OFFICIAL GAZETTE
UNITED STATES PATENT OFFICE

VOL. 859

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MICRO PHOTO DIVISION
BELL & HOWELL COMPANY

JN

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 4, 1969 Volume 859 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of December 1968

Examiner affirmed	82
Examiner affirmed in part	14
Examiner reversed	36
Total	132

Reduction in Patent Application Disclosure

Request for Comments

A joint committee comprising representatives of the Patent Office, the American Bar Association and the American Patent Law Association was established in September 1968 for purposes of investigating ways in which patent application disclosures could be improved and in particular ways in which the disclosures could be reduced. In the course of committee deliberations a number of proposals were generated. Those that appeared to be most practical and to hold most promise for early implementation have been compiled in the form of proposed "Guidelines for Preparation of Patent Application Disclosures." The guidelines are set forth below for review and comment. All persons who desire to present their views, objections, recommendations or suggestions in connection therewith are invited to do so by forwarding the same to the Commissioner of Patents, Washington, D.C., 20231 on or before March 31, 1969. No hearing will be scheduled.

GUIDELINES FOR PREPARATION OF PATENT APPLICATION DISCLOSURES

Applications for patents frequently contain descriptive and illustrative material in excess of that required by 35 U.S.C. 112. If such material were to be excluded from the application tri-fold benefits should accrue:

1. The time and costs involved in the preparation of an application should be reduced.
2. Examination time should be less.
3. There should be a reduction in patent printing costs.

In an effort to reduce such excesses, at least in part, the following guidelines, relating to preparation of patent applications, have been promulgated.

Drawing

The illustration on the drawing should be restricted to the invention disclosed in the application. Old and known subject matter should be omitted unless essential for establishment of environment or for a clear understanding of the invention. If disclosure of the latter type is essential it should be presented in skeleton or phantom form if possible. Reference numerals for such material should be held to a minimum.

Conventional sub-assemblies should be shown in block form with appropriate legends, or by means of standard drawing symbols, in instances where detailed disclosure is not essential for a proper understanding of the invention. If there is doubt as to whether or not symbolical representation is appropriate, reference should be made in the descriptive material to a patent or publication which will support the position that the item so illustrated is conventional with the understanding that the supporting document or the appropriate portion thereof will be made available upon demand.

Flow diagrams should be treated in a similar manner.

Shading should be provided on the drawing only if essential for illustrating contours or showing specific relationships between structural parts. Test—can the invention be clearly understood in the absence of shading?

Multiple Inventions, Species, etc.

Disclosures in divisional and other types of dependent applications carved from basic or parent application as well as those in the parent application should be restricted to the respective claimed inventions, or as an alternative the dependent application may be printed with the customary identifying information, an abstract, and the claims. The alternative printing should include proper reference to the parent document. The abbreviated printing should be used only if the parent precedes the dependent application in issue. (A copy of the parent or basic patent would be supplied along with the abbreviated patent in response to orders for the latter.)

Cancellation of Descriptive Material

Descriptive material deemed superfluous or unessential for a clear understanding of the disclosed invention should be omitted, however, if such material is presented in the application, the Examiner should require cancellation in the first Office action. This will provide applicant with an opportunity to traverse the requirement prior to final rejection. Cancellation may be deferred until the presence of allowable subject matter is indicated by the Examiner.

Laudatory language, exhaustive descriptions of prior art, unessential statements of objects and lengthy statements of environment should be omitted from, or reduced to bare essentials in the application descriptive material. Lengthy descriptions of items that are obvious and well known to those skilled in the art should be avoided. A mere statement that such items are known and conventional should be adequate in most instances, however, if doubt exists reference may be made to disclosures in specific documents for support. Likewise lengthy descriptions regarding use should be avoided. Procedures for testing should not ordinarily be described. Biological studies and case histories should ordinarily not be included in the descriptive material since they can be presented in affidavit form.

Objects—Abstracts—Summary

State the primary object of the invention and if essential a limited number of secondary objects—all should be brief.

The abstract and statement of object(s) appear to satisfy the requirements in Rules 73 and 77, a separate summary is deemed unnecessary.

New Applications Received During November 1968

Patents	7821
Designs	468
Plant Patents	3
Reissues	8
Total	8300

Issue—February 4, 1969

Patents	1300—No. 3,425,060 to No. 3,426,359, incl.
Designs	19—No. 213,284 to No. 213,302, incl.
Total	1319

The abstract should be limited to the technical disclosure that is *new in the art* to which the invention pertains.

Sectionalized Disclosure

Headings should be provided in patent applications to set off different portions, such as Abstract, Discussion of Prior Art, Background of Invention, Technical Disclosure of Invention, Additional Species of Invention, and the like. Cancellation of subject matter not pertinent to the claimed invention will be facilitated if the descriptive material is so organized.

In order to make the most of computer capabilities of the future, specifications should provide "indicators" which can be readily identified by the processing equipment. While this has general application it is illustrated below with regard to chemical disclosures.

Context indicators:
- Set out in the specification
- Reserved word paragraph
- Headings such as—
  - Utility
  - Starting material
  - Process
  - Final-Products
  - Chemical-Compounds—Names (followed by a tabulated list)
  - Chemical-Compounds—Structures (followed by a tabulation of structures)
  - Chemical-Compounds—Notations (the tabulated list could be Wiswesser, UPAC, or Patent Office; transformation could be made later)

Miscellaneous

Words or phrases of high information content (as distinguished, for example, from the word "means") appearing in claims as well as in invention descriptions, should be given indicator symbols or printed in bold face type, or italicized, so that future manual searching by the Examiner and the public will be made easier. A capability will exist for easier keyboarding for full text analysis for computer based information.

Where an elaborate expression appears in the descriptive material or claims it should be designated, for example, as "Definition 1" and later reference to the definition should be made with the designator.

Applications that include drawings should include a list of elements and the associated reference numerals for the elements comprising the invention.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 524; Jan. 16, 1969

Certificates of Correction for the Week of Feb. 4, 1969

3,338,369
3,345,296
3,346,576
3,346,617
3,347,818
3,347,819
3,347,930
3,350,579
3,352,446
3,355,753
3,356,802
3,357,731
3,359,742
3,360,473
3,360,974
3,404,007

Disclaimer

3,298,191.—*Lawrence A. Burke,* Royal Oak, Mich. SOLID STATE ICE BANK CONTROL. Patent dated Jan. 17, 1967. Disclaimer filed Nov. 6, 1968, by the assignee, *Temprite Products Corporation.*

Hereby enters this disclaimer to claims 1, 2, 3, 4, 5, 6, 8, 9, 10 and 12 of said patent.

Foreign Patents Received in the Search Center as of December 31, 1968

Source	Date received	Highest number
Australia:		
(Abstracts)	Nov. 25, 1968	42,185/68
(Patents)	Dec. 30, 1968	283,476
Austria	Nov. 1, 1968	265,189
Belgium	Nov. 1, 1968	676,200
Canada	Dec. 23, 1968	801,900
Czechoslovakia	Dec. 16, 1968	126,800
Denmark:		
(Fremlaeggelsskrifter)	Nov. 19, 1968	111,520
(Patents)	Nov. 19, 1968	110,050
East Germany	Dec. 2, 1968	64,414
Egypt	June 28, 1967	0,873
Finland	Oct. 8, 1968	37,023
France:		
(Patents)	Dec. 12, 1968	1,530,650
(Additions)	Nov. 26, 1968	91,550
(Medicaments)	Sept. 15, 1968	5,300 M
(Additions)	May 2, 1968	162 CAM
Germany:		
(Auslegeschriften)	Oct. 7, 1968	1,272,850
(Patents)	Oct. 7, 1968	1,258,667
Great Britain	Dec. 16, 1968	1,133,800
India	Apr. 11, 1968	101,130
Ireland	Nov. 20, 1968	27,641
Italy	Apr. 25, 1968	670,000
Japan	Nov. 26, 1968	24,880/68
Netherlands:		
(Octrooiaanvragen)	Oct. 7, 1968	07,864/68
(Patents)	Dec. 2, 1968	125,282
Norway:		
(Utlegningsskrifter)	Dec. 5, 1968	115,652
(Patents)	Oct. 2, 1968	113,252
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Dec. 2, 1968	55,893
Rumania	Nov. 1, 1968	50,850
Sweden:		
(Utläggningsskrifter)	Dec. 2, 1968	304,200
(Patents)	Nov. 12, 1968	301,938
Switzerland	Dec. 20, 1968	462,747
U.S.S.R	Dec. 12, 1968	220,031

Australia: First 2,000 incomplete
Belgium: First printed 493 079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,481/1941

Classification Order No. 396

Classification Order No. 396, dated Jan. 23, 1969, incorporates changes in the following classes:

68, TEXTILES, FLUID TREATING APPARATUS
117, COATING: PROCESSES AND MISCELLANEOUS PRODUCTS
166, WELLS
242, WINDING AND REELING

Design Classes

8, TOOLS AND HARDWARE—Established
10, BUILDERS HARDWARE—Abolished
45, JEWELRY
50, LOCKS AND LATCHES—Abolished
51, MASONRY—Abolished
54, METAL WORKING
87, LUGGAGE AND SPECIAL CONTAINERS AND CARRIERS NOT ELSEWHERE SPECIFIED
95, CUTLERY

Miscellaneous changes made in Design Classes 2, 13, 26, 37, 44, 48, 57, 67, 71, 74, 81, 83, 87, 95, and 96.

All changes will be incorporated in the Manual of Classification replacement pages dated April 1969.

ARTHUR P. KENT,
Acting Patent Documentation Administrator, Office of Examining and Documentation Control.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 14, 1969

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation	Actual Filing Date of Oldest Case Awaiting Action: New	Actual Filing Date of Oldest Case Awaiting Action: Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	10-03-66	5 05-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66	7-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	12-05-66	3-18-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*4-14-66	*7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-10-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-30-67	4-20-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-06-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*3-14-66	1-23-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-03-66	*12-16-63
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-11-67	7-01-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	4-24-68	8-02-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-17-67	2-04-66
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67	2-26-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-03-67	1-28-65
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-20-67	1-16-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-12-67	6-29-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	4-15-67	*7-02-64

Total number of pending applications (excluding Designs)	186, 568
Total number of Design applications pending	3, 137

Expiration of patents: The patents within the range of numbers indicated below expire during February 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,584,102 to 2,587,575, inclusive
Plant Patents	Numbers 1,071 to 1,076, inclusive

PATENT COOPERATION TREATY

The United International Bureaux for the Protection of Intellectual Property (BIRPI) released on May 31, 1967 in Geneva, Switzerland, a draft of a proposed Patent Cooperation Treaty designed to increase greatly international cooperation in the protection of inventions. This draft was reproduced in the OFFICIAL GAZETTE *of the United States Patent Office on June 13, 1967.*

A meeting of a Committee of Experts was held in Geneva from October 2–10, 1967 to consider the proposed treaty. A report of this meeting was released by BIRPI as PCT/I/11 dated October 20, 1967. A copy of this Report was reproduced in the OFFICIAL GAZETTE *of January 2, 1968.*

A meeting of a Working Group was held in Geneva from March 25–29, 1968 to consider the subject of searching under the Patent Cooperation Treaty. A report of this meeting was released by BIRPI as PCT/II/7 dated April 3, 1968. A copy of this Report was reproduced in the OFFICIAL GAZETTE *of April 30, 1968. Meetings previously scheduled for July 1–5, 1968 and November 4–12, 1968 were canceled.*

On July 15, 1968 BIRPI released the "1968 Draft" of the treaty. A copy of this draft treaty was reproduced in the OFFICIAL GAZETTE *of August 13, 1968. The Director of BIRPI convened a Committee of Experts meeting in Geneva from December 2–10, 1968 to discuss in detail the "1968 Draft." All Member States of the Paris Union were invited to this meeting, as well as those intergovernmental and international nongovernmental organizations which participated in previous meetings.*

Since considerable interest has been expressed in the developments in the treaty proposal, there has been reproduced in this issue of the OFFICIAL GAZETTE *a copy of the Final Report of the December 2–10 meeting identified as PCT/III/31 dated December 11, 1968.*

EDWARD J. BRENNER
Jan. 6, 1969. *Commissioner of Patents.*

PCT/III/31
ORIGINAL : English
December 11, 1968

BUREAUX INTERNATIONAUX
RÉUNIS POUR LA PROTECTION
DE LA PROPRIÉTÉ INTELLECTUELLE
GENÈVE, SUISSE

BIRPI

UNITED INTERNATIONAL
BUREAUX FOR THE PROTECTION
OF INTELLECTUAL PROPERTY
GENEVA, SWITZERLAND

COMMITTEE OF EXPERTS ON THE BIRPI PLAN FOR FACILITATING THE FILING AND EXAMINATION OF APPLICATIONS FOR THE PROTECTION OF THE SAME INVENTION IN A NUMBER OF COUNTRIES

Plan for a Patent Cooperation Treaty (PCT)

(Geneva, December 2 to 10, 1968)

REPORT

INTRODUCTION

The Committee of Experts

1. Within the framework of the program of BIRPI as decided by the competent organs of the International (Paris) Union for the Protection of Industrial Property concerning the BIRPI Plan for a Patent Cooperation Treaty (PCT), the Director of BIRPI convened a "Committee of Experts on the BIRPI Plan for Facilitating the Filing and Examination of Applications for the Protection of the Same Invention in a Number of Countries" from December 2 to 10, 1968. It is referred to hereinafter as "the Committee of Experts."

2. The meeting took place at the *Palais des Nations,* the Geneva headquarters of the United Nations.

3. All the member countries of the Paris Union were invited and the following 40 were represented: Algeria, Argentina, Australia, Austria, Belgium, Brazil, Canada, Cuba, Czechoslovakia, Denmark, Finland, France, Germany (Federal Republic), Greece, Hungary, Indonesia, Ireland, Israel, Italy, Japan, Lebanon, Luxembourg, Monaco, Netherlands, Norway, Philippines, Poland, Portugal, Rumania, Senegal, South Africa, Spain, Sweden, Switzerland, Turkey, Uganda, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom, United States of America.

4. India, which is not a member of the Paris Union, was represented by an observer.

5. The following intergovernmental organizations were represented: United Nations (UN), United Nations Industrial Development Organization (UNIDO), International Patent Institute (IIB), Organization of American States (OAS), Council of Europe, European Free Trade Association (EFTA), European Communities.

6. The following non-governmental organizations were invited: Committee of National Institutes of Patent Agents (CNIPA), Council of European Industrial Federations (CEIF), European Industrial Research Management Association (EIRMA), Inter-American Association of In-

dustrial Property (ASIPI), International Association for the Protection of Industrial Property (IAPIP), International Chamber of Commerce (ICC), International Federation of Inventors' Associations (IFIA), International Federation of Patent Agents (FICPI), Japan Patent Association, National Association of Manufacturers (NAM) (USA), Union of European Patent Agents, Union of Industries of the European Community (UNICE). All except ASIPI were represented.

7. The list of over 150 participants is annexed to this Report as document PCT/III/29.

Opening of the Meeting

8. The meeting was opened by Professor G. H. C. Bodenhausen, Director of BIRPI. In his opening speech, he emphasized that the objective of the BIRPI PCT Plan was to create a world-wide instrument, valuable both to industrialized and developing countries, to countries of Europe, the Americas, Asia, Africa and Oceania, irrespective of their economic and social structure. He further emphasized that the PCT, in order to be viable, must be useful both to Governments and to those private interests which seek patent protection in different countries (see document PCT/III/INF/1).

Officers

9. On the proposal of the Delegation of the Soviet Union, seconded by the Delegation of France, Mr. Eugene M. Braderman, Head of the United States Delegation, was elected Chairman, by acclamation.

10. The following were elected, by acclamation, as the three Vice-Chairmen of the Conference: Mr. Kurt Haertel, Head of the Delegation of the Federal Republic of Germany, Mr. E. I. Artemiev, Head of the Delegation of the Soviet Union, and Mr. B. Jimbo, Head of the Delegation of Japan.

11. Dr. Arpad Bogsch, Deputy Director of BIRPI, acted as Secretary of the meeting. He was assisted mainly by Mr. Klaus Pfanner and Mr. Ivan Morozov of the BIRPI Secretariat.

Basis of Discussion

12. Discussions were based on BIRPI documents of the PCT/III series, in particular, the Draft Treaty (PCT/III/5) and the Draft Regulations (PCT/III/6), dated July 15, 1968.

13. During the meeting, twenty documents, containing proposed amendments or other suggestions or comments, were filed by the Representatives of several Governments and intergovernmental or non-governmental organizations (see documents PCT/III/9 to 28). They were discussed in the meeting whenever invoked by their authors.

The Present Report

14. The present Report is not intended to be a complete record of the meeting. Points made but not reported on here are, however, in the files of the Secretariat and will be taken into consideration by it in its future work.

15. In order to reduce the length of the Report, the arguments invoked by the speakers are in most cases not reported on here. Only their proposals are recorded, and mainly if these proposals were for changing the BIRPI Drafts.

16. Generally, the Report follows the order in which the interventions were made. There are exceptions, however, when they make for a more economic presentation.

17. The meeting started with general statements. These were followed by a discussion of the Draft Treaty Article by Article and, under each Article, the corresponding Rules when the speaker considered that discussion of such Rules was closely tied to the Article. Once this discussion was finished, participants were invited to present suggestions on those draft Rules which had not yet been covered in connection with the discussion of the Articles. Such suggestions are reported upon under the heading: "Additional Observations on the Regulations."

GENERAL COMMENTS

18. General statements were made by the Representatives of the following countries and organizations (in the order in which they asked for the floor): United States, Canada, Netherlands, South Africa, Israel, IIB, Czechoslovakia, Switzerland, Australia, Rumania, Sweden, Portugal, UNICE, France, ICC, Brazil, Argentina, Soviet Union, Italy, Germany (Federal Republic), Poland, Luxembourg, IFIA, Philippines, Japan, India, EIRMA, Union of European Patent Agents.

19. Anything said in those statements and repeated when the Articles were brought up for discussion is mentioned in this Report in connection with those Articles. Consequently, this part of the Report attempts to summarize only those statements which are not already covered in other parts of the Report.

20. The Representative of the United States noted that great progress had been made towards the goal of an international instrument for cooperation in the field of patents. He thought this to be an important and urgent goal in view of the unprecedented scientific and technological advances, and the enormous growth in world trade and investment. These developments have caused problems and have led to duplication of efforts both for applicants and national Patent Offices. The United States considered the philosophy and underlying concepts of the BIRPI Draft to be sound and practicable. The Draft Treaty could be improved, however, and the United States would have suggestions to offer and would also carefully consider the proposals for improvement made by others. He stressed that it must be kept in mind that improvement did not mean a search for perfection since this was not attainable.

21. The Representative of Canada considered the PCT plan a worth-while enterprise and a first step in the right direction, further postponement of which would aggravate the present difficult situation. The lack of harmony in national laws naturally caused some difficulties but should not prevent the conclusion of a Treaty which would serve as a good basis for later harmonization. Canada was ready to identify and furnish to the Searching Authorities copies of Canadian patents on inventions not published abroad so that they could be included in the minimum documentation. As far as languages were concerned, it was indispensable for Canada to have access to Searching Authorities with which Canadian applicants could file their international applications either in English or in French. The PCT should result in simplified procedures and reduced costs.

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22. The Representative of the Netherlands declared that his Government officially favored the BIRPI Draft.

23. The Representative of Czechoslovakia declared that the competent authorities of his country supported the BIRPI Draft.

24. The Representative of Israel said that the revision of the Draft should be directed mainly towards more advantages for inventors and smaller countries, whose means were so limited that they would have to rely exclusively on the simpler and cheaper ways of the PCT and should not be required to supplement them by any external means.

25. The Representative of Switzerland said that he considered the BIRPI Draft a good basis for further work.

26. The Representative of Australia emphasized that, while international search would certainly mean advantages for his country, the attractiveness of the PCT for Australia would be diminished if the minimum documentation did not include Australian specifications.

27. The Representative of Rumania said that the BIRPI Draft was a good basis for discussion although there was still room for improvement. The Treaty should be in harmony not only with the Paris Convention but also with the greatest possible number of national laws. International search and preliminary examination should be uniform, their time limits should be as short as possible, and they should constitute a solid basis for examination in the national phase. The economic aspects of the proposal should be further studied and all States should be treated equally, irrespective of their size.

28. The Representative of Sweden emphasized that he was in favor of both phases provided for in the PCT Draft.

29. The Representative of France stressed the importance of developing a high-quality search and examination under the PCT to replace the present system. Only such search and examination could allow the guarantees flowing from multiple searching to be dispensed with. Furthermore, he said that such high quality required the fulfilment of the following two conditions: firstly, that the responsibility for utilizing search means be centralized; secondly, that the administration entrusted with searching have a truly international character. He also said that the PCT might lead to an increase in the number of applications and such an increase might have undesirable effects on the economy of certain countries. The latter might then have to correct such effects by stiffer requirements for the "working" of the invention in their countries.

30. The Representative of the ICC said that the ICC supported the BIRPI Plan in general (see document PCT/III/20). He urged that the required flexibility be preserved by transferring as many provisions as was reasonable from the Treaty to the Regulations. Furthermore, he proposed that in observance of no provision of the Treaty, other than those required to preserve its basic aims, should result in the possible loss of rights by the applicant.

31. The Representative of Brazil said that the PCT should take the needs of developing countries into greater consideration.

32. The Representative of Argentina said that his Government supported in principle the BIRPI Draft, which permitted the reinforcement of the patent system and was useful in connection with access to foreign technology. The Treaty should take into account the need for savings, both for the Governments and the inventors, and should lead to the harmonization of national laws. The PCT would allow his country to benefit from foreign technological experience.

33. The Representative of the Soviet Union said that the 1968 BIRPI Draft was generally acceptable to his country. The PCT would allow strengthening of the patent system. Countries would benefit more from foreign technology thanks to the PCT. The Treaty should pay particular attention to guaranteeing savings in time and money both for the Governments and the applicants, and to harmonizing national laws.

34. The Representative of Italy said that his Government favored Phase I of the PCT Draft but did not favor Phase II.

35. The Representative of Germany (Federal Republic) expressed the view that Phase I was of great advantage both to applicants and to national Offices: to the former, because they could file one application in one language with effect in several countries and because they would have a longer period and a better basis (the search report) for reflecting on whether to maintain their applications, factors which would result in considerable savings for them; to the national Offices, because the PCT would ease the examination tasks and would lead to closer cooperation between the major Patent Offices. The PCT would doubtless lead to more harmonization of national patent laws, which would be an advantage to industry, Governments, and the general public. (As to the observations of the Representative of Germany (Federal Republic) on Chapter II, see paragraph 184, below.)

DISCUSSION OF THE DRAFT TREATY AND DRAFT REGULATIONS

INTRODUCTORY PROVISIONS

ARTICLE 1: ESTABLISHMENT OF A UNION

36. The Representative of Israel suggested that this Article state that the PCT Union would be a Special Union under the Paris Union and that it further state that, as far as examination is concerned, that Union would be created "for providing examination facilities."

ARTICLE 2: DEFINITIONS

37. Several participants suggested that the expression "priority date" be replaced by "effective date" (Netherlands), "reference date" (FICPI), or some other expression, since "priority date" might be misleading in the case of paragraph (2)(e)(iii). The Representative of EIRMA shared this view, referred to Articles 4(2), 11(2), and 14(2), and suggested the expression "first effective filing date."

38. The Representative of FICPI, seconded by the Representative of EIRMA, proposed that, in cases where the international application contains matter disclosed in a national application filed by the applicant or his predecessor in title more than a year earlier than the international application, the "reference date" should be the date minus one year of the international filing.

39. The Representative of the Netherlands said that paragraph (2)(e)(i) should also refer to the case where the

international application claims the priority of an earlier international application as mentioned in Article 4A(2) of the Paris Convention.

40. The Representative of Switzerland suggested that the Article define "international application," whereas the Representative of South Africa suggested that the Article—rather than the Regulations—define "applicant," "agent," and "signature."

41. The Representative of Israel suggested that a State accepting Chapter II should be entitled to request the presentation of an international preliminary examination report even from applicants not demanding international preliminary examination, or even from applicants being residents or nationals of countries not accepting Chapter II, and that the definition of "elected Office" should be changed accordingly.

CHAPTER I: INTERNATIONAL APPLICATION AND INTERNATIONAL SEARCH

ARTICLE 3: THE INTERNATIONAL APPLICATION

42. The Representative of the United Kingdom proposed that Rule 12 be modified so as to allow the Receiving Office to require that international applications be filed in its own official language, if that language is also a language admitted by the competent Searching Authority, rather than any language admitted by such Authority. The Secretariat said that the next draft would be modified accordingly.

43. The Representative of the Netherlands suggested that the requirement for complying with the rules on unity of invention should not be mentioned in this Article but merely in connection with the amount of the fee for the international search.

44. The Representative of the ICC proposed that item (ii) in Rule 3.2 ("new plant and animal varieties, other than microbiological products") be modified so as to be identical with the corresponding provision in the Strasbourg Convention on Certain Points of Substantive Law on Patents for Invention.

45. The Delegation of the United States of America presented a proposal entitled "Changes proposed to make Rule 3.2 a matter of search function rather than a matter of 'purview'." The proposal, which asks for the deletion of Rule 3 ("Subject of the International Application") and proposes the introduction of a new rule specifying the cases in which the Searching Authority would not be obliged to establish an international search report, and further proposes modifications in Articles 3, 11, 17, 20, 22, 23, 24, and 34, is set out in document PCT/III/13. No complete analysis is attempted here. What is suggested, in essence, is: (i) that a filing date should be accorded to international applications whatever their subject matter; (ii) that if the subject matter is one which the Searching Authority is not obliged or—because of lack of clarity or similar reasons—is unable to search, it should so notify the applicant; the International Bureau would then promptly forward copies of the application to all the designated Offices, with any translations and fees to be furnished by the applicant within two months; (iii) that each designated Office should then be obliged to process the application (not accompanied by any search report) in accordance with its national law. It was said that the proposal would safeguard the applicant against possible errors by him, by the Receiving Office, or by the Searching Authority, and that, although the result might cause some inconvenience to the designated Offices, the cases would probably be extremely rare so that, on balance, the inconvenience caused would be less dangerous than the possibility of the said errors.

46. The cases in which the Searching Authority would not be required to establish search reports would, according to the proposal of the United States Delegation, be somewhat different from the cases enumerated in Rule 3.2, in particular: (i) all reference to discoveries would be omitted, (ii) "therapeutic methods" would be replaced by "methods for treatment of the human body by surgery or physical therapy," (iii) "computer programs" would not be mentioned, (iv) "written, printed or other similar physical representations of information" would be added as a new item. Article 11(2) would be amended to provide that an international application could not be used as an application for a "design patent," a "trademark patent," or a "plant patent."

47. Tentative or general agreement with the proposal of the United States Delegation was expressed by the Representatives of Germany (Federal Republic) and EIRMA. The Representatives of the Netherlands and the ICC also indicated tentative approval. The Representative of the United Kingdom, supported by the Representative of Sweden, expressed the fear that the proposal of the United States Delegation was so far-reaching that it might disturb the balance of the proposed system. They said, however, that they were prepared to study it and reserved their final opinion. On a question from the Secretariat, the Representative of the United States said that one should probably except from international publication international applications which, for the reasons in question, were not internationally searched.

ARTICLE 4: THE REQUEST

48. *Designation of States.* The BIRPI Draft provides that the international application must designate one or more Contracting States (Article 4(1)(ii)) but that, if no such State is designated, all Contracting States are considered designated (Article 14(2)). The Representative of Italy proposed that, if no Contracting State is designated, the international application should not be considered to be an international application. This point of view appeared to have been shared by the meeting. Consequently, failure to designate any Contracting State would result in refusal to accord a filing date to the purported international application (cf. paragraph 90, below).

49. Another question discussed concerning designation was whether each designation should be subject to a fee and whether, if such a fee were decided upon, it should replace the national filing fee (the Representative of Italy suggested that it should), or should be regarded as an advance towards the national filing fee (the Representative of the ICC suggested that it should be so regarded), or should be regarded partly as such an advance and partly as a fee to the International Bureau (the Representative of the Union of European Patent Agents suggested such a solution; he also said that in no case should designation fees be reimbursed). The Representative of France also favored designation fees. Several speakers said that designation fees would be a deterrent to designating countries in which the applicant did not really want protection.

50. Still another question discussed in connection with the provision on designation was whether an applicant should be allowed to designate his own country in an international application. The Representative of Germany (Federal Republic) said that the Treaty itself should provide that the applicant could not designate his own country if he invoked, in the international application, the priority of a first national application filed in that same country (since the Paris Convention excluded such a possibility) but that, where the applicant did not invoke such national application, he should have the right to designate his own country. The Representative of the United Kingdom, not sharing the view that the Paris Convention excluded the said possibility, suggested that the reply to the question should be given by each country in its national law. The Secretariat suggested two intermediary solutions. One would consist in providing in the Treaty that the national law of any country may prohibit the designation of the said country by applicants of that country where the international application invokes the priority of a first national application in that same country. The other would consist in leaving to each national law the possibility of providing that, in the said situation, the applicant must, within a certain time limit, withdraw his national application, failing which the designation of his own country would lapse.

51. *Naming of the Inventor.* There was a thorough discussion on the question whether the inventor should be required to be named in the international application. The Representative of the Netherlands proposed that this requirement should be dropped from the BIRPI Draft, allowing, however, any designated State to require the naming of the inventor when the international application is communicated to it. This view was shared by the Representatives of Switzerland, the ICC, and EIRMA. The Representative of France suggested as a possible alternative that naming of the inventor in the international application should be required only when the national laws of one or more countries actually designated required it. Since, by virtue of Article 9(2)(b), it is possible to designate different applicants for different designated States, it should be equally possible to make the application respect the laws of States which require that the applicant be the inventor or his successor in title. The Representative of Switzerland pointed out in this connection that, according to the laws of different countries, different individuals were considered inventors.

52. On the other hand, the Representatives of the following countries and organizations suggested that the requirement of naming the inventor, contained in the BIRPI Draft, should be maintained: Sweden, Rumania, IFIA, Canada, United States of America, Soviet Union, and India.

53. *Later Designations.* The Representative of EIRMA drew attention to the difficulty which might possibly arise if an international application relating to an invention which is the subject of an earlier national application is filed after the expiration of the priority year and, consequently, cannot and does not invoke the priority of the said national application. He suggested that, in paragraph (2), the words "but not after the expiration of one year from the priority date" be deleted, and that Article 11(2) be amended accordingly.

ARTICLE 5: THE DESCRIPTION

54. The Representative of FICPI suggested that the expression "a person skilled in the art" was unsuitable under modern circumstances and should be reconsidered.

55. The Representative of the United Kingdom, referring to his written suggestion (document PCT/III/9), proposed that Rule 6.1 concerning the manner of describing should either be deleted or redrafted so that it be in the nature of a mere recommendation. On the other hand, the Representatives of France and Australia expressed the view that the Rule was useful both for the protection of the applicant and for the gradual harmonization of practices.

ARTICLE 6: THE CLAIMS

56. The BIRPI Draft provides that the claims must define "the protection applied for." The Representative of the Soviet Union suggested that the provision should speak about "the subject for which protection is sought," whereas the Representatives of the ICC, Italy, UNICE, and Switzerland, suggested that it speak about "the invention." The last speaker also said that claims were not necessary but, if the Treaty should require them, they should be called "international" or "provisional," in order to indicate that, in his view, "PCT claims" serve a purpose different from that of the classical claims in national applications. This view was not shared by the Secretariat, which said that the claims could be called "provisional" merely in order to indicate that the Treaty gave the applicant a right to amend these claims. The Representative of the Netherlands supported the proposal to call the claims "provisional."

57. The Representative of the United Kingdom, referring to his written suggestion (document PCT/III/9), proposed that Rule 7 concerning the manner of claiming should either be deleted or redrafted so that it would be in the nature of a mere recommendation. The Representatives of the Netherlands and Australia expressed the opposite view in the interests of promoting harmonization of national practices and the security of the applicant.

ARTICLE 7: THE DRAWINGS

58. The BIRPI Draft contains two suggestions. Alternative A calls for drawings when they are *necessary* for the understanding of the invention, whereas Alternative B calls for them also when, because of its nature, the invention *admits of* illustration by drawings.

59. A preference for Alternative A was expressed by the Representatives of the Netherlands, Germany (Federal Republic), Switzerland, France, UNICE, EIRMA, and the United Kingdom.

60. A preference for Alternative B was expressed by the Representatives of the United States, the Soviet Union, Rumania, and Japan.

61. The Representative of the United States proposed, as a compromise, that Alternative A apply when the international application is filed, but that the Searching Authority, the Preliminary Examining Authority, and/or the designated or elected Office, should have the right in any individual case and at its discretion, to require the filing, within a reasonable time limit, of drawings even in the case described in Alternative B. The Representative of the Netherlands made a similar proposal, except that the said right would have been accorded only to the

designated or elected Officers. This proposal was also preferred by the Representative of Switzerland.

62. The compromise solution proposed by the Representative of the United States was then endorsed by the Representatives of Canada, Germany (Federal Republic), Rumania, Japan (tentatively), France, Israel, UNICE, EIRMA, and the United Kingdom, although the last mentioned said that he would have preferred a clear-cut choice between Alternatives A and B.

63. A proposal by the Secretariat to transfer all or most of the contents of Articles 4 to 7 from the Treaty to the Regulations was approved by the Committee of Experts, the Representative of the Soviet Union having reserved his opinion and the Representative of the ICC having expressed some doubts with respect to the transfer of Article 6.

Article 8: Claiming Priority

64. No suggestions were made for amending this Article.

Article 9: The Applicant

65. *Should the Treaty require that the applicant be the inventor or the successor in title of the inventor?* Or should it allow filing by any person, in particular, by the employer of the inventor, who, under the national laws of some countries, is the original owner of the invention? The debate on this question was particulary thorough and the report on it here is less than complete. Generally, an affirmative answer to the latter question was urged by the Representatives of Switzerland, the Netherlands, France, Luxembourg, Uganda, Israel, Italy, CEIF, ICC, EIRMA, and the Union of European Patent Agents. The Representative of Sweden expressed the opposite opinion, thus favoring the BIRPI Draft, as did the Representative of Rumania. The Representative of the United States said that under present US law application by a person other than the inventor was generally impossible but that, if proposals for changing the US law passed Congress, filing by the "owner" of the invention would generally become possible.

66. Some of the participants suggested that the question should not be regulated by the Treaty and each Receiving Office should apply its own law; others, however, said that this would mean that, if the law of the country of the Receiving Office were different from the law of the designated State, the applicant could lose all his rights. Therefore, the latter urged that the matter be regulated in the Treaty itself.

67. *Residence, etc.* The Representative of the Netherlands suggested that paragraph (2)(a) should read: "The applicant must be a resident or a national of a Contracting State." This suggestion was supported by the Representatives of Italy and the Soviet Union.

68. The Representative of the Soviet Union suggested that the permission given to any State under paragraph (3)(a) should be for a fixed period of time.

Article 10: The Receiving Office

69. *Where to File?* The reply in the BIRPI Draft to this question states, in essence, that if the applicant is a resident of a Contracting State other than the State of which he is a national, he must file in the State of which he is a resident. On the proposal of the Representatives of the United States and the Soviet Union, the Committee of Experts agreed that, if the applicant is a resident of a Contracting State and the national of another Contracting State, he may choose himself in which of the two States he will file. The Representative of Switzerland, however, gave a warning that such a solution could lead to a situation in which the applicant would have too much freedom to choose between Searching Authorities, whereas the Representative of the United Kingdom warned the meeting that the national security measures generally applicable to all residents might be more difficult to police.

70. The Representative of IFIA proposed that any applicant should be allowed, at his discretion, to file in any Contracting State.

71. *Filing in the IIB.* The Representative of Switzerland proposed, in effect, that the Treaty should allow any Contracting State to entrust to the IIB the duties which its national Office would otherwise have as a Receiving Office. The Representative of UNICE supported that proposal, and the Director General of the IIB declared that the IIB would be ready to act as Receiving Office for those States which wanted to delegate the corresponding tasks to the IIB. He added that such delegation could provide for safeguards in connection with the decisions which the IIB would have to make concerning the granting or denial of a filing date to international applications.

72. The Representative of the United States suggested that most of the provisions of this Article could be transferred to the Regulations. The Secretariat expressed the view that this would be an improvement.

Article 11: Filing Date and Effects of the International Application

73. *Prolongation of the Priority Period?* The Representative of IAPIP, referring to document PCT/III/16, suggested that, instead of giving to the international application the effect of a national application (as provided in paragraph (2)), the international application should have the effect of allowing applicants to file national applications up to the expiration of 20 months from the priority date. The suggestion was supported by the Representative of Australia and opposed by a number of speakers on substantive and other grounds (prolongation of the Paris Convention priority year by 8 months, etc.). It was decided by the Committee of Experts not to follow the IAPIP proposal.

74. *Denial of Filing Date (Generally).* The Representative of Germany (Federal Republic) suggested that, even where the Receiving Office has refused to grant a filing date, the application should be communicated (on the applicant's request) to the designated Offices, which could, for their own purposes, consider the application as having a filing date. This idea, subject to some modifications, was supported by the Representatives of Switzerland and Austria, the former reserving details for discussion in connection with Article 25.

75. The Representative of Switzerland also suggested that, before denying the grant of a filing date, any Receiving Office should, within one week from the receipt of papers which, in its view, did not qualify as an international application, inform the applicant of its intention to deny. If the correction arrives before the expiration of the priority year, the Convention priority could be preserved for the international application. The Representative of Israel

expressed the view that the applicant should always be given an opportunity to be heard before the grant of a filing date is denied. He suggested that, except in special cases, the application should be processed with a caveat and refused once the denial becomes final.

76. The Secretariat expressed the fear that added communications with the applicant would not be desirable (because the possible mistakes were elementary) and, if admitted, could unduly complicate and delay the procedure.

77. *Purview of the Treaty.* The Representative of the Netherlands suggested that, even if the subject of the application appeared to the Receiving Office to be obviously outside the purview of the Treaty, the application should be accorded a filing date and, if later the search is denied, it should be considered withdrawn subject to the possibility of review by the designated Offices. This proposal was supported, or similar proposals made, by the Representatives of Germany (Federal Republic), Switzerland, France, ICC, South Africa, and the United Kingdom. An even more far-reaching suggestion by the Delegation of the United States on the "purview question" is reported on in connection with Article 3. The Representative of Sweden gave his support to the BIRPI Draft and said that any additional leniency would unnecessarily complicate the system.

78. *Claims.* The Representative of the Netherlands said that a filing date should not be refused because of the mere absence of claims in the application. He said that this would be contrary to the Strasbourg Convention. Such a defect, at the time of filing, should be correctable within a reasonable period. This view was supported by the Representative of Switzerland. The Representative of France said that, in his view, the application should be subject only to a clerical check as to formalities and, consequently, in order to receive a filing date, it should be sufficient—as provided in the BIRPI Draft—to have a part in it which appears to constitute claims. The Representative of Sweden suggested that the absence of claims should not prevent the granting of a filing date but should exclude searchability and, if the claims are not furnished within the time limit prescribed (for other cases) by Article 14(1)(b), the application should be considered withdrawn. A similar solution was suggested by the Representative of the United Kingdom.

79. The Secretariat expressed the view that granting a filing date to international applications without claims would jeopardize both basic features of the PCT Draft, namely, that a search must be performed and that the international application has the effect of a national application (since a number of countries regard papers not containing claims as not amounting to an application).

80. *Name of Applicant.* The Representative of Germany (Federal Republic) said that as long as the identity of the applicant is recognizably indicated, the international application should be granted a filing date even if Rule 5.4 is not respected. The Secretariat said that this was the intention of the Draft Treaty.

81. *Effect of International Filing.* The Representative of EIRMA suggested that paragraph (2) read as follows: "Any international application fulfilling the requirements of paragraph (1) shall have the effect of a regular national application in each designated State. Such effect shall ensue as of the international filing date if the designation took place within one year from the first filing, and as of the date of designation if the designation took place after the expiration of the said one-year period." He referred, in this connection, to his proposals made concerning Articles 2(2)(e) and 4(2).

Article 12: Transmittal of the International Application to the International Bureau and the Searching Authority

82. *Authentic Copy.* In reply to a question from the Representative of the Japan Patent Association, the Secretariat said that the words "authentic copy" in paragraph (1)(b) ("The record copy shall be the authentic copy of the international application") merely meant that, if there was any difference among copies (which are necessarily in the same language) of the international application, the record copy was the one which was to be considered the true copy. The Draft would be revised accordingly.

83. *Search Copy.* The Representative of IAPIP suggested that the applicant should have the right, if he so desired, to send the search copy himself to the Searching Authority. Although the suggestion was put to a vote and received no support, the Secretariat said that it would study this suggestion, particularly in connection with the costs of the procedure.

84. *Search Copy and Record Copy.* The Representative of South Africa suggested that the Receiving Office be given the option to require that both the record copy and the search copy should be filed by the applicant directly with the International Bureau and the Searching Authority.

85. *Record Copy.* The Representatives of Sweden, Switzerland and Austria found the provisions of paragraph (3) too hard upon the applicant. The Representative of Sweden proposed that the words "unless he can show that he has filed the international application in time" be added to the paragraph under discussion, and that a time limit be prescribed. The Secretariat said that such a provision would mean prolonging the insecurity until the expiration of the time limit and that if the time limit were long the proposal would be particularly undesirable. The Representative of Switzerland disagreed with this suggestion and proposed, instead, that the applicant may also, if he so desires, transmit a copy to the International Bureau and, if either that copy or the copy transmitted by the Receiving Office arrives by the expiration of the 13th month from the priority date, the consequences of paragraph (3) would not ensue even if the other copy missed the said deadline.

86. The Secretariat said that it considered paragraph (3) foolproof because of paragraph (2) and Rules 22 and 23 but that the possibility of making it even more foolproof would be studied for the next draft.

Article 13: Availability of Copy of the International Application to Designated Offices

87. When this Article was brought up for discussion, the Representatives of the Union of European Patent Agents and Israel made remarks. They are reported on in connection with Articles 4 and 30, respectively.

88. The Secretariat announced that the expected financial implications of this Article, as well as the rest of the Treaty, for both the applicants and the Governments, were being studied and that the results of those studies would

be available before the negotiating conference to be called for the adoption of a Patent Cooperation Treaty.

ARTICLE 14: CERTAIN DEFECTS IN THE INTERNATIONAL APPLICATION

89. *Matter Obviously Excluded Under the Regulations.* The Representative of the Netherlands suggested that paragraph (1)(a)(vi) and Rule 6.2 ("Matter Excluded") be omitted. The Representative of Switzerland said that he would prefer to follow this suggestion but he was also prepared to accept the contents of Rule 6.2 provided they had merely the force of a recommendation. The Representative of Germany (Federal Republic) expressed the view that Rule 6.2 served a useful purpose and that the checking of compliance with that Rule could easily be performed by a clerical staff as paragraph (1)(a)(vi) referred only to matter *obviously* excluded. The Secretariat said that the main reason for Rule 6.2 was to prevent the need of publishing applications containing objectionable expressions and that the real issue was whether the Receiving Offices were prepared to process such applications and whether the designated Offices were free to ignore them.

90. *No State Designated.* Paragraph (2) provides that, if no Contracting State is designated in the international application, all Contracting States must be considered designated. On the suggestion of the Representative of Germany (Federal Republic), supported by UNICE, the Committee of Experts unanimously recommended that the paragraph be dropped. Consequently, if no Contracting State is designated, no filing date would be accorded to the purported application.

91. *Drawings.* The Representative of the Soviet Union suggested that the Receiving Office invite the applicant to furnish forgotten drawings and that such drawings should be filable within a time limit to be prescribed in the Regulations, whereas the Representative of South Africa proposed that such drawings should be filable subsequently. The Secretariat said that the Treaty would not prevent any designated State from being more lenient than the Treaty itself and, consequently, if any designated Office wanted to admit later filing of drawings, it could do so. On the other hand, the proposals, as far as they would also apply in the international phase, would seem to impose upon Receiving Offices and Searching Authorities a task which, as such, they were not supposed to perform, namely, to check whether drawings filed later contained "new matter." The Representative of the United States said that it should be possible to find solutions for performing the said check.

92. *Fees.* The Representative of Switzerland proposed that, if the fees are not paid, there should be an obligation upon the Receiving Office (and not merely a faculty, as in Rule 15.3(b)) to invite the applicant to pay.

93. *Paragraph (5).* The Representatives of the Netherlands, Luxembourg, and Israel, proposed that this paragraph be deleted, whereas the Representative of Switzerland proposed that the findings contemplated under the paragraph could not occur later than a certain date, for example, three months after the international filing date.

ARTICLE 15: THE INTERNATIONAL SEARCH

94. *"Belgian Route."* Although considered also in connection with other Articles, the question of the so-called "Belgian route" is reported on here.

95. The Representative of CEIF introduced a joint proposal by CEIF, EIRMA, ICC, and UNICE (document PCT/III/11), according to which an applicant who has already filed a national application may file first a provisional and then (but still within the priority year) a definitive international application. The provisional international application would be a copy or a translation of the national application. Both the provisional and the definitive international applications would be searched by the competent International Searching Authority. This proposal will hereinafter be referred to as "the proposal of the four organizations."

96. Another type of "Belgian route" is contained in Rule 5.11 of the BIRPI Draft, which, in effect, permits the use of a search report established on the basis of a national application in connection with the corresponding international application. However, availability of the BIRPI type of "Belgian route" would depend on the Receiving Office's having arrangements with the Searching Authority to make international-type searches on national applications, that is, even before it is known whether an international application would be filed, in the end, or not.

97. The Representative of Belgium said that the Belgian route should be written into the Treaty itself, in substantially the same form as it is in Rule 5.11, but with an obligation upon the Searching Authority to take into account the results obtained on the basis of the national application. No Government Representative objected to the BIRPI type of Belgian route. But several participants expressed opposition or hesitation in connection with the proposal of the four organizations. The Representative of Germany (Federal Republic) said that such a proposal could considerably enlarge the scope of the work of the Receiving Offices, which are also Searching Authorities, since they might have to make search reports on any of the three applications (national, provisional international, definitive international). The Representative of Germany (Federal Republic) thought that the question whether an applicant has the right to an international-type search on his national application should be left to the national law of his country and that country's agreement with the competent Searching Authority. This view was also shared by the Representatives of the United States, the Netherlands (who also said that use of such a route would speed up procedure and improve the quality of the search report), the United Kingdom, and Japan (who remarked that the Belgian route could be abused by applicants really interested in nothing other than their chances of obtaining a patent in their home country only). The Representative of France said that the institution of a single Searching Authority would simplify the problems raised by the Belgian route, which, in any case, had his support.

98. The Representative of Luxembourg said that there would hardly be time to complete the filing of all the applications within the priority year if the national application were not a "first" application, which would then mean that altogether four applications would have to be filed within one year. Otherwise, however, he would find the proposal of the four organizations an interesting one.

99. The Representative of Israel said that the Belgian route was particularly interesting for developing countries, who could use it to increase the advantages offered by the PCT. However, taking into account the aims of the PCT, he thought that the Belgian route was, at least at this stage, outside the scope of the Treaty.

100. After having head these remarks, the Representative of EIRMA said that some of the procedural aspects of the proposal of the four organizations were less important than that all applicants should have a right to an international-type search on a document which should not need to contain claims, at least when the national application to be searched does not contain claims, and which may be the national application or its translation rather than a provisional international application. He also said that the same requirements could apply to the international-type search as to the international search regarding eligibility to apply for it, competence of the Authority, fees, unity of invention, etc.

101. The Representative of IAPIP said that the applicant could always also have his application searched independently of the PCT, provided he asked for a search sufficiently in advance of the expiration of the priority year.

ARTICLE 16: THE SEARCHING AUTHORITY

102. *One or Several Searching Authorities.* The question most extensively discussed by the Committee of Experts was the question whether international search should be carried out by one international organization or by several authorities, international or national.

103. The Draft Treaty does not answer that question. It allows of both kinds of solutions, including the change from one to the other. But it does contemplate, at least initially, that international searching would be the responsibility of several authorities.

104. Three counter-proposals were presented in writing. Only the essence of those proposals is mentioned here as the details are reflected in the documents cited below.

105. The Delegation of France (document PCT/III/12) proposed that there be one Searching Authority but that the Authority may, for a period of two years, delegate all tasks, and thereafter some tasks, to "Advisory Authorities," which could be national Patent Offices and/or international organizations.

106. CEIF, EIRMA, and UNICE (document PCT/III/14), proposed that a single world-wide organization should direct or guide the carrying out of international search. Their proposal admitted, for a transitional period, searching by several authorities.

107. IAPIP (document PCT/III/16) advocated the creation of a single authority from the outset. It, too, admitted, under certain conditions and for a transitional period, search by several authorities.

108. The said four Organizations, as well as the ICC, urged the adoption of practical measures to ensure uniformly high quality in the search and the building of efficient cooperative machinery (see documents PCT/III/14, 16, and 19). Several of those Organizations, in particular UNICE, offered full cooperation by private industry for perfecting documentation storage and retrieval.

109. When the discussion on the question of one or several Searching Authorities was resumed, the proposal by the Delegation of France was supported by the Representatives of Luxembourg (who, however, found two years too short for the transitional period), Switzerland (who said, referring to statistical figures, that the IIB would be fully equipped in time to handle all the expected international applications), the Netherlands (who shared the views of Switzerland), Italy, and Belgium.

110. The Representative of Brazil said that he favored the centralized-authority approach, the more so as it contained more promise of solving the language problem. The Representative of Portugal said that several authorities should be accepted to act only for a transitional period. He expressed the hope that the IIB would be able to search applications in the Portuguese language.

111. The Director General of the IIB remarked that the IIB was centralized in terms of direction and methods but contemplated establishing branches in different countries, as evidenced by current negotiations between the IIB and Italy. He stressed that the IIB could handle all the expected number of international applications.

112. Later in the discussion, the Representative of the Netherlands, supported by the Representative of Australia, proposed that Article 16(1) read as follows: "International search shall be carried out by one International Searching Authority, appointed by the Assembly. However, the Assembly may appoint one or more national administrations as Searching Authorities in addition to the International Searching Authority."

113. The Representative of the United Kingdom said he favored a single authority, not necessarily in one geographical location. Several authorities seemed to be a practical necessity at the outset but the Treaty should state that the goal was a single authority. He said that he could also support the proposal of the Netherlands Representative.

114. The BIRPI Draft—as described above—was supported by the Representatives of the United States, Sweden, the Soviet Union, India, Austria, Japan, Poland, and Hungary. The Representative of Germany (Federal Republic) said that his position was a flexible one, illustrated by the fact that it was intended to allow German applicants to choose between international searching in the German Patent Office or the IIB. He raised the question whether it was realistic to assume, under the present political and practical conditions, that a solution different from the one provided for in the BIRPI Draft would be acceptable. Both the Representatives of Germany (Federal Republic) and of the Soviet Union said that big examining Offices would have to maintain and modernize their examination facilities anyway for the very large number of strictly national applications which they would have to search in any case. They added that a centralized search was not necessarily a better search. The Representative of Argentina urged the adoption of a flexible solution.

115. The Representative of Sweden, speaking in the name of all the Scandinavian countries, and supported by that of Austria, said that capability of doing high-quality work should alone decide which national Offices could be appointed Searching Authorities. The wish, on the Scandinavian side, was to keep the door open for their cooperating Offices to participate as one appointed authority. Language considerations should also be considered in connection with appointments. The Representative of the Netherlands opposed this idea since, in his view, one of the basic ideas of the PCT Plan was and should be to have a strictly limited number of Searching Authorities.

116. *Cooperation.* Another question discussed in connection with this Article was that of the composition and the role of what is called in the BIRPI Draft the "Advisory Committee on International Searching and International Preliminary Examination," and the matter of international cooperation in the field of documentation in general.

117. CEIF, EIRMA, and UNICE made a written proposal for the constitution of a Steering Committee (document PCT/III/14) the composition of which (half of the members to be non-governmental) the Representative of the United Kingdom took exception to. He, however, agreed that the powers of the Advisory Committee proposed in the BIRPI Draft should be increased.

118. IAPIP proposed a stronger committee, to be called Technical Coordination Committee, as well as a separate committee for the study of centralization, computerization, and related tasks (document PCT/III/16). The Secretariat said that it would try to incorporate the basic ideas of the proposal in the next drafts.

119. In connection with the question of the modernization of documentation methods, the Representative of the ICC underlined the urgency of a total mobilization of all forces and documentary facilities to cope in a coordinated effort with the tremendous increase of information (see document PCT/III/19). This view was expressly shared by the Representative of the Netherlands.

120. The Representative of UNICE emphasized the need for cooperation as regards all existing documentation facilities and their central, neutral guidance, for example, by BIRPI. This idea was generally endorsed by the Representative of NAM, who gave a warning that too much centralization might reduce efficiency. The Representative of EIRMA did not deny that it was quite possible to operate efficiently on a decentralized basis as industry does every day, but with a central direction and/or guidance for activities such as quality control, purchasing, methods, investment, etc. The principle of "total cooperation" was also endorsed by the Representative of the United States, who, as well as the Representatives of the United Kingdom and Germany (Federal Republic), referred in this connection to the growing usefulness of ICIREPAT (Paris Union Committee for International Cooperation in Information Retrieval Among Patent Offices). The Representatives of Germany (Federal Republic) and the United Kingdom urged private industry to make a substantial contribution towards the development of a cooperative mechanized search system by sharing both workload and expense with the public authorities concerned. The Representative of CEIF said that industry's reply would probably depend on what guarantee they could expect for a centrally supervised system which would ensure the production of search reports of a uniformly high quality.

121. The Representative of Argentina said that it was indispensable that all the member States of the Paris Union analyze the problem and be offered flexible solutions before final solutions were reached.

122. *Other Questions.* The Representative of IFIA suggested that applicants should be free to decide to which Searching Authority their applications would be submitted. The propsal was supported by the Representative of IAPIP.

123. The Secretariat said that the provisions on the competence and selection of Searching Authorities should probably be transferred to the Regulations (see paragraphs (2), (3) and (4)) since they might need to be changed in the light of changing circumstances.

Article 17: Procedure Before the Searching Authority

124. *Warning to the Applicant.* The Representatives of Switzerland and EIRMA proposed that the Searching Authority, prior to making the notifications referred to in paragraph (2), should notify the applicant of its intention to make a negative decision.

125. *Unity of Invention.* The Representatives of the ICC and EIRMA proposed that all questions concerning unity of invention should be solved only before the designated Offices. The Representative of Japan expressed the same idea but added that the requirement of unity of invention should be determined in the national phase before each designated Office, as this requirement in the international phase should be determinative only as regards deciding whether one international search fee is enough or whether several should be paid. The Representative of UNICE said that paragraph (2)(a) should be changed to allow the applicant, at his free choice, to limit to one invention, to pay more search fees, or to divide the application. The applicant's right to divide in the national phase should be preserved. (The proposal of the Delegation of Italy for the establishment of a possibility of appeal for the applicant was filed in the form of a document (PCT/III/23) but was not introduced orally and thus was not considered by the Committee of Experts.)

126. The Representatives of Germany (Federal Republic), Switzerland and the Netherlands supported the UNICE proposal. The Representative of the Netherlands also proposed that no possibility for division should be offered by the Searching Authority.

127. The Secretariat said that it would seem to be acceptable to remove the sanction whereby the international application would be considered withdrawn because the applicant refused to restrict the application or pay more fees, if the designated Offices were ready to process international applications which had not been searched internationally—or only in part. On the other hand, it said that allowing any designated State to disregard the unity of invention provisions of the Treaty would lead to too much uncertainty for the applicant, who might then have to divide his application before such Office even if the unity of invention rules prescribed by the PCT were followed.

128. A proposal by the Representative of Switzerland supported the "payment under protest" suggestion appearing in a note accompanying this Article of the BIRPI Draft and aimed at substantially broadening Rule 13.2 (somewhat along the lines of Rule 13.3) in allowing particularly a combination of one, several or all of the elements mentioned in this Rule and a combination of a product with several processes, apparatus, and uses in one application to be in compliance with the requirement of unity of invention. The Representative of India expressed himself against this broadening of the rule on unity of invention. The Representative of EIRMA said he could agree with Rule 13.2 and most of Rule 13.3, but would prefer to see Rule 13.3(c) deleted.

Article 18: The International Search Report

129. The Representative of Spain suggested that the search report, when communicated to a Spanish-speaking country, be translated into Spanish (see Rule 41.1). This suggestion was later confirmed, and extended to the preliminary examination report (see Rule 67.1), through a written proposal jointly sponsored by the Delegations of Argentina, Spain, and the Organization of American States (document PCT/III/26). The Secretariat said that the cost implications of the proposal would be studied for the next meetings.

130. The Representative of Switzerland proposed that a copy of the search report might also be sent to the Receiving Office (provided the latter does not express a wish to the contrary), even if it was not a designated Office. The Secretariat said that it saw no difficulty with regard to the proposal as long as it did not require any additional translations.

131. The Representative of IFIA suggested that paragraph (1) should be completed by providing that, if the search report is not communicated to the applicant within the prescribed time limit, all time limits running against the applicant should be extended accordingly. The Secretariat replied that such a proposal seemed unnecessary because cases in which the search report would be late would be extremely rare but that, in these extremely rare cases, it would not be possible to waive the requirements of Articles 22 and 23.

Article 19: Amendment of the Claims Before the International Bureau

132. *Amendment of the Claims.* The representative of FICPI made two proposals which are reflected in documents PCT/III/15 and 18. The first proposes that, when the applicant amends the claims in the international phase, he should be allowed to file, at the same time, a brief explanatory note and that note should be published together with the international publication of the amended claims. The second proposal suggests, in essence, that anything in the description or drawings which may have become unrelated or inconsistent because of the amendment of the claims should not be prejudicial to the applicant. The latter proposal would apply also when the claims are amended in the national phase, so that the proposal relates also to Article 28.

133. *Amendment of the Description.* The Representative of IAPIP, referring to document PCT/III/16 filed by him, asked that the Article should allow the amendment not only of the claims but also of the description in the international phase without addition of new matter. Designated Offices would receive both versions of the description. Countries having a registration system could publish both versions or one version and the changes. This proposal was supported by the Representatives of Switzerland and FICPI, the latter adding that it went even further in the desired direction than his own proposal. The Representative of the United States favored the proposal, provided that any international publication would show the changes made. However, if the IAPIP proposal were not accepted, he would propose that the amendments to the description should be designated as "proposed amendments" and so indicated in any international publication and, further, that time limits on any national procedures for amending the description should be held in abeyance until such time as translation of the international application becomes due. He also said that the proposal concerning the amendment of the description related to drawings as well. The Representative of CNIPA supported the IAPIP proposal.

134. Several participants expressed misgivings about the IAPIP proposal. The Representative of EIRMA said that the description should remain unchanged in the international phase, otherwise the public interest might be adversely affected if, due to its amendment, the description were to include new matter. For similar reasons, and because the proposal is inconsistent with the system of deferred examination recently introduced into his domestic law, the Representative of Germany (Federal Republic) said that any change in the description in the international phase was both unnecessary and undesirable. However, he was prepared to study the proposal further. The Representative of the United Kingdom said that amending the description, without any check by any authority, might mean the introduction of new matter. It could necessitate two publications (instead of one), which would lead to the added costs and complications. The Representative of the Netherlands said that he reserved his position although he might accept the alternative proposal of the United States Representative. Finally, the Representative of Australia called attention to the need for the search report to be responsive to the description and expressed his fears that this requirement might not be met if the description were amended after the search report had issued.

135. At this point in the discussion, the Secretariat invited the Representatives of all countries who had not spoken yet and whose present law did not provide for the amendment of the description (particularly registration countries) to speak up if they had objections to the IAPIP proposal; but since none of them did so, the Secretariat said that it would study the suggestion, and particularly its repercussions on the costs in view of the additional publication work.

Article 20: Communication to Designated Offices

136. According to the BIRPI Draft, a copy of the international application would be communicated to each designated Office by the International Bureau. (This communication is to be distinguished from the preparation and the filing of translations of the application, which would be the tasks of the applicant or his agent, even under the BIRPI Draft.) The Representative of IAPIP, referring to document PCT/III/16 submitted by him, proposed that the communication of these copies could, alternatively, be made by the applicant at his request, recognizing that if the prescribed time limit for such communication were missed by the applicant he would have to suffer the loss of his rights as an applicant (a consequence which would be avoided under the BIRPI Draft).

137. The proposal was supported by the Representatives of FICPI and the United States of America. Some objections were raised by the Representatives of Germany (Federal Republic), the Netherlands, France, Israel, the Soviet Union, and the United Kingdom, mainly on the grounds that their Offices would then need certified copies of the international application and that it would be simpler and cheaper for all authorities and the applicant to obtain the needed copies directly from the International Bureau.

138. The proposal of IAPIP, when put to a vote, was rejected by the majority.

139. The Representative of South Africa having proposed earlier in the discussion (see Article 12), as a compromise, that each State be allowed, if it so desired, to require communication by the applicant to the International Bureau, and now having added that communication under Article 20 should be effected by the applicant through normal channels rather than through the International Bureau, the Secretariat said that it would examine that possibility as well and in any case would study the cost and time implications of all proposals.

Article 21: Publication of the International Application and the International Search Report

140. *Time Limit for International Publication.* A very full debate took place on paragraph (2), which, in the BIRPI Draft, provides for the international publication to take place after 18 months from the priority date, except where the law of no designated country requires such publication, in which case the law calling for the earliest publication would determine the time limit for the international publication.

141. The Representative of the Soviet Union proposed that the exception provided for in the BIRPI Draft should be omitted and that international publication should take place, in any case, promptly after the 18th month. This proposal was supported by the Representatives of Germany (Federal Republic), the Netherlands, Sweden, France, Israel, EIRMA, IFIA, CEIF, and the ICC. The BIRPI Draft was defended by the Representatives of the United States and Italy. The Representative of EIRMA said that the exception in the BIRPI Draft should also take into consideration the law of the country in which the first filing occurred. The Representative of the Netherlands said that he could accept the BIRPI Draft, as a second choice, provided there was an outer limit of 24 months for publication. The Representatives of the ICC and EIRMA said that, even if the BIRPI Draft were adopted, in actual fact practically all international applications would be published after 18 months since it would hardly be worth while filing international applications without designating certain States, among which there would, almost inevitably, be at least one whose national law prescribes the 18-month time limit.

142. The proposal of the Soviet Representative was put to a vote, in which only the Representatives of the countries (some 40) participated. Preference for the proposal was shown by 13 votes for and nine votes against.

143. In the light of this vote, the Chairman then invited those Representatives of Governments to make themselves known who would not be able to agree to the compromise solution contained in the BIRPI Draft assuming that some Governments found the 18-month absolute deadline totally unacceptable. None accepted this invitation.

144. *Influence of Availability of Search Report.* The Representative of Switzerland proposed that international publication should never take place before the time limit in Article 19 had expired, that is, two months after the transmittal of the search report. This proposal, however, did not seem acceptable to the Representatives of countries whose national laws provide for an 18-month time limit. The Secretariat said that it would be extremely rare for the time limit provided for in Article 19 to expire only after the 18th month. To make sure, the Representatives of the ICC and IFIA proposed that Rule 38 be made stiffer, i.e., to require observance of the 3-month time limit for search in *all* cases.

Article 22: Copy, Translation, and Fee, to Designated Offices

145. *The Paragraph [lbis] Problem.* The first issue discussed was, roughly stated, whether translations should be due after 20 months (the main proposal in the BIRPI Draft) or after 18 months (the proposal contained in paragraph [*lbis*], which, when the Draft was prepared, was put in mainly pursuant to proposals by Germany (Federal Republic) and Japan. The Representative of the former country said that it could now accept the 20-month deadline. The Representative of the latter country first insisted on the 18-month deadline but at the end of the discussion declared that he would further study the question.

146. The Representatives of Australia, Belgium, Israel, and the Japan Patent Association favored—whereas the Representative of CNIPA objected to—the 18-month deadline. The Japan Patent Association said that, if the Japanese law required that Japanese national applications be published after 18 months, it would be contrary to the principle of equality to allow a 20-month deadline for international applications. The Secretariat said that the two situations were not quite comparable, firstly because (if Japan were designated) international publication would occur after 18 months (although not necessarily in Japanese), and, secondly, because a published international application is of much more informative value since it would be accompanied by a search report—whereas Japanese published national applications would not.

147. *Other Proposals.* The Representative of IAPIP said that the deadline in Article 22 should be 24 rather than 20 months.

148. The Representative of the United States of America proposed that the time limit provided for in this Article should be whichever of the following two expires earlier: (i) 20 months from the priority date where priority is invoked, or (ii) 12 months from the international filing date. Such a proposal would, in certain cases, result in shorter deadlines than that provided for in paragraph [*lbis*].

149. The Representative of France said that the national fees should be paid at the time of international filing.

150. The Representative of the Netherlands, supported by the Representative of EIRMA, suggested that, before communication under Article 20, there should be a confirmation of the designations by paying a confirmation fee or a part of the national filing fees, in order to put obstacles in the way of the communication of applications which the applicant will not maintain when the deadline under Article 22 is reached.

151. The Representative of Switzerland said that, if the search report was not available at the time the deadline under Article 22 expired, a translation of the abstract (rather than the whole application) should be furnished by the applicant, whereas the furnishing of a translation of the rest of the application could wait until the deadline under Article 19 expired. The translation of the abstract could then be published in any designated State within the 20-month period, and such State could permit inspection and copying of the international application in its original language as available in its Office.

152. The Representative of Finland, referring to his written proposal (document PCT/III/17), suggested that Rule 45.1(b) should be reworded to read "if there are several official languages and a translation must be furnished, the applicant must use the language which the domestic law prescribes for use by foreigners . . .". The suggestion was approved by the Committee of Experts.

Article 23: Delaying of National Procedure

153. The Representative of Switzerland suggested that national processing should not start before the communication under Article 20 or the notification that no search report will be established has reached the designated Office. The Secretariat said that this would mean that, in those extremely rare cases, if any, in which the search report would not be available by the end of the 20th month, the designated Office would have to accept further delaying of national procedure, which might cause all kinds of difficulties.

154. The Representative of Switzerland further suggested that, if the applicant expressly so requests, any designated Office should be entitled to process and examine the international application, even where the communication provided for under Article 20 has not reached it. The Secretariat replied that, according to its interpretation, if both the applicant and the designated Office freely agree on the waiving of this or any other requirement of the Treaty, any national Office is perfectly free to do so. The Secretariat thought that this principle, as well as the principle according to which any national law that is more lenient with the applicant than the Treaty may be applied notwithstanding the harsher provisions of the Treaty, went without saying. It said, however, that it would probably propose an express provision to that effect in the next draft.

Article 24: Possible Loss of Effect in Designated States

155. The Representative of the Union of European Patent Agents proposed the deletion of paragraphs (1)(iii) and (2), and this proposal was supported by the Representatives of Switzerland, Austria, Italy (referring to his proposal contained in document PCT/III/23), IAPIP (referring to his proposal contained in document PCT/III/16), and, as far as paragraph (1)(iii) was concerned, by the Representative of the United States of America. The Representatives of the ICC and UNICE supported the proposal to delete paragraph (2). The Representative of Austria added that non-observation of procedural time limits should never lead to the automatic loss of the effects provided for in Article 11(2) and that the restitution of effects under Article 25 did not seem to be a sufficient guarantee for the applicant.

156. The Representative of Germany (Federal Republic) said that paragraph (2) should at least be modified in the same spirit as that in which the proposal of the United States Delegation, reported on under Article 3, was conceived. The Representative of the United Kingdom shared that view, expressing some concern about the effect of a simple deletion.

157. The Representative of the United States proposed that the following provision be inserted in Chapter III: "Except with regard to Article 12(3), no international application shall be denied effect as a national application for any error in the action or non-action of the International Bureau, the Searching Authority, the Preliminary Examining Authority or the Receiving Office." He said that such provision would apply, for example, in connection with the Article under discussion. The Representative of Switzerland expressed his agreement with the substance of this proposal. The Secretariat said that the only difficulty it saw in the United States proposal was the inclusion therein of the Receiving Office. It said, however, that the proposal would be carefully studied.

158. The Representatives of the United Kingdom, Israel, Germany (Federal Republic), and the Netherlands, said that the proposal of the United States Representative and the other proposals to amend Article 24 should be carefully studied. The Representative of Sweden said that he would prefer to maintain Article 24 without change. Certain guarantees for respecting the provisions of the Treaty were indispensable for the designated Offices, which would delay national procedures pending the reception of applications in due form, in due time, and together with search reports. Failure, on the part of the applicant, to comply with the Treaty and the Regulations should in any case be subject to some sanction.

Article 25: Review by Designated Offices

159. The Representative of Switzerland suggested that review by a designated Office should also be possible where the Receiving Office refused to accord a filing date, and that any review under this Article should be on the basis of the national law "with due regard to the Treaty."

160. The Representative of Sweden warned the meeting against watering down this Article, which might lead to the overburdening of prior art files with completely useless applications.

161. The Secretariat repeated that more lenient national laws could always be applied but, where a national law required more than the Treaty, it could not be applied to international applications.

Article 26: Rejection in Designated Offices

162. The Representative of IAPIP proposed that no designated Office should be allowed to reject an international application on formal grounds. The Representative of Switzerland proposed either to delete this Article or to amend it so that it should allow rejection on grounds of national laws "having due regard to the provisions of the Treaty and the Regulations."

163. The Representative of Rumania said that paragraph (1) should provide that any State should be allowed to reject the international application not only if it does not comply with the requirements of the Treaty but also if it does not comply with its national law. The Secretariat said that the requirements of the Treaty related only to the form or content of the international application. Rejection of the international application on grounds of different (harder) rules of the national law was not permissible. On other grounds, namely, on grounds of substantive patent law, where the Treaty made no provision, rejection on the basis of national law was naturally possible.

164. The Representative of the United Kingdom said that he understood the Article under consideration as meaning that whenever a mistake was correctable the designated Office must give an opportunity to the applicant to correct it, but that, if the mistake was uncorrectable or the applicant did not avail himself of the opportunity, rejection must ensue. A control of formalities on the basis of the international requirements was necessary, because there was no complete check of formalities in the international phase, but more lenient national requirements could be applied.

165. The Representative of France expressed a similar thought when he drew a distinction between *conditions de recevabilité* and *conditions de régularité*.

Article 27: National Requirements

166. The Representative of the United States said that he understood the provision as leaving the substantive patent law of each country completely intact. The Secretariat said that this was also its understanding (see note relating to the draft Article in document PCT/III/5). Furthermore, the Representative of the United States proposed that in paragraph (1) "content" should be changed to "contents," and that the Article should be brought into harmony with the compromise solution agreed upon by the Committee of Experts as to the Article on drawings.

167. The Representatives of the Soviet Union, Germany (Federal Republic), and Japan, expressed agreement with the foregoing declarations of the United States Representative. The Representative of the Netherlands, while agreeing with these declarations, expressed some doubt whether, from a legal point of view, the wording of the Article ("form or content") admitted of the interpretation given in the last paragraph of the said note. The Representative of Rumania suggested that the note be incorporated in the Article and that a provision similar to that contained in Article 33(5) be incorporated in Article 27.

168. The Representative of Switzerland, supported by the Representative of France, suggested that, should the envisaged harmonization not seem to be acceptable, one could limit the obligation contained in the Article to the effect provided for in Article 11(2). The Representative of the Netherlands said that the proposal of the Representative of Switzerland would destroy all harmony as to the form and content of the applications and the agreed route of filing. In his view, Article 27 was also a strong incentive for the harmonization of the formal requirements for national applications. The Representatives of Germany (Federal Republic), UNICE, and EIRMA, expressed agreement with the views of the Netherlands Representative.

169. The Representative of the ICC said that, unless the Treaty allowed the amending of the description in the national phase, the essence of the FICPI proposal, as contained in document PCT/III/18, should be incorporated in the Treaty in order to protect the applicant's legitimate interests.

170. The Representative of the Japan Patent Association asked that the question of the number of claims that might be included in an application should be left to the discretion of each designated State. The Representative of Japan called the attention of the meeting to the fact that Rule 7 was not in harmony with present Japanese law, since each patent application could contain for one invention only one claim, and each utility model application could contain only one claim. He said that the problem, for Japan, was not only a question of fees (which could be solved by more fees for more claims) but also the fact that a change in the claiming system would affect the Japanese examination system and the interpretation of patents by Japanese courts. Furthermore, Rules 13.2 and 13.3(a) were considered too broad. The Secretariat expressed the fervent hope that there would be a further study of those problems between the Secretariat and the Japanese Government, as the matter seemed to be of paramount importance for the success of the PCT plan.

171. Finally, the Japanese Representative proposed that Rule 5.4(c) be modified so as to require the applicant to indicate, in his address, the last unit of administrative district (i.e., the house number). The Committee of Experts expressed a favorable view on this proposal.

172. The Secretariat repeated its intention to add a new paragraph to this Article to the effect that any designated State may apply more lenient national rules—that is, more lenient from the viewpoint of the applicant—than those prescribed by the Treaty and the Regulations as far as the form and contents of the application are concerned.

Article 28: Amendment of the Claims Before Designated Offices

173. This Article provides that the applicant shall be given the opportunity to amend the claims before each designated Office within the time limit prescribed in Rule 47. Two main questions were discussed: (i) Should the Treaty say anything about the limits of the possibility of amending the claims in this (the national) phase? (ii) Should the Treaty guarantee to the applicant the right to change in this (the national) phase not only the claims but also the description?

174. *Amendment of Claims.* As to the first question, the Representative of the United Kingdom, supported by the Representative of Rumania, proposed that the claims should be amendable "into such form as is permitted by the national law of the designated State," and the Representative of Australia, referring to his written proposal (document PCT/III/21), and supported by the Representative of the Union of European Patent Agents, proposed that "claims should not be amended beyond the scope of the claims as originally filed," whereas the Representative of Switzerland, supported by the Representatives of Germany (Federal Republic) and Rumania, said that claims should be amendable beyond their original scope although not beyond the scope of the original disclosure. The Representative of the United States said that, in view of the fact that the search report was not to be limited to the precise scope of the original claims, any amendment within the fair import of the description should be permitted. The Representative of the Soviet Union supported the proposal of the United Kingdom Representative. The Representative of Australia then said that he could accept amendment within the scope of the original description, provided the search was directed to the description as a whole.

175. *Change of the Description.* As to the second question, the Representative of Germany (Federal Republic) said that, while he opposed any change of the description in the international phase, it should be permissible to amend the description in the national phase. The Representative of the Netherlands agreed with this view, whereas the Representative of the United States favored the possibility of amendment in both phases and added that Rule 47 should permit national amendments to be submitted up to the time limit for furnishing translations. The Representatives of CNIPA, IAPIP, and FICPI, also urged a positive reply to the question of amendment in the national phase. The Representative of FICPI added that, if agreement could be reached on allowing amendment in the national phase, he would no longer insist on allowing amendment in the international phase as well.

Article 29: Effects of the International Publication

176. The Representative of the Netherlands said that conditional protection should depend on the applicant's having confirmed, through the payment of a confirmation fee and the national filing fee, that he intended to seek protection in the country concerned. If that were done, it might be possible for his country even to waive the translation requirement, at least for certain foreign languages.

177. The Representative of the United Kingdom, referring to his written proposal (document PCT/III/9), said that either the whole question of provisional protection should be left to domestic law or that the word "unexamined" be inserted, in paragraph (1), before the words "national applications."

178. The Representative of Germany (Federal Republic) said that paragraph (2)(i) should make it clear that not any kind of publication sufficed but that publication "according to the national law" might be required. The Representative of Switzerland agreed with this view.

179. The Representatives of Denmark and Australia said that, unless the whole question was left to national legislation, they would like to see assurances that the Article did not include those possible prior art effects which national laws give to published domestic applications (assimilations to prior art as of filing date, inclusion in prior art with geographical limitation). Such effect should not start until the international application was actually received in the national Office concerned.

180. The Representatives of Germany (Federal Republic), the Netherlands, and the ICC, stressed the importance of maintaining an Article of the proposed kind in the Treaty. The Chairman noted that this view appeared to represent a consensus.

Article 30: Confidential Nature of the International Application

181. The Representative of Sweden proposed that the Article be clarified to the effect that each designated State may reveal, any time after it receives a copy of the international application under Article 13, certain bibliographic data (date, filing number, name of applicant, title, and the like) concerning such application, so long as the subject itself of the invention is not revealed. This view was shared by the Representatives of Israel, Austria, the ICC, Italy, and the United Kingdom, and, later, by the Committee of Experts as a whole. The Representative of the United States expressed reservations about the Swedish proposal, at least as to the inclusion of the title of the invention.

182. Other points discussed under this Article related to drafting questions, for instance, the question whether from a legal point of view the wording ("shall not allow access") covers communication of the contents of an application to third parties. The question was raised whether the Article entitled a competitor having an interest recognized by the law of the designated country to have access to the international application before the expiration of the time limit fixed in paragraph (2). On the latter point, it was said that, if a third party had a legal right to compel the applicant to communicate a copy of the application to him (the third party), such third party could force the applicant to grant the authorization referred to in paragraph (2). The Netherlands Delegation pointed out, without expressing any view on the matter, that this provision effectively prohibits any cooperation between Searching Authorities on a particular application.

CHAPTER II: INTERNATIONAL PRELIMINARY EXAMINATION

Article 31: Demand for International Examination

183. *Chapter II (Generally).* When this Article was brought up for discussion, the Representative of the United Kingdom stressed that the whole of Chapter II, relating to international preliminary examination, was extremely important and that he hoped that it would be maintained in the Treaty even though some countries might not have the intention, at present, to use it when the Treaty came into force.

184. Earlier, when general statements on the whole Draft were heard, the Representatives of the Netherlands, Sweden, and the Soviet Union, also favored the inclusion of Chapter II in the Treaty, whereas the Representative of Italy said that he was not in favor of Chapter II. The Representative of Germany (Federal Republic) expressed some doubts as to the present form of Chapter II since preliminary examination would be based on criteria not necessarily identical with those found in the laws of any country and since it seemed that it was too easy for negative reports to be withheld by the applicant. Notwithstanding these imperfections, he was ready to support it, partly for the very reason that it would lead to close cooperation among Offices and to a certain degree of harmonization among national laws.

185. The Representative of Israel said that he found Chapter II particularly important to smaller countries, which were unable to maintain an expensive examination system. For them, the availability of international preliminary examination reports would be of real assistance. Countries accepting Chapter II, the speaker said, should be able to demand such reports from any applicant, irrespective of his nationality.

186. The Director General of the IIB declared that the IIB was in a position to function as a Preliminary Examining Authority.

187. When the discussion on Chapter II was completed, the Chairman said that there was a consensus of opinion in the Committee of Experts in favor of maintaining Chapter II in the PCT. Only a few States believed, for the moment, that they would ratify Chapter II, but even the

others were ready to study further Chapter II and their possible interest in ratifying it.

188. *Article 31, as such,* was not commented upon by any speaker.

Article 32: The Preliminary Examining Authority

189. The Representative of the Netherlands suggested that the requirements for becoming an International Preliminary Examining Authority (Rule 58) should be changed so that they would become less stringent. A higher number of such Authorities would be very useful and would promote harmonization.

190. The Representative of Switzerland expressed the opposite view. He would prefer, for the sake of uniformity and rationalization of work, to limit to Searching Authorities the eligibility for becoming Preliminary Examining Authorities.

Article 33: The International Preliminary Examination

191. The Representative of Germany (Federal Republic) suggested that Rule 59.1(b) should be changed so that the international applications mentioned therein would be treated in the same way as the disclosures referred to in Rule 59.2. This proposal was endorsed by the Representatives of the ICC, Switzerland, CEIF, and the Netherlands, and the Secretariat said that the next draft would conform to the proposal.

192. The Representative of CEIF said that Rule 60 went too far in admitting "mosaicking" and that, at least, the words "as a whole," appearing in that Rule, should be struck out.

Article 34: Procedure Before the Preliminary Examining Authority

193. The Representative of Japan proposed that amendments under Article 19 should be submitted by the applicant concurrently to the Preliminary Examining Authority and to the International Bureau (see Rule 57.2). The Secretariat said that it would include the proposals in the next draft.

194. The Representative of Switzerland suggested that, (i) in paragraph (2)(c), the words "if any written opinion calls for amendment of the claims" be omitted; (ii) the words "or to pay additional fees" be added in paragraph (3); (iii) the principle contained in Article 17(3)(b) should appear in Article 34(3)(b) as well. The Representative of Rumania made a proposal similar in effect to the last of the proposals of the Representative of Switzerland in connection with Article 35(3).

195. The Representative of the Netherlands urged that paragraph (3) be restudied. This view was shared by the Representative of the ICC, who said that he would even prefer it if the paragraph were dropped altogether.

196. The Representative of the United States proposed that Rules 61.3 and 61.4 be so modified as to provide for the possibility of the applicant's amending the description on his own initiative and not only upon invitation.

Article 35: The International Preliminary Examination Report

197. The Representative of Switzerland proposed that Rule 65.8(iv) be omitted, and the Committee of Experts, as a whole, seemed to share this view.

198. The Representative of Switzerland expressed doubts in connection with Rule 65.9, as it required some knowledge of certain national laws. The Representative of Israel, on the other hand, found the Rule useful.

199. The Representatives of Germany (Federal Republic), CNIPA, UNICE, and the United Kingdom, stressed how important it was that the preliminary examination report should contain explanations that would be as full as possible.

Article 36: Transmittal, Translation, and Communication, of the International Preliminary Examination Report

200. The proposal of the Delegations of Spain, Argentina, and the Organization of American States, reported on under Article 18, was invoked in connection with Article 36 and Rule 67.1 (see document PCT/III/26).

Article 37: Withdrawal of Demand or Election

201. The Representative of the Netherlands said that elected Offices should receive the preliminary examination report even when their elections were withdrawn.

202. The Representative of Germany (Federal Republic) said that the solution of the Draft gave the applicant the possibility of withholding negative reports under certain circumstances and this was against the public interest.

203. The Representatives of UNICE and CEIF were against any automatic transmittal of negative reports to all elected Offices because this would reduce the chances of Chapter II's being used by applicants.

204. The Secretariat expressed doubts on the suggestion referred to in paragraph 201.

205. The Representative of Switzerland suggested that the words "if this national Office has been informed of its election" be added to Rule 70.1(b).

206. The Representative of the United Kingdom said that the Draft seemed to incorporate the maximum limits of the possibility of withdrawal tolerable by elected Offices. Similar views were expressed by the Representative of Norway.

Article 38: Confidential Nature of the International Preliminary Examination

207. The Representative of the United States said that paragraph (2) should provide that the applicant would, of course, always be fully informed.

Article 39: Copy, Translation, and Fee, to Elected Offices

208. The Representative of Denmark proposed that each elected Office have a right to a translation by the end of the 20th month from the priority date. This proposal was supported by the Representatives of Sweden (speaking also in the name of Norway), Australia, Rumania, Japan, Germany (Federal Republic), Belgium, Austria (on behalf of Austrian private circles), and India.

209. The Representative of the United States proposed that the time limit be 25 months from the priority date or 17 months from the international filing date, whichever expires earlier (cf. paragraph 148, above). This proposal was generally supported by the Representative of the United Kingdom. The proposal for the 17-month deadline was also supported by the Representative of Germany (Federal Republic).

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210. The Representative of the Netherlands said that 25 months was too long to wait for confirmation but that, if a confirmation fee, to be paid sufficiently in advance, was introduced, he might consider admitting the 25-month deadline as far as furnishing the translation was concerned.

211. The Representatives of the ICC and CEIF said that industry would have an interest in Chapter II only if it could delay translations as proposed in the BIRPI Draft. The advantages of such a delay for the applicant were obvious and it would not hurt competitors or the public since access, in the world languages, would be available through the international publication, normally occurring after 18 months. The Representative of the ICC said that information in those languages was sufficient for industry. They lived with it today. The Representative of IFIA said that, for inventors, the main merit of Chapter II lay in the delays it allowed for filing translations and paying national fees. The Representative of the United States said that, subject to the small amendment made by him earlier, the Article as in the BIRPI Draft represented a good balance between the interests involved and should be left as it was.

212. The Representative of Switzerland said that the solution might lie in requiring, by the 20th month, translation only of the abstract, provided that the full application may be inspected by any third party whose interest is awakened by the abstract (see paragraph 151, above).

213. The Representative of Switzerland also suggested that national processing in an elected Office should in no case be allowed to start before the expiration of two months after the search report was actually available, even if such report becomes available only after the 25th month (see paragraph 154, above).

Article 40: Delaying of National Examination and Other Processing

214. The Representative of Switzerland repeated his proposal (cf. Article 21) that national processing should be delayed until the search report was available. Furthermore, he expressed himself, in principle, against any commencement of national processing before the preliminary examination report was transmitted to the elected Offices. He therefore proposed the deletion of paragraph (2) and the words "and in no case before the expiration of the 25th month from the priority date" at the end of paragraph (1). He suggested, nevertheless, that paragraph (3) be changed in order to permit national Offices, at their discretion, to process the international application at any time, if so requested by the applicant.

Article 41: Amendment of the Claims Before Elected Offices

215. The Representatives of CNIPA and FICPI proposed that the Article provide that the applicant may amend not only the claims but also the description.

Article 42: National Examination Results

216. The Representative of the Soviet Union, supported by the Representative of Rumania, considered it desirable for an elected Office to have the results of final examination from other national Offices.

217. The Representative of the Netherlands said that the Article would require modification of his national law but that he was prepared to study the possibilities of such modification.

218. The Representative of NAM stressed the value of the Article to applicants.

219. The Representative of Rumania said that the title of the Article was not in harmony with its content.

220. On a question from the Representatives of Israel and Rumania, the Representative of Germany (Federal Republic) said that nothing in the Article prevented any elected Office from asking any other elected Office, directly, to exchange information on any application, provided that the national laws permitted such exchange. This statement found general agreement in the Committee of Experts.

CHAPTER III: COMMON PROVISIONS

Article 43: Inventor's Certificates

221. No comment was made on this Article.

Article 44: Regional Patents and Regional Patent Treaties

222. The Representative of the Netherlands proposed that the Article should provide that countries agreeing to issue regional patents valid in those countries may close the PCT route to obtaining national (as opposed to regional) patents in such countries. The proposal was supported by the Representatives of Germany (Federal Republic) and Italy.

223. The Representative of the Soviet Union proposed that paragraph (2) should expressely state that the international treaties referred to therein must be in conformity with the Paris Convention. Since the Convention on the European Patent was not yet concluded and its contents were unknown, reference to it in the accompanying note should be omitted.

Article 45: Seeking Protection Through Other Means Than the Grant of a Patent

224. The Representative of CNIPA proposed that it be made clear that international applications could relate, at the same time, to the grant of a patent and to the grant of a utility model in countries where such possibility exists under national law. The Representative of Germany (Federal Republic) agreed with the proposal.

Article 46: Incorrect Translation of the International Application

225. On a question from the Representative of Japan, the Secretariat said that, in granting a patent, any national Office would have to consider only that translation of the international application which concerned it. It would not have to compare the original with the translation. The patent would be interpreted in the language in which it was issued, subject, in lawsuits, to the possibility open to the plaintiff to refer, within the limits of Article 46, to the original as he might refer today to a priority document in a foreign language.

226. The Secretariat said that it was considering omitting paragraph (2).

227. The Representatives of Switzerland and Rumania said that the whole Article should be omitted. The Secretariat expressed the view that paragraph (1) would be useful to applicants as it excluded the possibility of de-

claring patents null and void for irrelevant translation mistakes.

Article 47: Time Limits

228. No proposal was made in the meeting concerning this Article.

Article 48: Delay in Meeting Certain Time Limits

229. No proposal was made in the meeting concerning this Article.

Article 49: Right to Practice Before International Authorities

230. No proposal was made in the meeting concerning this Article.

CHAPTER IV: ADMINISTRATIVE PROVISIONS

Article 50: Assembly

231. The Representative of the IIB, introducing his written proposals (document PCT/III/10), proposed that any intergovernmental organization being a Searching Authority should, as of right, have observer status in the Assembly. The Committee of Experts expressed a favorable view on the proposal.

232. The Representative of Switzerland suggested that paragraph (7) was superfluous (since it was already covered by paragraph (3)), that all provisions covering the Executive Committee should constitute a separate Article, and that such provisions should follow more closely the Stockholm Act of the Paris Convention.

233. The Representative of the Soviet Union proposed that Rule 35.1(b) be omitted and that national Offices which were Searching Authorities should be members of the preparatory committee irrespective of the number of applications. The Committee of Experts expressed a favorable view on those proposals.

234. The Representative of the United Kingdom suggested that the number of members in Rule 35.1(a) be specified (the Secretariat said that the next draft would comply with that suggestion), whereas the Representative of Switzerland suggested that, in the same Rule, the number of applications received from abroad or sent abroad should be decisive.

235. The Representative of the IIB introduced his written proposal (document PCT/III/10) concerning Rule 35.1, according to which the Representative of at least one Contracting State member of an intergovernmental organization appointed as Searching Authority should be member of the preparatory committee.

Article 51: International Bureau

236. The Soviet Union asked that all Searching and Preliminary Examining Authorities shoud have the right to free copies of any publications effected by the International Bureau under the PCT. The Secretariat said that the next draft of the Rules would so provide.

Article 52: Advisory Committee on International Searching and International Preliminary Examination

237. The Representative of the IIB proposed that the Advisory Committee should necessarily include as members all International Searching and Preliminary Examining Authorities (see document PCT/III/10). The Committee of Experts approved this proposal.

238. The Representative of EIRMA, supported by the Representative of Italy, introduced the proposal of CEIF, EIRMA, and UNICE, as contained in document PCT/III/14, which, among other things, would give half of the seats on the Advisory Committee (called "Steering Committee" in the proposal) to "experts from non-governmental circles." The Representatives of the Soviet Union, the United Kingdom, and Argentina, found that the proposal went too far as it did not take sufficiently into account the paramount responsibility of Governments (see also paragraph 117). The Representative of Sweden opposed an limitation of the number of members of the Advisory Committee.

239. The Representative of IAPIP introduced his proposal (document PCT/III/16) concerning the "Technical Coordination Committee," a proposal which would give "more teeth" to the Advisory Committee. The Secretariat said that it would consider the proposal when working on the next drafts.

240. The Representatives of Germany (Federal Republic) and the Soviet Union said that the Committee's functions must remain advisory but that interested circles should be heard by it. They could not, however, become members of it, for legal reasons. The Representative of Switzerland proposed that the tasks of the Advisory Committee should be further specified and enlarged.

Article 53: Finances

241. *Paragraph (4)*. The Representative of the Soviet Union proposed that the fixing of fees by the Director General should be subject to the approval of the Advisory Committee and the Executive Committee.

242. *Paragraphs* (5)(*d*) and (7)(*a*). The Representative of Australia suggested that these provisions be completed by the words "or applied to the reduction of fees."

243. *Paragraph (8)*. The Representative of Switzerland asked that the ex officio seat mentioned in this paragraph be created in the Executive Committee as well.

244. *Rules 16 and 53*. The Representative of the IIB introduced the written proposal contained in document PCT/III/10, which, among other things, provides that, when a national Office of a State acts as Searching or Preliminary Examining Authority for other countries, the fees would be fixed in an agreement between such State and the International Bureau. This, he said, would put the national Offices and the IIB on the same footing and thus avoid any discrimination against the IIB. The Secretariat replied that one could not talk about discrimination since the two situations were not comparable: whereas national Offices would act only for the applicants of those States which they would choose to act for, the IIB would have to act for all applicants who could not turn to any national Office. The Representative of Germany (Federal Republic) said that any agreement concerning searching by a national Office of a State for the applicants of other countries should be between the said State and the Governments of the other countries, rather than the International Bureau. The Representative of France said that the IIB proposal might serve a useful purpose should some national Offices act as Searching Authorities for a mass of applications coming from nationals of countries other than their own. The Representative of the IIB said that the BIRPI Draft did not contain any provision according to which applicants who could not ask for international

search in national Offices must of necessity ask the IIB to perform such search. On a proposal by the Representative of the United Kingdom, it was decided to reserve the question and ask BIRPI to negotiate further with the IIB.

Article 54: Regulations

245. The Representative of the ICC said that, instead of requiring unanimity of all countries, unanimity of those countries alone whose Offices acted as Searching and/or Preliminary Examining Authorities should suffice where decision by a majority was not regarded as satisfactory. The Representative of the Netherlands said that the Regulations should be more strongly linked to the Treaty, and that the Treaty should provide, for example, that the Regulations constitute an essential part of or an annex to the said Treaty.

246. On a question from the Representative of the Netherlands, the Secretariat said that it intended to submit, for adoption by the diplomatic conference, not only a draft of the Treaty but also a full draft of the Regulations.

Article 55: Revision of the Treaty

247. No comments were made on this Article.

Article 56: Amendment of Certain Provisions of the Treaty

248. The Representative of the ICC said that, unless transferred to the Regulations, some of the Articles of Chapters I and II could also be mentioned in paragraph (1). Article 6, for example, could be included among such Articles.

CHAPTER V: FINAL PROVISIONS

Article 57: Becoming Party to the Treaty

249. No comments were made on this Article.

Article 58: Entry into Force of the Treaty

250. The Delegations of Switzerland, the United Kingdom and Italy, and the Representative of IAPIP, introduced their written proposals contained in documents 24, 9, 28, and 16, respectively.

251. After a thorough discussion, the Committee of Experts agreed on this solution: The PCT should be put into effect on the date on which any of the following two sets of events have occurred: (i) the events as described in the BIRPI Draft, paragraph (1); (ii) ratification or accession by five to ten countries each of which, in the preceding years, has received a certain number (for example, ten thousand) of applications from abroad, or the nationals of which have filed a certain number (for example, one thousand) of applications in at least one foreign State.

252. The Representative of the United Kingdom, with the support of that of Switzerland, said that the Assembly should be given the power to determine the date, after entry into force, from which international applications might actually be filed.

Article 59: Effective Date of the Treaty for States Not Covered by Article 58

253. No comments were made on this Article.

Article 60: Reservations

254. The Representative of Switzerland proposed that subparagraph (c) refer not only to subparagraph (a) but also to subparagraph (b).

Article 61: Gradual Application

255. No comments were made on this Article.

Article 62: Denunciation

256. No comments were made on this Article.

Article 63: Signature and Languages

257. No comments were made on this Article.

Article 64: Depositary Functions

258. The Representative of Israel suggested that this Article cover also the transmission of copies of the Regulations and any amendments to the Treaty and the Regulations.

Article 65: Notifications

259. No comments were made on this Article.

ADDITIONAL OBSERVATIONS ON THE REGULATIONS

260. The Representative of Japan suggested that Rule 9.1 provide that the abstract state the technical problem to be solved and contain the reference numbers of the drawing included in the abstract. He suggested, further, that Rule 44.3(b) should provide that not only the abstract but also the claims of all international applications should be translated into English under the responsibility of the International Bureau and should be published in the international publication of the international application. (The Secretariat expressed doubts as to this proposal because of the high cost of translating and publishing, but said that it would cover it in its cost study.) Finally, the Representative of Japan suggested that, as far as the margins referred to in Rules 11.6(c) and 11.10(c) were concerned, he preferred the wider margins and type spaces specified as alternatives in those Rules.

261. The Representative of South Africa said that national Offices should not be obliged to hold international forms at the disposal of applicants and that they should not be required to receive fees in cash or, for that matter, any fees not intended for themselves.

262. The Representative of India asked that Rule 13.2 be carefully restudied.

263. The Representative of the Netherlands suggested that the next commentary should explain the reason for routing the demands for priority documents through the International Bureau as proposed in Rule 17; that Rule 20.1 should require the marking of the hour and minute of receipt; and that notification under Rule 23.2 should refer also to the name of the applicant and the title of the invention.

264. At the end of the discussion, the Representative of Sweden expressed the urgent desire to keep the differences between the present, well-balanced and carefully thought-out BIRPI Draft and any future draft to the indispensable minimum. In all cases of doubt, the present BIRPI Draft should be maintained.

265. This Report was unanimously adopted by the Committee of Experts in its closing meeting held on December 10, 1968.

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International Chamber of Commerce (ICC)

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Mr. T. Simada, Chief, First Patent Section, Takeda Chemical Industries Ltd., Osaka

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Mr. R. W. Ball, Foreign Patent Counsel, E.I. du Pont de Nemours & Co., Wilmington, Del.

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Mr. B. J. Kish, European Patent Counsel, Merck & Co., New York

Mr. J. R. Shipman, Director of International Patent Operations, IBM, New York

Union of European Patent Agents

Mr. C. Massalski, Rapporteur-General, Union of European Patent Agents, Paris

Union of Industries of the European Community (UNICE)

Mr. J. M. Dopchie, Civil Engineer, Tréfileries Léon Bekaert, Zwevegem

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Mr. G. Oudemans, President of Patent Group of UNICE, Vught

Mr. J. P. Simon, Legal Service, Syndicat Général de la Construction Electrique, Paris

Mr. J. Servot, Service of Legislative Studies, Conseil National du Patronat Français, Paris

Mr. P. Trupia, Confederazione Generale dell'Industria Italiana, Rome

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Mr. W. Weiss (Patent Office of the Federal Republic of Germany)

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Ernst F. G. Klesper

No. 7932. Decided June 27, 1968

[55 CCPA —; 397 F.2d 882; 158 USPQ 256]

1. Patentability — Reference — Effective Filing Date Under 35 U.S.C. 102(e)—35 U.S.C. 120.

"Appellant's construction of section 102(e) must be rejected as contrary to long-settled law. Appellant has cited no authority for the proposition that, where there are successive applications and entitlement to an earlier filing date in the United States as contemplated by 35 U.S.C. 120, the only filing date to be considered under section 102(e) is the last filing date, by virtue of the words 'granted on an application.' "

2. Same—Same—Same.

"Prior to the enactment of section 102(e) in 1952, there was a history of treating the disclosure of a U.S. patent as prior art as of the filing date of the earliest U.S. application to which the patent is entitled, provided the disclosure was contained in substance in the said earliest application. See, for example, McCrady, Patent Office Practice § 168, at 177 (2d ed. 1946). Section 102(e) was a codification of that law, as it was a codification of the rule of *Alexander Milburn Co.* v. *Davis-Bournonville Co.* 270 U.S. 390 (1926). The rationale of *Milburn* does not limit the rule to the filing date of the last filed of a series of copending cases containing common disclosure but is to the contrary."

3. Same—Same—Same.

"We agree with the conclusion of the Patent Office that Frost's abandoned [parent] application discloses the subject matter of the appealed claims and it is admitted that that subject matter is contained in the reference patent [to Frost]. It follows that it was carried forward and that the effective date of the patent as a prior art reference against the appealed claims under section 102(e) is October 20, 1955, which antedates appellant. The decision of the Board affirming the rejection on Frost is therefore affirmed.

Appeal from the Patent Office. Serial No. 336,038.

AFFIRMED.

Donald M. Wight for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, Rich, Smith and Almond, *Associate Judges*

Rich, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals [1] affirming the Examiner's rejection of all claims of application Serial No. 336,038, filed January 6, 1964, entitled "Polyurethane Foams, Compositions and Methods."

The claims, 1–9, on appeal were presented for interference with Frost Patent No. 3,072,582, but the Examiner refused to declare one, rejecting the claims as fully met by Frost and holding that appellant had not overcome the effective date of the Frost patent. Whether he has done so, which depends on what that date is, is the primary issue here and the only one we find it necessary to decide. The situation as to dates is as follows:

> Appealed application filed January 6, 1964, as a continuation-in-part of application Serial No. 610,658, filed *September 18, 1956*. Appellant has been accorded the latter date and his right to it is not disputed.

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[1] Consisting of Asp and Behrens, Examiners-in-Chief, and Sterman, Acting Examiner-in-Chief; opinion by Sterman.

> Frost Patent No. 3,072,582, issued January 8, 1963, on application Serial No. 803,381, filed April 1, 1959, as a continuation-in-part of Serial No. 541,823, filed *October 20, 1955*, now abandoned.

The Patent Office has held that the effective date of the Frost patent as a reference is the parent filing date, October 20, 1955, which is earlier than appellant's date. Appellant disputes this on two grounds: (1) Conceding that the Frost patent, if early enough, would anticipate the claimed inventions, appellant says that they were not disclosed in the Frost parent application in disclosure carried forward into the patent; (2) under the language of 35 U.S.C. 102(e),

> * * * the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent * * *.

Frost's patent did not issue *on* the parent application, but on Serial No. 803,381, wherefore the statute does not apply. The Patent Office has held that neither of these contentions is well taken, and the rejection was therefore proper. We agree.

The Invention

The invention relates to methods of making polyurethane foams and to the foams produced thereby. Claims 1–5 are drawn to method and claims 6–9 to foams in terms of product-by-process. It has been assumed throughout that the claims stand or fall together and therefore they need not be separately detailed by us. Claim 1 is illustrative:

> 1. The method of making a poly*ether* polyurethane foam which comprises mixing (1) an aromatic polyisocyanate, (2) a poly*ether* polyol, (3) water, and (4) a volatile inert organic *liquid* chlorofluoro alkane having a boiling point of *from 0° to 60°* C. in amount of from 10 to 35% based on the weight of the polyether polyol, the *alkane being volatilized by the exothermic heat of foaming*. [Our emphasis.]

The art of making polyurethane foams appears to have been known prior to the inventions of either Frost or appellant, which are improvements in an old process. Frost's patent and appellant's application provide comparable descriptions of prior art practices. For background, here is appellant's:

> In present day prior art practice, a mixture of polyester, isocyanate (which is mostly diisocyanate) and activator mixture (which consists generally of catalyst, water, emulsifier and sometimes several other additives) is prepared by any suitable mixing and metering assembly and discharged within seconds into any kind of mold or pan. After a short period of time, which is necessary for achieving a good distribution of the mixture in the pan, the actual foaming reaction starts. This reaction consists of first, the reaction between isocyanate and water, which results in the generation of CO_2 gas and expanding of the material; and second, of the reaction between isocyanate and polyester, which results in a linking reaction and hardening of the foam.

Appellant's specification, after discussing the making of poly*ester* polyurethane foams at considerable length, with eight specific examples, then proceeds to discuss and exemplify the making of poly*ether* polyurethane foams by substituting a poly*ether* polyol for the polyester polyols which he has described. It will be noted that claim 1, above, is specific to polyether polyurethanes. So are the other claims and this is a point to remember in connection with appellant's contention that Frost's abandoned application does not describe the claimed inventions.

Another point involved in the present dispute relates to the "inert organic liquid chlorofluoro alkane" of claim 1 and the limitation as to its boiling point falling between 0° and 60° C. The materials which fall within this description are used either as a sole or as an auxiliary blowing agent, producing gas *by vaporization* from the heat of reaction. Their use is an important aspect of the claimed inventions. The alkanes enable the production of soft foams of low density. Appellant describes his preferred materials as chlorofluoro alkanes and exemplifies them by reference to a number of materials known commercially as "Freons." He refers especially, and includes in most of his specific examples, "Freon 11," which is trichloromonofluoromethane ($CFCl_3$), which has a boiling point of 23.77° C. The one claim which is specific as to the alkane is claim 9 reading:

> 9. The polyether polyurethane of claim 6 in which the chlorofluoro alkane is $CFCl_3$.

The formula is that of "Freon 11." It can be written CCl_3F.

With this background, we are in a position to consider appellant's contentions. We shall consider first the contention that under section 102(e) the Frost patent must be restricted in filing date to the date of the last application on which it actually issued, for if that were a sound legal proposition there would be no point in considering what the abandoned application discloses.

The Effective Date Under 35 U.S.C. 102(e)

[1] Appellant's construction of section 102(e) must be rejected as contrary to long-settled law. Appellant has cited no authority for the proposition that, where there are successive applications and entitlement to an earlier filing date in the United States as contemplated by 35 U.S.C. 120, the only filing date to be considered under section 102(e) is the last filing date, by virtue of the words "granted on an application." This is reminiscent of the too literal reading of statutes urged on us in *In re Hilmer*, 53 CCPA 1288, 359 F.2d 859, 149 USPQ 480 (1966), a case on which appellant relies. The literal reading there rejected was with respect to the words of 35 U.S.C. 119, "shall have the same effect," as applied to giving effect to a United States patent as a reference as of its *foreign* filing date. We held that would be contrary to clear Congressional intent. Appellant now argues that we should do the same with respect to earlier United States filing dates, available to an applicant under section 120, and limit the date of a U.S. patent as a reference to the filing date of the last application on which it directly issued. This argument, insofar as it is based on our *Hilmer* decision, ignores the section of the opinion in that case entitled "*Section 120*" and much of the remainder of the opinion pointing out that domestic and foreign filing dates stand on entirely different footings.

[2] Prior to the enactment of section 102(e) in 1952, there was a history of treating the disclosure of a U.S. patent as prior art as of the filing date of the earliest U.S. application to which the patent is entitled, provided the disclosure was contained in substance in the said earliest application. See, for example, McCrady, Patent Office Practice § 168, at 177 (2d ed. 1946). Section 102(e) was a codification of that law, as it was a codification of the rule of *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (1926). The rationale of *Milburn* does not limit the rule to the filing date of the last filed of a series of copending cases containing common disclosure but is to the contrary.

We considered this question of law in a case decided and reported between the filing of appellant's main brief and the Patent Office main brief herein, *In re Lund*, 54 CCPA 1361, 376 F.2d 982, 153 USPQ 625. We there said:

> It is, of course, incontrovertible that a description of an invention of another in an application filed before an applicant's date of invention, upon which application a patent is issued, constitutes a bar to the issuance of a valid patent for the same invention, *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (1926), codified by § 102(e), or obvious variations thereof, *Hazeltine Research, Inc.* v. *Brenner*, 382 U.S. 252, 147 USPQ 429 (1965). It is also well settled that where a patent purports on its face to be a "continuation-in-part" of a prior application, the continuation-in-part application is entitled to the filing date of the parent application as to all subject matter *carried over* into it from the parent application, whether for purposes of obtaining a patent or subsequently utilizing the *patent* disclosure as evidence to defeat another's right to a patent. 35 U.S.C. 102(e), 120; *Goodyear Tire & Rubber Co.* v. *Ladd*, 121 U.S. App. D.C. 275, 349 F.2d 710, 146 USPQ 93 (1965), certiorari denied 382 U.S. 973, 148 USPQ 771; *Asseff* v. *Marzall*, 88 U.S. App. D.C. 358, 189 F.2d 660, 89 USPQ 206 (1951), certiorari denied 342 U.S. 828, 91 USPQ 382; *In re Switzer*, 35 CCPA 1013, 166 F.2d 827, 77 USPQ 156.

Quoting a portion of the above, the Patent Office brief states:

> Since the court in the *Lund* decision supra considered the issue "well settled" upon the basis of a carry over of subject matter from the parent application to the patented application, no further discussion of appellant's contentions respecting the statutory provisions (sections 102(e) and 120) or the *Hilmer* case or the other decisions relied upon (Board and court) appears necessary. As shown above, appellant having conceded that the patent fully meets the appealed claims, the only question at issue is whether the parent Frost application discloses the claimed subject matter.

We are in agreement with that statement. We would only point out additionally that at oral argument opportunity was given appellant to file a memorandum on the *Lund* case since his brief was written and filed before its appearance. Appellant did so but took no exception therein to our statement of the *law* in the above quotation; instead, he argued only the question of what disclosure was carried forward and, in fact, now relies on *Lund* as "controlling authority." This would seem conclusively to dispose of appellant's attempt to rule out reliance on the date of Frost's abandoned application on the basis of section 102(e), amounting, as it does, to abandonment of the argument in his brief.

Disclosure of Abandoned Parent Application

The question to be considered here is not whether the disclosures of the patent and the abandoned application are the same with respect to the inventions of the appealed claims but whether the subject matter of the appealed claims is disclosed both in the abandoned application and in the patent. Under section 102(e) it must, of course, be disclosed in the patent. Appellant admits that it is. For various reasons, he argues that it is not disclosed in the abandoned application.

We would observe, in passing, now that appellant treats *Lund* as controlling, that a quite different question was involved there. The disclosure relied on in the parent abandoned application appeared *only* in that application and did *not* appear in the patent. We said:

> It seems to us that the sine qua non of § 102(e) and the *Milburn* case is that, consistent with the gain to the public which the patent laws mean to secure, a *patent must issue* which contains, explicitly or implicitly, the description of an invention which is to be relied on to defeat a later inventor's patent rights.

Admittedly, that condition is met in the present case. In *Lund* we were not concerned with the dating back of a *patent* disclosure, we were considering whether a disclosure appearing *only* in an abandoned application was to be regarded as prior art under section 102(e). In *Lund*, reading the patent would give no clue to the existence of the disclosure in the application which was relied on. Here there is no question about the patent disclosure but only as to the date to be accorded it, as prior art, after it was made known by the issuance of the patent.

The Examiner found all limitations of all appealed claims to be met by disclosure in the Frost abandoned application carried forward into the patent, giving detailed citations for each limitation. The Board agreed with the Examiner's findings. We have studied with care the appellant's argument as to why there is not a disclosure of the claimed subject matter and find it lacking in substance. Speaking generally, what appellant does is to attempt to minimize the disclosure that is thereby characterizing it as "vague," "conjecture," and consisting of "general" or "bare, unsupported statements." He complains repeatedly that the disclosure is not amplified by the inclusion of specific examples teaching "how to produce a polyurethane foam" according to the claims. This kind of invective cannot get rid of the disclosure that is there or get us to ignore it.

Polyether Disclosure

More specifically, appellant complains that Frost's abandoned application "contains only the vaguest and most general references to polyethers of any type * * *. There is no example or adequate teaching of making a polyurethane foam using a polyether component." This is answerable by simply reciting the facts. Frost's specification opens with the sentence, "This invention relates to the making of polyester- and/or polyether-diisocyanate foams." The second paragraph discusses the *prior art* practice in making "polyether- or polyester-diisocyanate foams." It then discusses the invention generally with particular reference to making foams using polyesters and gives three fully detailed examples thereof covering about five printed pages. It then says:

> All or part of the polyesters used in the examples may be substituted by polyethers. Suitable polyethers for use in obtaining improved polyurethane foams are polyalkylene ether glycols such as the mixed polyglycol of ethylene-propylene, polyethylene glycol, the latter of which is sold under the name of "Carbowax 1000" and has a molecular weight of about 1000.
>
> Polyethers are preferred which have a molecular weight above 700 but those with a molecular weight as low as 500 to 600 or as high as 3500 or even somewhat higher may be used, depending upon the type of improved foamed product desired. Other suitable polyethers besides the aforementioned mixed polyalkylene ether glycols such as poly (ethylene-propylene) ether glycols are polytetramethylene ether glycol, polytrimethylene ether glycol, polyneopentylene ether glycol, and polypentamethyl ether glycol and mixtures of these.

Appellant's characterization of this as vague and general strikes us as wishful thinking. We agree with the Patent Office position that to one skilled in the art the above disclosure with respect to polyethers is tantamount to setting forth specific examples, especially since it appears that it was already known to the art to use polyethers to make polyurethane foams. While it may be a *limitation* of appellant's claims, the use of polyethers cannot be said to be his *contribution* to the art.

Alkane Boiling Point Disclosure

The other argument principally emphasized by appellant relates to the use of "liquid chlorofluoro alkane having a boiling point of from 0° to 60° C." Now, that is obviously an inclusive *range* of boiling points reading on any such material whose boiling point falls within the range. The term "liquid" is, moreover, relative since a blowing agent alkane with a boiling point of 1° C., which is within the stated range, is not going to *be* liquid unless appropriate conditions such as ambient temperature and pressure and whether it is dissolved in another component are such as to maintain it in a liquid state. Frost, like appellant, discloses that the alkane acts as a blowing agent by vaporization from reaction heat and states, inter alia, "a liquified gas that is soluble in the polyester is preferred." As point out in describing appellant's invention above, appellant's preferred blowing agent is "Freon 11" whose boiling point of about 23° C. falls in the claimed range. The Frost abandoned application likewise discloses the same "Freon 11," as "CCl_3F." Frost also discloses other "halogen substituted alkane gases" some with boiling points within the claimed range and some lower than 0° C. The Patent Office considered the disclosure of materials within the claim limitation to be sufficient, notwithstanding the disclosure of others which are not. So do we. The Solicitor's brief points out that in addition to "Freon 11," Frost's abandoned application and patent disclose "Freon 21" (b.p. 48° F. or 8.8° C.), and "Freon 114" (b.p. 38° F. or 3.3° C.)

Appellant took advantage of our invitation to discuss the *Lund* case by filing a supplemental memorandum in which he attempts to show that three other claim limitations are not disclosed in Frost's abandoned application, namely, the inclusion of *water* in the reaction mixture (a limitation not in all appealed claims), the production of foam having a *density* of about 1.2 to 2.5 lbs. per cu. ft. (claims 7 and 8), and foam of soft texture (claim 8). Frost's abandoned application contains numerous disclosures of the use of a small amount of water, including each of the specific examples using polyester, for which he says polyether can be substituted. It discloses production of a foam having a density of 2.5 lbs./cu. ft. One of Frost's stated objects is "to provide a means for making a softer cellular polyurethane * * *." Another stated object is "cellular polyurethanes of low density which are softer and more resilient and which have less shrinkage at low density than those heretofore produced."

Conclusions

[3] We agree with the conclusion of the Patent Office that Frost's abandoned application discloses the subject matter of the appealed claims and it is admitted that that subject matter is contained in the reference patent. It follows that it was carried forward and that the effective date of the patent as a prior art reference against the appealed claims under section 102(e) is October 20, 1955, which antedates appellant. The decision of the Board affirming the rejection on Frost is therefore affirmed.

In view of the affirmance of the rejection on Frost, we find it unnecessary to consider the other rejection "as unpatentable over claim 59 of applicant's parent application S.N. 610,658."

AFFIRMED.

Smith, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

In re Mervyn Cademartori

No. 7958. Decided June 27, 1968

[55 CCPA —; 397 F.2d 992; 158 USPQ 261]

1. Patentability—Evidence—Commercial Success.

"Appellant submitted evidence of commercial success both before and after his hearing before the Board. The Board did not consider the latter evidence. Appellant argues that the Board thereby committed error. Recognizing, as we do, that commercial success is a factor to be considered, we think that even if all of the evidence of commercial success were to be considered, the conclusion of obviousness compelled in this case by the cited art would not be overcome. *In re Myrtetus*, 55 CCPA —, — F.2d —, 157 USPQ 386 (1968). We note that no long-felt need or unsolved problem is proven to have antedated the commercial success."

2. Same—Particular Subject Matter—"Roller Applicator Particularly Adapted for Coating Rough Surfaces."

The refusal of certain claims in an application entitled "Roller Applicator Particularly Adapted for Coating Rough Surfaces," as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 314,926.

AFFIRMED.

George A. Arkwright, Jr., Shlesinger, Arkwright & Garvey, Noel G. Conway for appellant.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Judges Rich, Smith, Almond, and Kirkpatrick [1]

Rich, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals [2] affirming the rejection of claims 5, 7, 9, and 11 of application Serial No. 314,926, filed October 9, 1963, entitled "Roller Applicator Particularly Adapted for Coating Rough Surfaces." The Board reversed the rejection of claim 6, the only other claim in the application.

The invention is a paint roller specially adapted for use on rough surfaces. It includes a handle, a rotatable drum, and a sponge-like sleeve in which there are numerous mutually perpendicular slits. The effect of the slits is to divide the sleeve into independently deformable segments which make it useful in the application of paint to rough surfaces. FIG. 1 shows an embodiment of the invention:

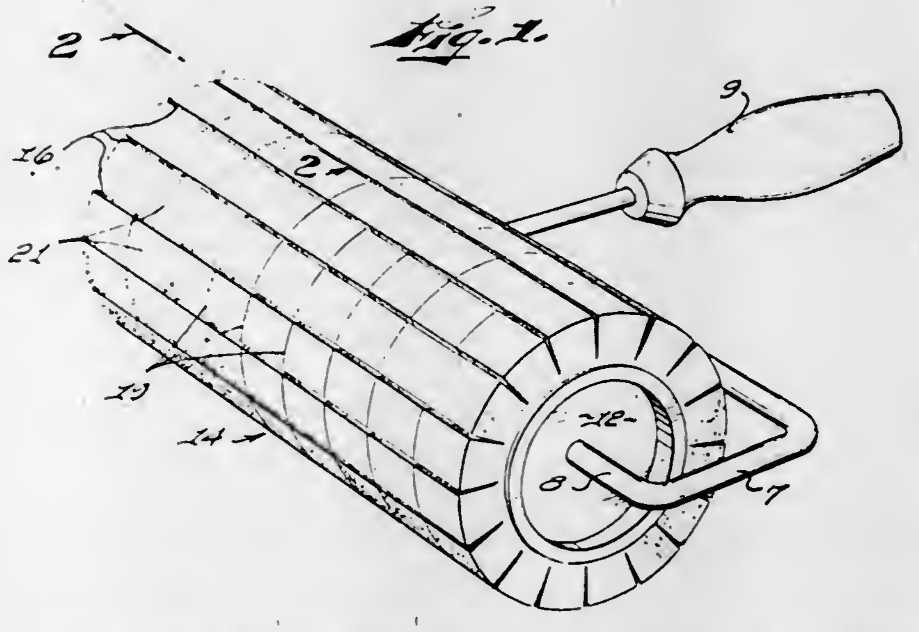

Fig. 1.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Consisting of Kreek and Keely, Examiners-in-Chief, and Andrews, Acting Examiner-in-Chief; opinion by Andrews.

Claim 5 is illustrative:

> 5. A roller applicator comprising:
> a handle:
> a drum connected to said handle and mounted for rotation;
> a sleeve encircling said drum;
> at least four circumferential slits in said sleeve encircling the drum, one of said slits being adjacent one end of said sleeve, a second of said slits being adjacent the opposite end of said sleeve;
> a plurality of longitudinal slits extending between said one circumferential slit and said second circumferential slit and crossing said circumferential slits between said one and second slits at a substantial angle, said circumferential and longitudinal slits being spaced substantially equidistant apart, said slits being of a depth substantially equal to the distance between slits.

The Board relied primarily on the following references.[3]

Bridgford, 2,761,167, Sept. 4, 1956.
Guggenheim (French), 874,496, May 4, 1942.

Bridgford discloses a paint roller in which "the applicator roller is made with a solid body of fluid saturable porous cellular and deformable material like vinyl plastic or Ivalon * * *." It incorporates certain features to make it useful in painting chain link fences. Chief among these are radial slits in the sponge to receive the wires of the fence.

Guggenheim discloses an improved sponge characterized by mutually perpendicular cuts which divide its surface into a "number of independent blocks." Advantages include:

> In the first place, the sponge is provided with greater suppleness. If non-flat surfaces, such as moldings or other wall ornaments are to be cleaned, this part of the sponge is deformed much more easily inasmuch as the blocks, by moving apart, completely conform to the shape of these moldings; thus cleaning is performed under much better conditions than with ordinary sponges whose surfaces, forming one single block, can be deformed only with greater difficulty.

While the only drawing in the patent shows an artificial cellulose sponge of "parallepipedal shape," the specification contains this statement:

> It will be noted, however, that the invention can be applied, under the same conditions and with the same advantages, to sponges of any other shape and made of any other material.

The Board found appellant's invention obvious in view of these references:

> Bridgford recognizes that the problem of applying a rolled liquid coating to an uneven surface, such as fencing, could be overcome by providing a series of slits in a sponge roller that would allow a local deformation of the roller to accommodate the uneveness. Guggenheim likewise addressed himself to this problem of uniform coating of rough surfaces, such as a wall, and arranged for mutually perpendicular slits in a sponge block to provide a sufficient degree of flexibility to accommodate the rough surfaces of a wall. In view of this recognition by Guggenheim of the advantages of perpendicularly arranged slits, we find that it would merely be adopting an expedient known to the art for its recognized advantages, and hence obvious, to provide mutually perpendicular slits in the roller surface of Bridgford to thereby secure merely the advantages taught by Guggenheim.

We agree. For the reasons given by the Board, we think that it would have been obvious to one of ordinary skill in the art to use the sponge of the Guggenheim disclosure in the Bridgford roller.

Appellant argues that the references are from non-analogous arts and so are improperly "combined." He especially rejects the relevance

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[3] The Board also affirmed the Examiner's rejections based on other references. However, the Board preferred to rely on the references indicated and regarded the others as cumulative. We need consider only the preferred rejection.

of the Guggenheim patent inasmuch as the sponge described therein is apparently intended for *cleaning* purposes. The Board had a cogent reply to this contention:

> The fact that Guggenheim is concerned with the application of a cleaning liquid rather than a paint to a rough surface is a matter of an arbitrary selection of a composition for the applied liquid rather than a diversity of concept from the Bridgford patent. Both patents deal with "applicators" as called for by the appealed claims.

The cleaning liquid referred to, we presume, is essentially water.

We need not adopt in toto the Board's rationale to approve its conclusion. The problem in the application of paint to rough surfaces with a sponge roller of regular contour lies in the failure of the sponge to conform itself to those surfaces. The same problem attends the use of any sponge in the cleaning of rough surfaces. We think that, given the clearly common problem, it would be obvious to one of ordinary skill to apply the lesson taught with respect to sponges used in cleaning to the improvement of those used in paint application. See *Graham* v. *John Deere Co.*, 383 U.S. 1, 35, 148 USPQ 459, 473–74 (1966).

[1] Appellant submitted evidence of commercial success both before and after his hearing before the Board. The Board did not consider the latter evidence. Appellant argues that the Board thereby committed error. Recognizing, as we do, that commercial success is a factor to be considered, we think that even if *all* of the evidence of commercial success were to be considered, the conclusion of obviousness compelled in this case by the cited art would not be overcome. *In re Myrtetus*, 55 CCPA —, —F.2d —, 157 USPQ 386 (1968). We note that no long-felt need or unsolved problem is proven to have antedated the commercial success.

[2] The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,602,751, D. M. Robinson, SUBSTANCES OR MATERIALS SUCH AS FOOD AND DRUGS; **2,680,815**, E. A. Burrill, METHOD OF AND APPARATUS FOR TREATING SUBSTANCES WITH HIGH ENERGY ELECTRONS; **2,729,748**, D. M. Robinson, APPARATUS FOR STERILIZING FOODS, DRUGS AND OTHER SUBSTANCES BY SCANNING ACTION OF HIGH-ENERGY ELECTRONS; **2,887,584**, J. C. Nygard, ELECTRON IRRADIATION APPARATUS, **filed** Sept. 12, 1968, D.C. Idaho (Boise), Doc. C–1–68–79, *High Voltage Engineering Corporation* v. *Boise-Cascade Corporation*. This case was transferred from District of Delaware.

2,606,492, J. A. Black, SILK SCREEN STENCILING MACHINE, **filed** Mar. 6, 1968, D.C., E.D. Mo. (St. Louis), Doc. 68C101(3), *James A. Black and General Research, Inc.* v. *Alfred Landesman and Eugene Landesman, doing business as Lawson Printing Machine Co.* Consent judgment decreeing patent in suit to be infringed and is good and valid; permanent injunction against defendants, Aug. 1, 1968.

2,614,916, Hoffmann and Schoene, AGRICULTURAL CHEMICAL COMPOSITIONS COMPRISING 1,2-DIHYDROPYRIDAZINE-3,6-DIONE AND ITS SALTS, **filed** July 12, 1968, D.C., E.D.N.C. (Wilmington), Doc. 1315–C, *Uniroyal, Inc.* v. *Cape Fear Chemicals, Inc.* Dismissed by attorneys for plaintiff, Aug. 8, 1968.

2,629,134, R. P. Molitor, METHOD OF MANUFACTURING ARTICLES FROM VINYL RESINS, **filed** Sept. 27, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1788, *J. A. Dubow Manufacturing Co.* v. *Sun Corporation*.

2,641,215, R. S. Danforth, ANCHORS, **filed** Sept. 30, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50066, *The Eastman Company* v. *West Coast Wire Rope and Rigging Inc.*

2,643,890, O. W. Smith, TANDEM TRAILER DEVICE, **filed** Apr. 22, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–687–EC, *Eight Point Trailer Corporation* v. *K & W Trucking, Inc. et al.* Order patent is valid, defendants permanently enjoined, Jan. 26, 1968.

2,680,815. (See 2,602,751.)

2,728,779, A. Pohland, ESTERS OF SUBSTITUTED AMINOBUTANES, **filed** Oct. 1, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–995, *Eli Lilly & Co.* v. *Spencer-Mead Inc.*

2,729,748. (See 2,602,751.)

2,768,479, Zweig and Zweig, ABRADING MACHINE, **filed** Sept. 25, 1968, D.C., S.D.N.Y., Doc. 68–C–3825, *Louis Zweig, doing business as Zweig Bros.* v. *Jack Tchalikian.*

2,798,213. (See 2,798,214.)

2,798,214, W. G. Rowell, CHECKING TECHNIQUE AND SYSTEM; **2,798,213**, same, **filed** Oct. 2, 1968, D.C. Mass. (Boston), Doc. 68–881–F, *Scully Signal Company* v. *Electronics Corporation of America.*

2,801,510, R. R. Colburn, TRACTOR MOUNTED ROTARY DISC MOWER, **filed** Sept. 11, 1968, D.C., E.D. Mich. (Detroit), Doc. 31709, *Ethel Colburn and Richard R. Colburn* v. *Yard-Man, Inc.*

2,824,315, G. E. McKenny, RELEASABLE COUPLING DEVICE, **filed** July 28, 1967, D.C., W.D. Wash. (Seattle), Doc. 7295, *C. J. Hendry Company* v. *Nordby Supply Co.* Consent decree, permanently enjoining defendant, Oct. 8, 1968.

2,842,170, Bruck and Mittins, SABER SAW STRUCTURE, **filed** Feb. 21, 1968, Ct. of App., 4th Cir. Va. (Richmond), Doc. 12,174, *The Porter-Cable Machine Company and Rockwell Manufacturing Company* v. *The Black & Decker Manufacturing Company.* Judgment of District Court affirmed, Sept. 13, 1968.

2,861,731, K. J. Robinson, FOLDING PORCH, **filed** Sept. 19, 1968, D.C., N.D. Ga. (Atlanta), Doc. 12113, *Stromberg Carlson Products, Inc.* v. *Diversified Manufacturing Co., Inc.*

2,875,777. (See 3,118,463.)

2,882,384, J. E. Foster, WELDING SYSTEM, **filed** Apr. 14, 1965, D.C., S.D.N.Y., Doc. 65–C–1114, *Julius E. Foster* v. *Magnetic Heating Corp. et al.* Interlocutory judgment in favor of plaintiff, Sept. 11, 1968.

2,887,584. (See 2,602,751.)

2,919,042, J. V. Kierulff, TRAVELLING SHIP-LOADING CRANE, **filed** Oct. 10, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50132, *John M. Calimafde* v. *Levin Metals Corporation.*

2,921,351, Pankey and Wasson, APPARATUS FOR MAKING PRECAST CONCRETE BRIDGES OR THE LIKE, **filed** Oct. 2, 1968, D.C. E.D. La. (Baton Rouge), Doc. 68–155–CA, *W.O.W. Pankey* v. *Waskey Bridges, Inc. and H. H. Manner.*

2,933,146, Zaldastani and Junger, STRUCTURAL MATERIAL, **filed** Sept. 18, 1968, D.C., S.D. Ohio (Cincinnati), Doc. 6860, *The Proudfoot Co., Inc. et al.* v. *Reading Concrete Products, Inc. et al.*

3,041,557, R. C. Posh, VARIABLE PITCH FAN BLADE, **filed** Sept. 24, 1968, D.C. Mass. (Boston), Doc. 68–854–C, *Canadian Filters (Harwich) Limited* v. *Lear Siegler, Inc.*

3,055,201, J. D. Smith, WINDSHIELD LIGHTER STRUCTURE; **D. 188,622**, S. Rappoport, LIGHTER OR SIMILAR ARTICLE, **filed** Aug. 16, 1967, D.C.N.J. (Newark), Doc. 876–67, *R. J. Reynolds Tobacco Company, Jayme Products, Inc.* v. *Ronson Corporation.* Stipulation and order of dismissal, Sept. 11, 1968.

3,059,458, E. G. Sarbo, FOOT COVER AND METHOD OF MANUFACTURING THE SAME, **filed** Jan. 15, 1968, Ct. of App., 4th Cir., Va. (Richmond), Doc. 12,054, *Wayne Knitting Mills and The May Corporation* v. *Russell Hosiery Mills, Inc.* Judgment of District Court reversed and cause remanded, Sept. 10, 1968.

3,062,662, B. McDonald, CONFECTION, **filed** Dec. 8, 1966, D.C.N.J. (Newark), Doc. C–1222–66, *Bessie McDonald, doing business as McDonalds Bubble-Gum-Pop Co.* v. *Charms Co.* Stipulation of dismissal, Sept. 25, 1968.

3,073,419, H. P. Henry, BRAKES FOR TRAILER VEHICLES, **filed** Dec. 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2193, *Howard P. Henry* v. *Atwood Vacuum Machine Co.* Dismissed without prejudice, Sept. 12, 1968.

3,075,167, R. J. Kinkaid, PANEL CONNECTOR WITH FLAG-TYPE TERMINALS, **filed** Sept. 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1688, *AMP Incorporated* v. *Molex Products Company.*

3,077,807, D. C. Weight, ROLLER DIE APPARATUS, **filed** May 29, 1967, D.C., N.D. Ohio (Cleveland), Doc. C–67–376, *The Falls Engineering and Machine Co.* v. *The American Packaging Corporation.* Consent decree, patent issued to plaintiff good and valid. All counterclaims are dismissed, Sept. 20, 1968.

3,086,297, L. A. Kantrowitz, TALKING BOOK, **filed** July 3, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1240, *Mattel, Inc. et al.* v. *Marvin Glass & Associates.* Ordered, sua sponte, dismissed, Oct. 7, 1968.

3,118,463, R. H. Lacart, TESTING MANIFOLDS; 2,875,777, same, HERMETIC PORT VALVE ASSEMBLY FOR TAPPING FLUID CONDUITS, **filed** Sept. 16, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1722, *Robinair Manufacturing Corporation* v. *Jarrow-Brinda, Inc. et al.*

D. 188,622. (See 3,055,201.)

DEFENSIVE PUBLICATIONS

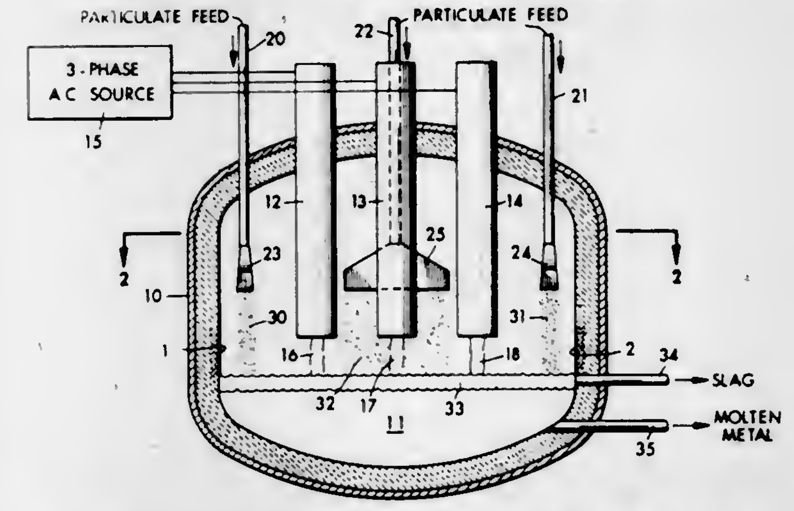
PUBLISHED FEBRUARY 4, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

613,819
ELECTRIC ARC FURNACE OPERATIONS

Joseph J. Kociscin, 42 N. 22nd St.,
Kenilworth, N.J. 07033
Filed Feb. 3, 1967. Published Feb. 4, 1969
Class 75—12
1 Sheet Drawing. 9 Pages Specification



A technique is described for preventing excessive erosion of the walls of an electric arc steelmaking furnace. The erosion is prevented by shielding the portion of the walls closest to the electrodes from the intense radiation created by the electric arcs. The shielding is provided by continuously adding powdered partially-reduced iron ore to the furnace between the walls of the furnace and the arcs.

616,504
POLYESTERS AND POLYCARBONATES PREPARED FROM CYANO SUBSTITUTED BISPHENOLS

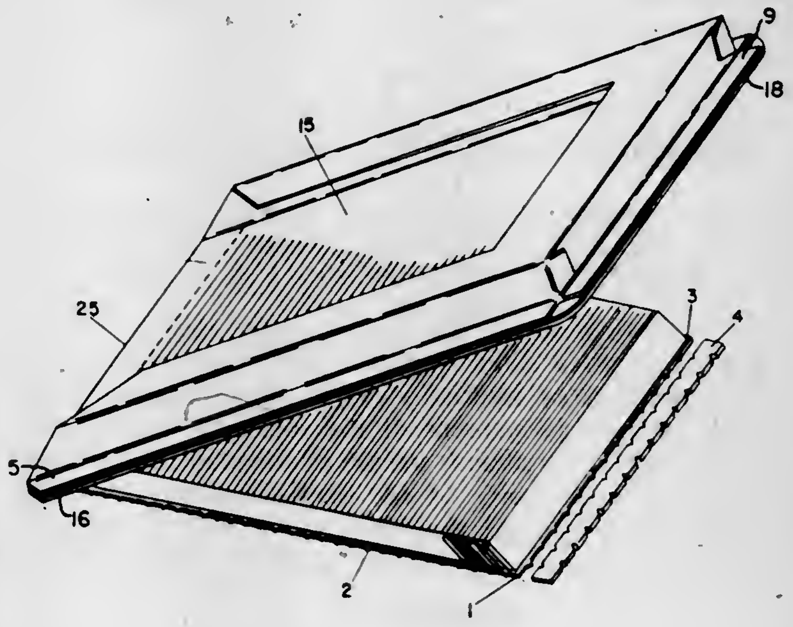
Paul Winthrop Morgan, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 16, 1967. Published Feb. 4, 1969
Class 260—47
No Drawing. 18 Pages Specification

Novel polyesters and copolyesters are prepared from mono- and dicyano-substituted bisphenols wherein each cyano group is attached to a methylene carbon atom bridging the phenolic rings. Novel polycarbonates and copolycarbonates prepared from dicyano-substituted bisphenols of the type described above. High melting fibers and films having good thermal stability are prepared from these polymers.

635,175
PACKAGE AND PROCESS USING HOT MELT CURTAIN COATING ON SUBSTRATE ATTACHED TO PREFORMED LID

Rex Eells and Ted L. Douglas, both of P.O. Box 511, Kingsport, Tenn. 37662
Filed May 1, 1967. Published Feb. 4, 1969
Class 99—174
2 Sheets Drawing. 8 Pages Specification

An improved method for packaging and a package for an article such as bacon wherein the article is placed on a substrate and curtain coated with a molten thermoplastic coating material. A separate, preformed lid is sealed to the substrate along edge portions or lips thereof extending outwardly from the article. Tear strips or perforations along three of the substrate lip portions allow ready access to the contents of the package when the substrate is broken along these lines. The lid remains secure to the lip portions and is hinged to the substrate by the thermoplastic coating secured to the remaining edge or lip portion of the substrate. The lid advantageously has an opening so the article can be seen through the transparent coating material.



661,820
AQUEOUS DYE BATH CONTAINING A HIGH MOLECULAR WEIGHT QUATERNARY AMMONIUM SALT AND AN ETHYLENE OXIDE CONDENSATE OF 8 TO 12 CARBON ALIPHATIC ALCOHOL AND NYLON DYEING AND ELECTROSTATIC CHARGE REDUCTION THEREWITH

Joseph Aloysius Brooks, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 21, 1967. Published Feb. 4, 1969
Class 8—17
No Drawing. 17 Pages Specification

A process of dyeing and simultaneously imparting durable antistatic protection to synthetic polycarbonamide material by dyeing the polycarbonamide material in an aqueous dye bath which contains in percent by weight of the material to be dyed (1) from 0.05 to 5.0% of a dyestuff for said material, (2) from about 0.1 to 0.5% of a non-ionic surfactant which is a condensation product of a long-chain aliphatic alcohol containing from 8 to 18 carbon atoms with from 10 to 25 molar equivalents of ethylene oxide, (3) from about 0.25 to 1% of a cationic surfactant consisting of a high molecular weight aliphatic quaternary ammonium salt and (4) from about 0.4 to 2% of an anionic surfactant consisting of a disulfonate salt of an alkyl diphenyl ether, the weight of the anionic surfactant being at least 50% greater than that of the cationic surfactant, and the pH of the dyeing bath being from about 4 to 6. The preferred non-ionic surfactant is the condensation product of a branched chain, 10-carbon oxo alcohol with about 15 molar equivalents of ethylene oxide. A specific anionic surfactant is a 4-dodecyl-2,4′-di(sodium sulfonato)-diphenyl ether. A useful cationic surfactant is a high molecular weight, straight-chain quaternary ammonium salt, i.e., dimethyl-distearyl-quaternary ammonium chloride.

In an example, nylon fibers modified by poly (ethylene oxide), m.w. 20,000, dispersed in the fibers are bulked for use in carpets, caused to have voids therein by aqueous processing extracting the polyethylene-oxide particles and are dyed at 180° to 250° F. in an acid, pH 4 to 6, dye bath containing the latter quaternary ammonium compound and alkyl diphenyl ether disulfonate as well as acid, metallized azo and neutral-dyeing premetallized acid of the 2:1 azo dye:metal atom type. The carpet so dyed has antistatic protection, unaffected appearance, tactile aesthetics and soil resistance.

683,817
ADDITIVE CONTAINING TOBACCO SMOKE FILTER

John R. Hatfield, Jr., and Kyle E. Morrison, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Nov. 17, 1967. Published Feb. 4, 1969

Class 131—266

No Drawing. 14 Pages Specification

Tobacco smoke filter elements containing particles of anhydrated and/or hydrated magnesium sulfate for removing at least 50 percent of the total particulate matter contained in an effluent stream of tobacco smoke from a cigarette. A majority of the particles have a size of about 2.0 microns and the filter will selectively remove more nicotine than tar from the tobacco smoke.

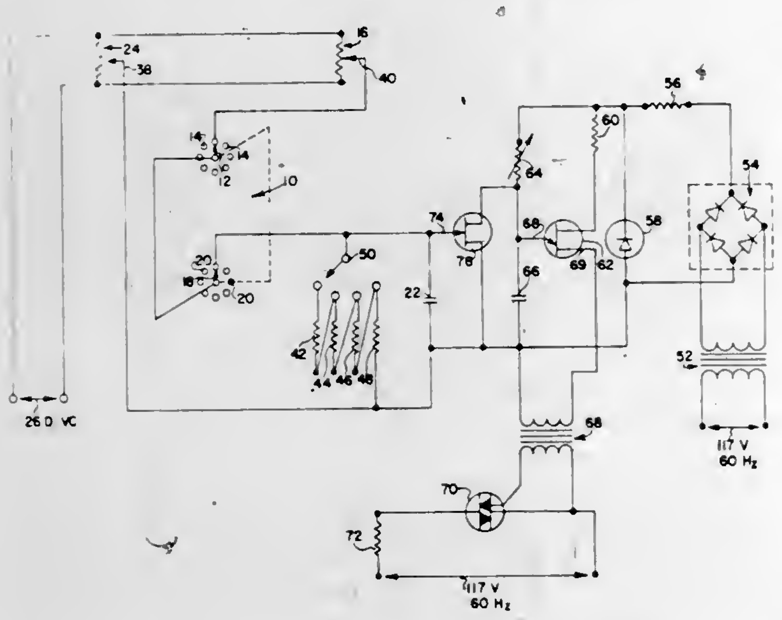
728,616
SOLID STATE, MULTIPOINT, TEMPERATURE CONTROLLER

John B. Engleman, P.O. Box 511, Kingsport, Tenn. 37662

Filed May 13, 1968. Published Feb. 4, 1969

Class 219—501

2 Sheets Drawing. 11 Pages Specification



In a temperature controlling circuit the difference in a reference voltage and voltage produced by a temperature sensing means is impressed on the gate of a field effect transistor which acts as a proportioning shunt across the capacitor in an RC circuit connected to the gate of a unijunction transistor in circuit with one side of the primary of a transformer. The RC circuit and unijunction transistor form a relaxation osecillator to drive the transformer the secondary of which is connected to a silicon controlled rectifier connected in series with a source of alternating current and a heater.

768,947
PHOTOTROPIC COMPOSITIONS (B)

Gordon C. Newland and Melvin S. Bloom, both of P.O. Box 511, Kingsport, Tenn. 37662

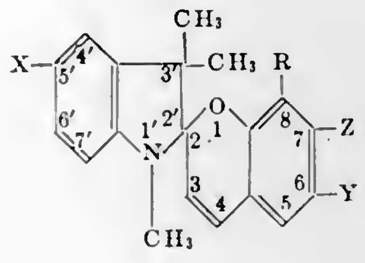
Continuation of application Ser. No. 563,041, July 6, 1966. This application Sept. 9, 1968. Published Feb. 4, 1969

Class 106—176

No Drawing. 9 Pages Specification

Phototropic composition comprising a mixture of a cellulose ester resin and an effective amount of a phototrope having the general formula:

(I)



and containing the substituents defined in Table A in the specification in the positions indicated in the formula.

764,017
PLASTICIZED TOBACCO SMOKE FILTER

George P. Touey and Cephas H. Sloan, both of P. O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 650,656, July 3, 1967. This application Sept. 18, 1968. Published Feb. 4, 1969

Class 131—267

No Drawing. 20 Pages Specification

A tobacco smoke filter comprising a cellulose ester and containing a plasticizer blend of triacetin and a poly(ethylene glycol) diacetate wherein the triacetin content ranges from 40% to 60% and the poly(ethylene glycol) diacetate is selected from the group consisting of di-, tri-, tetra,-penta-, and hexaethylene glycol diacetate.

764,025
NON-FIBRILLATING POLYOLEFIN ARTICLE AND METHOD OF MAKING

Warner D. Long, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 440,596, Mar. 17, 1965. This application Sept. 20, 1968. Published Feb. 4, 1969

Class 24—16

No Drawing. 8 Pages Specification

A strap of a formable, organic, polymeric material which is substantially unilaterally oriented to give it longitudinal strength containing from about 2% to about 40% of a filler material which disrupts the unilateral orientation of the strap giving it sufficient transverse strength to prevent it from fibrillating when it is subjected to external forces. Such a strap is useful in packaging especially as a replacement for steel strapping.

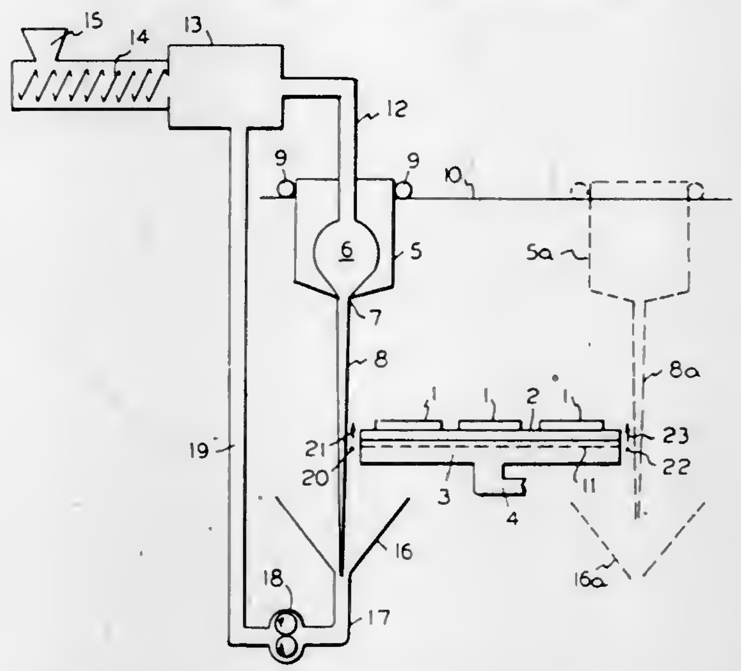
766,373
CURTAIN COATING METHOD FOR PACKAGING AN ARTICLE

Earl Quinn, ℅ Kodak Park Works, Rochester, N.Y.

Continuation of application Ser. No. 541,413, Mar. 2, 1966. This application Sept. 30, 1968. Published Feb. 4, 1969

Class 264—90

2 Sheets Drawing. 10 Pages Specification



A method for curtain coating, as illustrated in FIGURE 1, wherein an article is placed upon an air-permeable substrate beneath which the air pressure is reduced. A curtain of a viscous, molten, thermoplastic coating composition is then moved over the article at a rate sufficient to cause the curtain to contact the upper surface of said substrate and said article at an angle which is not greater than about 45 degrees.

This application is a streamlined continuation of Serial No. 541,413, filed Mar. 2, 1966, now abandoned.

768,970
PLASTICIZED TOBACCO SMOKE FILTER

George P. Touey and Cephas H. Sloan, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 663,510, Aug. 28, 1967. This application Oct. 16, 1968. Published Feb. 4. 1969

Class 131—267

No Drawing. 16 Pages Specification

A tobacco smoke filter containing a rapid bonding plasticizer blend of glyceryl triacetate and a glycol wherein the glycol is selected from the group consisting of propylene glycol and dipropylene glycol.

769,435
CELLULOSE ESTER CURTAIN COATING THERMOPLASTIC MATERIAL AND PROCESS FOR EMPLOYING THE SAME

Donald E. Gonzalez and David A. Tenquist, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 633,702, Apr. 26, 1967. This application Oct. 21, 1968. Published Feb. 4, 1969

Class 106—180

No Drawing. 12 Pages Specification

Curtain coating composition for coating substrates such as paper or packing an article on a substrate coated with the composition applied to the article and substrate as a falling molten curtain. The composition contains 50–90 percent by weight of cellulose acetate propionate, cellulose acetate butyrate or cellulose propionate butyrate together with 10–50 percent by weight of a plasticizer having a boiling point of at least 325° C. As a hot melt at 375° C. the composition has a viscosity of 20,000 to 175,000 cps. and a melt stability of at least 1.5 hours.

PATENTS

GRANTED FEBRUARY 4, 1969

GENERAL AND MECHANICAL

3,425,060

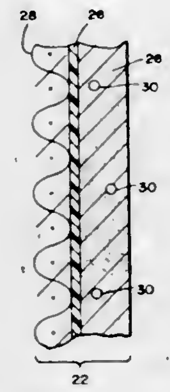
PROTECTIVE GARMENT

Peter E. Glaser, Lexington, Reed H. Johnston, Wellesley, and Robert M. Jolkovski, Brighton, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 25, 1965, Ser. No. 427,677

U.S. Cl. 2—2.1 **11 Claims**

Int. Cl. B63c; A41d; D04h *1/00*



A space suit including an outer air-impermeable sheath and an inner garment of multiply fabric, the fabric comprising an inner ply of flexible, moisture-absorbent material, an outer ply of flexible, elastic, porous material, and sandwiched between the inner and outer plys, a continuous, flexible, moisture-permeable material. The inner ply may also include a network of conduits through which cooling fluid can be passed.

3,425,061

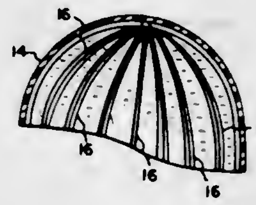
ENERGY ABSORBING HELMET SHELL

Daniel D. Webb, Birmingham, Mich.
(21620 Coolidge Highway, Oak Park, Mich. 48237)

Filed Sept. 8, 1967, Ser. No. 666,379

U.S. Cl. 2—3 **6 Claims**

Int. Cl. A42b *1/08*



A safety helmet, energy absorbing shell formed of an inner and an outer shell layer, each having long, narrow ribs formed integral therewith, the ribs of one shell layer extending towards and transversely crossing and being in edge to edge contact with the ribs of the other, and with the ribs being crushable under impact to thereby absorb impact energy.

3,425,062

POCKETED REVERSIBLE TROUSERS

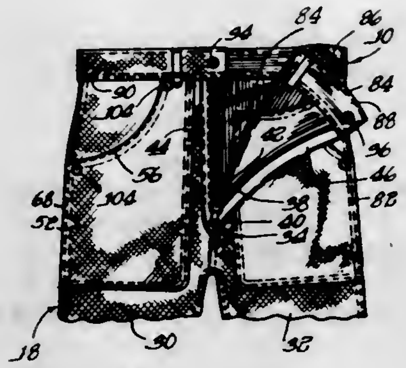
Alvaro Saad Chujfi, Confecciones Saad, Calle 17, Cra. 10, No. 9—78, Pereiera, Colombia

Filed Nov. 8, 1967, Ser. No. 681,402

U.S. Cl. 2—227 **6 Claims**

Int. Cl. A41d *1/06, 13/02, 27/20*

Reversible trousers constructed of fabric having wear surfaces on both sides and being pocketed in front, both inside and outside, with pockets formed of the same fabric material and shaped and connected to each other and to front and back panels of the trousers by common seaming in such manner that the structural appearance, form and function of the trousers as pocketed are virtually unchanged by reversal of the trousers.



3,425,063

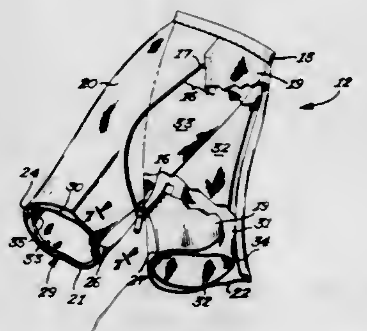
WEARING APPAREL

Mary Lucille Brown, 7427 13th Ave. S., Minneapolis, Minn. 55423

Filed Nov. 8, 1965, Ser. No. 506,737

U.S. Cl. 2—234 **2 Claims**

Int. Cl. A41d *1/06, 13/02*



A woman's nether garment comprising an outer garment having a zippered crotch and an inner, under garment attached to the outer garment along the inside leg seams and having a crotch opening in registry with the zippered crotch of the outer garment, thereby permitting the wearer to conduct normal bodily functions with a maximum of modesty and convenience.

3,425,064

TRANSDUCER FOR ARTIFICIAL HEART

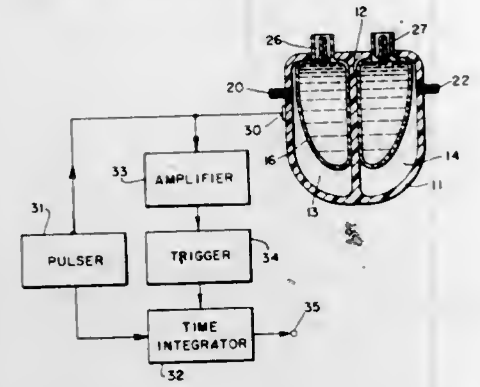
Edmund H. Carnevale, Beverly, and Lawrence C. Lynnworth and Ronald N. Lawson, Waltham, Mass., assignors to Parametrics, Inc., Waltham, Mass., a corporation of Massachusetts

Filed May 9, 1966, Ser. No. 548,695

U.S. Cl. 3—1 **6 Claims**

Int. Cl. A61f *1/00;* **A61b** *5/00;* **G01n** *9/24*

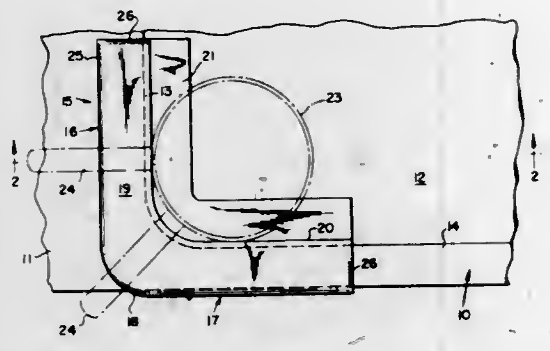
A transducer for measuring the cardiac output of an artificial heart by mounting an ultrasonic transducer on a rigid portion of the heart and measuring the times required for pulses of ultrasonic energy to travel from that portion to the flexible portion of the heart and return,



thereby indicating the average displacement of the flexible portion of the heart from the rigid portion.

3,425,065
COMBINATION SINK PROTECTOR AND POT SUPPORT

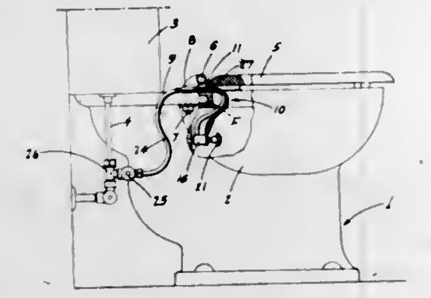
Arthur J. Strong, Mineola, N.Y.
(R.D. 2, Box 141, Narrowsburg, N.Y. 12764)
Filed June 6, 1967, Ser. No. 643,859
U.S. Cl. 4—1 3 Claims
Int. Cl. A47k *17/00;* **E03c** *1/18;* **A47f** *5/00*



A unitary member which is angle- or elbow-shaped in plan view, complementarily to a corner of a sink, and is composed of an upright wall having a ledge extending outward from the top edge thereof and a shelf extending inward from the bottom edge thereof. The member is adapted to be mounted on top of a corner of the sink with the said wall engaging the inside of the sink corner walls, with the ledge resting on said top of the corner and with said shelf extending over the bottom of the sink.

3,425,066
PERSONAL HYGIENE ATTACHMENT FOR TOILETS

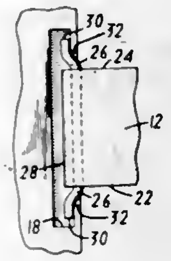
Carl H. Berger, Tracy, Calif., assignor of one-half to Andrew J. Gusich, Antioch Calif.
Filed July 7, 1966, Ser. No. 563,591
U.S. Cl. 4—7 5 Claims
Int. Cl. A47k *3/22, 11/08*



A water spray nozzle, for personal hygiene, disposed in the bowl of a flush toilet; there being attachment means effective to mount such nozzle in said bowl without altering the toilet structure in any way.

3,425,067
RESILIENT SEAT PLATFORM WITH INTEGRAL MEANS FOR ATTACHMENT TO A FRAME

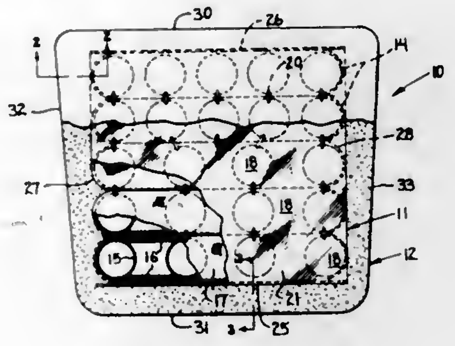
Gerald E. Frig, Warren, Mich., and Philip T. Heuston, Marion, and Mario F. Thumudo, Jr., Fairhaven, Mass., assignors of one-half each to Acushnet Process Company, a corporation of Massachusetts, and General Motors Corporation, a corporation of Delaware
Filed July 18, 1966, Ser. No. 565,988
U.S. Cl. 5—186 10 Claims
Int. Cl. A47c *17/86, 31/00*



A seat platform is constructed by providing an elastomeric sheet with a plurality of rod elements, each having a main portion completely buried in the sheet adjacent a peripheral edge thereof, integral side portions extending from the opposite ends of the main portion toward the peripheral edge and integral terminal portions spaced from the peripheral edge. The integral terminal portions of each rod element are adapted to be retained by suitable mechanical means on a frame to which the platform is to be attached, whereby after such attachment the portions of the sheet disposed between the integral side portions of the rod elements are guarded against potentially damaging contact with the frame.

3,425,068
SPRING-FOAM CUSHION

Wayne A. Bechtoldt, Anderson, Ind., assignor to Barber Manufacturing Company, Inc., Anderson, Ind., a corporation of Indiana
Filed Aug. 7, 1967, Ser. No. 658,791
U.S. Cl. 5—353 5 Claims
Int. Cl. A47c *27/20*

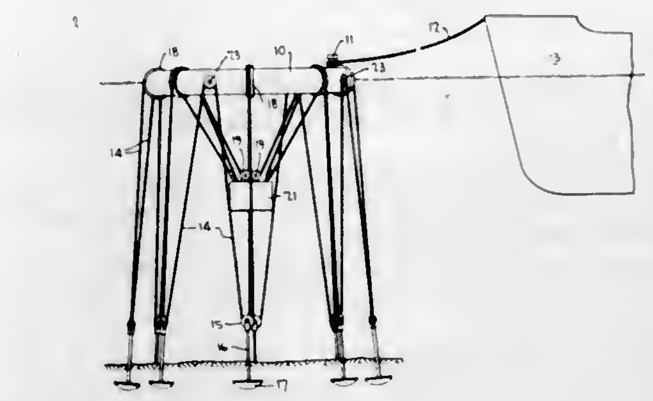


A spring cushion including a burlap covered coil spring resilient unit surrounded by molded foam material. A sheet of plastic covers the top, front and back of the resilient unit and prevents adherence of the foam material to the burlap. The sides of the burlap are adhered to the foam material and because of this are stiffer and less yielding than the front and back of the cushion.

3,425,069
MOORING BUOY

John A. Christians, Springfield, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 1, 1967, Ser. No. 687,306
U.S. Cl. 9—8 6 Claims
Int. Cl. B63b *21/52*

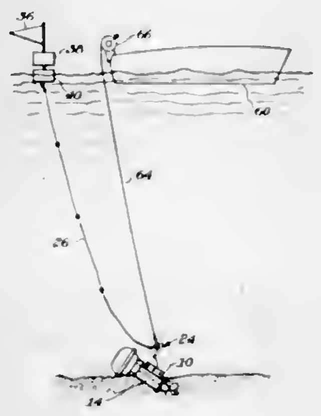
This invention relates to mooring buoys constructed of a toroidal floating unit to which a vessel is secured. The floating unit is anchored by a continuous wire rope connected through blocks to form vertical lines connected to piles, dead weights, explosive embedment anchors, or the like, and to a suspended weight which maintains the wire rope in tension. The floating unit is stabilized and the



wire ropes tightened by the suspended weight while being capable of rising and falling with the tides and while being subjected to the horizontal pull of a vessel anchored thereto.

3,425,070
MARKER AND RETRIEVER UNIT

William Oscar Clark, Fort Myers, Fla. (Hq. Sqd., 1608th ABG, Box 555, Charleston AFB, S.C. 29404)
Filed May 20, 1966, Ser. No. 551,569
U.S. Cl. 9—9 5 Claims
Int. Cl. B63b *21/52*

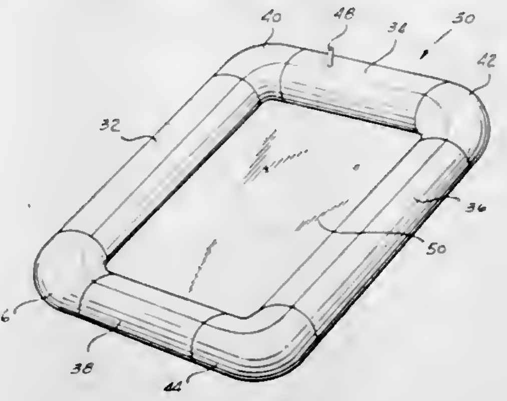


A pressure responsive salvaging assembly for recovering submerged objects and particularly outboard motors, boats etc. in which a vented container includes a spring urged cover having a latch lever lockingly engagable with a depth-responsive catch normally projecting from the container and engaging the latch lever, and in which container is housed an attaching cable terminating in a V-shaped hook terminally connected to a marker line terminally connected to float means and a marker, the float means reacting against the cover when the container is submerged, and the cover being automatically opened when submerging occurs, and the marker line being detachable from the float means to permit a retrieving cable and ring to be guided to the V-shaped hook along the marker line and the ring engaged beneath the hook.

3,425,071
HEAT REFLECTIVE INFLATABLE BUOYANT BODY

Leonard P. Frieder, Clarks Green, and August G. Luisada, Waymart, Pa., assignors to Gentex Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,491
U.S. Cl. 9—11 4 Claims
Int. Cl. B63c *9/04;* **B32b** *15/08*

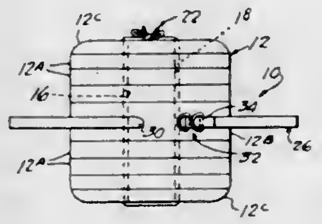
A craft for use by survivors at sea comprising an inflatable body having a wall made up of an impervious base and a film of heat reflective material carried by said base for reducing variations in temperature of the inflating



gas within the body in response to changes in ambient temperature.

3,425,072
METHOD AND APPARATUS FOR TEACHING SWIMMING

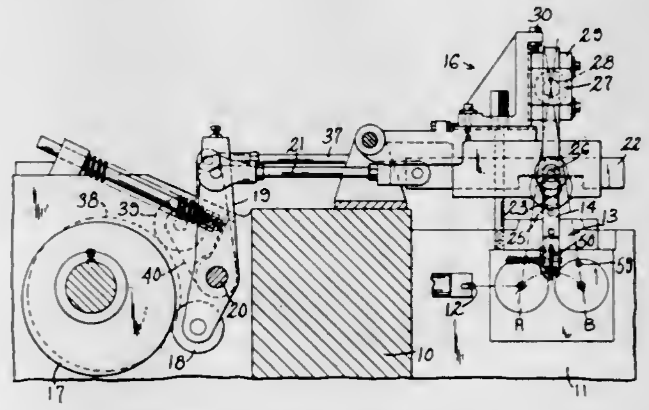
Merle T. Carlson, Houston, Tex.
(1210 Oriole Lane, Wharton, Tex. 77488)
Filed Feb. 24, 1967, Ser. No. 618,525
U.S. Cl. 9—339 1 Claim
Int. Cl. B63c *9/08*



A variable volume aquatic float for releasable connection on the body of a user, the float capacity being adapted for adjustment in an inverse ratio with respect to the swimming ability of the user.

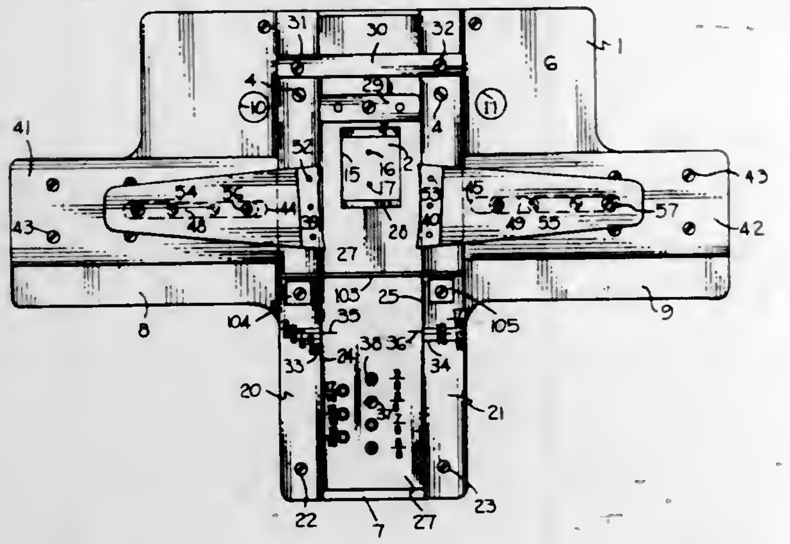
3,425,073
TRANSFER FINGER MECHANISM

John C. McMurray, Hamden, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed June 1, 1966, Ser. No. 554,543
U.S. Cl. 10—11 4 Claims
Int. Cl. B21k *1/44, 1/64, 27/02*



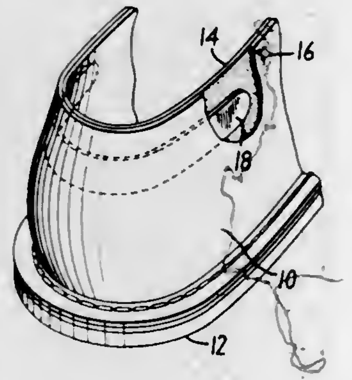
A transfer arm mechanism for use in transferring a workpiece between two dies. In particular, the transfer arm mechanism includes two fingers spaced apart at their ends for receiving a workpiece and a lever pivotally supported by one of said fingers for inserting the workpiece held between the fingers into a die upon the advance of the transfer arm mechanism toward the die.

3,425,074
INNERSOLE ORIENTING AND PUNCHING DEVICE
**Donald F. Robinson, Rustic Lane,
Plaistow, N.H. 03865**
Filed Sept, 27, 1966, Ser. No. 582,433
U.S. Cl. 12—123 **7 Claims**
Int. Cl. A43d *44/00, 63/00*



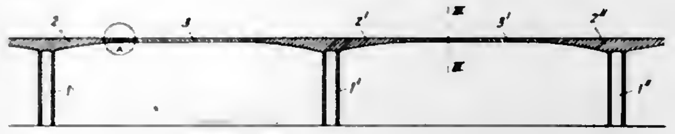
An apparatus for the accurate positioning of successive innersole heel portions of innersoles and punching holes therein, said holes being later used to receive pins on the lasts whereby the shoe top may be properly attached to the innersole. Positioning elements including one fixed but manually adjustable heel gauge for positioning the rear end of the heel of an innersole and two interconnected side gauge elements for contacting the opposite side portions of the heel portion of the innersole are incorporated in the apparatus. Independent pneumatic devices are connected, one to each heel side gauge for operating said side gauges and such devices are operated by either a foot treadle or by an automatic microswitch connected to the fixed gauge element.

3,425,075
METHOD OF MAKING LEATHER FOOTWEAR
**Alan E. Murray, 329 Lexington Ave.,
New York, N.Y. 10016**
Filed June 24, 1965, Ser. No. 466,752
U.S. Cl. 12—142 **9 Claims**
Int. Cl. A43d *9/00;* **A43b** *23/08;* **B29h** *7/08*



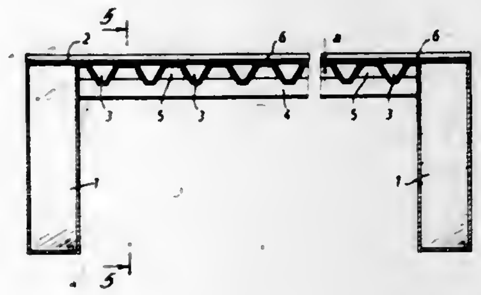
The invention provides; two control devices for footwear, one a resilient U-shaped strip mounted upon the counter of the footwear to exert pressure upon the upper portion of the calcaneus, and the other a flexible filament mounted along peripheral edges of the footwear to conform the same to the adjacent foot contour; three-dimensional, shape-retaining laminates of at least two plies of leather bonded flesh side-to-flesh side with a rubber latex; sealed leather surfaces the pores and interstices of which are filled with synthetic plastic material; and all-leather footwear made with molded toe and heel, leather laminates which are bonded to a bottom sole in a spacing corresponding to the length of the wearer's foot.

3,425,076
CONCRETE HIGHWAY FORMED IN THE FASHION OF A BRIDGE AND METHOD OF CONSTRUCTING SAME
Ulrich Finsterwalder, Munich-Obermenzing, Germany, assignor to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany
Original application May 29, 1963, Ser. No. 284,797. Divided and this application Dec. 18, 1967, Ser. No. 691,556
Claims priority, application Germany, June 1, 1962, D 39,057, D 39,058; Mar. 28, 1963, D 41,230
U.S. Cl. 14—7 **4 Claims**
Int. Cl. E01d *19/00;* **E04b** *1/16*



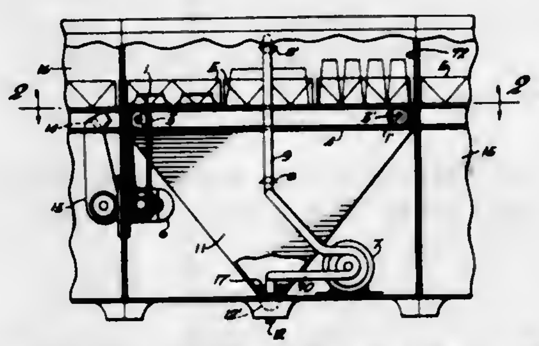
Bridge-like elevated highway and method for constructing such highway, where substantially rectangular sections forming the carriageway cantilever out freely in all directions from supports and additional slab sections are supported between the cantilever sections, being supported on the ends thereof, and resilient tensioning members rigidly anchored in contiguous sections extend through expansion joints between the cantilever sections and the sections supported therebetween.

3,425,077
BRIDGE ROADWAY CONSTRUCTION
Hans Sievers, Broich, Germany, assignor to Demag Aktiengesellschaft, Duisburg, Germany
Filed Sept. 9, 1966, Ser. No. 578,228
U.S. Cl. 14—73 **5 Claims**
Int. Cl. E01d *19/12;* **E04c** *2/34*



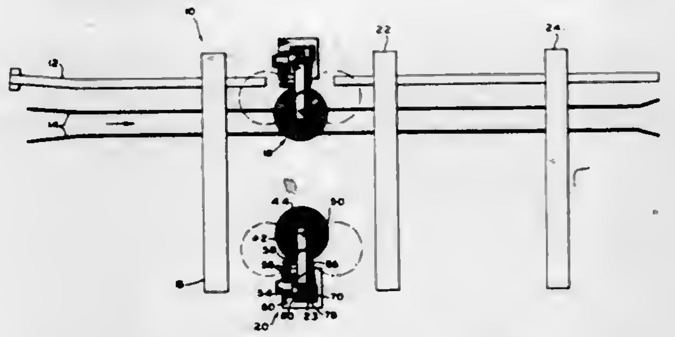
An orthotropic roadway construction for steel bridges includes a plurality of box-shaped longitudinal ribs which are arranged at the underside of a cover plate parallel to the main bridge girders. Transverse girders transmit the load of the roadway plate to the main girders. At the underside of the cover plate and transversely to the box-shaped longitudinal ribs there are arranged transverse bulkheads, which are located at a spaced location from the cover plate and are connected at each end to the sides of the longitudinal ribs. In addition, flat middle ribs are arranged and welded to the upper side of the cover plate such as in the same vertical plane as the cross bulkheads arranged below the cover plate.

3,425,078
WASHING MACHINE TO USE IMPACT OF SOLID MATERIALS AND SOLID RECOLLECTING EJECTOR
**Francisco F. Lazaga, 2736 SW. 7th Ave.,
Miami, Fla. 33129**
Filed Oct. 19, 1966, Ser. No. 587,890
U.S. Cl. 15—3 **4 Claims**
Int. Cl. D06f *15/00, 39/00;* **B67c** *1/10*



A washing machine for circulating solid particulate material with a liquid medium including a funnel-like tank and an overlying funnel-like strainer in conjunction with a centrifugal pump operatively connected by an inlet to the tank sump and having an outlet nozzle connected to the pump by an intermediate venturi-type solid particle recollecting means having a vacuum chamber communicating with the sump of the strainer.

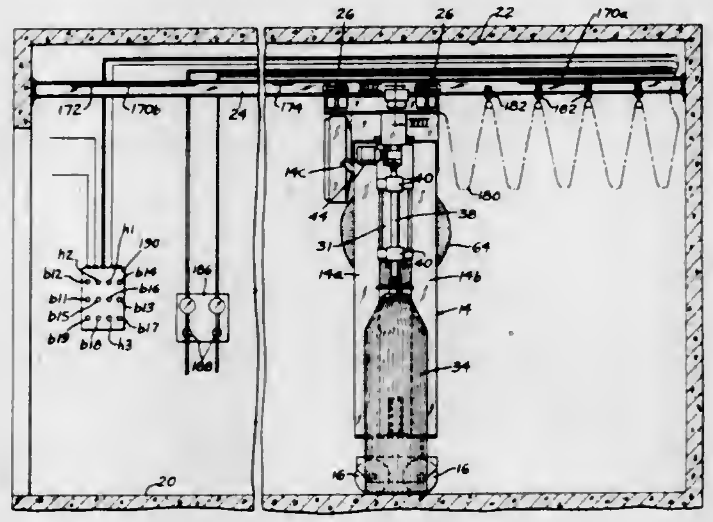
3,425,079
REVERSIBLE MOUNT FOR A BRUSH
Jack F. Ebeling, Portland, Oreg., assignor to Daniel C. Hanna, Portland, Oreg.
Filed Oct. 10, 1966, Ser. No. 585,509
U.S. Cl. 15—21 **5 Claims**
Int. Cl. A46b *13/02;* **B60s** *3/06*



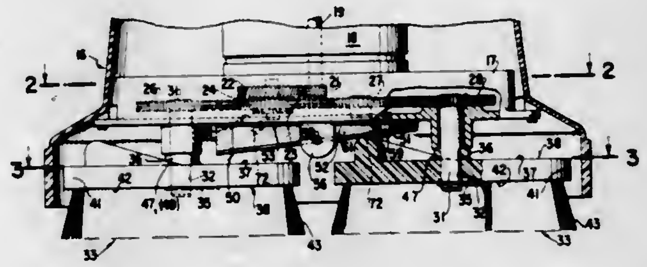
A car washing apparatus includes brush structures **18** and **20** for washing the front and the sides of a car advanced along a track **14**. Each brush structure includes a rotated brush **44** carried by a frame **42** normally held in a centered position by springs **56** acting in one direction and a dashpot **66** which is mounted on an arm **70** normally held by a stronger spring **78** in a position preventing rearward movement of the frame **42**. When a car is backed into the brush, the arm **79** swings away from a stop **76** so that the brush structure is not damaged.

3,425,080
WASHING APPARATUS FOR VEHICLES, MORE PARTICULARLY FOR MOTOR VEHICLES
Heinz Dölitzsch, Adolfstrasse 73, and Gerhard Skirde, Osterbekstrasse 21, both of 2200 Hamburg, Germany
Continuation-in-part of application Ser. No. 484,492, May 17, 1965. This application June 9, 1967 Ser. No. 644,975
Claims priority, application Germany, May 15, 1964, D 44,442; Apr. 3, 1965, D 46,962
U.S. Cl. 15—21 **11 Claims**
Int. Cl. B60s *3/04;* **A46b** *13/04*

Car washing apparatus having an inverted U-shaped frame with a vertically moveable horizontal brush therein and with vertical brushes at the sides swingable into trailing relation with the vertical brush and the frame being arranged to traverse a stationary car in the longitudinal direction thereof with control provided sensitive to the load on the horizontal brush for controlling the travel of the frame and the vertical movements of the horizontal brush so that the horizontal brush takes a stepwise path and follows the profile of the vehicle.



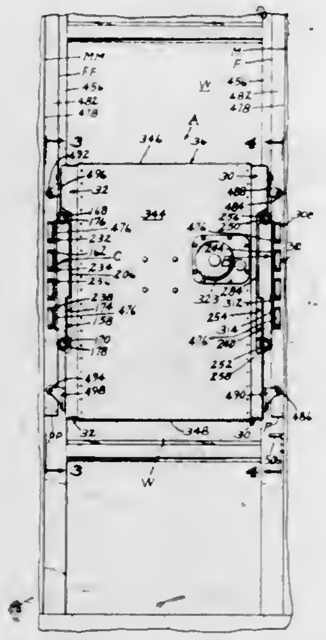
3,425,081
RUG SCRUBBING MACHINES WITH FOAMING DEVICES
Charles W. Smith and Willard A. Dix, Chester, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 4, 1966, Ser. No. 531,803
U.S. Cl. 15—50 **7 Claims**
Int. Cl. A47l *11/34*



A foaming attachment for a rotary floor polisher having a chassis below which is positioned a single foam producing or generating device comprising a flat plate portion of a bracket which is secured to the chassis and a pivotally mounted lower squeeze plate movable with respect to the top plate. A single sponge is located between the two plates and a tube supplies foaming liquid to the edges of the sponge. The sponge is also positioned between a pair of rotary brushes and alternately is squeezed and relaxed by cam means operatively carried by polishing brushes rotatably carried by the chassis.

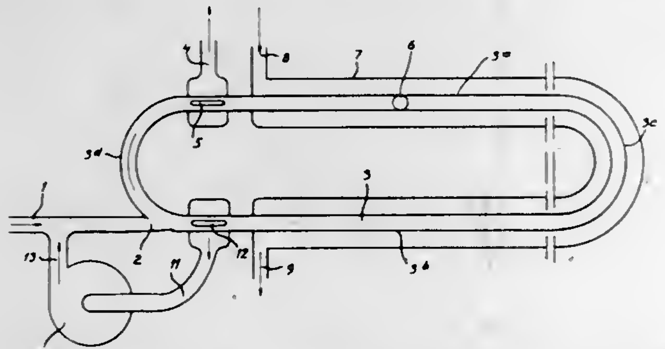
3,425,082
SELF-PROPELLED DEVICE FOR CLEANING THE WINDOW AND WALL SURFACES OF A BUILDING STRUCTURE
**Frank W. Hetman, 124 Paisley Lane,
Minneapolis, Minn. 55422**
Filed May 27, 1966, Ser. No. 553,351
U.S. Cl. 15—52 **32 Claims**
Int. Cl. A47l *11/00, 1/02*

The disclosure relates to a device for cleaning the surface of the wall of a building and includes a support having driving roller members thereon for driving engagement with track means incorporated in a building along the window and wall surfaces, a supply of fluid carried by the machine, brush means and liquid collecting means for cleaning the surface of a building and means for actuating the driving roller members to cause the device to move upon the track means and over the window and wall surfaces to clean the same.



3,425,083
APPARATUS FOR AUTOMATICALLY CLEANING AN ENDLESS PIPE

Fritz Johan Wennerberg, and Jarl Eilif Gullaksen, Lund, Sweden, assignors to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed July 6, 1966, Ser. No. 563,215
Claims priority, application Sweden July 12, 1965, 9,145/65
U.S. Cl. 15—104.06 **6 Claims**
Int. Cl. F28g *9/00;* **B08b** *9/04;* **F16l** *45/00*

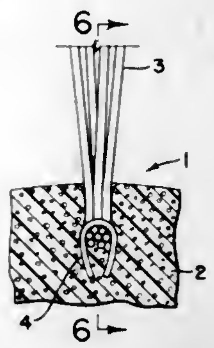


An endless pipe has a bent form allowing a cleaning member to circulate constantly through the pipe and past its inlet and outlet for a liquid medium, the outlet having a smaller capacity than the inlet so that part of the liquid medium is returned from the outlet through a return portion of the pipe to and past the inlet for recycling; and means are provided for supplying the liquid medium under pressure to the inlet to cause the cleaning member to be pushed through the pipe from said return portion, the return flow through the latter portion being preferably effected by an ejecting action.

3,425,084
BRUSHES AND METHOD FOR THEIR MANUFACTURE

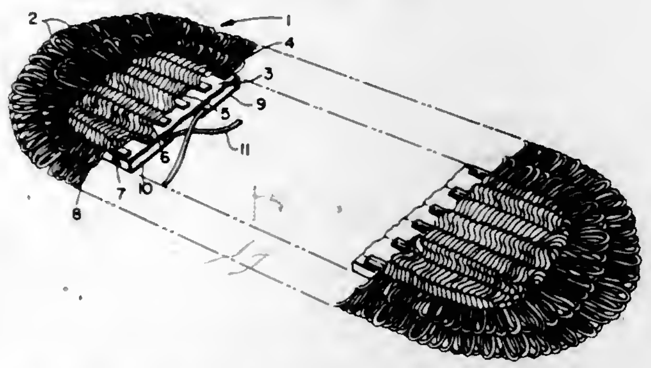
William A. St. Laurence, Hatfield, and Lewis James Halberstadt, Williamsburg, Mass., assignors to Pro-Phy-Lac-Tic Brush Company, Florence, Mass., a corporation of Ohio
Filed Aug. 8, 1966, Ser. No. 570,697
U.S. Cl. 15—195 **4 Claims**
Int. Cl. A46b *3/16;* **A46d** *1/08*

Brushes, such as household brushes, personal brushes, industrial brushes and the like, are prepared from foamed thermoplastic backs by direct stapling of bristles therein. A novel method of manufacturing brushes which eliminates the necessity for drilling or otherwise providing holes in the plastic brush back prior to insertion of the tufts therein is provided.



3,425,085
DRY MOP AND METHOD OF MAKING THE SAME

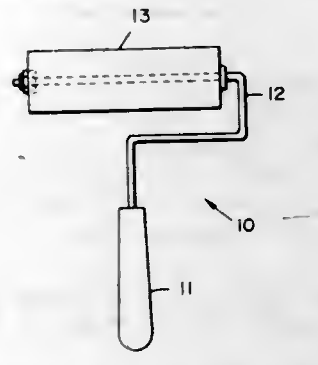
Theron C. Moss, 16033 Brewster, East Cleveland, Ohio 44112
Filed Mar. 31, 1966, Ser. No. 539,006
U.S. Cl. 15—229 **16 Claims**
Int. Cl. A47l *13/20;* **A46b; A46d**



A dry mop having a plurality of substantially parallel rows of looped yarns attached to a support extending longitudinally of the support. At least one ring of looped yarns may also be attached to the support circumferentially of the mop. The looped yarns are turns or wrappings of yarn collapsed substantially centrally longitudinally to form looped yarns on opposite sides of the collapsed central section. Such mop is formed from a plurality of longitudinally extending turns or wrappings which are collapsed substantially centrally longitudinally thereof and attached to a support member to form the indicated rows and circumferential ring.

3,425,086
PAINT ROLLER SPINDLE

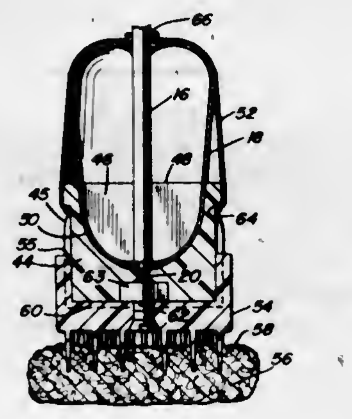
Eldon W. Ball, Natick, Mass., assignor to Baltimore Brushes, Roxbury, Mass.
Filed Sept. 9, 1966, Ser. No. 578,293
U.S. Cl. 15—230.11 **9 Claims**
Int. Cl. B05c *1/08;* **B44d** *1/00*



A paint roller spindle is formed of a deformable, tubular material having a continuous periphery and non-circular cross-section. When the spindle is inserted into a sleeve that exerts a radial, compressive force on portions of the spindle, other portions of the spindle bulge radially outward causing the spindle more nearly to assume the cross-sectional configuration of the sleeve.

3,425,087
BEATER BLADE MOUNTING ADAPTERS FOR WORKING IMPLEMENTS OR THE LIKE

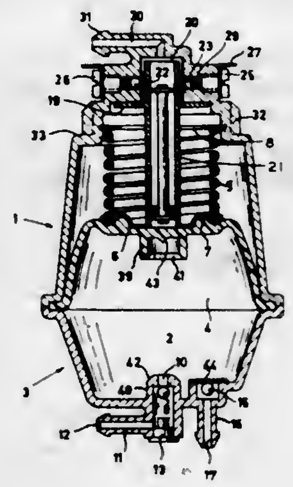
Guy D. Fitzhugh, P.O. Box 6053, Pine Bluff, Ark. 71601
Filed Jan. 28, 1966, Ser. No. 523,607
U.S. Cl. 15—230.19 **20 Claims**
Int. Cl. B05c *1/06;* **A47l** *17/00;* **A46b** *13/02*



An adapter for a conventional beater blade assembly by means of which a working implement may be mounted for use. The adapter body is provided with positive torque transmitting formations that engage the beater between its blades and also engage the blades along contact surfaces conforming to the curvature of the blades with which they are held in contact.

3,425,088
RECIPROCATING PUMPS FOR USE WITH WINDSHIELD WASHERS

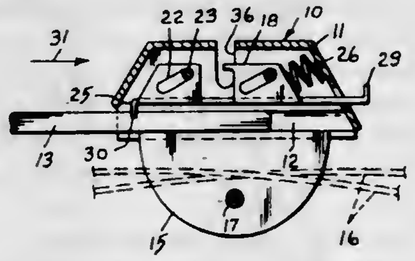
Henri Charles Molenaar, Stevinstraat 177, The Hague, Netherlands
Filed May 1, 1967, Ser. No. 635,073
Claims priority, application Netherlands, May 2, 1966, 6605887
U.S. Cl. 15—250.02 **6 Claims**
Int. Cl. A47l *1/02;* **B60s** *1/02;* **F15b** *15/22*



This invention relates to a reciprocating pump for use in a windshield washing system for automobiles having an electrically driven windshield wiper, the pump including a pumping member movable in a pumping chamber for drawing liquid into the chamber from a source of washing fluid and for discharging liquid from the pumping chamber through one or more nozzles against the windshield of the automobile and means responsive to movement of the pumping member as it approaches the end of its discharge stroke for restricting discharge of liquid from the pumping chamber to decrease the speed of the pumping member and allow the windshield wiper to continue to operate for a period of time after discharge of the washing fluid is discontinued, the pump further being provided with valves for keeping the pipes leading from the source of washing fluid to the washer nozzles full of the washing liquid.

3,425,089
ARM AND BLADE CONNECTOR FOR WINDSHIELD WIPERS

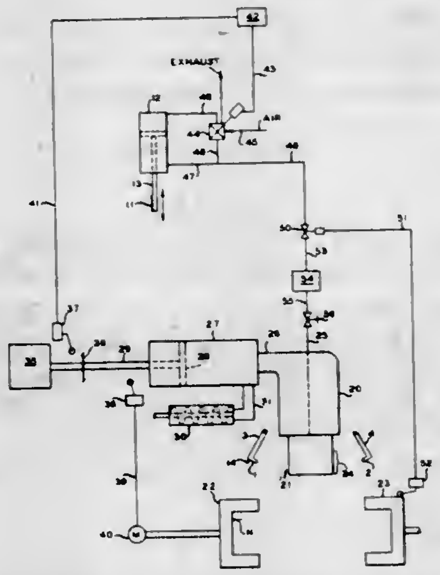
William J. Quinlan and Lawrence L. Huver, Hastings, Mich., assignors to Hastings Manufacturing Company, Hastings, Mich., a corporation of Michigan
Filed June 22, 1967, Ser. No. 648,079
U.S. Cl. 15—250.32 **16 Claims**
Int. Cl. B60s *1/04;* **A47l** *1/02*



A connector for removably attaching a wiper blade to an arm, the connector consisting of a blade-mounted case which contains a slide provided with detents to lockingly engage the wiper arm. The slide has oblique cam edges in engagement with cross pins in the case and a spring biases the slide in a direction in which the cam action brings the detents into locking engagement with the arm. The case is provided with different sockets for different types of arms, but the slide and detents are operative regardless in which socket an arm is positioned. A finger-piece projects from the slide to the outside of the case for retracting the slide against its spring bias to disengage the connector from the arm.

3,425,090
PARISON PREPINCHING AND PREBLOWING APPARATUS

Thomas J. Nave and Mark E. Larkin, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,834
U.S. Cl. 18—5 **7 Claims**
Int. Cl. B29c *1/00; 17/00*



7. The apparatus according to claim **5** wherein the prepinching and preblowing apparatus are controlled to pre-

vent preblowing during prepinching and for a finite period of time after prepinching by the following: a piston carrying accumulator openly connected to and upstream of said parison forming means; a piston rod connected to said piston and extending outside said accumulator; means for filling said accumulator with material from which the parison is formed; said piston being adapted to be retracted by the force of incoming material from said means for filling said accumulator; means to move said piston forward against said force of incoming material and force material in said accumulator through said parison forming means; a first switch means adjacent said piston rod and adjacent said accumulator; a second switch means adjacent said piston rod but spaced away from said first switch means in the direction of retraction of said piston; and actuating arm carried by said piston rod and adapted to actuate said first switch means when said piston is in about its forwardmost, parison forming position in said accumulator, and adapted to actuate said second switch means when said piston is in about its most retracted, accumulator filling position; means for moving said molds towards and away from one another; means operatively connecting said first switch means and said means for moving said molds so that when said first switch means is actuated said molds move towards one another to mold a parison; a four-way, spring return, air valve operatively connected to an air operated cylinder containing a piston whose piston rod carries said separate gear means; said four-way valve being adapted to when in a first position pass air into said cylinder to cause said separate gear means to move and cause said pinch members to move towards one another; and when in its normal second position to pass air into both said cylinder to cause said separate gear means to move and cause said pinch members to move away from one another and said fluid carrying conduit; a first time delay means operatively connected to said second switch means and said four-way valve and adapted to upon actuation of said second switch means delay the switching of said four-way valve to said first position for a finite period of time and after said four-way valve is switched to said first position further delay returning said four-way valve to its normal second position to allow time for pinching of the parison; a normally closed two-way valve operatively connected to said fluid carrying conduit; a third switch means operatively connected to said two-way valve and adapted to be actuated by one of said molds when said molds are moved away from one another after a parison molding operation has been completed, actuation of said third switch means causing opening of said normally closed two-way valve; and an air delay means that is self-resetting when the air flow therethrough is terminated and that is operatively mounted downstream from said two-way valve; said air delay means being adjusted to delay the passage of air into the parison for a finite period of time sufficient to allow the formation of a parison of sufficient internal volume to contain said air without rupturing.

3,425,091

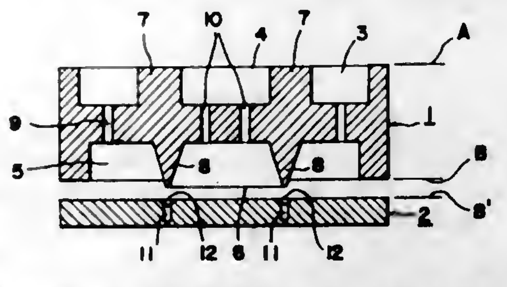
SPINNERET AND NOZZLE ASSEMBLY FOR THE MANUFACTURE OF COMPOSITE FILAMENTS

Keizo Ueda, Nishinomiya, and Koetsu Nagata, Kentaro Fujita, and Kazukiyo Iwamoto, Osaka, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, and Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy

Filed Dec. 12, 1966, Ser. No. 601,009

U.S. Cl. 18—8 **5 Claims**
Int. Cl. D01d *3/00, 5/00*

The disclosure shows an improved spinneret and nozzle assembly including a filter plate having separate inlet chambers for two molten polymers. Two coaxial polymer outlet reservoirs separated by a partition wall integrally formed with the filter plate and having V-shaped ends are connected by passageways with the inlet chambers. The pointed end of the wall is held within a V-shaped groove formed on a nozzle plate without touching the bottom of the groove which has a plurality of orifices formed therein. The axes of orifices are aligned with the center of the groove.



3,425,092

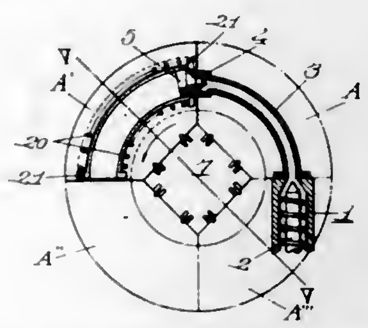
APPARATUS FOR MOULDING SECTIONS OF CIRCULARLY BENT TUBING FROM THERMOPLASTIC MATERIAL

Jun Taga, No. 5664 Ikuta Kawasaki, Kanagawa Prefecture, Japan

Filed July 21, 1965, Ser. No. 473,602

Claims priority, application Japan, July 24, 1964, 39/41,713

U.S. Cl. 18—12 **5 Claims**
Int. Cl. B29d *23/04*



An apparatus for molding section of circularly bent tubing from thermoplastic material is formed of an extruder arranged to force molten thermoplastic material, in turn, through a pipe, a die and a die mandrel and then into a mold. The mold and the pipe have substantially the same radius of curvature as the tubing being formed and the mold is formed of hinged parts for removal of the tubing.

3,425,093

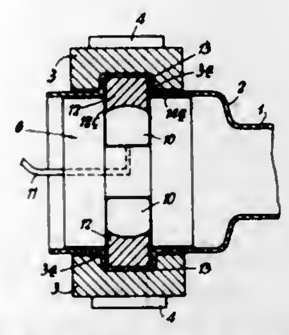
APPARATUS FOR GROOVING THERMOPLASTIC MATERIAL

Cyril George Ansette, Ashford, England, assignor to Chemidus Plastics Limited, Ashford, England, a British company

Filed Apr. 21, 1966, Ser. No. 544,234

Claims priority, application Great Britain, Dec. 17, 1965, 53,609/65

U.S. Cl. 18—19 **4 Claims**
Int. Cl. B29d *23/03;* **B29c** *17/07*



An apparatus for forming an internal groove or recess in a tube of thermoplastic material comprises a heating means and a means for expanding heat-softened tubing into the interior of a contoured mold.

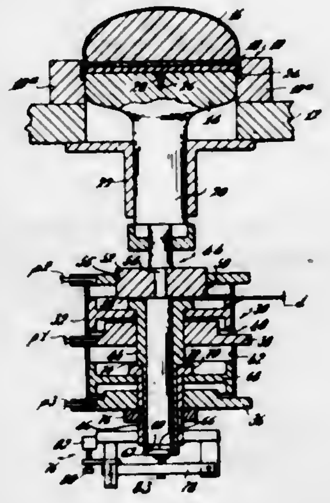
3,425,094

APPARATUS FOR MAKING FOOTWEAR WITH BOTTOMS APPLIED BY INJECTION MOLDING

Herbert Ludwig, Desmastr, 112, Usen, near Bremen, Germany

Filed Apr. 22, 1966, Ser. No. 544,568

U.S. Cl. 18—30 **6 Claims**
Int. Cl. B29f *1/22;* **A43d** *35/00;* **B29h** *5/00*



A mold assembly comprising a side ring and sole plate movable relative to each other, a ram supporting the sole plate for movement, tandemly arranged cylinders containing pistons, means for supplying pressure to the pistons to raise and lower the sole plate and to control lowering movement of the sole plate to enable obtaining a bottom of predetermined thickness and porosity, and a switch operable by displacement of the sole plate through a predetermined distance to terminate injection of the bottom-forming composition into the mold cavity.

3,425,095

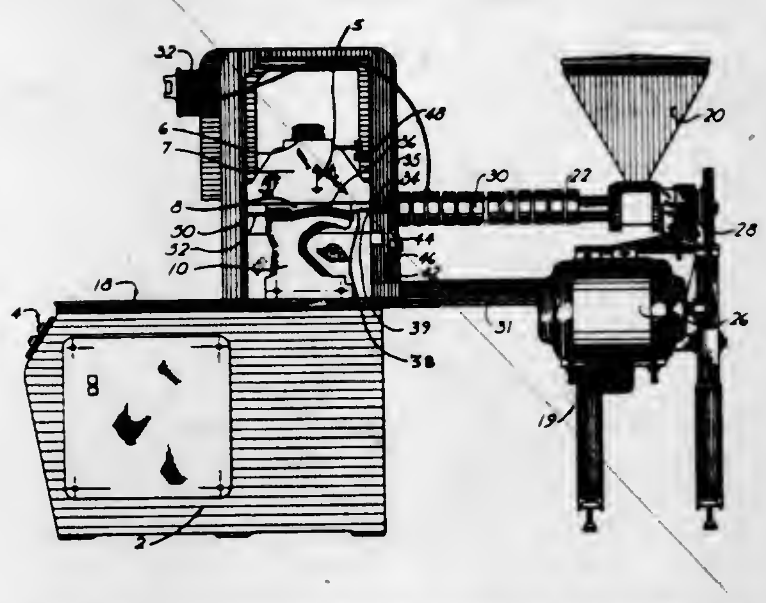
INJECTION MOLDING APPARATUS

Alexander Kotek, Batawa, Ontario, Canada, assignor to Bata Shoe Company, Inc., Belcamp, Md.

Filed July 18, 1966, Ser. No. 565,777

Claims priority, application Canada, July 22, 1965, 936,520

U.S. Cl. 18—30 **11 Claims**
Int. Cl. B29f *1/00;* **A43d** *3/02;* **B29c** *1/00*



Injection molding apparatus including top and side molds and an article carrying last to which molding material is to be applied. The molds and lasts are mounted to close together to define a cavity adjacent the last with the side molds providing therebetween when closed an injection port extending from the cavity to the mold exterior. An injection unit having a heated valve and a nozzle has the valve pivotally mounted to pivot into alignment with the injection port during closing of the molds and last and to pivot in substantial alignment with the last during movement of the last following injection and of contact with the side molds providing the injection port.

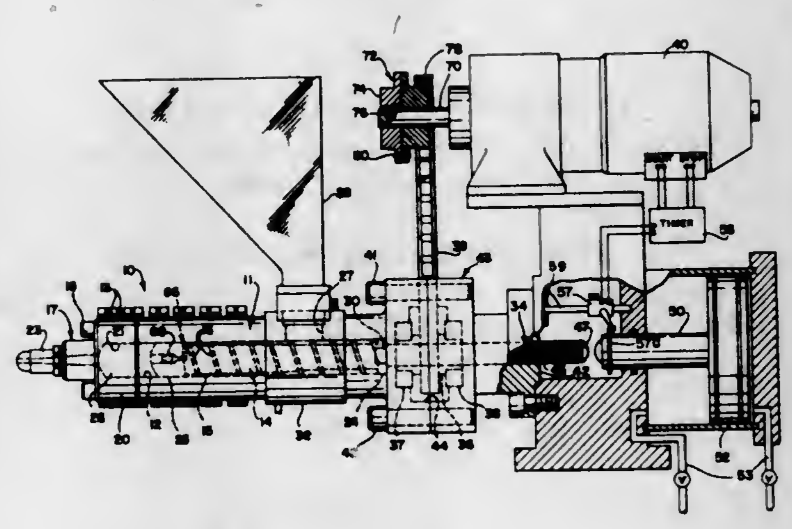
3,425,096

RECIPROCABLE SCREW INJECTION MOLDING DEVICE

Albert Reynolds Morse, Beachwood, Ohio, assignor to IMS Company, Cleveland, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 442,632, Mar. 25, 1965, which in turn is a continuation-in-part of application Ser. No. 275,013, Apr. 23, 1963 and application Ser. No. 284,243, May 29, 1963, now Patent No. 3,267,524, which in turn is a continuation-in-part of application Ser. No. 232,201, Oct. 22, 1962, now Patent No. 3,246,367. This application Dec. 8, 1966, Ser. No. 600,168

U.S. Cl. 18—30 **6 Claims**
Int. Cl. B29f *1/06, 1/08*



This disclosure relates to a plastic injection molding device in which the screw ram has in fluid communication a convergence defined by the terminal portions of the flight walls and a discharge opening in the center of the tip of the screw. The screw tip discharge opening may have a ball check valve to prevent back flow. The screw ram includes a cylindrical bearing adjacent its end to maintain alignment and is moved forward by a first independent hydraulic drive means but returns freely in response to forces built up by an increase in plastic being fed in front of the tip by a constant number of rotations from a second rotational drive means thus permitting a substantially constant change regardless of material variations in density and gas content.

3,425,097

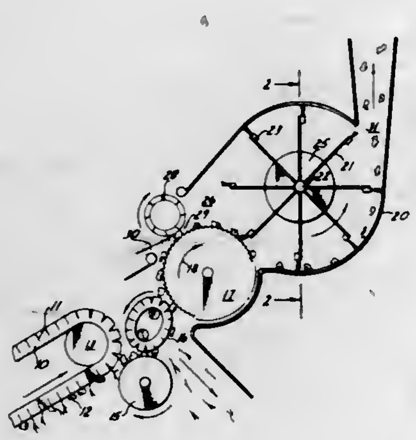
AIR WASH COTTON CLEANER AND TRANSPORTATION SYSTEM

William E. Rood, Jr., 235 E. Desert Park Lane 85020; James E. McKinley, 6242 N. 34th Drive 85017; and James H. Gray, 3411 E. Gold Dust 85028, all of Phoenix, Ariz.

Filed May 25, 1966, Ser. No. 552,857

U.S. Cl. 19—203 **7 Claims**
Int. Cl. D01b *3/00*

This disclosure provides a cotton cleaning device including a rotating saw cylinder for transporting cotton, a doffer positioned adjacent the saw cylinder and rotating in the same direction as said saw cylinder to remove large trash from said saw cylinder and define with the periphery of said saw cylinder a flow path, and a centrifugal blower having brushes attached to the tips of rotating blades, the brushes removing cotton from the saw cylinder while air current created by the blower is directed through said flow path to air-wash the cotton on the saw cylinder of sand and fine trash found therein.



3,425,098

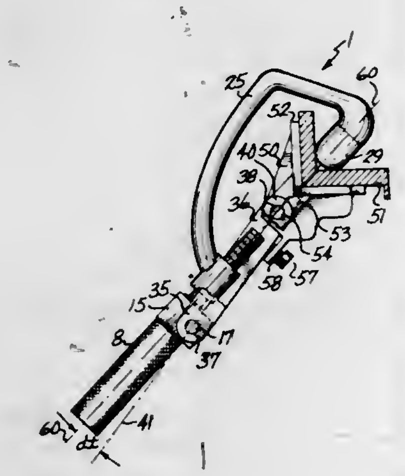
ADJUSTABLE TOGGLE CLAMP

Martin Bredvik, Mercer Island, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 25, 1967, Ser. No. 677,996

U.S. Cl. 24—68 **13 Claims**

Int. Cl. A44b *21/00;* **B25f** *5/12;* **B25h** *1/10*



An easily adjusted clamp assembly for use in a toggle action clamp or cable take-up tool. In one form the assembly includes a hook-shaped force application member which is attached through a threaded sleeve at its shank end to a threaded rod. The rod is held in a swivel block which is connected to one end of the toggle bars, and the other end of the rod forms a knurled handle which permits the rod to be threaded into or out of the hook sleeve to change the distance between the swivel block and the work-contacting portion of the hook. The workpiece is normally held in a support member which includes a pivot for pivotally holding the other end of the toggle arms. As the size of the workpiece changes, the clamp can be simply adjusted by turning the knurled handle portion. No adjusting tools are required. In the preferred form the hook is shaped so that the force application point is axially aligned with the axis of the threaded sleeve.

3,425,099

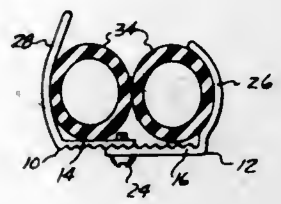
ADJUSTABLE CLAMP FOR COILING HOSE

Ernest Leboczky, 9350 Manor, Allen Park, Mich. 48101

Filed Dec. 4, 1967, Ser. No. 687,533

U.S. Cl. 24—81 **1 Claim**

Int. Cl. A24b *21/00*



An adjustable clamp for attachment to hose, cable and other similar elongated flexible members to facilitate the coiling of such members into uniform loops of any preselected size.

3,425,100

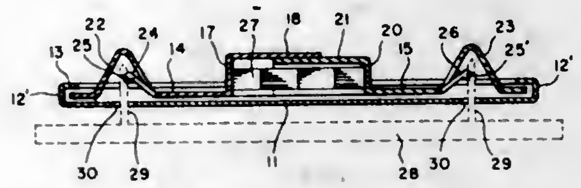
SECURING DEVICE

Boyd E. Matney, 4 Provider Circle, Pope Air Force Base, N.C. 28308

Filed May 5, 1966, Ser. No. 547,869

U.S. Cl. 24—110 **3 Claims**

Int. Cl. A44b *1/38;* **A44c** *3/00*



In abstract, a preferred embodiment of the present invention is a securing device for military ribbons and similar pin type decorations, including two slideable portions which are spring biased away from each other to cause a gripping action on pins placed in contact with such slide portions.

3,425,101

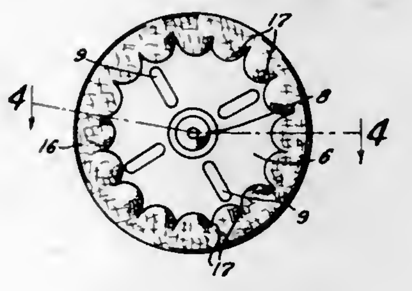
COVERED TRIM BUTTON

Frederick N. Reynolds, Augusta, Ky., assignor to The F. A. Nelder Company, Augusta, Ky., a corporation of Kentucky

Filed Feb. 23, 1967, Ser. No. 617,964

U.S. Cl. 24—113 **2 Claims**

Int. Cl. A44b *1/12, 1/14*



A covered trim button for upholstery and for interior trim in automobile bodies. Structure that reduces bulging of the covering material at the bottom of the trim button.

3,425,102

ANCHORING DEVICE

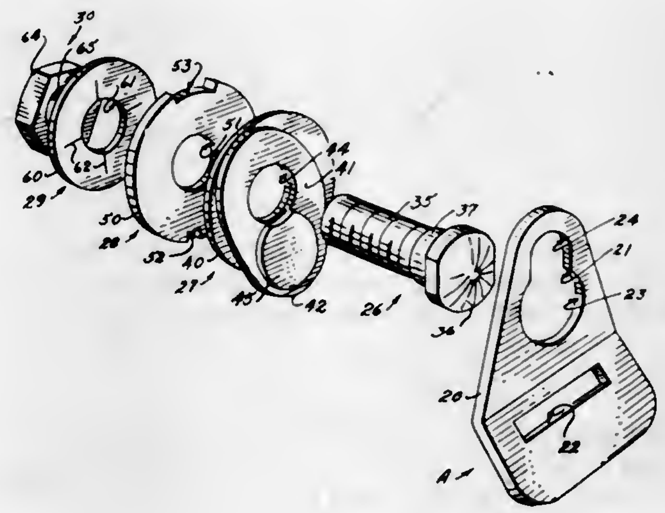
John Edward Hatfield, Stotfold, England, assignor to Irvin Industries Inc., a corporation of New York

Filed May 15, 1967, Ser. No. 638,548

Claims priority, application Great Britain, Jan. 4, 1967, 579/67

U.S. Cl. 24—224 **4 Claims**

Int. Cl. B60r *21/10*



An anchoring device for removable attachment of an attaching plate to a bolt-like member. The plate is provided with a keyhole slot; the head of the bolt-like member is aligned with and passed through the larger part of the keyhole slot; the bolt-like member is registered with the narrower part of the keyhole slot for anchoring the plate; and a leaf spring member is provided for locking the plate in an anchored position. There may be included means for preventing or limiting rotational movement of the attaching plate about the bolt-like member.

3,425,103

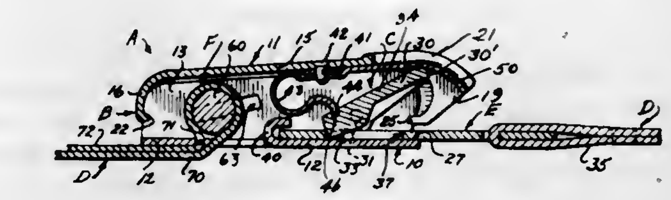
PUSHBUTTON TYPE SAFETY SEAT BELT BUCKLE

Edward Milton Melin, Lexington, Ky., assignor to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York

Filed Apr. 11, 1966, Ser. No. 541,611

U.S. Cl. 24—230 **4 Claims**

Int. Cl. B25b *1/08, 5/08*



A pushbutton type safety seat belt buckle in which a casing is provided having a chamber with an opening for receiving a belt buckle tongue and which casing has a pivoted dog normally spring biased into locking position with respect to the tongue, the casing having a finger inserting opening and a flexible pushbutton type flexible spring adapted to cover the opening and located within the casing for flexing upon insertion of a finger through said opening in order to rock the pivoted dog and release it from its locking relation with respect to a belt tongue.

3,425,104

BAND FIXING DEVICE

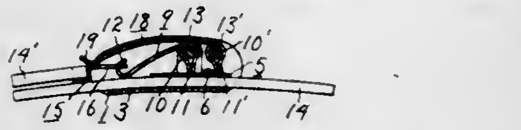
Kiyishi Mochizuki, Tokyo, Japan, assignor to Mochizuki Manufacturing Company, Limited, Tokyo, Japan, a limited-liability company of Japan

Filed Feb. 29, 1968, Ser. No. 709,480

Claims priority, application Japan, Apr. 21, 1967, 42/33,497

U.S. Cl. 24—265 **1 Claim**

Int. Cl. A44b *11/25, 11/12;* **A44c** *5/18*



A band fixing device consisting of a base frame, a pressing plate, a locking member, an eye member, a locking cover and two coupling shafts, all of the component members except said shafts being preferably made of resilient sheet metal, said pressing plate and said locking member being mounted on said base frame with one of said shafts, said pressing plate being held apart from said base frame for permitting insertion of one part of a band, said locking member serving to press said pressing plate, said eye member serving to fasten another part of said band and to engage said locking member, and said locking cover being mounted on said base frame with another of said shafts and serving to press said pressing plate and to cover the fixing mechanism of said device.

3,425,105

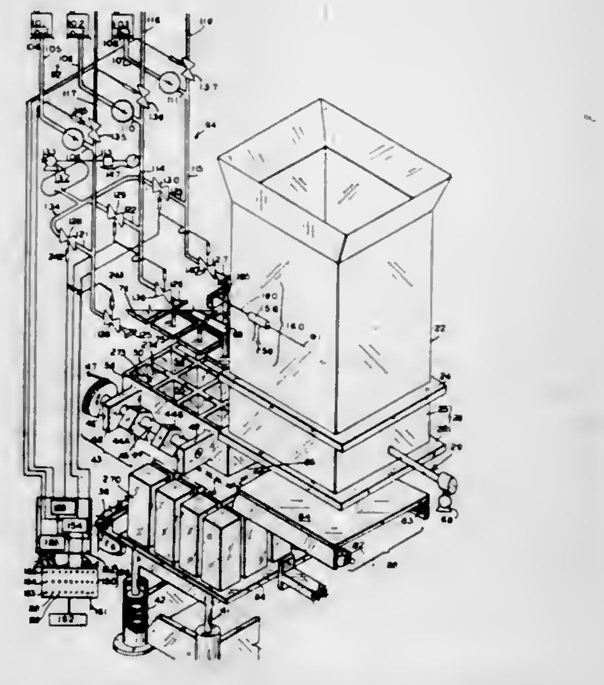
APPARATUS FOR MAKING CONCRETE FACING BRICKS WITH VARIED COLOR AND TEXTURE

Gulde Cement Company, Amarillo, Tex., a corporation Charles James Gulde, Amarillo, Tex., assignor to Crowe-of Texas

Filed Sept. 23, 1965, Ser. No. 489,625

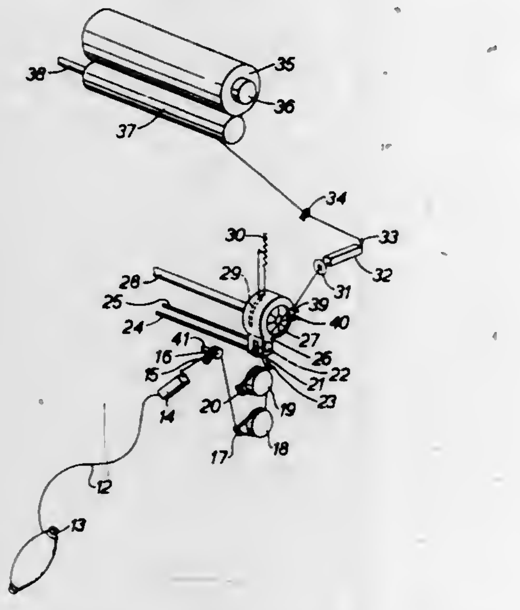
U.S. Cl. 25—2 **3 Claims**

Int. Cl. B28b *1/16, 7/10, 15/00*



This disclosure comprises a process of and apparatus proved mechanical characteristics as well as attractive for producing concrete bricks. The apparatus comprises a cooperative combination of a block making machine slurry spraying apparatus and a slurry flow and spray control arrayed and interconnected to rapidly coat the vertical walls of the mold chambers of the block making machine on each short cycle of its block producing operation in a manner utilizing the action of the machine to distribute colored pigment in the slurry on the brick surface as desired. The disclosure also comprises the product of such a process. The product is a concrete brick with a sufficiently smooth and attractively colored surface to be used as a facing or outside surface building unit. The process provides for applying colors as color mixes to a portion of one or more vertical faces of mold chambers in a block making machine prior to adding concrete mix thereto and rapidly thereafter adding concrete mix and vibrating the mold to compact the mix and concurrently distribute over the surface of the material in the mold portions of the color mix to achieve a desired color effect; the color mix applied to the mold surfaces may be changed according to a predetermined pattern on each batch of bricks. The process is capable of considerable variation. The product, according to one embodiment thereof, has a smooth and colored surface. The concrete bricks produced by the process of this disclosure have improved mechanical characteristics as well as attractive appearance. One embodiment of the product according to this disclosure has the general appearance of a clay brick that has undergone substantial aging.

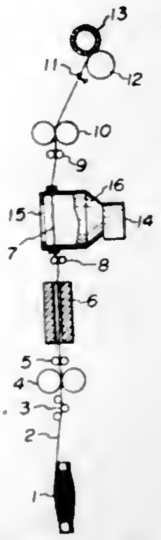
3,425,106
METHOD AND APPARATUS FOR CRIMPING YARN
Denis Albert Edward Mattingly, London, England, assignor to The Klinger Manufacturing Company Limited, London, England, a British company
Filed Jan. 24, 1966, Ser. No. 522,776
Claims priority, application Great Britain, Feb. 10, 1965, 5,755/65
U.S. Cl. 28—1 **4 Claims**
Int. Cl. D02g *1/00;* **D02j** *1/22;* **D01d** *5/22*



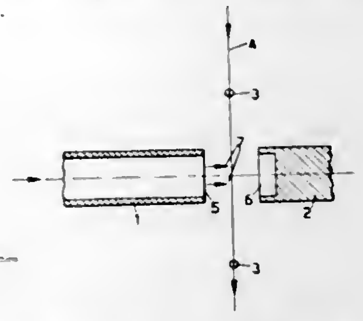
Yarn is crimped by first cold drawing the yarn between two spaced rollers and then immediately thereafter subjecting the yarn to linear compression in a closely adjacent, closed chamber. The heat generated in the yarn by the drawing operation is used to predispose the yarn for proper crimping thereby avoiding the need for supplying additional heat to the crimping chamber.

3,425,107
APPARATUS FOR DEVELOPING CRIMPS BY HEATING COMPOSITE FILAMENT
Masao Matsui, Takatsuki, Osaka-fu, and Susumu Tokura, Osaka, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha and Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Tokyo, Japan
Filed Sept. 22, 1966, Ser. No. 581,295
Claims priority, application Japan, Oct. 11, 1965, 40/62,551
U.S. Cl. 28—1 **4 Claims**
Int. Cl. D02g *3/00;* **D02j** *13/00*

An apparatus for developing crimps in a composite filament in which the filament is fed into a heating zone at a given rate and withdrawn therefrom at a lesser rate. The filament is heated in the heating zone and then subjected to an air stream directed substantially perpendicular to the axis of the path of the crimped filament passing through said apparatus, the air stream maintaining a predetermined tension on the traveling filament.



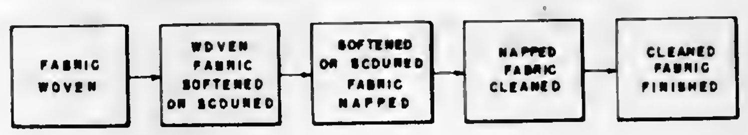
3,425,108
DEVICE AND METHOD FOR TREATING A RUNNING ARTIFICIAL MULTIFILAMENTARY THREAD WITH A GAS JET
Giacomo Cerutti and Giorgio Faraci, Gozzano, Italy, assignors to Bemberg S.p.A., Milan, Italy, a company of Italy
Filed Feb. 6, 1967, Ser. No. 614,285
Claims priority, application Italy, Feb. 9, 1966, 2,894/66
U.S. Cl. 28—1 **18 Claims**
Int. Cl. D02g *3/00;* **D01d** *1/00;* **D06c** *1/00*



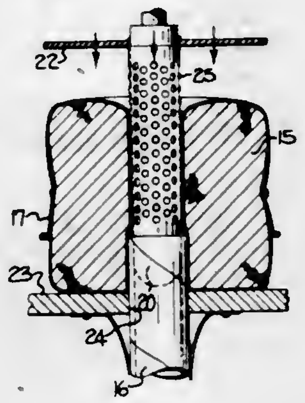
The invention provides novel apparatus and method for treating running multifilamentary thread, and a resultant novel thread, said thread having little or no twist and its component filaments closely interlinked to one another, the thread being passed through spaced guides arranged with respect to a nozzle which delivers pressurized gas onto the guided thread and therebeyond into an opposing resonant chamber so that the line joining the guide center intersects the common axis of the nozzle and said chamber, the nozzle outlet port and the chamber inlet comprising two vertical slits, the height of the nozzle slit being between 5 mms. and 15 mms., and its width being between 0.1 mm. and 0.5 mm., the height of the chamber slit being between 5 and 15 mms., its width being between 1 and 3 mms., and the distance between said two opposing slits being between 3.1 mms. and 6 mms.

3,425,109
PROCESS FOR TREATING GLASS FABRIC
Bennett M. Keasler, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,810
U.S. Cl. 28—74 **8 Claims**
Int. Cl. D02j *3/18;* **D06c** *1/00;* **D02g** *3/36*

1. In the process for preparing a lofty surface on a woven glass fabric wherein the woven fabric is subjected to a finishing and napping operation, said finishing operation being at least one final process step comprising dyeing, printing, coloring, resin treatment, chrome complex treatment, colloidal silica and organosilicon treatments and caramelizing, the improvement comprising napping the woven glass fabric in an unfinished state and thereafter finishing the napped fabric, whereby the resulting loft on the glass fabric surface is greater than that obtainable by finishing the glass fabric and subsequently napping the glass fabric.


FABRIC WOVEN
WOVEN FABRIC SOFTENED OR SCOURED
SOFTENED OR SCOURED FABRIC NAPPED
NAPPED FABRIC CLEANED
CLEANED FABRIC FINISHED

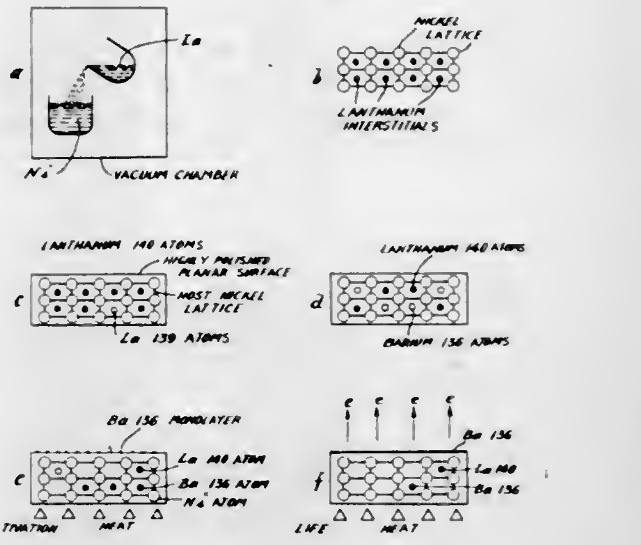
3,425,110
METHOD OF STABILIZING BULKED CONTINUOUS FILAMENT THERMOPLASTIC YARN
David M. Willis, Spartanburg, S.C., assignor to Butte Knitting Mills (a division of Jonathan Logan, Inc.), Spartanburg, S.C., a corporation of Delaware
Filed July 20, 1967, Ser. No. 654,847
U.S. Cl. 28—75 **5 Claims**
Int. Cl. D02g *3/36*



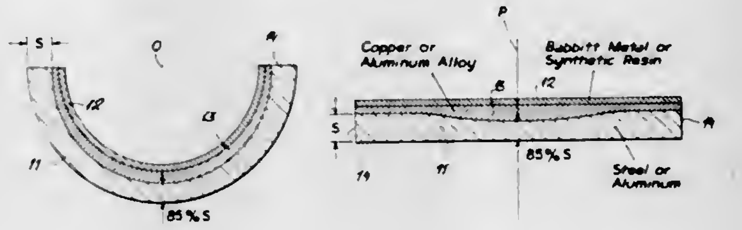
The method involves stabilizing a core supported wound package of bulked, continuous filament yarn, at a predetermined bulk level by replacing the core with a core of a predetermined smaller diameter to allow the bulk level of the yarn in the inner portion of the package to increase up to the level of the remaining yarn in the package, compressing the package to obtain more uniform density, and thereafter stabilizing the yarn in a heated liquid.

3,425,111
METHOD OF MAKING CATHODES BY NEUTRON BOMBARDMENT
James W. Denison, Jr., Largo, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.
Filed Oct. 8, 1964, Ser. No. 402,455
U.S. Cl. 29—25.17 **10 Claims**
Int. Cl. H01j *9/00, 9/04;* **G21g** *1/00*

A method is disclosed for producing improved electron emissive cathodes for use in vacuum tubes and other electronic applications. The method of the invention employs nuclide reactions through neutron bombardment to transmute atoms of rare earth metals within a host metal base into a pure metal matrix of low work function, without the presence of oxygen. The irradiated base and matrix is then heated in a vacuum to cause the rare metal atoms within the matrix to migrate to the host surface where they form a monatomic layer of the low work function pure metal. The method is applicable to a variety of base metals and rare earths transmutable into pure metals having the desired work function characteristics. A detailed process is disclosed as a preferred embodiment using nickel as the host metal and lanthanum as a dopant which is transmuted into barium atoms in a matrix within the nickel.



3,425,112
MANUFACTURE OF JOURNAL BEARINGS
Erich Roemer, Wiesbaden, Germany, assignor to Glyco-Metall-Werke, Daelen & Loos G.m.b.H., Wiesbaden-Schierstein, Germany, a corporation of Germany
Filed Oct. 3, 1966, Ser. No. 583,553
Claims priority, application Germany, Oct. 2, 1965, G 44,850
U.S. Cl. 29—149.5 **11 Claims**
Int. Cl. B21d *53/10;* **F16c** *9/00, 33/00*

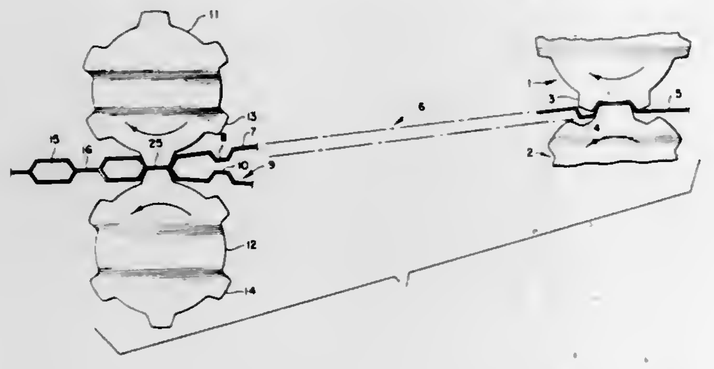


1. In a method of making journal bearings by the deformation of a composite strip into arcuate shape, said strip consisting of a plurality of dissimilar layers including a relatively heavy layer of a harder backing metal and a relatively thin layer of a softer lining material, the improvement which comprises the step of varying the mean hardness of said strip averaged over its thickness, prior to deformation, in a direction which upon deformation becomes the periphery of the bearing, with formation of a zone of maximum mean hardness at a location subject to maximum tangential pressures during deformation, while keeping the thickness of said thin layer substantially constant.

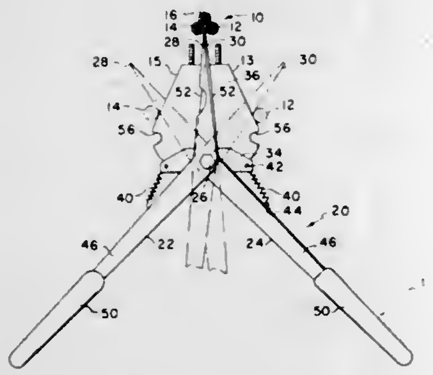
3,425,113
METHOD OF MAKING COMPOSITE SHEET STRUCTURES WITH INTERNAL PASSAGES BY ROLL BONDING
Bennie R. Ward, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 580,927
U.S. Cl. 29—157.3 **14 Claims**
Int. Cl. B21d *53/02;* **B21b** *27/00;* **F28f** *3/14*

1. A method of making thin-walled tube comprising bringing together in facing relationship a substantially

transversely corrugated sheet and a second sheet so as to have concavities of the corrugated sheet contact the face of the other sheet, and passing the two sheets through a rolling mill comprising one substantially transversely ribbed roller and a second cooperating roller so as to have the ribbed roller engage the concavities of the corrugated sheet and the cooperating roller engage the second sheet, the two rollers being spaced apart such that the minimum spacing between the rib surfaces and the cooperating surface of the second roller is less than the original thickness of the material of the two sheets so as to reduce the thickness and bond the sheets together where they pass between a rib and the cooperating roller, and consequently increase the length of the sheet material at the reduced and bonded area, the ribs being circumferentially spaced so as to engage and bond only the concavities of the corrugated sheet whereby the convexities of the corrugated sheet will stand proud as tube-like passages separated by the bonded portions of the sheets.



3,425,114
TRIPLEX CABLE SPREADING TOOL
Archie D. Fellenzer, Jr., 11 Starhaven Ave., Middletown, N.Y. 10940
Filed Apr. 16, 1964, Ser. No. 360,264
U.S. Cl. 29—203 **5 Claims**
Int. Cl. H01r *43/04;* **H01b** *13/00;* **B23p** *19/04*

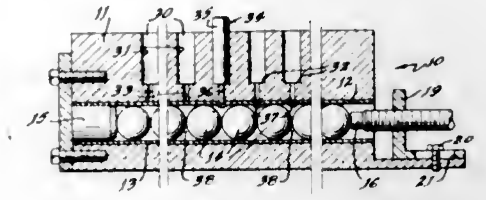


1. A spreader for placing a spacer in a triplex cable, comprising:
a pair of levers mounted on a pivot;
said levers terminating in pointed tips for insertion between the conductors of a triplex cable;
said tips having smooth exterior surfaces for causing a pair of conductors to slide towards the pivot when the levers are spread apart;
and, a holder means coupled to the spreader for supporting a cable spacer device thereon.

ERRATUM

For Class 29—203 see:
Patent No. 3,426,355

3,425,115
METHOD AND APPARATUS FOR MAKING PEAS-IN-A-POD NUCLEAR REACTOR ELEMENT
Joseph Henry Handwerk, Joliet, and David E. White, Maywood, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 20, 1964, Ser. No. 369,033
U.S. Cl. 29—421 **3 Claims**
Int. Cl. B23p *17/00, 19/00;* **B21d** *39/00*

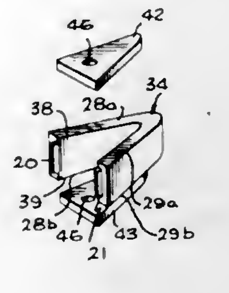


Method of and means for producing a fuel element for a nuclear reactor. A metal tube is filled with spherical fuel bodies of diameter about equal to the inner diameter of the tube, a punch is used to create indentations in the tube between the fuel bodies in a regular pattern, the tube is sealed at the ends and subjected to isostatic pressure to collapse the tube about the spherical bodies.

3,425,116
BRAZING METHOD
Donald D. Crooks, Royal W. Kelsey, and Henry T. Sumsion, San Jose, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Continuation-in-part of application Ser. No. 326,644, Nov. 27, 1963. This application Aug. 10, 1966, Ser. No. 571,648
U.S. Cl. 29—472.7 **6 Claims**
Int. Cl. B23k *35/38, 35/12, 35/24*

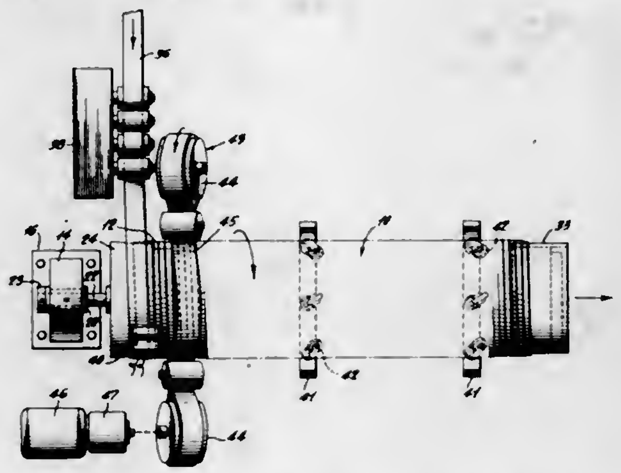
A process for bonding together graphite articles or graphite to ceramic or to other high temperature structural materials by brazing with an alloy selected from a group of specific binary alloys in vacuo or in a chemically inert atmosphere.

3,425,117
METHOD OF FORMING EXCAVATION TEETH
Roy R. Hill, Alhambra, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California
Filed Dec. 5, 1966, Ser. No. 599,254
U.S. Cl. 29—475 **6 Claims**
Int. Cl. B23k *29/00;* **B21k** *19/00;* **B23p** *15/00*



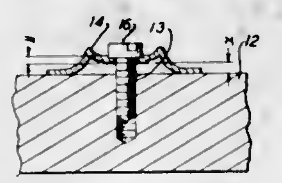
1. A method of forming an excavation tooth to be attached to the end of a shank of an excavation machine comprising the steps of:
cutting a substantially V-shaped blank from a billet;
squaring off the ends of the sides of the blank;
coining the interior of the blank to shape the interior to conform to the end of the shank; and
attaching a side plate flush with the edge of each side of the blank to form a cavity and complete the tooth.

3,425,118
APPARATUS AND METHOD OF MAKING ELONGATED VESSELS, CONTAINERS AND TUBULAR MEMBERS
Curzon Dobell, Nassau, Bahamas, and Leslie P. Wilson, London, England; said Dobell assignor to Caribbean Holdings Ltd., Nassau, Bahamas, a Bahamian corporation
Filed Jan. 24, 1964, Ser. No. 341,835
U.S. Cl. 29—477.3 **30 Claims**
Int. Cl. B23k *31/06;* **B21d** *51/04*



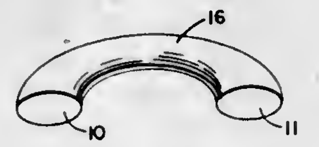
18. A method of forming a hollow elongated member of any desired length comprising, winding turns of material on a forming head by rotating a rotatable wrapping device, bonding successive turns of the material to each other, and moving said head axially away from said hollow elongated member to advance bonded turns of material from said head at a rate corresponding to the rate at which the turns of material are formed on said head.

3,425,119
ADJUSTING THE ARMATURE AIR GAP AND CHANGING THE STIFFNESS OF THE LOCK SPRING BY PLASTIC DEFORMATION
Richard P. Holtfreter, Pickerington, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 4, 1966, Ser. No. 518,682
U.S. Cl. 29—593 **3 Claims**
Int. Cl. G01r *11/02;* **H01h** *1/00;* **H01r** *7/12*



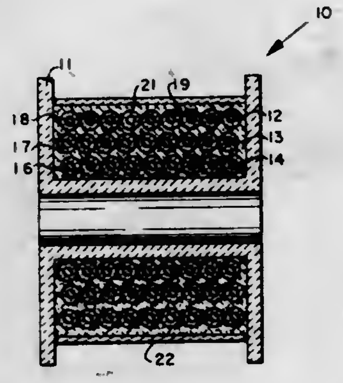
A method is disclosed for increasing the stiffness of a tripartite spring juxtaposed to a pole piece and an adjusting post in a relay during adjustment of the air gap between the adjusting post and the relay armature.

3,425,120
METHOD OF PRODUCING A CERAMIC GAPPED CERAMET TAPE HEAD
John A. Cooley, 10121 Parkwood Drive, Bethesda, Md. 20014
Filed Mar. 2, 1965, Ser. No. 436,701
U.S. Cl. 29—603 **9 Claims**
Int. Cl. H01f *7/06.*



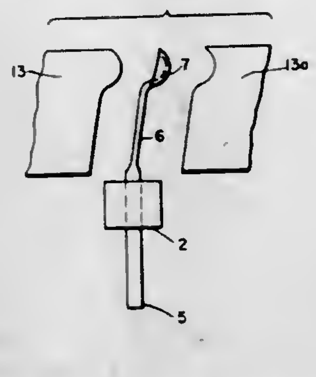
A method of making a tape head core having an essentially toroidal body of ceramic or ferro-spinel material having a vitreous gap therein.

3,425,121
METHOD OF MAKING HIGH-TEMPERATURE ENCAPSULATED APPARATUS
George W. Ostrander, Muskegon Heights, and Wesley W. Pendleton, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware
Original application Jan. 14, 1964, Ser. No. 337,552, now Patent No. 3,308,414, dated Mar. 7, 1967. Divided and this application June 6, 1966, Ser. No. 570,103
U.S. Cl. 29—605 **3 Claims**
Int. Cl. H01f *5/06;* **C09j** *5/06;* **B32b** *31/26*



1. The method of making an encapsulated electrical coil comprising the steps of
(A) forming a coil from magnet wire having an insulation comprising an organic moiety and an inorganic moiety,
(B) covering said coil with a porous encapsulating medium,
(C) heating said coil so as to decompose said organic moiety into gas that passes through said porous medium, and
(D) further heating said coil so as to fuse said inorganic moiety within said porous medium,
(E) coating said coil with a vitreous slip, and
(F) baking said coil so as to harden said slip into a nonporous coating.

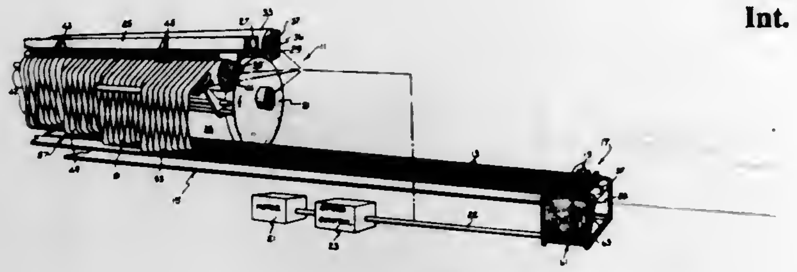
3,425,122
METHOD OF MAKING AN ELECTRICAL SWITCH SUB-ASSEMBLY
Richard Berger, Wunstorf, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Jan. 14, 1965, Ser. No. 425,592
Claims priority, application Germany, Feb. 1, 1964, T 25,538
U.S. Cl. 29—622 **6 Claims**
Int. Cl. H01h *11/00, 19/10;* **B29f** *1/10*



A slide-type switch having a slide made of insulating material and carrying metal contact elements sandwiched and movable between two rows of flexible stationary contact elements. Two contact assemblies, each containing one row of stationary contact elements, are made by arranging metal wires in an insulator and stamping the extending ends of each wire to form a contact surface. The two contact assemblies are placed parallel to each other with a slide sandwiched therebetween.

3,425,123
ELONGATED CHEESE RIBBON CUTTING DEVICE

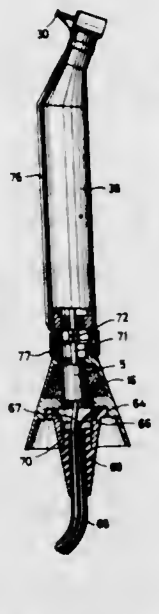
Roland E. Miller, Orangeville, Clyde Wayne, Wilmette, and William T. Kirby, Park Ridge, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,339
U.S. Cl. 31—5 **13 Claims**
Int. Cl. A23c *19/14;* **A01j** *25/00;* **B23d** *25/02*



8. An apparatus for cutting a continuously moving ribbon into units, said apparatus comprising a carriage having a cutting instrument mounted thereon, first means engageable with said carriage effective to cause reciprocal movement thereof in one direction, said engagement being such as to permit shifting of said carriage relative to said first means, and second means engageable with said carriage effective to cause shifting reciprocal movement thereof in a direction transverse to said one direction during reciprocal movement by said first means in said one direction.

3,425,124
DENTAL HANDPIECE

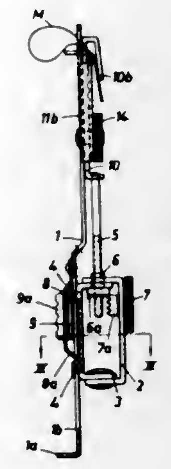
Erich Hoffmeister, Biberach (Riss), Germany, assignor to Kaltenbach & Voigt, Biberach (Riss), Germany
Filed Nov. 19, 1963, Ser. No. 324,736
U.S. Cl. 32—28 **11 Claims**
Int. Cl. A61c *1/12*



1. A dental handpiece comprising a handle sleeve, a second sleeve detachably connected to the handle sleeve and including a portion having a cross-section of greater size than that of the handle sleeve, an electrically operated fractional horsepower motor mounted within said portion of the second sleeve, a cooling water jacket through which cooling water can flow, said jacket being mounted in said second sleeve and surrounding the motor to cool the same, said jacket having a greater cross-sectional extent than that of said handle sleeve, and a conduit coupled to and providing for the discharge of water from said cooling water jacket, said conduit being so arranged that cooling water can be conveyed from the cooling water jacket toward and for the concomitant cooling of a tool mounted in the handpiece.

3,425,125
DENTAL RETAINERS

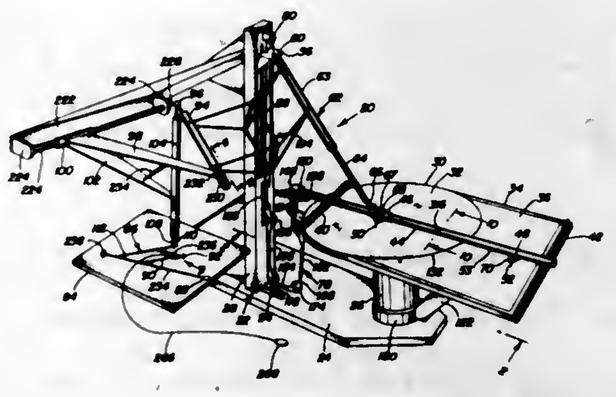
Gunnar Bergendal, Angbyhojden 42, Bromma, near Stockholm, Sweden
Filed May 10, 1966, Ser. No. 548,907
Claims priority, application Sweden, May 19, 1965, 6,539/65
U.S. Cl. 32—63 **3 Claims**
Int. Cl. A61c *5/12*



A dental retainer for placing a flexible band as a filling matrix around a tooth. The band is looped around a tooth and the ends of the band are then clamped. The band is tightened by manual longitudinal movement of a carriage and screw spindle connected to a band holder. Further tightening is effected by advancement of the screw spindle through an angular gear device and a control knob having its axis of rotation angularly disposed in relation to the longitudinal axis of the spindle and the band holder.

3,425,126
AUTOMATIC PERSPECTIVE DRAFTING MACHINE

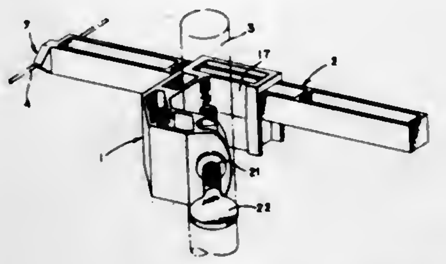
Kermit A. Bowen, 8022 University Place, La Mesa, Calif. 92041
Continuation-in-part of application Ser. No. 437,832, Mar. 8, 1965. This application Aug. 9, 1967, Ser. No. 659,422
U.S. Cl. 33—18 **22 Claims**
Int. Cl. B43l *13/14*



An instrument for drawing perspective views including a tracing lever mounted for nutation about a plurality of axes whereby orbital movement can be imparted to the free end of the lever about a plurality of axes. The lever is of the telescope type and the free end is connected with either of two styluses for tracing several views of the object to be drawn in perspective. The lever is connected to a marking device, such as a pen or pencil through motion transmitting mechanism, such as through a pantograph.

3,425,127
MOUNTING MEANS FOR LINE HOLDER

George E. Long, Rte. 2, P.O. Box 382, Monroe, Wash. 98272, and Howard G. Anson, 15823 35th NE., Seattle, Wash. 98188
Filed Sept. 27, 1967, Ser. No. 671,008
U.S. Cl. 33—86 **6 Claims**
Int. Cl. B43l *7/06*



A clamp body having a slotted opening for receiving vertical grade or line stakes of varying sizes. A thumb screw extends through the clamp body and is adapted to contact the vertical stake to fix the clamp in position. The clamp body is made from semi-rigid plastic material and has a through opening at right angles to the slotted opening for receiving a horizontally disposed adjustable line holder or arm. The clamp body has a frangible offset wall section located so as to yield and press against the line holder when the thumb screw is tightened.

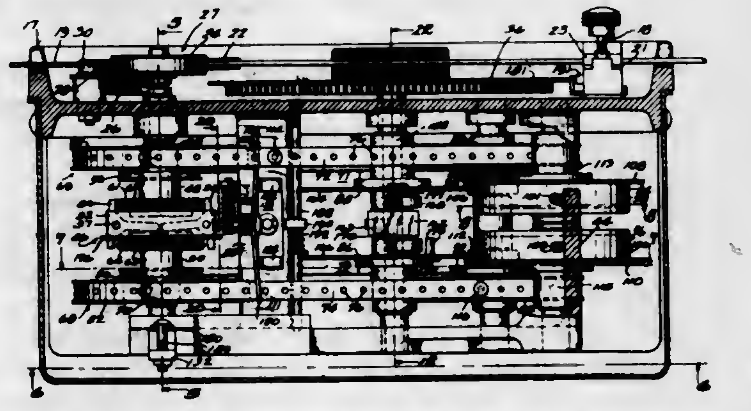
3,425,128
DRAFTING INSTRUMENT

John M. Cooper, P.O. Box 101, Birmingham, Ala. 35202
Filed Nov. 22, 1967, Ser. No. 685,117
U.S. Cl. 33—107 **1 Claim**
Int. Cl. B43l *7/00*

An elongated drafting instrument having an edge thereon for drawing a line and an under side which is movable over a surface on which the line is to be drawn. Pressure applying means is carried by the elongated instrument forcing the portion thereof intermediate its ends upwardly in spaced relation to the surface on which a line is to be drawn.

3,425,129
MEASURING APPARATUS

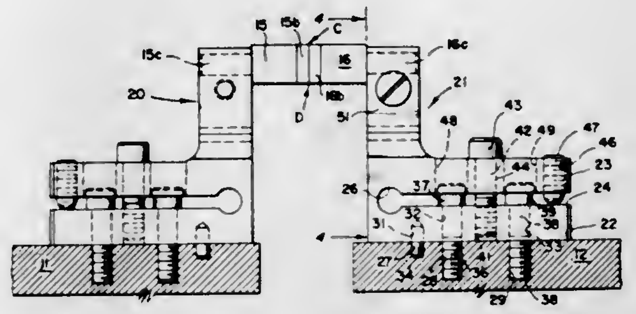
Ragnar Gudmestad, West Allis, Wis., assignor to Artos Engineering Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 14, 1966, Ser. No. 534,170
U.S. Cl. 33—132 **20 Claims**
Int. Cl. G01b *5/04;* **B65h** *25/04*



Apparatus for measuring a desired length of material, and more particularly, apparatus for repetitively measuring lengths of a filament or elongated material from a continuous supply thereof in preparation for a cutting, printing, wrapping or other subsequent operation.

3,425,130
ADJUSTMENT FEELER HOLDER

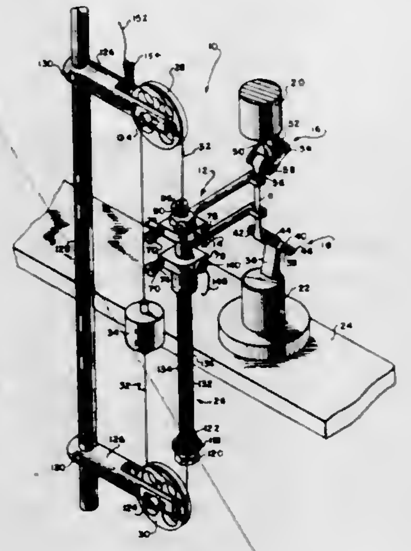
Joseph S. Olasz, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 547,368, May 3, 1966. This application Oct. 25, 1967, Ser. No. 678,113
U.S. Cl. 33—143 **12 Claims**
Int. Cl. G01b *5/00, 3/00, 3/32*



The gauge has oppositely facing feelers, each feeler being carried by an element mounted on support blocks, at least one of the mounting elements being movable such that at least one feeler moves toward and away from the other feeler. Each mounting element comprises a pair of superposed jaws connected by adjustable screws for pivoting the feeler about a horizontal axis. Each mounting element is pivotally mounted on its associated support block and has screw means passing through the lower jaw into the support block whereby the screw means may be loosened and the mounting element pivoted about an axis perpendicular to the first mentioned axis.

3,425,131
EXTENSOMETER

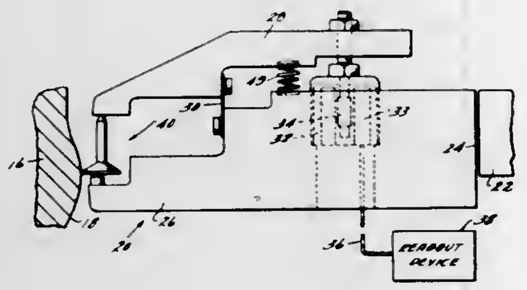
Carrol D. Hooper, Decatur, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 20, 1967, Ser. No. 634,040
U.S. Cl. 33—147 **3 Claims**
Int. Cl. G01b *5/30*



An apparatus for measuring successive increments of strain of an elastomer having a first self releasing specimen grip mounted to a counter-balanced freely hanging calibrated shaft and having a second self releasing specimen grip slidably mounted to the calibrated shaft and carrying a sensing device which cooperates with the calibrated shaft to provide an electrical signal on successive increments of strain.

3,425,132
MEASURING AND SENSING DEVICE

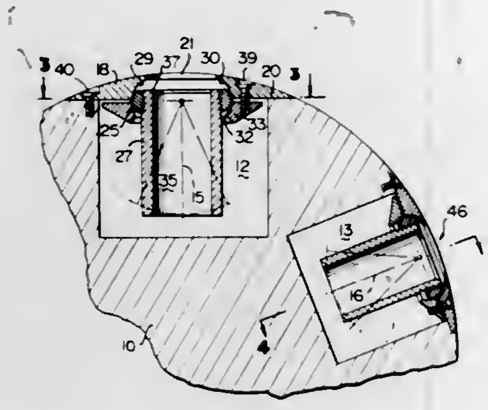
Lawrence Joseph Kamm, San Diego, Calif., assignor to General Electric Company, a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,578
U.S. Cl. 33—172 **6 Claims**
Int. Cl. G01b *3/22, 5/20*



A sensing device is used to check machined inaccessible contours by replacing the cutting tool with said device. The device comprises a spindle with a peripheral ring work contact, and a conical cam which converts displacement of said ring and spindle, said displacement being detected by a linear variable differential transformer and indicated by a readout component.

3,425,133
ADJUSTABLE GRIP-MEASURING BOWLING BALL

Albert R. Smith, 5th St., Eau Gallie, Fla. 32935
Filed Apr. 14, 1967, Ser. No. 631,078
U.S. Cl. 33—174 **1 Claim**
Int. Cl. G01b *1/00*

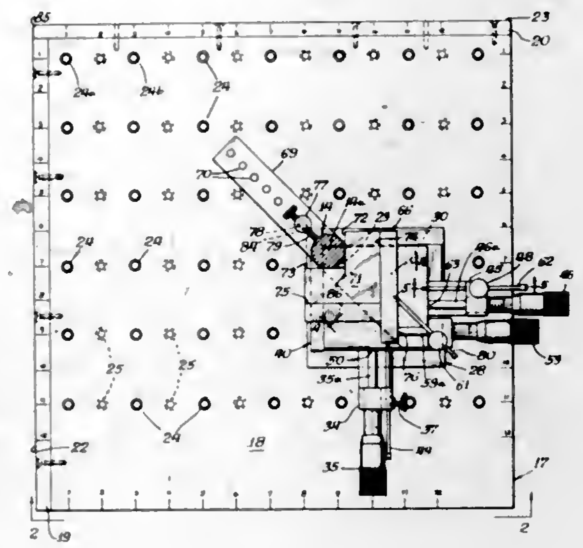


A ball simulating a regulation bowling ball and having cavities which house thumb and finger receiving units, the latter units each including a sleeve of appropriate size to accept the thumb or finger, respectively, of the bowler, and each sleeve terminating at its uppermost point in a universal joint by which pitch and angle of pitch may be adjusted to suit the individual. Each cavity is completely closed by a cover plate except for a hole in each cover plate through which the finger or thumb is thrust into the adjustable sleeve, and the cover plates conform to the spherical surface of the ball at their respective locations, so that the ball may be tested under actual conditions after appropriate adjustments have been made.

3,425,134
SET-UP GAGE FOR PUNCH PRESS, ETC.

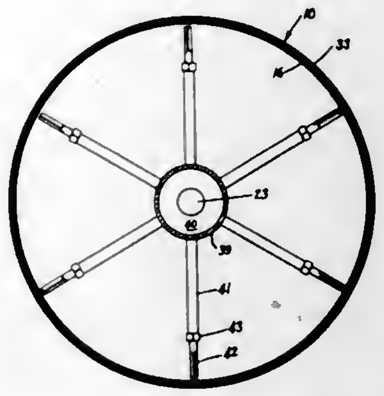
Louis R. Christensen, 21319 E. Cienega, Covina, Calif. 91722
Filed Apr. 17, 1967, Ser. No. 631,201
U.S. Cl. 33—185 **10 Claims**
Int. Cl. B27g *23/00*

A set-up gage for determining the proper position of the side guides on a punch press with respect to the center line of a punch. A group of movable plates are provided for positioning a plate which has a pair of abutments positioned normal to each other. These abutments fit about sides of the punch and are used to set the position of the center line of the tool.



3,425,135
ROTARY SOLIDS PROCESSING APPARATUS AND METHOD

Peder K. Langsetmo, Robbinsdale, Minn., Harry F. Ogden, Jr., Bryn Mawr, Pa., and Lewis A. Emery, Brooklyn Center, Minn., assignors to Strong-Scott Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 11, 1964, Ser. No. 395,756
U.S. Cl. 34—8 **17 Claims**
Int. Cl. F26b *3/24, 11/04;* **B01f** *7/04*



1. Apparatus for processing particulate solid material comprising:

(A) a substantially closed elongated cylindrical housing,

(B) a rotor assembly within said housing journaled for rotation about a generally horizontal axis extending longitudinally through said housing substantially coaxial therewith,

(C) a material feed inlet at one end of said housing and a material discharge at the other end thereof, and a substantially unimpeded longitudinal passage through the housing connecting the inlet and discharge,

(D) high speed motor drive means operatively connected to said rotor assembly for rotating said rotor above the critical speed necessary to overcome the force of gravity upon the particulate solid material sufficient to maintain a relatively deep annular radially stratified turbulent fluidized bed of dispersed gradated particulate solid material circulating in said housing,

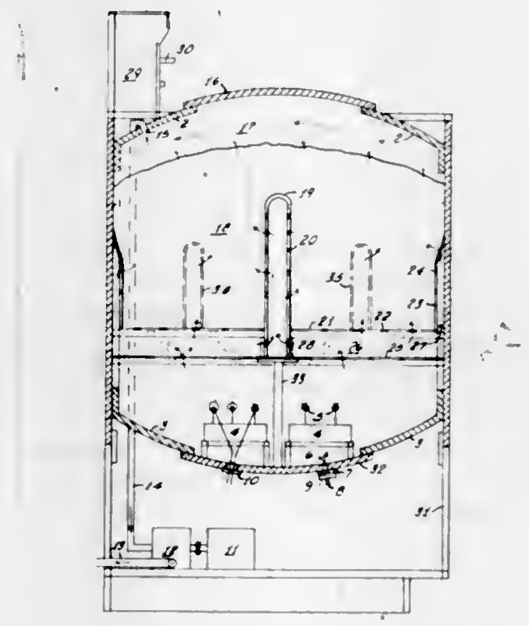
(E) said rotor assembly including a multiplicity of relatively small and relatively widely spaced apart rigid radial paddle blades,

(F) each of said blades extending outwardly from a radial arm and each having its outer extremity adjacent the housing wall surface, and

(G) said blades being present in number between about ½ to 3 for each square foot of cylindrical housing surface.

3,425,136
VACUUM CLOTHES DRYER WITH INTERIOR DRUM HEATER AND VERTICAL AIR DUCTS

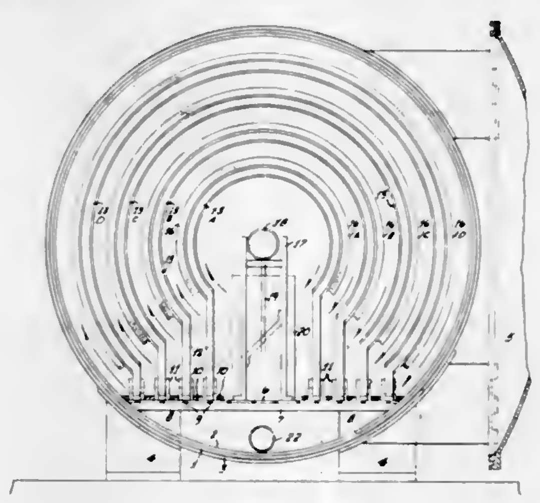
Chandley W. Lambert, P.O. Box 56, Lake Dallas, Tex. 75065
Filed Mar. 20, 1968, Ser. No. 714,686
U.S. Cl. 34—92 **4 Claims**
Int. Cl. F26b *13/30*



The invention comprises the combination of a closed vacuum drum, perforated floors within said drum, vertical perforated posts and ducts above said floor, a removable plate at the bottom of said drum, a heating unit secured to said plate within said drum, an adjustable air leak secured to said plate, said heating unit being removable from said drum by the removing of said cover.

3,425,137
VACUUM RUG DRYER

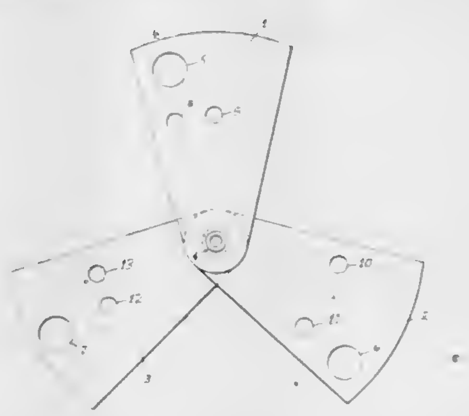
Chandley W. Lambert, P.O. Box 56, Lake Dallas, Tex. 75065
Filed Mar. 20, 1968, Ser. No. 714,687
U.S. Cl. 34—92 **4 Claims**
Int. Cl. F26b *13/30*



The invention is a combination comprising, a large cylindrical vacuum drum wherein rugs are secured to concentric frames and dried by a small draft of warm air from a heater and reducing valve, an interior heater and fans to circulate the air, a vacuum pump to remove the moisture laden air and preserve the partial vacuum and an external platform, to and from which the frames are loaded.

3,425,138
COLOR DEMONSTRATION DEVICE

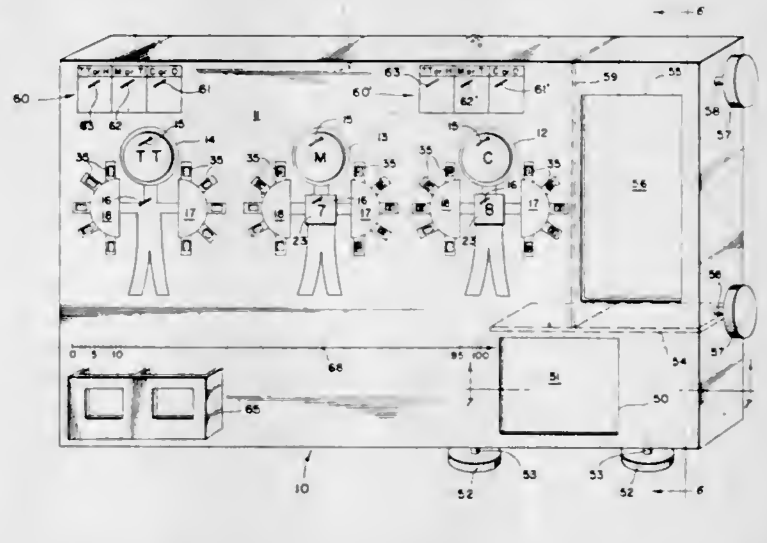
Isay Balinkin, 1337 N. Bend Road, Cincinnati, Ohio 45224
Continuation-in-part of application Ser. No. 562,643, July 5, 1966. This application Dec. 14, 1967, Ser. No. 697,261
U.S. Cl. 35—28.3 **19 Claims**
Int. Cl. G09b *1/32*



A demonstration device for certain additive and subtractive color phenomena comprising a plurality of filter elements. Means are provided whereby the interaction of light from a source and the individual filter elements, a combination of any two of the filter elements and the combination of all of the filter elements may be observed. Diffraction grating means may be associated with the device in such a way that the above mentioned observations may be made with respect to the spectrum of the light source. Means may also be provided in association with each filter element for indicating the transmittance thereof.

3,425,139
MODERN MATH AND READING TEACHING-AID-GAME

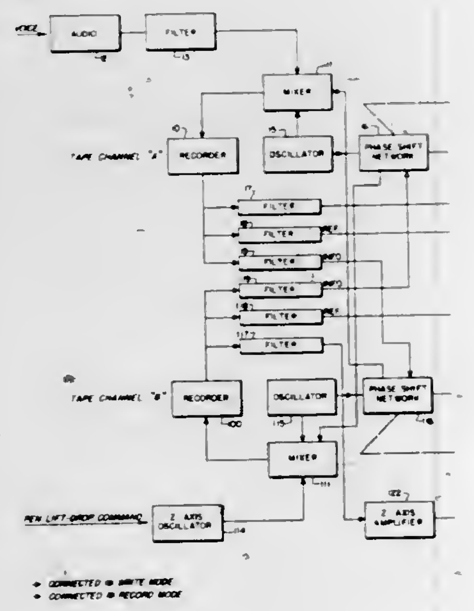
Aleene F. Smith, P.O. Box 191, Oakboro, N.C. 28129
Filed May 26, 1967, Ser. No. 641,593
U.S. Cl. 35—31 **24 Claims**
Int. Cl. G09b *23/02, 1/06*

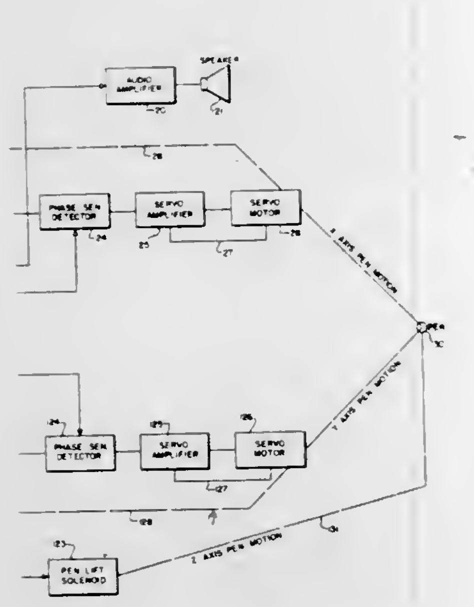


A teaching aid for illustrating various arithmetic relationships in the form of a reading and math game having a backboard which includes a "one's" area, a "ten's" area and a "hundred's" area. Each area has formed thereon a representation of a human figure with its fingers numbered one through ten consecutively, each finger having a device for selectively exposing or covering the numerals of that finger. The figures also have holding elements for holding label cards and number cards. The backboard further includes movable information display areas, scoreboard areas, and a card storage area.

3,425,140
EDUCATIONAL SKILL-BUILDING APPARATUS

Helen T. Dillon, 383 Highland Ave., Malden, Mass. 02148, and John H. Dabrowski, Manomet, Mass.; said Dabrowski assignor to said Dillon
Filed Dec. 20, 1966, Ser. No. 603,354
U.S. Cl. 35—36 **8 Claims**
Int. Cl. G09b *5/04;* **G06k** *9/00*

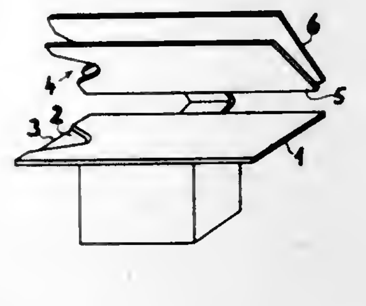




The present invention relates to teaching machines and in particular to apparatus for providing audio, visual and kinesthetic instruction simultaneously. The apparatus of the present invention comprises a stereo tape recorder, a pen adapted for manual operation, a servo system for positioning the pen mechanically, an audio channel with input and output means and an electronic mixing system. The tape records voice instructions and pen positioning information in the record mode. In the playback mode it gives the voice instructions through a speaker or earphone while moving the pen by operation of the servo system. The student holds the pen so that the pen movement is felt kinesthetically while it provide a graphic display.

3,425,141
TROUSER-PRESSING APPARATUS

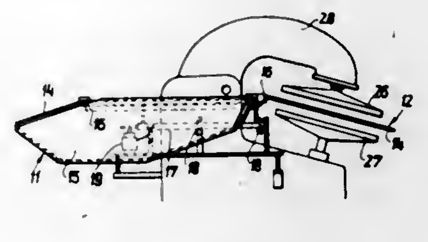
Heinrich Führing, Augsburg, and Erwin Petrich, Tubingen, Germany, assignors to Bowe Bohler & Weber K.G., Augsburg, Germany, a corporation of Germany
Filed Jan. 20, 1966, Ser. No. 521,964
Claims priority, application Germany, Jan. 21, 1965, B 80,209
U.S. Cl. 38—21 **15 Claims**
Int. Cl. D06f *71/00, 71/08;* **D06c** *15/00*



Trouser-pressing machine with a pair of generally rectangular press plates and a flat insert of similar configuration therebetween, the plates and the insert being formed with coextensive recesses or cutouts which extend inwardly from one of the minor sides of the rectangle and have each a U-shaped bight portion remote from that minor side and a trapezoidal portion proximal to that side, the flanks of the trapezoid diverging more rapidly than the extremities of the U. A stretching attachment, designed to grip the waistband of the trousers and to blow air or steam into same, may be movably mounted adjacent the recessed side of the plate assembly. The cutout of the lower plate may be underlain by a foreshortenable two-piece bottom plate to support the seat-portion of the trousers to be pressed.

3,425,142
DEVICE FOR PRESSING TEXTILES

Herbert Kannegiesser and Richard Juraschek, Vlotho (Weser), Germany, assignors to Kannegiesser Maschinenfabrik Gesellschaft mit beschrankter Haftung, Vlotho (Weser), Germany, a firm
Filed June 19, 1967, Ser. No. 647,097
Claims priority, application Germany, Jan. 2, 1967, K 56,478
U.S. Cl. 38—22 **9 Claims**
Int. Cl. D06f *71/08;* **D06c** *15/00*



This invention provides an apparatus for pressing knitwear goods. The apparatus includes a plurality of planar supports which move sequentially through at least three different stations for loading, pressing and unloading the said knitwear goods. Thin forms corresponding to the contours of the knitwear goods are placed on the said supports. As the supports carrying the forms pass through the pressing station, planar pressing plates located on either side of the supports move together to press the knitwear goods.

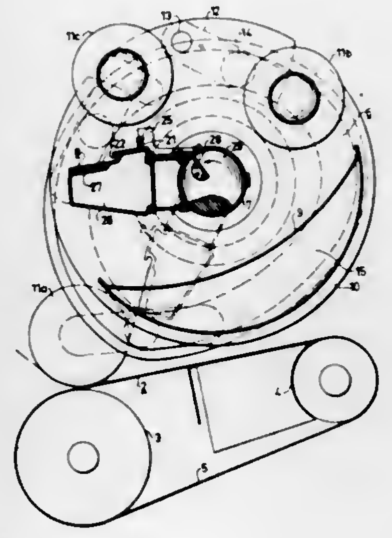
3,425,143
DEVICE FOR BLOCKING, STRETCHING AND DRYING TEXTILE ARTICLES

Nellie Ancona Feld and George J. Feld, both of 100 Avenue P, Brooklyn, N.Y. 11204
Filed May 11, 1967, Ser. No. 637,824
U.S. Cl. 38—102.9 **17 Claims**
Int. Cl. D06c *3/08;* **A47f** *5/10*

The device comprises a pair of coextensive sections pivoted together and foldable into superposed positions. The sections comprise complementary frames carrying panels of closed cell expanded foam so that a sweater or like article may be placed on the opened up panels and stretched, and the sweater will be held onto the panels because of the character of the material of which the panels are made. The front surfaces of the panels may be roughened so that the sweater may better adhere thereto. Also, prong like members may be used to pierce the sweater and the panels to hold the sweater on the panels. The sections may be folded together for storage or shipping. Means is provided to hold the panels opened up which may be easily manipulated to permit the panels to be folded. A hanger is also provided to hang up the device in opened up position. The panels are perforated.

3,425,144
FEEDING APPARATUS FOR IRONING MACHINES

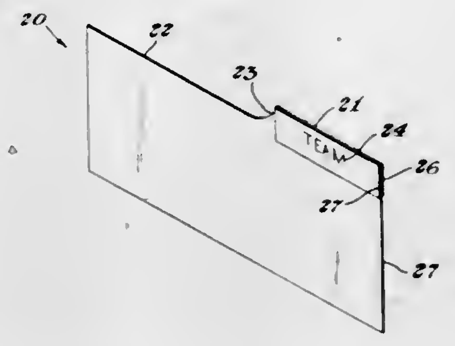
Adolf Helmer Petterson, Skarsgatan 70, Goteborg, Sweden
Filed June 2, 1966, Ser. No. 554,836
Claims priority, application Sweden, June 3, 1965, 7,265/65
U.S. Cl. 38—143 **5 Claims**
Int. Cl. D06f *67/04, 61/08*



Feed apparatus for an ironing machine in which a shaft carrying a beam which retains the foremost edge of sheet material in a spread out position is associated with a number of rollers which are carried with the beam to successively roll on the sheet material after the latter has been released on a conveyor of a feed table whereby the sheet material is properly fed on the table.

3,425,145
INDEX TAB AND PREPARATION THEREOF

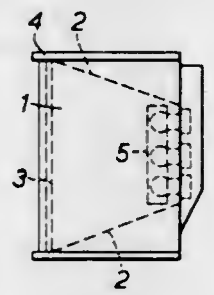
John R. Newton, Strongsville, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 12, 1966, Ser. No. 520,164
U.S. Cl. 40—23 **13 Claims**
Int. Cl. G09f *3/10;* **B32b** *27/10, 31/12*



An improved index tab is provided which consists of an outer layer of Mylar, an inner layer of polyethylene having an oxidized surface which is readily bonded to paper. Index sheets are readily fabricated by heat sealing without warping. The resultant tab is very resistant to cracking, deformation and scratching.

3,425,146
COLORED LIGHT APPARATUS

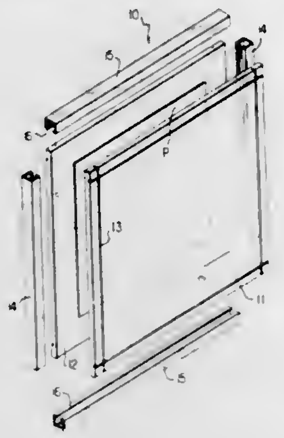
John Eric Winstanley, 45 Shepherds Close, Chadwell Heath, Essex, England
Filed Oct. 8, 1965, Ser. No. 494,203
U.S. Cl. 40—132 **8 Claims**
Int. Cl. G09f *13/04;* **F21p** *5/02*



Apparatus for producing colored light effects, comprising a compact arrangement of at least three differently colored light sources in a preliminary section of a mixing chamber formed by a wall closely surrounding the light sources and having a matt-white coated interior surface. The light passes from this section to a second diffusion section, the wall of which has at least one aperture and a thermoplastic opalescent screen covering the aperture. Sequentially operating switch means are provided which operate in predetermined time sequence to energize the light sources. Preferably the first section is offset so that the light sources are arranged out of the line of normal vision of the screen. Alternatively, the light source group is closely encircled by a cylinder having an internal matt-white surface and arranged in the rear of the diffusion chamber behind the opalescent screen so as to obtain uniform illumination of the screen.

3,425,147
DISPLAY FRAME

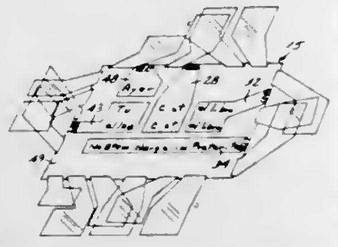
Guilherme S. Marx, Rua Prudente de Morais 564, Apt. 304, Rio De Janeiro, Brazil
Filed Jan. 26, 1966, Ser. No. 523,141
U.S. Cl. 40—155 **9 Claims**
Int. Cl. G09f *1/10, 3/18*



A display frame comprising opposed transparent panels having grooves parallel to each edge on the outer face thereof and secured together about the object to be displayed by channel border frame members having inwardly turned flanges which are slidingly received in the grooves.

3,425,148
TRANSPARENCY ASSEMBLIES

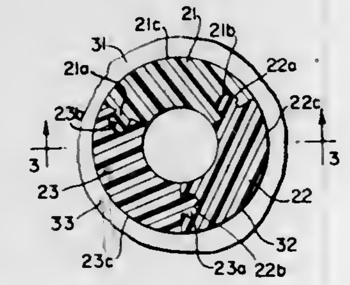
James R. Reese, 681 N. Valencia, La Habra, Calif. 90631
Filed June 12, 1967, Ser. No. 645,421
U.S. Cl. 40—158 **9 Claims**
Int. Cl. G09f *1/10, 13/10*



The specification describes an assemblage of transparencies suitable for use with a transparency projector to display information in enlarged scale. The assembly includes a flat base certain areas of which are transparent and are designated as viewing areas. It also includes a number of overlays which are hinged on the base and have transparent portion that can be positioned over, or not over, the viewing areas of the base. A number of overlays are arranged in sets any number of which can be made to overlie, in any order, a respectively associated viewing area.

3,425,149
IDENTIFICATION INSERT FOR TEXTILE CARRIER

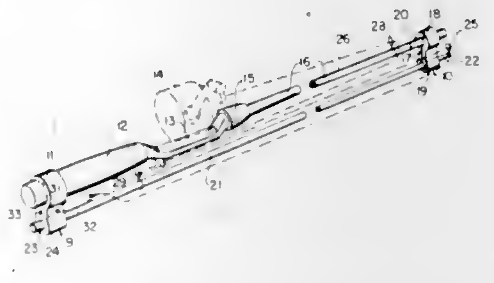
Wade D. Fletcher, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed Aug. 7, 1967, Ser. No. 658,809
U.S. Cl. 40—309 **6 Claims**
Int. Cl. G09f *3/78, 7/18;* **B65h** *75/10*



An identification insert for a textile carrier which is made up of a plurality of complementary arcuate segments which are connected together to make an annular insert. The insert is snap-fitted into an opening in the top end of the carrier. The segments are of selected colors to identify the textile material on the carrier.

3,425,150
SECTIONAL FISH-POLE CARRIER CLIPS

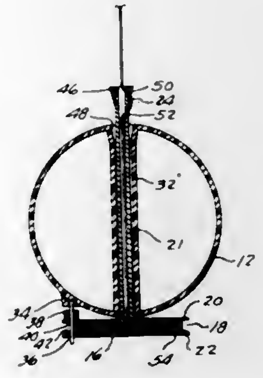
William E. Braese, Airport Road, Dyersburg, Tenn. 38024
Filed Aug. 4, 1967, Ser. No. 658,455
U.S. Cl. 43—25.2 **7 Claims**
Int. Cl. A01k *87/00*



Two carrier clips made of molded rubber or other resilient material have sleeve portions applicable to opposite ends of the handle section of a two-section casting rod and additional parallel sleeve portions designed to have the other section of the rod when detached from the handle section slipped thereinto at opposite ends. The clip at one end of the handle section being split lengthwise so that the eye on the tip of the other section can be slipped through the clip readily. The clip of the other end of the handle section has a through bore for receiving the fishhook of a line attached fish lure. The large sleeve portion on the one clip that is adapted to fit snugly over the handle on the rod is also large enough in relation to the length of the other clip so that the latter can be inserted in this sleeve portion for compactness in storage.

3,425,151
AUTOMATIC RELEASING FISHLINE FLOAT

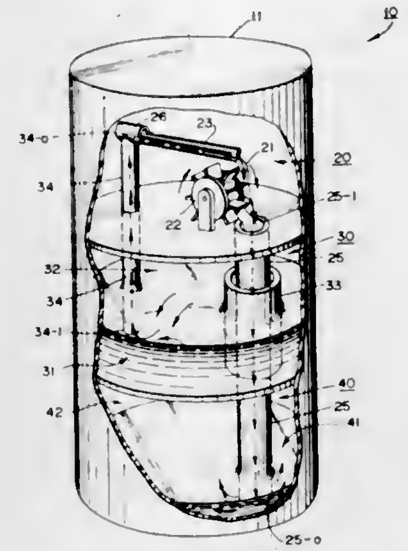
Clinton F. Salfer, 422 2nd Ave., Havre, Mont. 59501
Filed June 2, 1967, Ser. No. 643,282
U.S. Cl. 43—43.11 **6 Claims**
Int. Cl. A01k *93/00*



An automatic releasing fishline float has a spool having a central bore and with an upstanding hollow stem secured in the bore of the spool. The float also has a bore slidably receiving the stem for movement therealong. The spool has aligned apertures in its rims to receive a pin mounted on the float to prevent rotation of the float with respect to the spool and to retain a preselected length of fishline wound on the spool. The stem is provided with a stop at its upper end which limits the drop of the spool after the float strikes the surface of a body of water, the drop movement freeing said pin from the spool groove to release said length of fishline.

3,425,152
FLUID STREAM GENERATOR

John D. Foulkes, 33 Lillian Road, Lexington, Mass. 02173
Filed Mar. 3, 1967, Ser. No. 620,457
U.S. Cl. 46—41 **11 Claims**
Int. Cl. A63h *29/10;* **F01k** *25/00;* **E03b** *7/07*



An enclosed and rechargeable fluid stream generator in which pressure is applied internally from a collection compartment to fluid in a reservoir compartment. This produces an upward flow of fluid which is dischargeable as a fluid stream into a demonstration compartment. The generated stream fluid then flows downwardly into the collection compartment, where its accumulation serves to maintain pressure in the reservoir compartment.

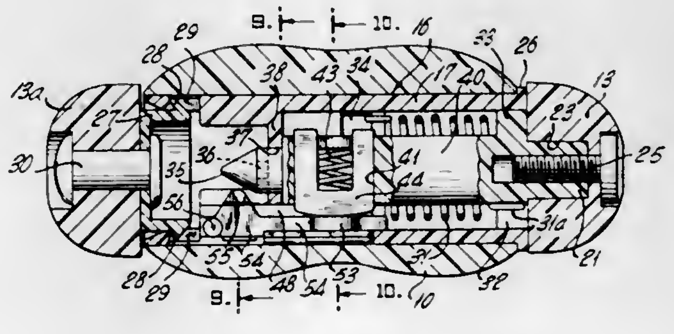
Stream flow continues until the reservoir fluid is depleted to the point that the pressure transferred internally from the collection compartment to the reservoir is insufficient to drive fluid into the demonstration compartment. Since the system is enclosed, it is rechargeable by inverting the generator to permit fluid accumulated in the collection chamber to return to the reservoir.

The generated fluid stream is used, for example, to simulate a fountain. It is also used to operate hydraulically actuatable devices, such as a water wheel.

Also disclosed is a composite of two generating systems mounted back-to-back so that when one of the systems is functioning as a stream generator, the other is recharging.

3,425,153
ANIMATED TOY SUCH AS A DOLL

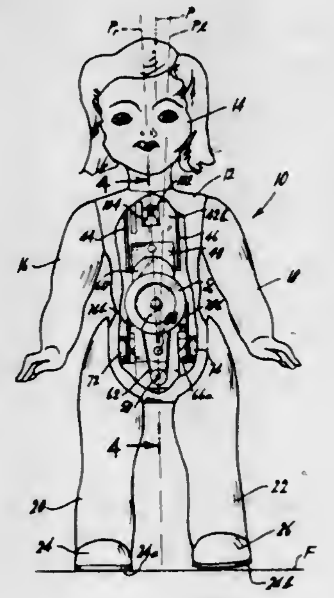
Joseph L. Bonanno, South Orange, and Dorland L. Crosman, Glen Ridge, N.J., assignors, by mesne assignments, to De Luxe Topper Corporation, Elizabeth, N.J., a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,236
U.S. Cl. 46—119 **10 Claims**
Int. Cl. A63h *11/00, 13/16*



Flexible doll body has passageway for accommodating cylindrical housing. Rotatable spindle within housing carries doll appendage on one end, and is constantly urged toward one extreme position by a spring. Spindle may be latched in another extreme position, and may be unlatched via a trigger which is depressed by applying pressure to doll body. Trigger located within cavity in housing and does not project beyond cylindrical contour of the housing.

3,425,154
WALKING MECHANISM

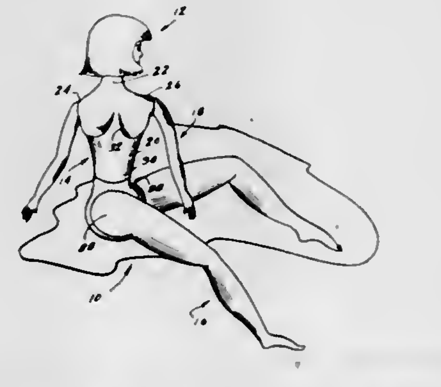
Kenneth W. Lindsay, Great Neck, and Burt W. Ensmann, Jamaica, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Oct. 11, 1965, Ser. No. 494,627
U.S. Cl. 46—150 **1 Claim**
Int. Cl. A63h *11/14*



A walking doll having a natural gate simulating a toddler learning to walk. Two rocker plates are provided inside the doll journaled at a weight-shift pivot. One rocker plate is operatively connected to the doll body. The two legs are pivoted to the second rocker plate. A motor is provided for causing relative rocking movement between the two rocking plates to shift the center of weight of the doll body from side to side. The motor also imparts a mechanical stepwise force to the legs in coordinated relation to the weight shift.

3,425,155
DOLL CONSTRUCTION FOR NATURAL MOVEMENTS AND POSITIONS

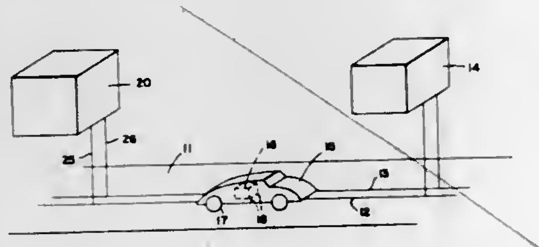
John W. Ryan, Bel Air, and Jack Lewis Lemkin, Torrance, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed July 15, 1966, Ser. No. 565,577
U.S. Cl. 46—162 **8 Claims**
Int. Cl. A63h *3/36, 3/14, 3/46*



1. In combination with a doll having a head, a torso comprising:
- upper torso means forming a neck portion and a midriff portion;

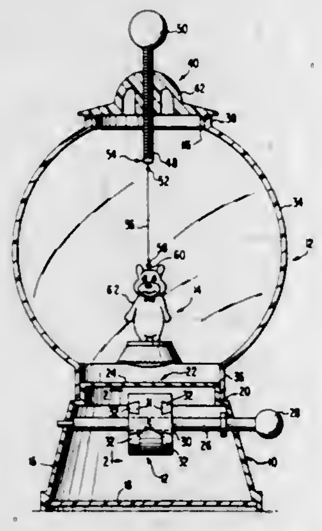
lower torso means forming a midriff portion and a trunk portion;
means for connecting said head to said neck portion; and
means for connecting said midriff portions together in such a manner that said torso means may be subjected to twisting movements;
said midriff portions are joined together by coplanar end portions forming a predetermined acute angle with a substantially horizontal forward-rear axis for imposing a predetermined twisting action on said torso means during said twisting movements.

3,425,156
ENGINE SOUND SIMULATOR
Harry W. Field, 2366 Warburton, Santa Clara, Calif. 95050
Filed Oct. 21, 1965, Ser. No. 499,419
U.S. Cl. 46—232 **5 Claims**
Int. Cl. A63h *33/26;* **H01j** *39/12*



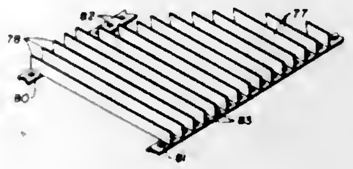
An engine sound simulator for electric cars or the like which are powered from a variable source of voltage which includes a lamp energized from the same variable source of voltage and arranged to control the frequency of an oscillator whose output is delivered to a loudspeaker or other sound reproduction device so that the frequency of sounds emanating therefrom will increase in direct proportion to the increased speed of the car.

3,425,157
MAGNETIC TOY OR SIMILAR APPARATUS
William H. Hartsock, Baltimore, Md., assignor of fifty percent to J. Roland Volz and John L. Bartenfelder, Baltimore County, Md.
Filed Apr. 1, 1966, Ser. No. 539,420
U.S. Cl. 46—238 **9 Claims**
Int. Cl. A63h *33/26*



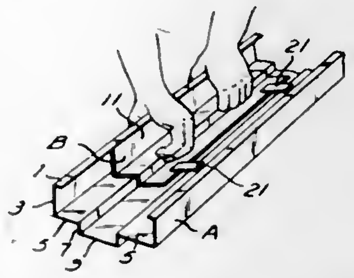
A toy figure responsive to magnetic fields is movably positioned adjacent the upper surface of a base assembly containing distinctively arranged movable magnet means, so that movement of the magnet means will cause movements of the toy figure. North and south poles of the magnet means are spaced apart in a vertical plane and the magnet means rotate about a horizontal axis intermediate the poles. Different movement effects are achieved through the use of different toy figure constructions and/or mountings.

3,425,158
CULTURE BELT FOR A HYDROPONIC SYSTEM
Leslie B. Kyle, 4604 Bluff Road, Indianapolis, Ind. 46217
Filed Jan. 26, 1967, Ser. No. 612,028
U.S. Cl. 47—1.2 **5 Claims**
Int. Cl. A01g *31/00*



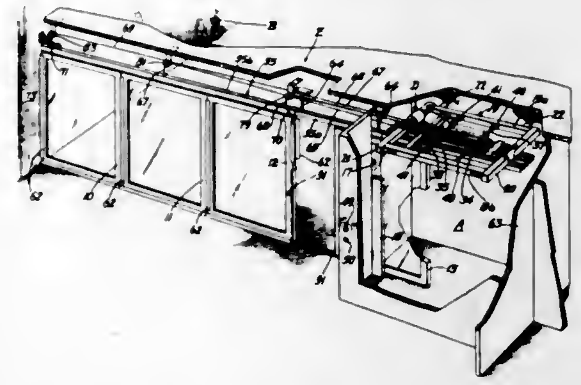
An improved culture belt for supporting a hydroponic growth mat, which permits ready removal of said mat at the point of harvesting the same.

3,425,159
SNAP-IN REINFORCEMENT
Francis J. Fortsch and Edward L. Durch, Warren, Ohio, assignors to The American Welding & Manufacturing Company
Filed Aug. 12, 1966, Ser. No. 572,014
U.S. Cl. 49—504 **7 Claims**
Int. Cl. E06b *1/18*



The disclosed reinforcement is disposed within a sheet metal door frame and engages and supports face, rabbet, stop and soffet parts of the frame. It is retained in the frame by wedging engagement of thin metal tabs on one edge of the reinforcement with the frame.

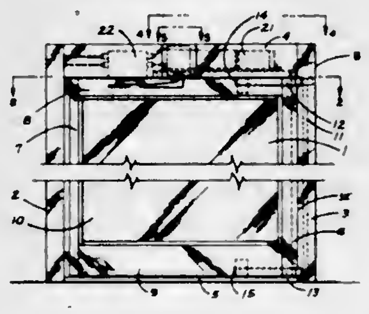
3,425,160
SLIDING DOORS ON SINGLE TRACK
Emil M. Petterborg, 1442 Wright Ave., Sunnyvale, Calif. 94087
Filed Nov. 14, 1967, Ser. No. 682,758
U.S. Cl. 49—127 **5 Claims**
Int. Cl. E05d *15/10;* **E06b** *3/92*



A door panel supporting carriage has a plurality of parallel door panel tracks thereon, and a door panel is suspended by a pair of roller hangers from each carriage

track. The carriage itself is roller-mounted on a pair of horizontal tracks which extend transversely of the carriage tracks across the top portion of a door-receiving compartment located at one side of a wide door opening which is to be closed off by the door panels. A single door-supporting track, hereinafter called the "room track," extends from the compartment across the top of the door opening, and the carriage is movable along its supporting tracks to align succesive ones of carriage door panel tracks with the room track, thereby to permit moving the door panels, one at a time, from their respective carriage tracks onto and along the room track and vice versa. The room track consists of two aligned portions, one portion of which is rigidly mounted, while the other is resiliently supported at selected points throughout its length so as to maintain door panels suspended therefrom clear of the bottom of the door opening while said door panels are being moved along the room track either toward or from the compartment. However, when the carriage is moved into position to align with the room track the carriage track which supports the last door panel to leave the compartment, the resilient support means for said other portion of the room track is rendered inoperative, thereby allowing the full weight of the door panels supported on this other portion of the room track to lower and to rest with their full weight on the floor. Indexing means preferably are provided for aligning successive ones of the carriage tracks with the room track.

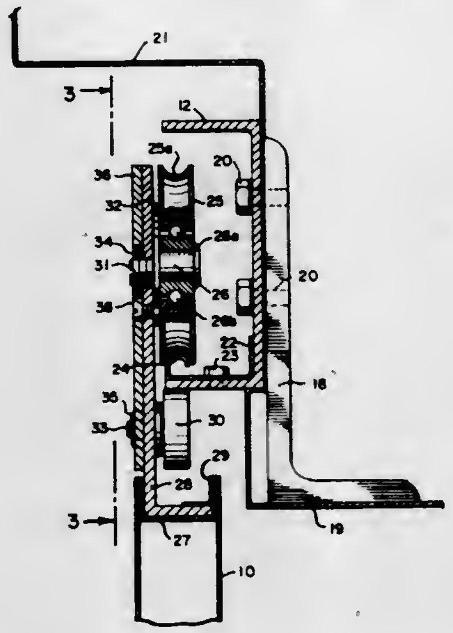
3,425,161
AUTOMATIC BALANCED DOOR WITH TRANSOM MOUNTED OPERATOR
John C. Catlett and James R. Gilson, Memphis, Tenn., assignors to Gyro-Tech Door Company, Memphis, Tenn., a corporation of Illinois
Filed Oct. 17, 1967, Ser. No. 675,933
U.S. Cl. 49—253 **12 Claims**
Int. Cl. E05d *15/30;* **E05f** *15/02, 15/10*



A door having a balanced hinge arrangement and a compact power unit for effecting swinging of said door about a pivot axis located inwardly of the jamb of the door frame; said power unit being mounted within the transom or lintel of the door frame and being connected to said door by linkage, said power unit having a motor, a gear train for transmission of the motive power to an operating shaft for door opening operation; said gear train effecting a speed reduction during door opening operation; there being a compression spiral spring adapted for storing of energy upon door opening to provide the force for the door closing operation with the said gear train effecting a speed increase during such closing operation.

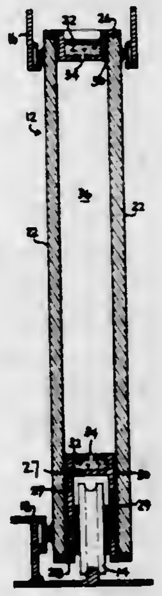
3,425,162
DOOR HANGER AND TRACK CONSTRUCTION
Ernst Halpern, Plainview, N.Y., assignor to Williamsburg Steel Products Company, Brooklyn, N.Y., a corporation of New York
Filed May 4, 1966, Ser. No. 554,253
U.S. Cl. 49—425 **5 Claims**
Int. Cl. E05d *13/02, 15/06*

A hanger for elevator doors is characterized by a hanger plate which is supported by a shaft having an eccentric axle. A hanger rotatable on the axle glides on a track located within a channel. A collar having a plurality of circumferentially spaced holes for receiving fasteners is interposed between the axle and the hanger plate. The hanger plate has an aperture which can be brought into



registration with the holes in the collar by rotation of the shaft. A locking plate having cut-outs for the fastening means is fixed to the hanger plate. A relatively small adapter is mounted outside the door frame in proximity to the door jamb for supporting the track.

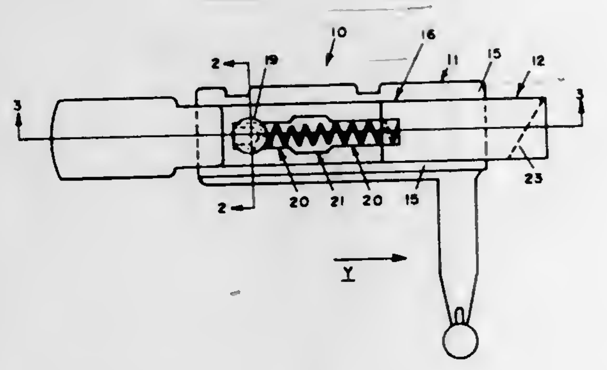
3,425,163
PREGLAZED SLIDING PANEL
William J. Horgan, Jr., Pittsburgh, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Filed Nov. 14, 1966, Ser. No. 594,140
U.S. Cl. 49—425 **4 Claims**
Int. Cl. E05d *13/02, 15/06;* **E06b** *13/02*



This relates to a sliding glass panel comprising a pair of glass sheets connected together to form a hermetically sealed multiple glazed unit, a spacer member closing at least one side of said unit, said spacer member having a portion thereof inset from the adjacent marginal edges of the glass sheets a distance sufficient to receive and retain an operating wheel assembly and an operating wheel member mounted in said inset portion of said spacer member.

3,425,164
WINDOW LATCH ASSEMBLY

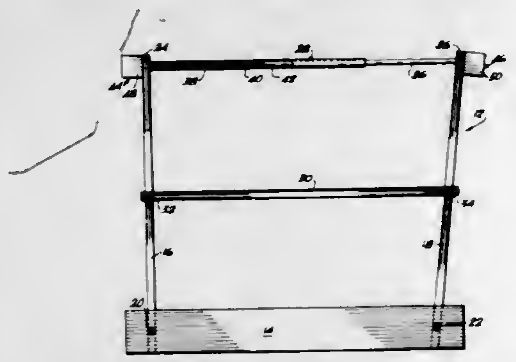
Llewellyn O. Storlie and Lyle M. Northrup, Decorah, Iowa, assignors to Deco Products Company, Decorah, Iowa
Filed Dec. 16, 1966, Ser. No. 602,375
U.S. Cl. 49—450 **4 Claims**
Int. Cl. E05d *13/04;* **E05c** *1/12*



A window latch assembly characterized by a housing for connection to a window frame with a retractable latch finger wherein a retaining pin with head off-set to a side thereof extends from a rear wall of said housing for slideably retaining said latch finger in said housing.

3,425,165
EXTENSIBLE GATE FOR ELEVATOR SHAFTS

Floyd M. Cleveland, Plantation, Fla., assignor to General Safety, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed Nov. 24, 1967, Ser. No. 685,530
U.S. Cl. 49—465 **10 Claims**
Int. Cl. E06b *5/00, 11/02;* **E05c** *19/06*

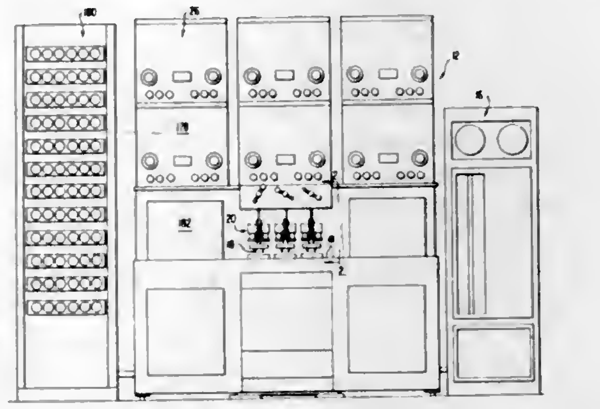


An extensible gate for protectively spanning an elevator shaft opening of a building under construction which includes a plurality of pads to engage the marginal surface of the elevator opening in the vertical plane across the mouth of the opening and spring means to hold the gate in an extended position in abutting engagement with the sides of the building opening.

3,425,166
RESISTOR TAILORING MACHINE

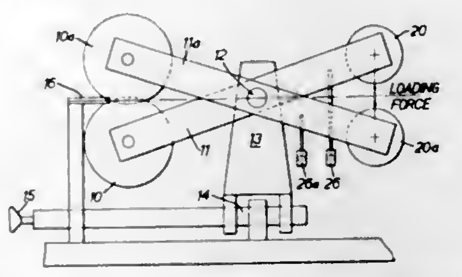
Howard S. Best, Raleigh, N.C., and Robert Emery Bowser, Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 28, 1966, Ser. No. 582,744
U.S. Cl. 51—14 **5 Claims**
Int. Cl. B24c *3/00*

A resistor tailoring machine mounts resistors to be tailored on a work table moveable in horizontal plane under numerical control to precisely preselected positions under an abrasive blast nozzle fixed with relation to the movement of the work table and directed toward resistors thereon. The abrasive blast nozzle reciprocates vertically and includes a valve for selective control of the abrasive blast for resistor tailoring. Electrical intercontrols synchronize movement of the table, nozzle and abrasive application as well as electrical probes which contact the resistors on the table.



3,425,167
ABRASIVE APPARATUS

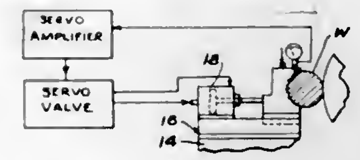
Peter James Pope, Windsor, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed Oct. 21, 1965, Ser. No. 499,954
U.S. Cl. 51—80 **6 Claims**
Int. Cl. B24b *7/00, 9/00, 49/00*



Apparatus for grinding razor blades comprises two counter-balanced grinding wheels respectively supported above and below the path of razor blade strip, pneumatic piston-cylinder assemblies for applying a substantialy constant predetermined force moving the grinding wheels into grinding contact with the strip, and further pneumatic piston-cylinder assemblies for applying counter-forces to the grinding wheels so as to move them clear of the path of the strip in the event the strip is absent.

3,425,168
WORK FOLLOWER RESTS

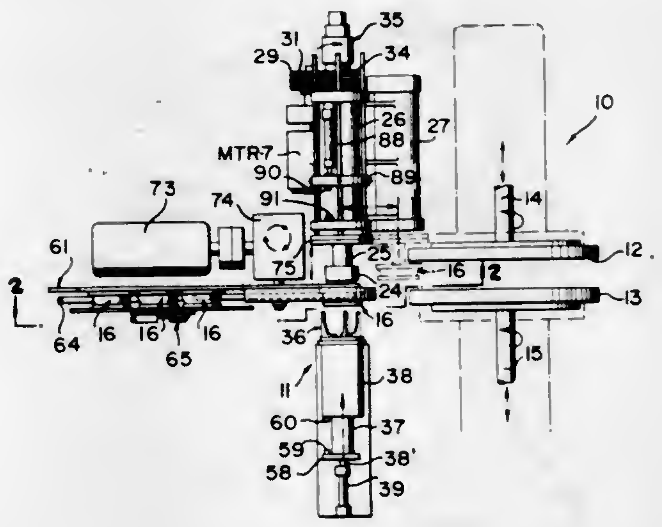
Gordon H. Porath, Detroit, Mich., assignor, by mesne assignments, to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 19, 1966, Ser. No. 573,625
U.S. Cl. 51—105 **6 Claims**
Int. Cl. B24b *5/00, 17/00, 41/06*



A follower rest which is brought into position adjacent but in spaced relation to the workpiece having a plurality of surfaces, each of which has at least one pressure pad therein. A restrictor is associated with each pressure pad and liquid is provided to each restrictor. When the workpiece is in position adjacent the follower rest and the work performing tool is brought into contact with the workpiece, liquid is supplied to each of the pressure pads and a film of liquid flows continuously at a low velocity between the adjacent surfaces of the follower rest and the workpiece in such a manner that the liquid dissipates its pressure a short distance from the pressure pad.

3,425,169
WORK POSITIONING APPARATUS FOR GRINDING MACHINE

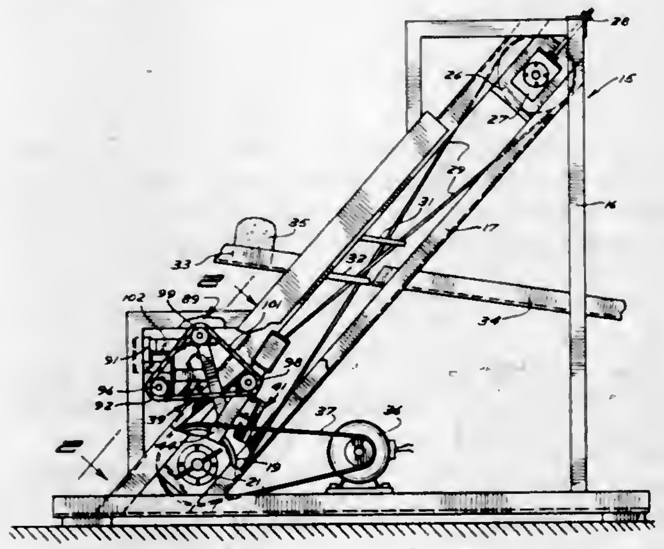
Elman R. Dunn, Roscoe, Ill., assignor to Landis Tool Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,582
U.S. Cl. 51—118 **15 Claims**
Int. Cl. B24b *5/00, 29/00, 47/02*



The disclosure of this application relates to a means for locating a workpiece in a predetermined axial position relative to a grinding zone. The workpiece is removed axially from a loading turret by a locating member consisting of three angularly spaced fingers, against which the workpiece is held by an oppositely positioned spring-actuated member. The locating member is moved endwise by a hydraulic motor onto an expanding arbor to an axial position determined by a pair of co-acting stops at the rear of the locating member where they are protected from debris produced by the grinding operation. At the end of the grinding operation, the spring-actuated member is actuated positively in an axial direction to remove the workpiece from the arbor.

3,425,170
BAND SHARPENER

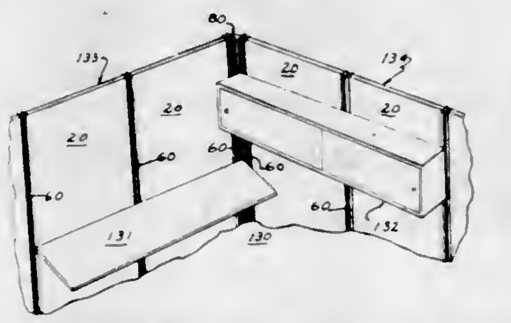
Haryl C. Simmons and Douglas R. Hanson, Anoka, Minn., assignors to Gopher Grinders, Inc., Anoka, Minn., a corporation of Minnesota
Filed May 19, 1966, Ser. No. 551,441
U.S. Cl. 51—247 **16 Claims**
Int. Cl. B24b *19/00*



A sharpening apparatus having a pair of concurrently rotating and moving grinding wheels operable to successively sharpen the cutting edges of moving endless bands of a bread slicing machine. Each grinding wheel is mounted for rotation about a generally upright axis on a sharpening unit having a motor driving the grinding wheel. The sharpening unit is movably mounted on a transverse rotatable support operable to move the sharpening unit transversely of the direct of movement of the bands so that the power driven grinding wheel moves transversely across successive bands.

3,425,171
SPACE DIVIDER SYSTEM

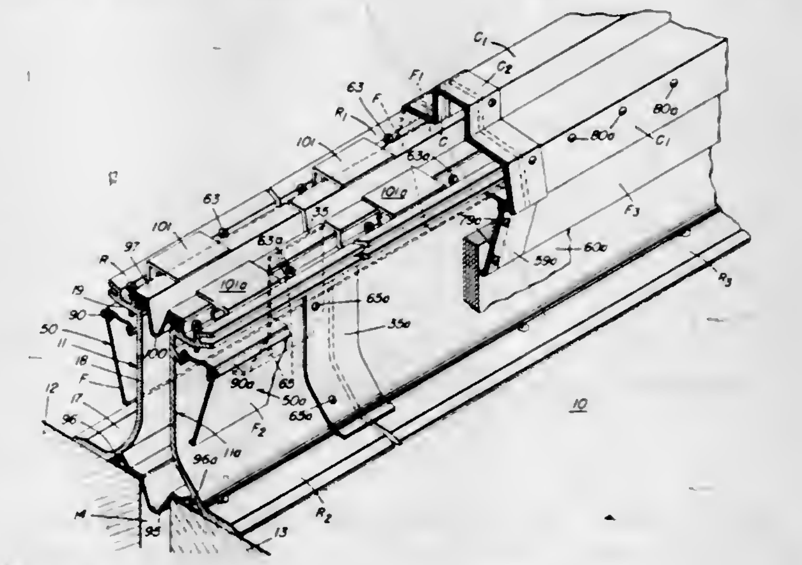
Robert L. Propst, Ann Arbor, and James O. Kelley, Saline, Mich., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Feb. 9, 1966, Ser. No. 526,146
U.S. Cl. 52—36 **19 Claims**
Int. Cl. A47b *5/00;* **E04c** *2/40;* **E04b** *2/72*



A combination locking joint and accessory hanging structure for utilization in a free-standing space divider system wherein adjacent panels are affixed together by means of an elongated spline having a plurality of pear-shaped apertures therein. A plurality of wedging members extend from the facing edges of the panels, and these wedging members are received by the apertures in the spline. A bearing member is provided across the top of the panels and the spline is shifted upwardly with respect thereto by means of a threaded rod affixed to the spline and bearing against the bearing member. The joint is provided with converging flanges at either side thereof which, in conjunction with the spline, form an accessory anchoring channel adapted to receive wall-hung accessory supporting clips. It is understood that this abstract is not to be utilized to limit the scope of this disclosure.

3,425,172
ROOF EXPANSION JOINT COVER AND FLASHING

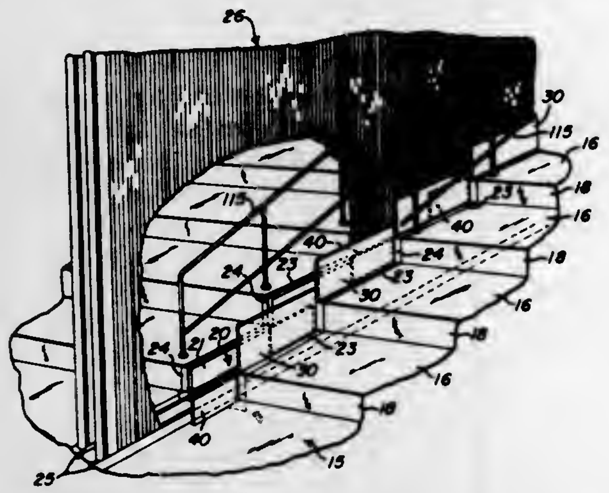
Julian J. Attaway, 4520 Elmdale Drive, Tucker, Ga. 30084
Filed Nov. 30, 1967, Ser. No. 686,968
U.S. Cl. 52—58 **13 Claims**
Int. Cl. E04d *3/38, 13/14, 1/36*



An expansion joint cover and flashing for roof use is provided wherein rail means is associated with flashing by pivotal connection and with thrust means so that when the rail means is mounted on one side of an expansion joint to move with this structure the flashing may be brought to a clamping position against the end of roofing introduced between the flashing and the rail means and thus clamp the roofing under thrust of the thrust means, there also being second rail means mounted on structure on the other side of the expansion joint to move with the latter structure, the second rail means in certain embodiments also having flashing pivotally connected therewith and being provided with thrust means for this further flashing to clamp a roofing end portion to the second rail means under force imposed by the corresponding thrust means. The several rail means are covered by laterally intermediately flexible cover means secured to the several rail means and bridging the expansion joint.

3,425,173
APPARATUS FOR PARTITIONING A ROOM HAVING A STEPPED FLOOR

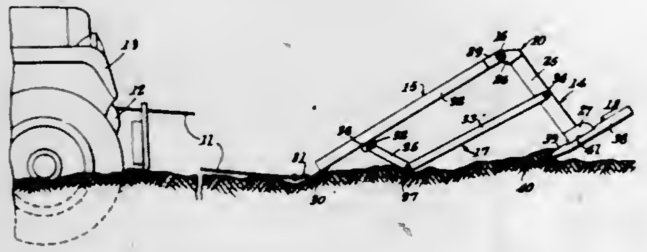
Kenneth J. Carlo, Dyersville, Iowa, assignor to New Castle Products, Inc., New Castle, Ind., a corporation of Indiana
Filed Aug. 28, 1967, Ser. No. 663,702
U.S. Cl. 52—64 **11 Claims**
Int. Cl. E04b *1/343;* **E04h** *3/10;* **E04f** *11/04*



A coilable partition is supported for extension within a trough formed within a stepped floor defined by alternate tread and riser surfaces, and tread and riser plates are automatically pivotable between positions closing and opening the trough by power driven mechanisms interconnecting the corresponding plates.

3,425,174
GROUND ANCHOR

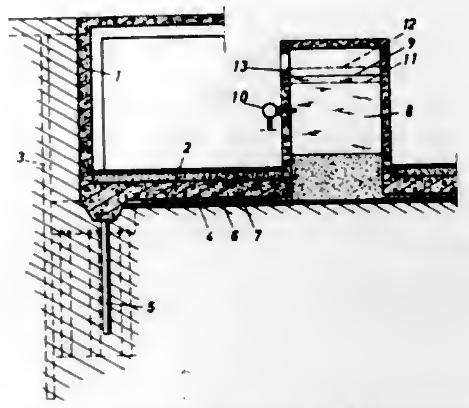
Ross C. Wood, 633 California St., El Segundo, Calif. 90245
Filed May 12, 1967, Ser. No. 638,082
U.S. Cl. 52—162 **7 Claims**
Int. Cl. E02d *5/80;* **B60s** *9/00*



An articulated and portable anchor that, under forward pull, buries itself in the ground. When the pull is exerted by a winch-wound cable on a vehicle that is bogged down in soft ground, the anchor, when so buried, enables the vehicle, by means of the power of said winch, to pull itself free. The anchor is foldable to flat, stowable condition.

3,425,175
HYDROSTATICALLY PRESSURIZED BUILDING FOUNDATION

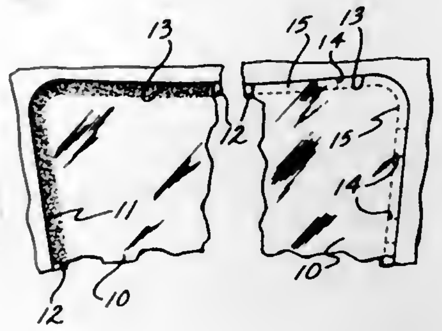
Bernt Hjalmar Gerde, Oktobergatan 6, Goteborg, Sweden
Filed Mar. 30, 1967, Ser. No. 627,216
Claims priority, application Sweden, Apr. 5, 1966, 4,544/66
U.S. Cl. 52—169 **5 Claims**
Int. Cl. E02d *31/12, 27/01, 27/10*



The present invention relates to a foundation in particular for great buildings and by means of the invention there is obtained a possibility of maintaining the subsoil water level constant around the building such that its foundation will be exposed to a constant pressure.

3,425,176
ADHERED WINDSHIELD WITH CONCEALED ADHERENT

Robert Edward Cairns, East Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed July 7, 1967, Ser. No. 656,618
U.S. Cl. 52—208 **5 Claims**
Int. Cl. B60j *1/02, 3/00;* **E06b** *3/24*

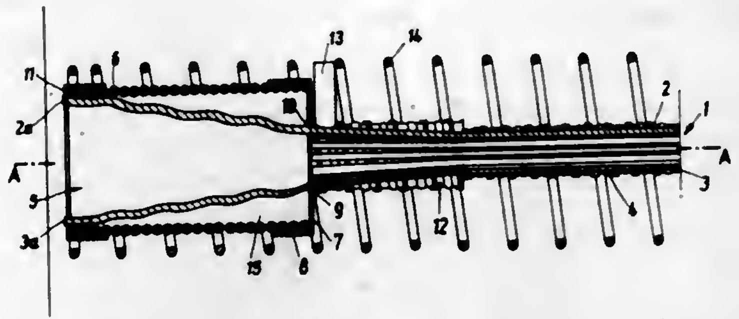


This disclosure relates to a novel glazing unit for use in vehicles, building construction, etc., which eliminates the need for wide cumbersome moldings in order to conceal the substructure and mounting means. This disclosure provides a glazing unit with an aesthetic appearance which minimizes the glare commonly caused by wide shiny metal molding strips. The glazing unit comprises a glass panel adhered to a sub-structure and an opaque border on the panel concealing the adherent.

3,425,177
FIXED ANCHORAGE FOR CONCRETE PRESTRESSING METHOD WITH SUBSEQUENT ATTACHMENT

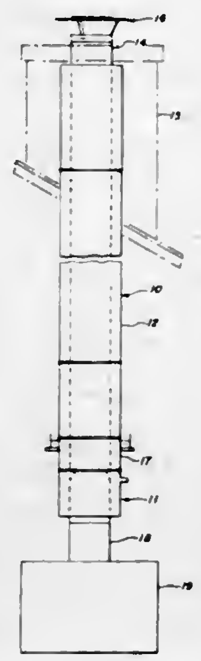
Karl Buyer, Grafelfing, Bavaria, Germany, assignor to Messrs. Heilmann & Littman Bau-Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Sept. 23, 1966, Ser. No. 581,491
U.S. Cl. 52—230 **3 Claims**
Int. Cl. E04c *5/08;* **E04g** *21/12*

An anchoring head for a prefabricated prestressed cable for use in prestressed concrete is disclosed having a profiled sleeve of wound steel wire or sheet metal. The profilings on the sleeve are sufficiently large to cause the transmission of the anchoring force continuously over the entire length of the anchor head. End plates are provided for the anchoring head for positioning prestressed wires within the anchoring head and causing uniform radial transmission of the anchoring force.



3,425,178
RAIN TRAP FOR PREFABRICATED METAL CHIMNEY

Richard L. Stone and Alan Kinkead, Los Altos Hills, Calif., assignors to Wallace-Murray Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,170
U.S. Cl. 52—244 **1 Claim**
Int. Cl. E04f *17/02;* **F23j** *13/00;* **E04d** *13/04*



1. In a chimney assembly including a plurality of prefabricated chimney sections coupled together in vertical alignment above a heat producing means, rain protection means comprising, in combination:

a rain trap connected to and in line with a prefabricated chimney section, said rain trap being comprised of a pair of concentric wall members;

an annular ring intetrconnecting said wall members near their lower ends and forming therewith an annular storage compartment;

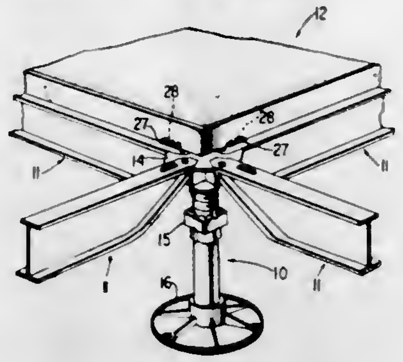
an annular ring interconnecting said wall members member at its upper end and having a peripheral inner flange having a diameter substantially equal to the inside diameter of the chimney;

a deflector member fixed to the top of said inner wall member having an inwardly extending conical surface and terminating at an upper edge whose diameter is substantially less than said peripheral inner flange and the inside diameter of said chimney;

and a top cap attached to the upper end of said chimney assembly and extending completely above the area of the chimney opening and thereby preventing rain from falling vertically past said rain trap.

3,425,179
ELEVATED FLOORING

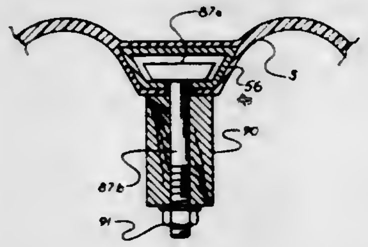
Victor G. Haroldson, 30 Notchpark Road, Little Falls, N.J. 07424
Filed Feb. 15, 1967, Ser. No. 616,319
U.S. Cl. 52—283 **1 Claim**
Int. Cl. E04b *5/14, 3/48;* **E04g** *21/00*



The present invention relates to elevated flooring, and more particularly to an improved pedestal and girder arrangement for supporting floor panels wherein each panel is supported by a set of pedestals and girders.

3,425,180
CORRUGATED RESIN SHEET WITH HOLLOW MEMBER

Paul H. Hoffman, Tampa, Fla., assignor, by direct and mesne assignments, to Roy E. Raney, St. Petersburg, and Charles F. Clark, Tampa, Fla., co-trustees
Original application Feb. 27, 1961, Ser. No. 92,009, now Patent No. 3,271,215, dated Sept. 13, 1966. Divided and this application July 5, 1966, Ser. No. 589,767
U.S. Cl. 52—309 **1 Claim**
Int. Cl. E04c *2/32, 2/38*

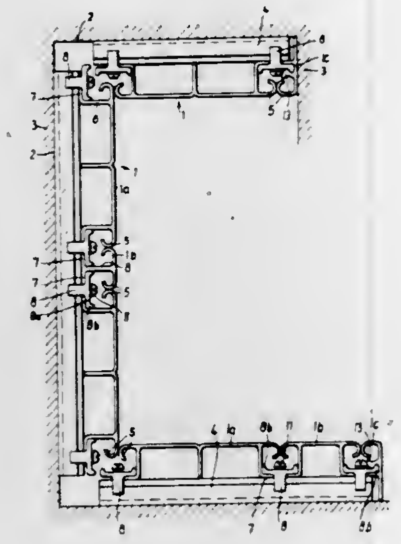


A structural sheet is formed of a reinforced plastic resin and has adjacent corrugations extending thereacross, which sheet is adapted to be secured to a building member or the like by headed fastener members having the heads in a hollow formation extending across the sheet parallel to the corrugations and having walls thereof formed by extensions of two adjacent corrugations. The hollow formation has a metal liner member and is slotted to receive the shanks of the fasteners.

3,425,181
PANELING ARRANGEMENT

Rudolf Barainsky, Auf dem Gewann 19, Bardenberg-Pley, Germany
Filed May 6, 1966, Ser. No. 548,288
Claims priority, application Germany, May 6, 1965, B 81,769
U.S. Cl. 52—480 **9 Claims**
Int. Cl. E04b *2/72;* **E04c** *2/38;* **E04f** *13/00*

An arrangement for paneling wall surfaces in which paneling strips are mounted on lathing provided on wall surfaces. The arrangement includes rail members which serve as the lathing, the panel strips themselves made of plastic and arranged on and fastened to the rail members and clamping members having flange-like projections for accomplishing the fastening. The panel strips have resilient bent portions which act as feet on the sides of the strips which face the rail members. The bent portions of the panel strips are arranged to slide between the flange-like projections and the rail members thereby securing the panel strips to the rail members without preventing the panel strips from expanding or contracting with changes of temperature. The panel strips are also provided with freely protruding resilient members on at least one front side portion thereof which contact an adjacent panel and cover the clamping members.



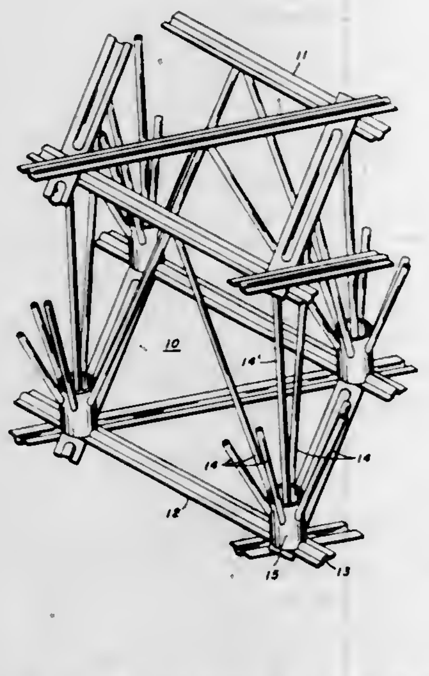
3,425,182
STUB-TUBE CONNECTION FOR SPACE-FRAME STRUCTURES

David E. Owens, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Oct. 10, 1966, Ser. No. 585,676

U.S. Cl. 52—650 **2 Claims**

Int. Cl. E04h *12/10;* **F16b** *9/00*



A connecting member for uniting the several web and chord members of a space-frame structure which come together at spaced points therein, comprising a short length of cylindrical pipe welded to one of the chord members.

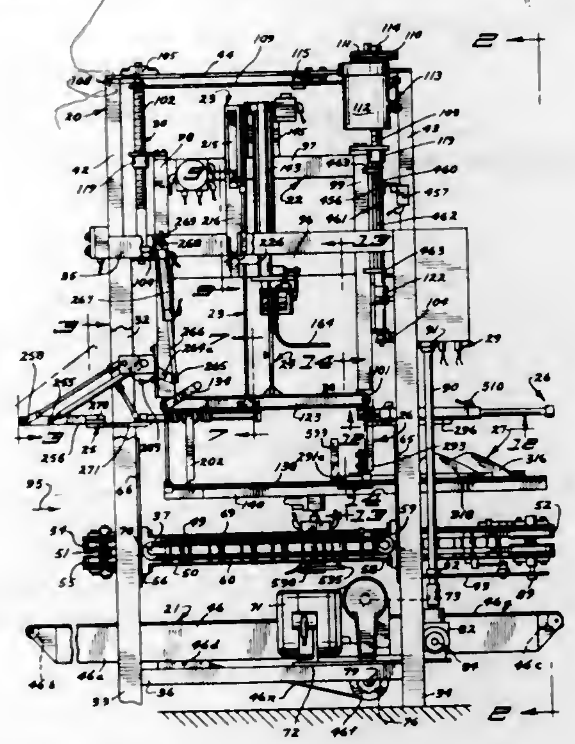
3,425,183
BALER SEALER APPARATUS

Richard H. Ayres and Gaylerd M. Lieder, Minneapolis, Minn., assignors to Bemis Company Inc., Minneapolis, Minn., a corporation of Missouri

Filed Aug. 16, 1965, Ser. No. 479,993

U.S. Cl. 53—76 **39 Claims**

Int. Cl. B65b *57/18, 7/04;* **B67b** *3/26*



Apparatus that longitudinally conveys a bag of product between a pair of table tops and thence automatically operates a feeler arm to sense the level of product and adjusts the level of the table tops. Next a pair of opening members force the bag side walls outwardly over the table and entry and exit shoes fold the front and side walls. Rollers form creased side wall tabs; and thereafter as the bag is conveyed, a first gun applies longitudinally spaced adhesive spots on one tab and a reciprocate second gun applies to the other tab an adhesive strip that extends diagonally outwardly, next longitudinally and then diagonally inwardly. Thereafter, the tabs are moved through folder blades to provide a sealed bag closure.

3,425,184
ARRANGEMENT FOR GROUPING BAGS INSIDE A CONTAINER

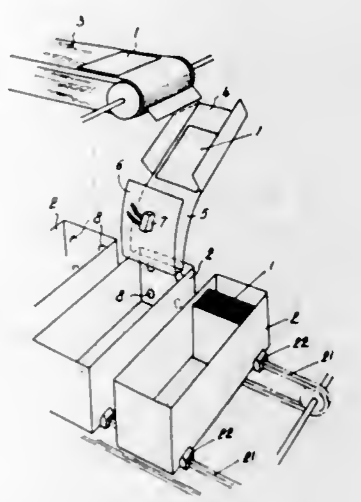
Maurice Joseph Heliot, 2 bis Rue Passerat, Troyes, Aube, France

Filed Apr. 8, 1966, Ser. No. 541,195

Claims priority, application France, Apr. 27, 1965, 14,766

U.S. Cl. 53—78 **14 Claims**

Int. Cl. B65b *57/18, 57/20, 5/12*



Means for automatically grouping a predetermined number of bags inside a container. A conveyor band feeds the bags to a trough which drops them by gravity into the container. A second conveyor band shifts the containers into registry with the lower end of the trough and the bags are delivered into the rear terminal spaces of successive containers. Means urge the bags forwardly in each container each time a bag is dropped therein. Means are also provided for holding the bags in the container. A switch is provided upon the trough registering the passage of successive bags and a counting mechanism is controlled by the pulses produced by the passage of successive bags over the switch which controls the shifting of the containers and the means for urging the bags forwardly in each container.

ERRATUM

For Class 53—124 see:
Patent No. 3,426,359

3,425,185
PRODUCTION OF SEALED FILLED ENVELOPES

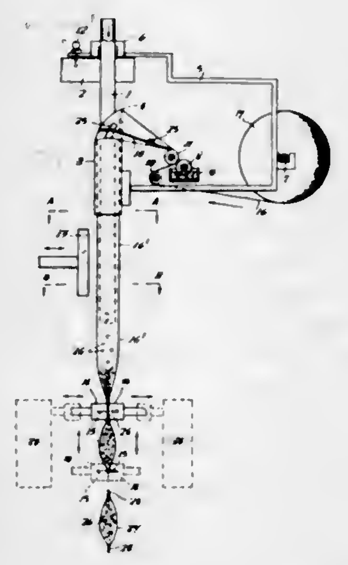
Bruce Samways, Bristol, and Donald Arthur Shore, Congresbury, Somerset, England, assignors to Colodense Limited, Bristol, England, a company of Great Britain and Northern Ireland

Filed Dec. 9, 1966, Ser. No. 600,438

Claims priority, application Great Britain, Dec. 11, 1965, 52,727/65

U.S. Cl. 53—182 **7 Claims**

Int. Cl. B65b *9/12, 51/30;* **B31b** *1/38*



1. An apparatus for the continuous production of sealed filled envelopes comprising a downwardly directed filler tube down which goods may be fed, a forming member mounted for rotation about the filler tube for forming a travelling sheet of heat-sealable wrapping material into a tube having overlapping edges about the filler tube, a support for a supply of wrapping material fixed to the forming member and mounted for angular movement with the forming member about the longitudinal axis of the filler tube, a sealing means for sealing the overlapping edges of the tube of wrapping material along a longitudinal strip, advancing means for progressing said tube of wrapping material downwards from the filler tube, a pair of heat-seal jaws placed beneath the filler tube to be reciprocable towards and away from the filler tube axis for transversely sealing together opposed walls of the tube of wrapping material at envelope length intervals and a cutting means placed beneath the filler tube for separating individual sealed filled envelopes from the tube.

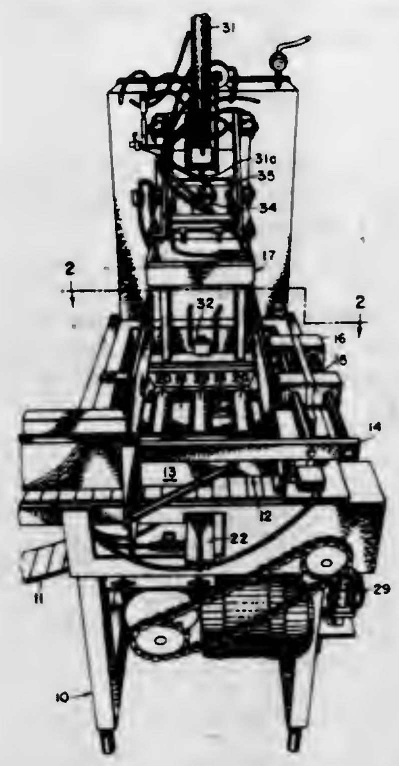
3,425,186
APPARATUS FOR INTRODUCING CONTAINERS INTO CASES

Emil E. Hageline, Chicago, Ill. assignor to Warren Du Broff

Filed Aug. 23, 1966, Ser. No. 574,448

U.S. Cl. 53—247 **1 Claim**

Int. Cl. B65b *1/04, 3/04, 67/10*



A casing apparatus constituting an improvement on co-owned Patents Nos. 3,047,990 and 3,190,052, the apparatus introducing milk cartons having upstanding ribs into open metal mesh cases through a gripping head sized to handle a plurality of cartons which are advanced and elevated by a carrier operated by air cylinders.

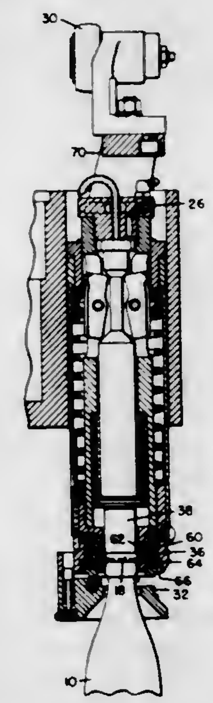
3,425,187
UNIVERSAL BOTTLE CAPPING THROAT

Gustav A. Broetzler, Cincinnati, Ohio, assignor to The Coca-Cola Bottling Works Company, a corporation of Ohio

Filed Mar. 5, 1965, Ser. No. 437,387

U.S. Cl. 53—344 **5 Claims**

Int. Cl. B65b *7/28;* **B67b** *3/02*

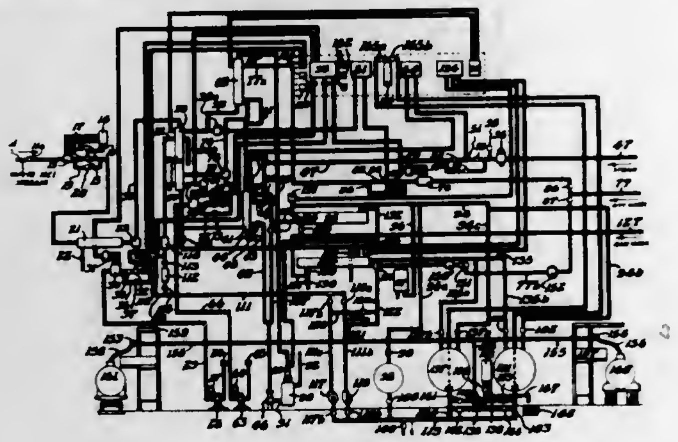


1. A universal bottle capping throat for use with and adapting the head of a crowner for use with either standard, intermediate or shallow crowns, said throat

comprising a body portion having an opening therethrough which tapers uniformly from a maximum to a minimum diametrical dimension at the entry end thereof diametrical dimension at the top end thereof wherein said maximum diametrical dimension is .003 inch less and said minimum diametrical dimension is .002 inch greater than the respective diametrical dimensions of bottle capping throats for standard and shallow crowns, respectively, and wherein the axial spacing between said entry and top ends is 13⁄16 inch.

3,425,188
PROCESS FOR THE PRODUCTION OF PURE MURIATIC ACID FROM BYPRODUCT HYDROGEN CHLORIDE

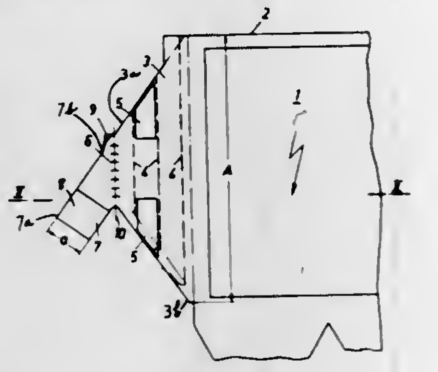
Charles E. Kircher, Detroit, Mich., and Robert J. Jones, Conneaut, Ohio, assignors to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 356,839, Apr. 2, 1964. This application May 25, 1967, Ser. No. 641,383
U.S. Cl. 55—20 **1 Claim**
Int. Cl. B01d *53/00*



In a process in which hydrogen chloride feed gas is absorbed by water, inert gas is added to the hydrogen chloride gas for the purpose of separating organic impurities from the hydrogen chloride gas upon absorption. The amount of inert gas added is determined by sensed conditions of the feed gas.

3,425,189
DIFFUSER-LIKE INLET CONNECTION FOR ELECTRICAL DUST SEPARATORS

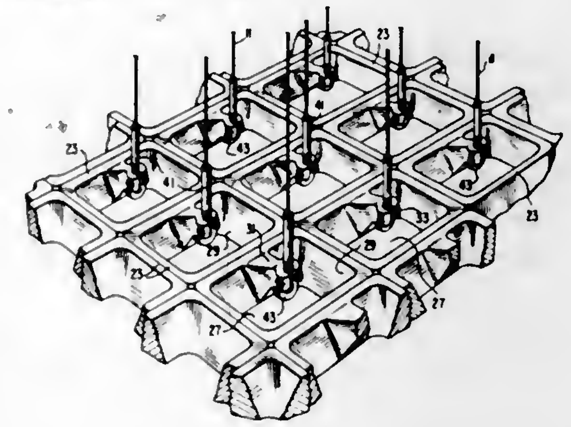
Karl Haselmayer, Dornigheim am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Aug. 27, 1965, Ser. No. 483,163
U.S. Cl. 55—129 **2 Claims**
Int. Cl. B03c *3/02*



Electrostatic dust separator with gas conveying inlet connection in the form of a horizontal axis quadrilateral truncated pyramid-shaped diffuser diverging toward the separator and containing perforated plates to distribute uniformly incoming gas, an angular throat inclined upwardly toward the diffuser and having a longitudinal axis intersecting the diffuser horizontal axis at an angle of about 45–60°, said throat diverging toward said diffuser at an aperture angle of about 60 to 90° and containing flow directing plates to distribute gas flow uniformly, a connecting juncture having a profile surface in the form of a concave through flow connecting the throat with the diffuser, and gas deflecting grid means disposed across the flow cross section of the diffuser at the connecting juncture to deflect incoming gas from the throat to the diffuser uniformly and without premature dust separation thereat, the over-all cross-sectional aperture ratio from the inlet side of the throat to the outlet side of the diffuser being e.g. between about 1:10–25.

3,425,190
ELECTROSTATIC PRECIPITATOR WITH ELECTRODE TENSIONING MEANS

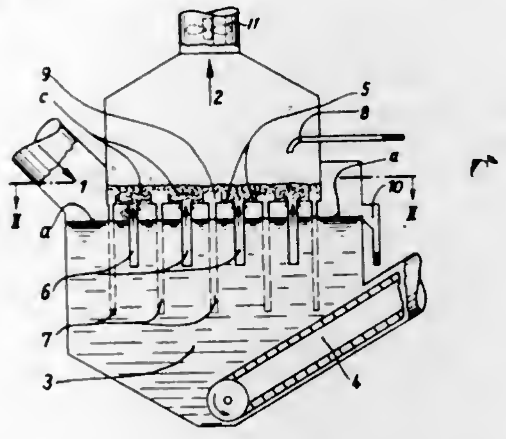
Benjamin Ragland, 1911 E. Maple Ave., Birmingham, Mich. 48008
Filed Mar. 18, 1968, Ser. No. 713,869
U.S. Cl. 55—147 **10 Claims**
Int. Cl. B03c *3/10, 3/08*



An electrostatic precipitator which has vertical corona discharge wires that are tensioned by weights at their lower ends. The weights are polygonal and rub vertically against each other so that their rubbing friction damps the tendency of the body of wires to swing or to vibrate individually. The weights have upright sides and central openings and are suspended detachably from the wires by arms that extend from one side of the weight across the central portion, the center of gravity of the weight being below the point of attachment of the weight to the corona discharge wires.

3,425,191
WET SEPARATOR FOR CLEANING DUST-LADEN GASES

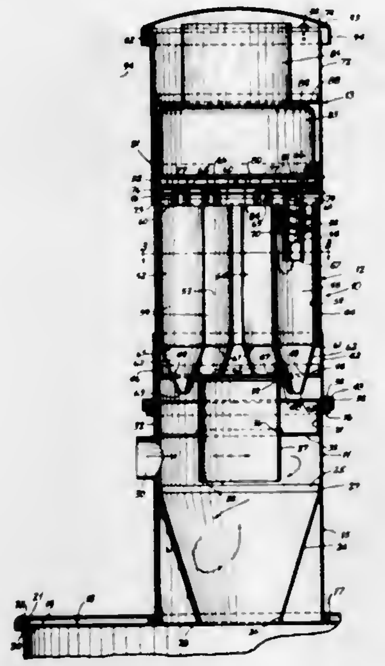
Heinz Butz, Schwarzenbachweg 17, Zurich, Switzerland
Filed Jan. 24, 1966, Ser. No. 522,461
U.S. Cl. 55—223 **2 Claims**
Int. Cl. B01d *47/02*



A washer for gases having a grid, a tank under the grid, tubes immersed in the tank and extending through the grid to cause water in the tank to flow by suction above the grid and form a bubbling bath and discharge channels for silt and dust which extend into the tank.

3,425,192
VACUUM CLEANING SYSTEM

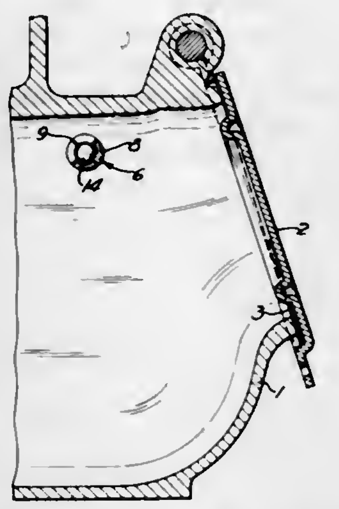
Norman E. Davis, Dallas, Tex., assignor to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed Dec. 12, 1966, Ser. No. 600,821
U.S. Cl. 55—345 **2 Claims**
Int. Cl. B01d *45/12*



A cleaning tank system to be used with a vacuum hose, having a cylindrical housing that can be considered in three superposed sections. In the bottom section is a centrifugal separator for separating maximum size dirt. It discharges air into a second section containing a plurality of smaller cyclone separators from which other dirt is extracted and separately collected in a pan above and apart from the collector for the first stage. The multiple separators of the second stage then discharge toward the third section of the housing which contains the suction fan preceded by a filter to completely clean the air which finally discharges from the top section.

3,425,193
SEALED JOURNAL BOX WITH BREATHER

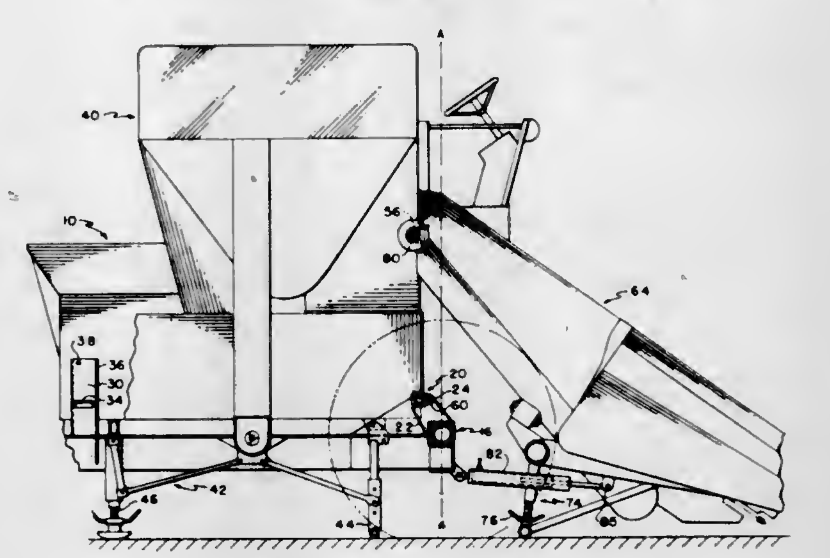
Arthur F. Emmerson, 425 Bell Ave., Altoona, Pa. 16602
Filed Mar. 15, 1967, Ser. No. 623,296
U.S. Cl. 55—385 **4 Claims**
Int. Cl. B01d *35/02, 46/00*



A tubular resilient plug is fitted in a breather opening in a sealed railroad car journal box. The plug has an integral diaphragm-like wall normally closing its outer end, but the wall is provided with at least three uniformly spaced radial slits to form a cusp valve in order to permit air to leave and enter the box.

3,425,194
SELF-PROPELLED IMPLEMENT ASSEMBLIES

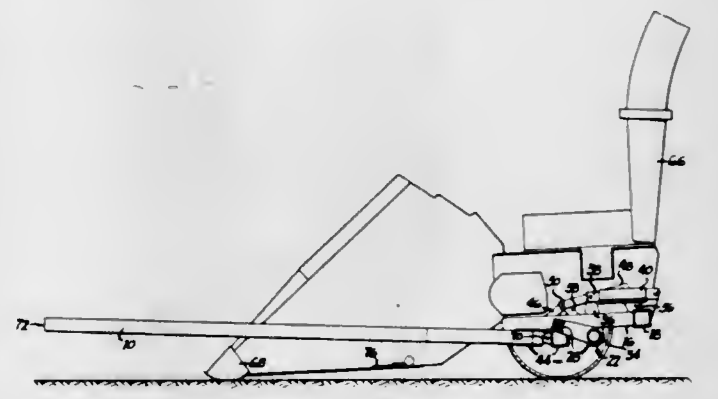
Ted Stott, Lyman J. Gunyou, George V. Frushour, and Wilbur E. Groeneveld, Celina, Ohio, assignors to Avco Corporation, Coldwater, Ohio, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,933
U.S. Cl. 56—15 **7 Claims**
Int. Cl. A01d *45/02;* **A01b** *51/02*



A maneuverable, self-propelled power plant assembly with laterally projecting carrier with offset spaced drive wheels is provided with means to connect a rearward section and a forward section of an implement to the projecting carrier. The connections afford an upwardly open connector above the carrier to which the front end of the rear section is connected with an additional connection at the rear of the rear section with a mating connector at the side of the power plant assembly. The forward section, generally including a crop gathering unit, is connected to the assembled rear section by a pivotal connection, located adjacent a vertical plane through the carrier at a position above the carrier and a stable connection is completed by an hydraulically operable, variable length connecting means extending between the forward section and the carrier which also supplies an operating adjustment of the gathering mechanism.

3,425,195
FORAGE HARVESTER HAVING LIFTING DEVICE

Wolfgang R. Potzsch, Wolfenbuttel, Germany, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 23, 1966, Ser. No. 529,339
U.S. Cl. 56—23 **9 Claims**
Int. Cl. A01d *75/14;* **B60g** *19/10*

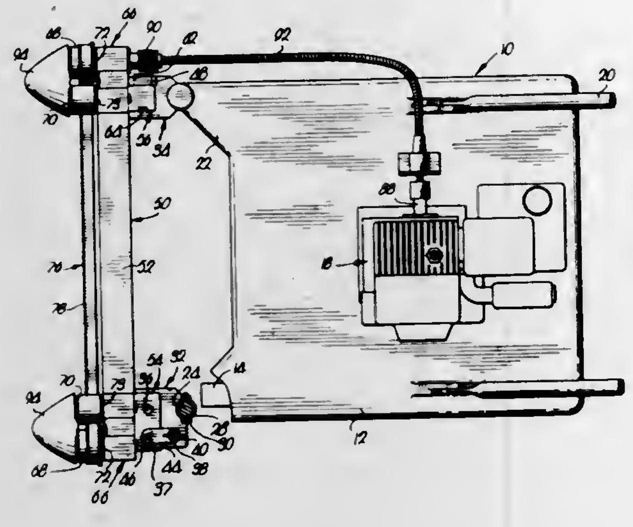


A lifting device for a crop harvester for maintaining the harvesting unit substantially horizontal at any adjusted position. The lifting device includes toggle links having opposite free ends respectively connected to the relatively movable frame elements of the harvester with a separate link connecting the joint of the toggle to the raising and lowering element of the harvester.

3,425,196

LAWN MOWER HAVING A REMOVABLE ENDLESS CUTTER

James S. Reed, 1435 Engel Road,
Lawrence, Kans. 66044
Filed Nov. 10, 1965, Ser. No. 507,153
U.S. Cl. 56—25 **5 Claims**
Int. Cl. A01d *55/24, 35/12*

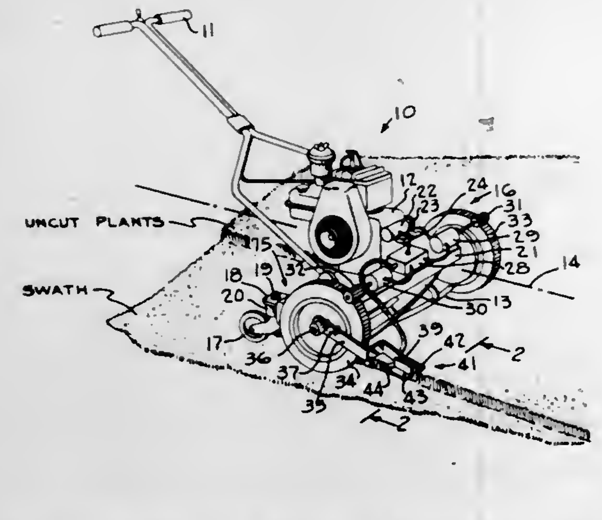


A mower including a removable cutting assembly comprising an endless, fleixble, serrated belt trained over rollers for cutting of material when juxtaposed stretches of the belt are moved transversely of the path of travel of the mower. A flexible drive permits removal of the cutting assembly from the frame for auxiliary trimming purposes. Releasable latching components securing the assembly to the frame are vertically adjustable for height of cut adjustment.

3,425,197

VEHICLE GUIDANCE APPARATUS

Stanley Bernard Kita, Lansdale, Pa.
(30 Valley Green Road, Doylestown, Pa. 18901)
Filed Aug. 7, 1967, Ser. No. 658,858
U.S. Cl. 56—26 **7 Claims**
Int. Cl. A01d *35/24, 75/28;* **B62d** *5/04*

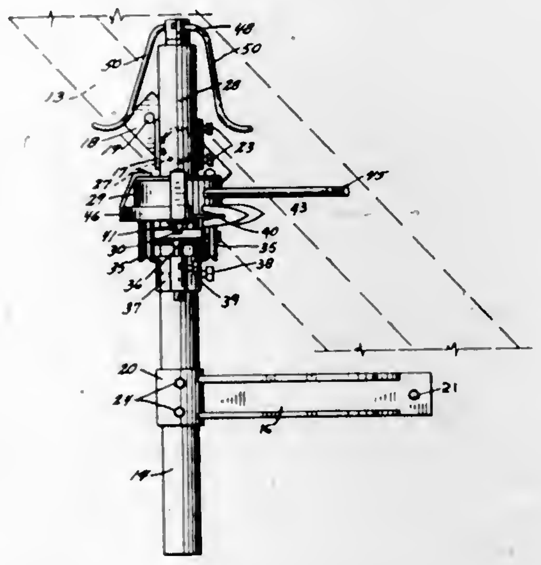


An electrically energized conductor is positioned on a self-propelled crop-cutting vehicle at an elevation sufficiently close to ground level to contact uncut plants standing adjacent to a swath of plants. The energized conductor produces an electrical current in the contacted uncut plants in response to a predetermined orientation of the vehicle relative to the swath. This current, after amplification, actuates a powered steering apparatus which maintains the vehicle in alignment with the edge of the swath so that the vehicle operates on uncut plants standing adjacent thereto.

3,425,198

CORNSTALK TOPPERS

Carl H. Schlothauer, Rte. 1, Box 100, Fort Morgan, Colo. 80701, and Pete Galassini, Fort Morgan, Colo.; said Galassini assignor to said Schlothauer
Filed Mar. 21, 1966, Ser. No. 536,049
U.S. Cl. 56—63 **5 Claims**
Int. Cl. A01d *45/02, 55/26*

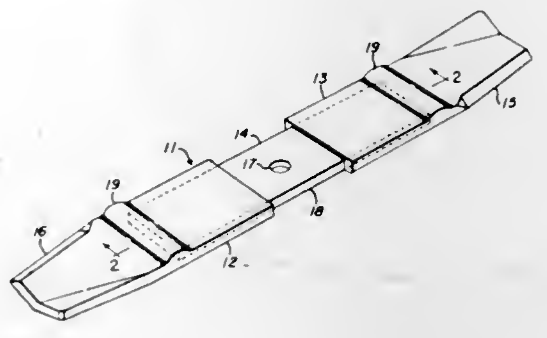


A vertical frame pipe adjustably secured to the side of a corn harvester, with a supporting arm adjustably mounted thereon and extending horizontally outward therefrom to support a vertical shaft housing which terminates at its lower extremity in a circular, open-bottomed, pulley housing. A knife shaft rotatably mounted in, and extending above and below, said shaft housing and through a belt pulley in said pulley housing. A bladed knife-disc mounted on the lower extremity of said shaft to cut the tops from entering stalks, and radial top-throwing arms mounted on the upper extremity of said shaft to throw the cut tops outwardly therefrom.

3,425,199

MOWER BLADE

Abraham L. Freedlander, Dayton, Ohio, and Robert E. Matthews and Wayne C. Garrett, Waynesville, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,359
U.S. Cl. 56—295 **5 Claims**
Int. Cl. A01d *55/18*

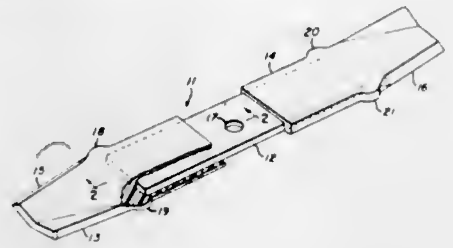


A flexible mower blade primarily formed of an elastomeric material such as urethane and having a rigid metal or plastic central mounting portion bonded within the blade for mounting to the lawn mower shaft. Humps on the upper or lower surface opposite the ends of the portion provide reinforcement.

3,425,200

REINFORCED MOWER BLADE

Abraham L. Freedlander, Dayton, Ohio, and Robert E. Matthews and Wayne C. Garrett, Waynesville, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,360
U.S. Cl. 56—295 **3 Claims**
Int. Cl. A01d *55/18*

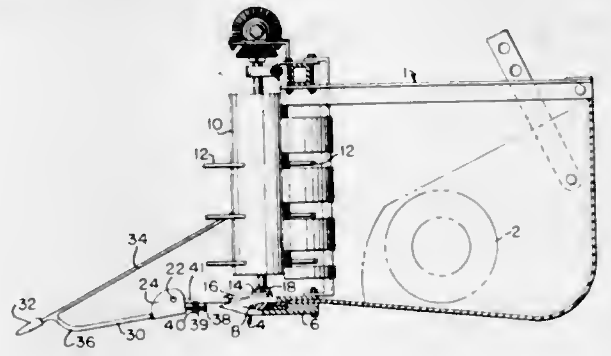


A flexible mower blade primarily formed of an elastomeric material such as urethane and having a rigid metal or plastic central mounting plate bonded within the blade for mounting to the lawn mower shaft. Ears on the sides of the blade opposite the ends of the plate provide reinforcement.

3,425,201

STALK PICK-UP APPARATUS

Irvin D. McEachern, deceased, late of Hale Center, Tex., by William T. McEachern, executor, Rte. 2, Hale Center, Tex. 79041
Filed Aug. 18, 1965, Ser. No. 480,824
U.S. Cl. 56—314 **4 Claims**
Int. Cl. A01d *55/02, 63/00*



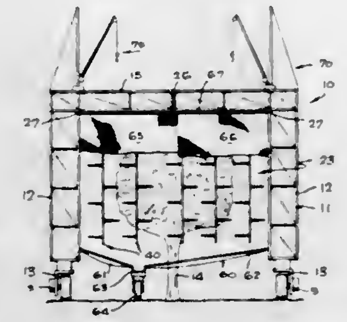
A stalk pick-up which extends forwardly of the sickle of a broadcast type combine and which is adjustably and resiliently supported normally a spaced distance above the terrain, which stalk pick-up has a yieldably rubber like finger on the outer end thereof to enable the stalk pick-up bar to be run close to the terrain without the likelihood of damage to the bar to which it is attached or the sickle with which it is associated.

3,425,202

FRUIT HARVESTER

Logan E. Setzer, 9013 Reading Ave.,
Los Angeles, Calif. 90045
Filed Jan. 5, 1966, Ser. No. 518,927
U.S. Cl. 56—328 **10 Claims**
Int. Cl. A01g *19/00*

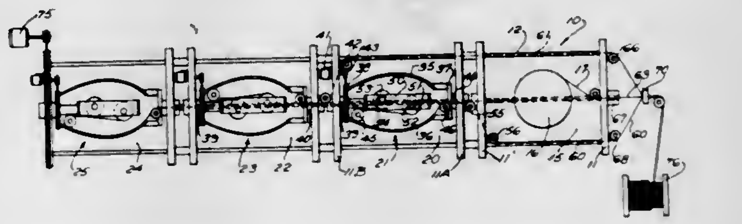
A fruit harvester is disclosed herein including a wheeled vehicle having upright stanchion frame supported on upper centrally opened framework. A vertically movable fruit flailing apparatus is supported on the upper framework and includes a plurality of downwardly depending rotatable flailing units. Each flailing unit includes a plurality of selectively inflatable swipples radially disposed from a hollow shaft for engaging the fruit of the tree.



3,425,203

CABLE MAKING MACHINE

Konrad C. Schillebeeckx, Cranston, R.I., assignor to Wanskuck Company, a corporation of Rhode Island
Filed Dec. 30, 1966, Ser. No. 606,208
U.S. Cl. 57—58.36 **4 Claims**
Int. Cl. D01h *7/90, 1/10;* **D07b** *3/04*

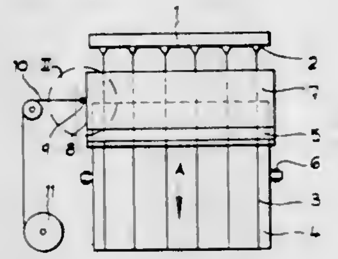


A cable machine for twisting a plurality of pairs of twisted strands with each pair of said plurality or pairs being twisted together in the same machine as an initial operation and furnishing the pairs to be twisted together without intermediate reeling.

3,425,204

METHOD AND APPARATUS FOR MANUFACTURING TWISTED FIBER STRANDS FROM STAPLE FIBERS, ESPECIALLY FROM GLASS STAPLE FIBERS

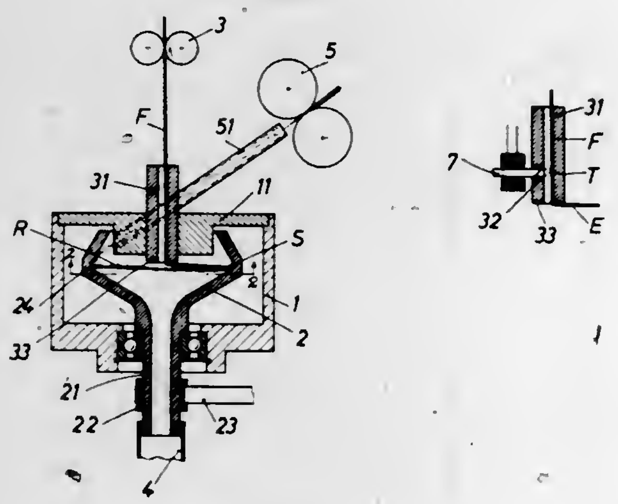
Wolfgang Schuller, Wertheim (Main), and Harald Hohlfeld, Wertheim, Germany, assignors to Werner Hugo Wilhelm Schuller, Munich-Grunwald, Germany
Filed Sept. 15, 1966, Ser. No. 579,632
Claims priority, application Germany, Sept. 16, 1965, G 44,694
U.S. Cl. 57—58.89 **25 Claims**
Int. Cl. D01h *7/00;* **D02g** *3/02*



A method and apparatus for manufacturing twisted fiber strands in which a stream of air with fibers, especially glass fibers, suspended therein is guided in substantially tangential direction along a stationary surface of circular cross-section and wherein the fibers are withdrawn along the axis of this surface and through a tube rotating at high speed about its axis so as to rotate the air surrounding the strand of fibers in the tube to thereby twist at least the outer layer of the strand about the strand axis.

3,425,205
METHOD AND APPARATUS FOR STRAND QUALITY CONTROL IN ROTARY SPINNING CHAMBERS

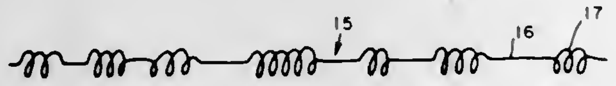
Hans Landwehrkamp and Franz Schreyer, Ingolstadt, Germany, assignors to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Germany, a corporation of Germany
Filed Nov. 14, 1967, Ser. No. 682,944
Claims priority, application Germany, Nov. 19, 1966, Sch 39,841
U.S. Cl. 57—58.89 **8 Claims**
Int. Cl. D01h *7/00*



When a spinning operation is discontinued, the strand is severed a predetermined distance from the fiber-collection zone, the inferior trailing severed portion is removed from the spinning apparatus, and the strand end is moved in a direction opposite its normal travel direction such predetermined distance to the collection zone in readiness to resume spinning. A reciprocable knife may extend into the strand-withdrawal tube transversely of the tube length to sever the strand, or an annular knife encircling the withdrawal tube is axially reciprocated longitudinally of the withdrawal tube to a location between the tube and the collection zone to sever the strand moving generally radially into the tube. Alternatively, the strand may be twisted from the fiber at the point of strand tangency to the collection zone by stopping the strand-withdrawal mechanism and continuing rotation of the chamber.

3,425,206
DYED INTERMITTENTLY TEXTURED YARN

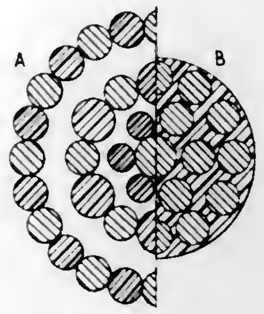
James R. Holton, Gulf Breeze, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application Nov. 12, 1963, Ser. No. 322,731, now Patent No. 3,263,298, dated Aug. 2, 1966. Divided and this application Aug. 12, 1965, Ser. No. 479,214
U.S. Cl. 57—140 **3 Claims**
Int. Cl. D02g *3/02, 3/36;* **D01d** *11/06*



A dyed thermoplastic continuous filament yarn exhibiting intermittently arranged textured sections and untextured sections is provided. The untextured sections present a different and darker shade of the same color from the textured sections. The textured sections can be in the form of crimps, curls or like distortions.

3,425,207
ROPE, STRAND OR THE LIKE

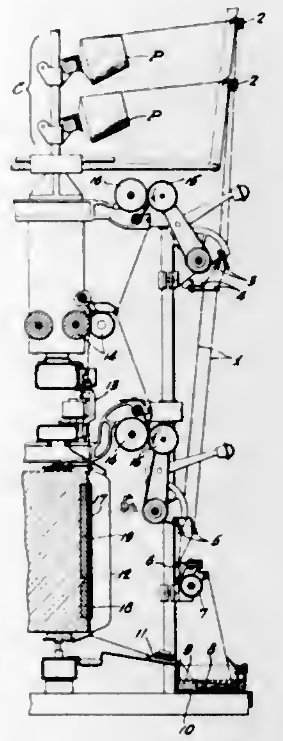
Robert Edward Campbell, Doncaster, England, assignor to British Ropes Limited, Doncaster, Yorkshire, England, a British company
Filed Apr. 24, 1967, Ser. No. 633,252
U.S. Cl. 57—145 **11 Claims**
Int. Cl. D07b *1/06;* **D02g** *3/36*



A wire rope in which adjacent wires are separated by an elastomeric material which completely fills the interstices between the wires, and a method of forming such a rope by drawing a strand, formed from a mixture of filamentary components of metal and elastomer through a die.

3,425,208
METHOD FOR PRODUCING TEXTURED YARNS OF CELLULOSIC FIBRES

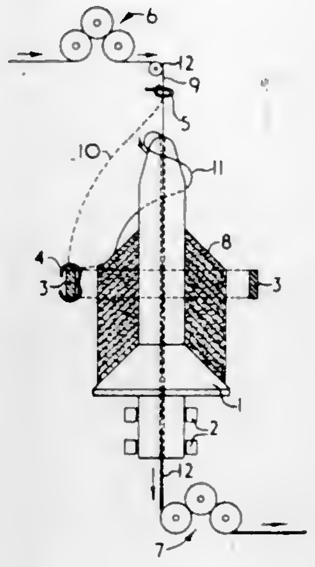
Fred Boswell Shippee, East Greenwich, and Guy Emmanuel Perkins, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 30, 1963, Ser. No. 320,030
U.S. Cl. 57—157 **7 Claims**
Int. Cl. D02g *3/02, 3/36;* **D06m** *1/00*



Textured yarns of cellulosic fibres are prepared by false-twisting at high spindle speeds by impregnating the yarn prior to false-twisting with a catalyzed heat-activated cross-linking agent and a mixture of mono-hydroxy oxyethylene oxy 1,2-propylene aliphatic monoethers.

3,425,209
METHOD FOR THE MANUFACTURE OF CORD

Ronald S. Goy, Sutton Coldfield, England, assignor to The Dunlop Company Limited, London, England, a British company
Filed Apr. 24, 1967, Ser. No. 633,074
Claims priority, application Great Britain, May 7, 1966, 20,307/66
U.S. Cl. 57—157 **10 Claims**
Int. Cl. D02g *3/02;* **D01h** *13/26, 7/02*

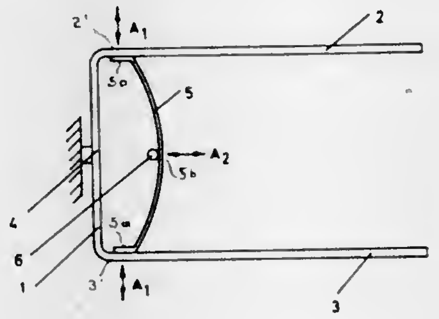


A method for manufacturing a doubled cord using a hollow spindle capable of rotating at high speed. A twisted continuous filament yarn, carried on the spindle, is passed down the centre of the spindle together with an untwisted continuous filament yarn whilst the spindle is rotated at high speed. The rotation of the spindle causes twist to be removed from the twisted yarn and the two yarns to become doubled together in a cord.

The rate of input of untwisted yarn must be greater than the rate of take-up of cord to allow for the apparent reduction in length of the yarn during doubling.

3,425,210
STEPPING DEVICE FOR TUNING FORK OSCILLATOR

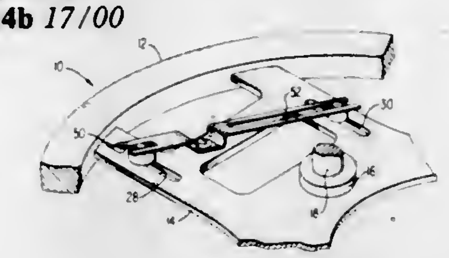
Manfred Frans Barth, Dauchingen, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany
Filed Jan. 18, 1967, Ser. No. 610,086
Claims priority, application Germany, Jan. 22, 1966, K 58,216
U.S. Cl. 58—23 **5 Claims**
Int. Cl. G04c *3/00*



The prongs of a tuning fork are bridged by a toggle member in the vicinity of the nodal mount of the fork, so that vibrations of the prongs produce substantially pure linear motion of the midpoint of the member. A shift element engaging on a stepping wheel is attached to member at the midpoint of the latter.

3,425,211
WATCH RATE REGULATOR

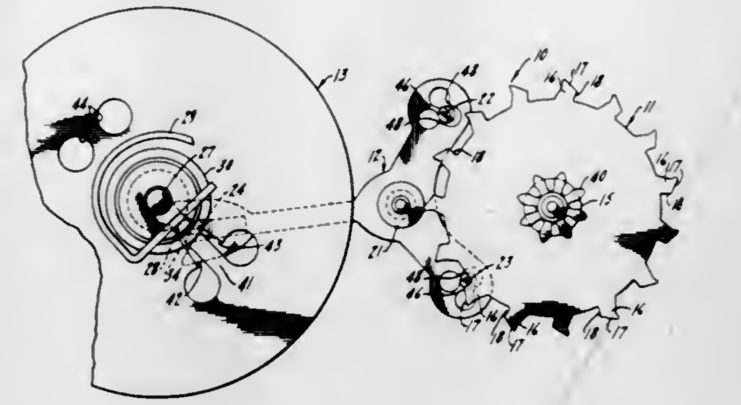
John A. van Horn, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 539,507, Apr. 1, 1966. This application Jan. 25, 1968, Ser. No. 700,496
U.S. Cl. 58—107 **11 Claims**
Int. Cl. G04b *17/00*



The watch rate regulator hereof provides for the simultaneous movement of a pair of weights along linear paths lying along chord lines of a circle coincident with the axis of rotation of a balance wheel to change the moment of inertia thereof while maintaining the center of gravity of the balance wheel constant with respect to its axis of rotation. A lever is pivotally carried by the balance wheel at a point offset from the axis of rotation of the balance wheel and coincident with the center of gravity of the two weights, pivotal action of the lever displacing the weights along the paths such that the center of gravity of the weights remains constant throughout the full range of movement.

3,425,212
QUIET CLOCKWORK ESCAPEMENT

Charles D. Verde, Clifton, N.J., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed May 12, 1967, Ser. No. 638,135
U.S. Cl. 58—116 **7 Claims**
Int. Cl. G04b *15/14*



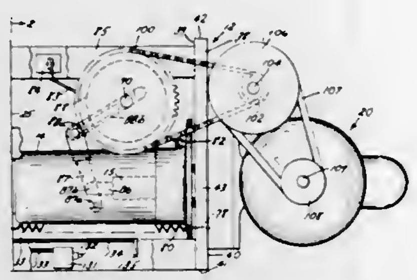
A clockwork escapement assembly suitable for one-piece molding of the major parts in which resilience is embodied at the points of impact, both at the pallet and the impulse pins, with the direction and extent of the resilience being controlled to minimize the loss of torque to the balance wheel.

3,425,213
CHAIN CUTTER AND ASSEMBLY APPARATUS

Gary Roselman, Liberty, N.Y., assignor to Albert Monash, Bronx, N.Y.
Filed Apr. 20, 1964, Ser. No. 361,059
U.S. Cl. 59—11 **5 Claims**
Int. Cl. B21l *5/00, 11/00;* **B26d** *5/12*

1. A machine for breaking or shearing chain links of interlocking chains, and spreading and compressing chain hooks, comprising:
(a) a frame,
(b) a front tool holder attached to the frame,

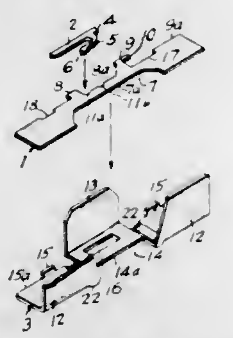
(c) a ram drive secured to the frame, located and spaced opposite the front tool holder forming a bed for locating one of the links of chain,
(d) a mount carried by the ram drive and positioned to be guided into the bed,
(e) means for limiting the stroke into the bed,



(f) means on the mount and front tool holder for each removably receiving one of complementary sections of a link shearing or breaking tool, or a chain hook spreading tool, or a chain hook compressing tool whereby the machine may be used selectively for breaking or shearing the links, or spreading or compressing the chain hooks.

3,425,214
WRIST BAND WITH ADJUSTABLE LINKAGE

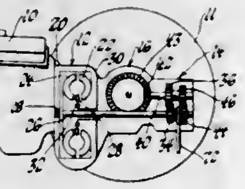
Ng Chue Meng, Kowloon, Hong Kong, assignor to Stelux Manufacturing Co., Ltd., Kowloon, Hong Kong, a corporation of Hong Kong
Filed Oct. 11, 1966, Ser. No. 585,822
U.S. Cl. 59—80 **9 Claims**
Int. Cl. B21l *11/00;* **F16g** *15/14*



A wrist band comprising links having a casing and a locking member with a terminal part projectable to a position beyond the casing to lock with a portion of a similar adjacent link. The casing has a slot to expose part of the locking member for manipulation thereof. Retaining means are provided so that the locking member can be maintained either in a locked or unlocked position.

3,425,215
POWER TRAIN WITH ENGINE AND TORQUE CONVERTER

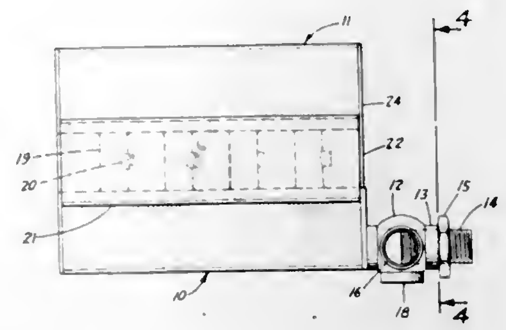
Frank J. Winchell, Bloomfield Hills, and Jerry R. Mrlik, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,351
U.S. Cl. 60—12 **8 Claims**
Int. Cl. F16d *39/00, 43/02*



A power train which in the preferred embodiment has an engine and a torque converter whose coupling point occurs at the engine speed at which peak engine torque occurs and whose torque ratio provides substantially constant converter output torque approximating peak engine torque between converter stall and the coupling point.

3,425,216
MUFFLER

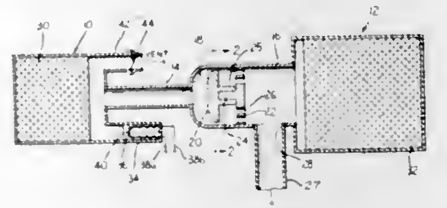
Gust H. Bjork, Robbinsdale, Minn., assignor to Pure Air Mufflers, Inc., a corporation of Minnesota
Filed Jan. 31, 1967, Ser. No. 612,993
U.S. Cl. 60—30 **8 Claims**
Int. Cl. F01n *3/02, 1/14;* **B01j** *9/00*



A pollution reducing muffler for internal combustion engines having a fresh air aspirating inlet for exhaust gases, and a long narrow gas receiving chamber connected along one side to a similar parallel gas discharge chamber through multiple passages for distributing the gases in their path of travel through the muffler. The muffler reduces pollution by promoting further combustion of combustible constituents of the exhaust gases.

3,425,217
APPARATUS FOR PRESSURIZING ROCKET MOTOR PROPELLANT TANKS

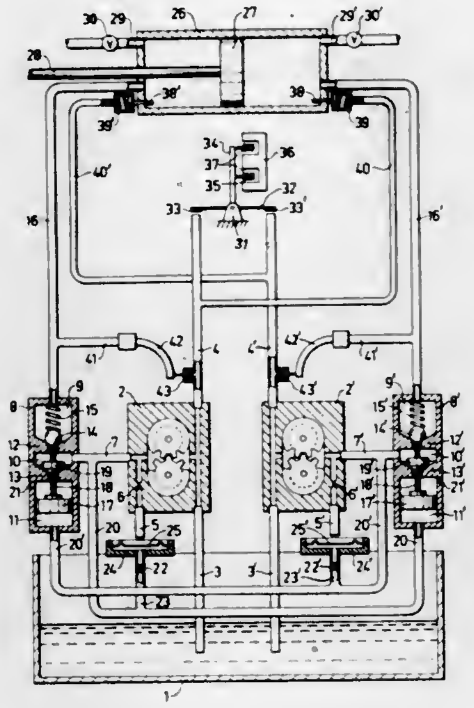
Thomas P. Layendecker, Jersey City, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,094
U.S. Cl. 60—39.48 **3 Claims**
Int. Cl. F02g *1/06, 3/00;* **F02k** *9/00*



Apparatus for pressurizing rocket propellant storage tanks with gas generated by combustion of two solid grains having different burning rates. A first conduit connects two casings holding respective ones of the aforesaid grains, and a branch conduit connects this first conduit to propellant tanks. When the pressure in the latter reaches a predetermined level, a pressure rupture diaphragm vents the first casing to the atmosphere, and a check valve in the conduit closes to prevent venting of gas from the propellant tanks and the second casing.

3,425,218
HYDRAULIC ACTUATOR

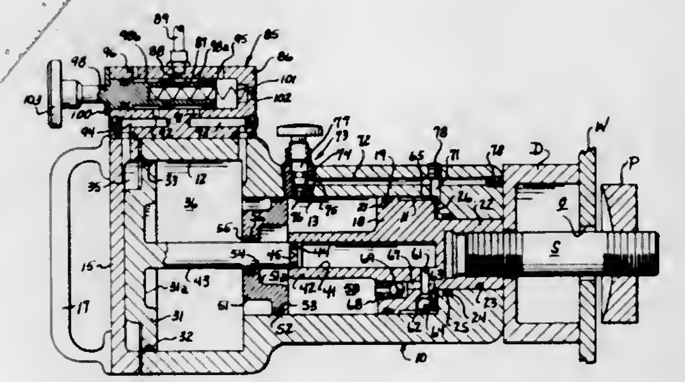
Erik Gunnar Attebo, Saffle, Sweden, assignor to Aktiebolaget Kalle-Regulatorer, Saffle, Sweden
Filed July 20, 1967, Ser. No. 654,903
Claims priority, application Sweden, Sept. 9, 1966, 12,165/66
U.S. Cl. 60—52 **6 Claims**
Int. Cl. F15b *15/26, 13/043;* **F04b** *13/02*



The invention relates to a hydraulic actuator of the type in which each of two gear wheel pumps has inlets for liquid and gas on the suction side and a restricted outlet on the pressure side as well as a pressure fluid conduit leading to a hydraulic servo cylinder. The gas inlets are alternately throttled by valve members actuated simultaneously in opposite directions by a signal transmission device.

3,425,219
AIR-HYDRAULIC PRESS

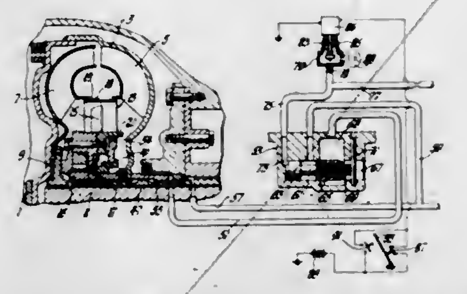
Henry N. Oliver and Carl H. Morris, Rockford, Ill., assignors of fifty percent each to Henry N. Oliver and Carl H. Morris, Rockford, Ill.,
Filed Aug. 21, 1967, Ser. No. 662,005
U.S. Cl. 60—52 **12 Claims**
Int. Cl. F15b *15/18, 7/00*



An air-hydraulic press in which a movable ram piston is hydraulically actuated by a reciprocatory hydraulic pump formed in the movable ram piston and driven by an air-operated piston. Hydraulic fluid is supplied to the hydraulic pump from a reservoir having a floating wall to accommodate changes in volume in the reservoir.

3,425,220
HYDRODYNAMIC TORQUE TRANSMITTING UNIT WITH VARIABLE PITCH ROTOR BLADES

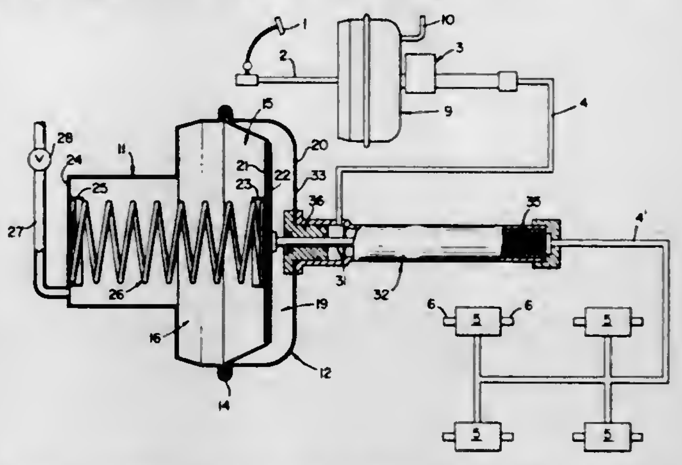
Earl L. Egbert, Northville, Paul H. Goodale, Ann Arbor, and Paul D. Stevenson, Plymouth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,900
U.S. Cl. 60—54 **13 Claims**
Int. Cl. F16d *33/04;* **F16h** *41/08*



Control motor mechanism movably mounted in a rotor hub of a hydrodynamic torque transmitting unit which can be moved by control forces operative on the motor mechanism, to a first set position to turn the blades of a unit rotor to a closed, high-angle position for reducing torque transmission through the unit, or moved to a second set position to turn the blades to a fully open, low-angle position for efficient torque transmission by the unit, or moved to an intermediate position in response to increased torque demand to turn the blades to an intermediate angle position for increased torque multiplication by the unit.

3,425,221
SAFETY AND PARKING VEHICLE BRAKING DEVICE

Brett J. Canfield, San Francisco, Calif., assignor of seventy-five percent to John M. Graham, Oakland, and twenty-five percent to Elvin D. Neill, Fremont, Calif.
Filed Oct. 20, 1966, Ser. No. 588,086
U.S. Cl. 60—54.5 **9 Claims**
Int. Cl. F15b *15/18;* **B60t** *17/06;* **B60r** *25/08*

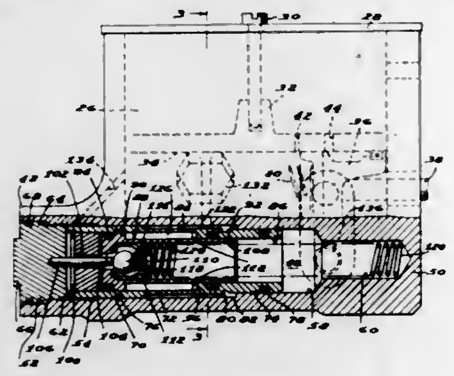


In a hydraulic braking system, the inclusion of an independently actuatable brake actuating device which is deactuated by application of vacuum and actuated by the release of vacuum and application of yieldable means independently of other means of actuating said braking system.

3,425,222
FLUID PRESSURE BRAKING SYSTEM

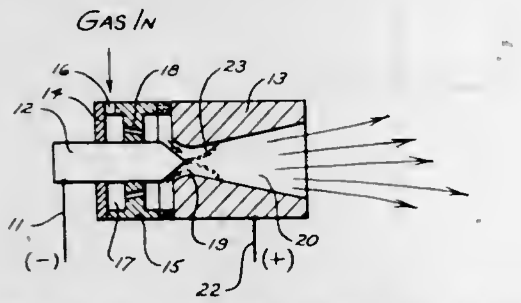
Leo A. Cooney and Marco Nobili, Grosse Pointe, Mich., assignors to Hydroease Corporation, Grosse Pointe, Mich, a corporation of Michigan
Filed May 25, 1966, Ser. No. 552,961
U.S. Cl. 60—54.6 **4 Claims**
Int. Cl. F15b *7/08, 15/00*

The provision in a vehicle braking system of an integral, self-contained unit including a master cylinder and fluid reservoir therefor together with a pressure booster unit incorporating a pair of interfitting, stepped pistons received within a stepped bore and including valve means operable to permit straight through fluid flow during initial movement of master cylinder piston and responsive to booster piston movement to interrupt such straight through flow and thereby multiply pressure fluid in the load lines. The reservoir, master cylinder, and pressure booster cylinder are arranged in gravity flow communication, with passageway means establishing secondary communication between the reservoir and the larger end of the stepped bore on the booster cylinder to permit bypassed fluid return to the reservoir, thus eliminating any leakage of the fluid from the self-contained unit.



3,425,223
ELECTROTHERMAL THRUSTER

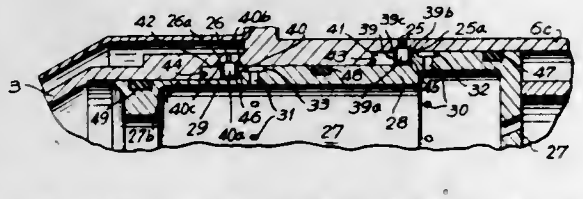
James A. Browning, Hanover, N.H., assignor to Thermal Dynamics Corporation, a corporation of New Hampshire
Continuation of application Ser. No. 394,980, Sept. 8, 1964. This application Mar. 7, 1967, Ser. No. 645,555
U.S. Cl. 60—203 **4 Claims**
Int. Cl. F02k *7/08;* **B64g** *1/00;* **F23r** *1/04*



1. A method of producing thrust by electrothermal means comprising, establishing an electric arc between two electrodes, passing a gas therethrough under laminar flow conditions, heating said gas substantially beyond the point required to completely dissociate said gas, and allowing the resultant heated particles of said dissociated gas to expand and escape in a coherent frozen flow stream.

3,425,224
PROPELLANT INJECTOR MECHANISM FOR ROCKET ENGINES

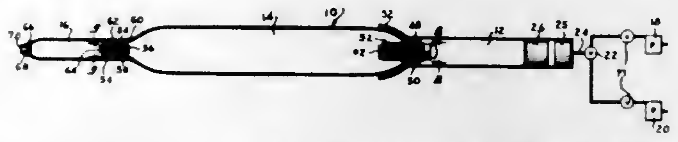
Charles E. Upper, Williamsville, N.Y., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,917
U.S. Cl. 60—258 **9 Claims**
Int. Cl. F02k *9/02;* **F02g** *1/00*



1. In a rocket engine of the type having a storage container for a liquid propellant with at least one port in its wall closed by a frangible closure projecting inwardly from the wall and a slide mounted for movement adjacent the wall to shear the closure and having at least one orifice for alignment with the port in the wall to deliver liquid therefrom, the combination of said storage container, said slide and an annular shoulder projecting inwardly from the wall of the container adjacent one side of the closure, an annular shoulder projecting outwardly from the slide adjacent the opposite side of the closure, and means for actuating said slide to shear the closure and compress it between the shoulders on the wall of the container and slide to cushion the movement of the latter.

3,425,225
AUXILIARY JET STREAM INJECTING MEANS FOR REACTION ENGINES

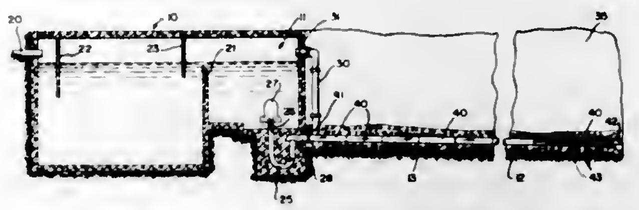
Frederick W. Krause, Rte. 1, Box 120, West River, Md. 20881
Filed Sept. 20, 1966, Ser. No. 581,143
U.S. Cl. 60—261 **3 Claims**
Int. Cl. F02k *3/10;* **F02g** *3/00, 5/02*



Means for increasing the efficiency of reaction engines by the provision of novel apparatus for converting a fuel/water mixture from liquid phase through vapor to superheat phase to thereby provide an auxiliary jet stream for direct injection into the main stream of the products of combustion, the auxiliary jet stream providing an increment of thrust as it is injected into the stream and the fuel thereafter being after-burned.

3,425,226
SUBSURFACE DISPOSAL SYSTEM

Henry S. Santeford, Jr., 201 Quincy St., Apt. 2, Hancock, Mich. 49930
Filed July 25, 1966, Ser. No. 567,670
U.S. Cl. 61—13 **5 Claims**
Int. Cl. E03f *1/00, 5/00*



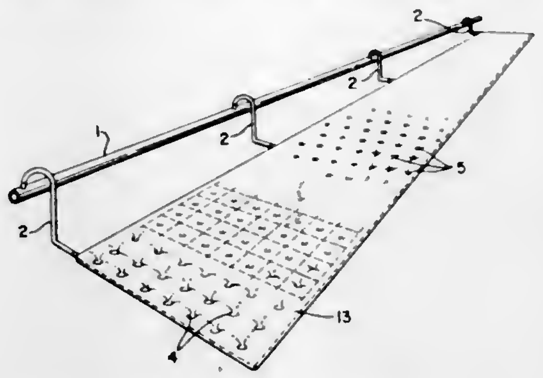
A subsurface disposal system for effluent having a septic tank with a dosing chamber for discharging quantities of effluent periodically from the septic tank in combination with a pipe system for the distribution field having a series of pipe sections disposed in abutting relation to receive and handle the effluent in open channel flow and with uniform distribution in the absorption field derived from repeated hydraulic surges at opposite ends of the pipe system as caused by openings in the bottom of the pipe system large enough not to be blocked by solids and yet small enough to prevent too rapid discharge of effluent and spaced sufficiently apart to limit the rate of effluent outflow.

3,425,227
FORM FOR CONSTRUCTING A SLAB FOR TALUS OR BOTTOM PROTECTION

Henri F. J. Hillen, The Hague, Netherlands, assignor, by mesne assignments, to Construction Techniques, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,239
U.S. Cl. 61—38 **4 Claims**
Int. Cl. E02b *3/12, 5/02*

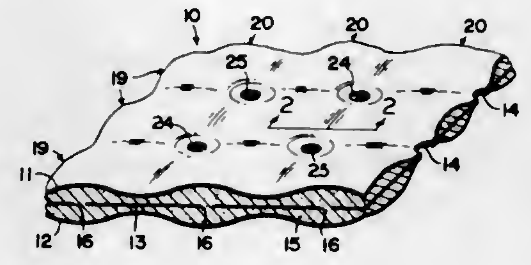
A form for forming slabs on a talus or other surface comprised of a pair of sheets of flexible material joined

to each other around the peripheries thereof defining a closed space into which a hardenable cementitious material may be flowed and means inwardly of the periphery joining said sheets at a plurality of spaced points. Each point of attachment permits the passage of water therethrough whereby the hydrostatic pressure on both sides of the slab may be equalized. The points of attachment also comprise sections of reduced thickness which permit selective cracking of the slab, thereby allowing the slab to conform to the surface on which it is placed.



3,425,228
FABRIC FORMS FOR CONCRETE STRUCTURES

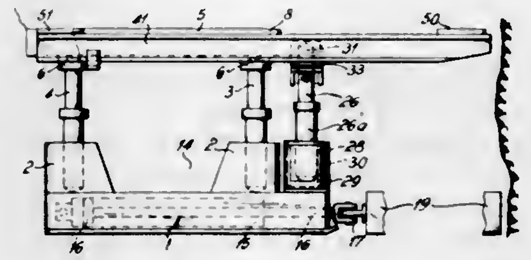
Bruce A. Lamberton, Berea, Ohio, assignor to Construction Techniques, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 10, 1967, Ser. No. 674,289
U.S. Cl. 61—38 **12 Claims**
Int. Cl. E02b *3/12*



Two continuous sheets of flexible fabric material, at least in part porous, are joined around their entire outer periphery. A third fabric layer is interposed between the two sheets with the three sheets being joined at spaced points to form a plurality of tubes or pockets into which a cementitious slurry is pumped. The third layer of fabric has openings to facilitate the passage of the slurry between upper and lower surfaces of the third layer.

3,425,229
MINE ROOF SUPPORT

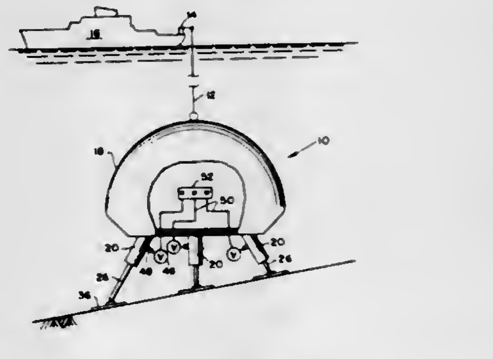
Karl Maria Groetschel, Stolzestrasse 44, Bochum, Germany
Continuation-in-part of application Ser. No. 254,713, Jan. 29, 1963. This application Nov. 12, 1963, Ser. No. 322,606
Claims priority, application Germany, Nov. 10, 1962, G 36,367
U.S. Cl. 61—45 **27 Claims**
Int. Cl. E21d *11/00;* **F16m** *15/04*



A traveling or walking mine support which can be advanced and which includes a forward assembly and a rearward assembly movably attached together. The assemblies include supports or props for supporting the roof of a mine. The forwardmost assembly includes girders or caps mounted on the prop or props for supporting the roof of a mine in such fashion that the major supporting effect of the caps is provided forwardly of the prop and forwardly of the forward assembly so as to be capable of supporting the roof of the mine in the area where the working face of the mine is located.

3,425,230
UNDERWATER ADJUSTABLE APPARATUS AND METHOD

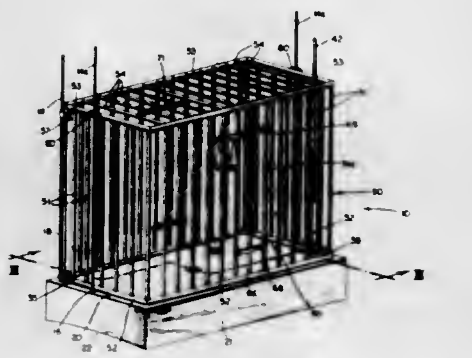
Harvey H. Haynes, Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1967, Ser. No. 664,221
U.S. Cl. 61—69 **7 Claims**
Int. Cl. B63c *11/36*



The description discloses an underwater adjustable apparatus which may include a payload or vehicle and a plurality of adjustable legs connected thereto. Each of the legs may include a hollow cylinder and a piston and rod means disposed therein for reciprocal movement. The rod extends through the bottom of the hollow cylinder and may be provided with a foot for contacting the water bottom. Upon descent of the payload or vehicle the hollow cylinder is open to the water environment thereby causing the piston rod to be fully extended. Just prior to the foot making contact with the ocean bottom the hollow cylinder is closed. After the foot comes to rest on the ocean bottom pressure within the hollow cylinder is relieved until the piston rod retracts within the hollow cylinder a desired distance. Selective pressure relieving of the adjustable legs will level or properly position the payload or vehicle on the water bottom.

3,425,231
DIVING DEVICE

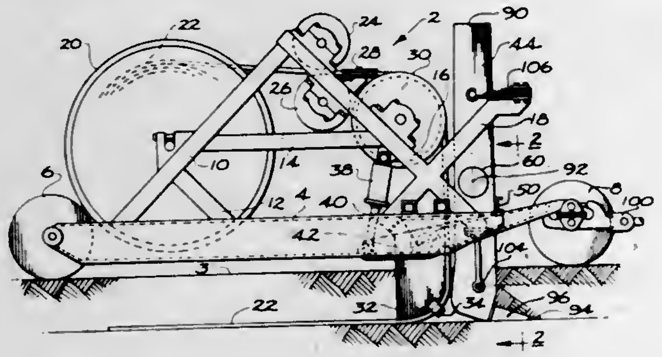
Kenneth Z. Rehrer, 3400 N. 11th St., Philadelphia, Pa. 19140
Filed June 27, 1967, Ser. No. 649,303
U.S. Cl. 61—69 **5 Claims**
Int. Cl. B63c *11/46;* **E02b** *17/00*



A cage is constructed of interconnected hollow pipes which form an airtight chamber, mounted on an airtight tank. Both the chamber and the tank have valve connections for bleeding air out, allowing water to enter, and forcing the water out. The cage may be lowered into the water by any suitable means.

3,425,232
UNDERGROUND CABLE INSERTING BY SONICS

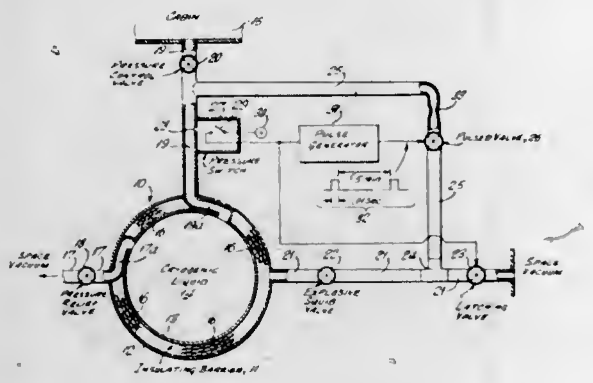
Albert G. Bodine, Jr., 7877 Woodley Ave.,
Van Nuys, Calif. 91406
Filed Sept. 27, 1965, Ser. No. 490,406
U.S. Cl. 61—72.6 **6 Claims**
Int. Cl. F16l *1/00*



Apparatus for laying an underground cable is described. Cable from a supply drum is payed out behind a vertical trench cutting blade which penetrates the ground and which is sonically activated to a resonant frequency such that a velocity antinode occurs near the bottom end of the blade thereby causing the soil to be fluidized to permit the cable to be buried behind the blade without forceful breaking away and removal of the earth structure.

3,425,233
PROCESS AND MEANS FOR REGULATING THE PRESSURE AND FLOW OF A STORED FLUID

Harlan F. Brose, Littleton, Colo., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,423
U.S. Cl. 62—45 **3 Claims**
Int. Cl. F17c *1/12, 7/02;* **B64g** *9/00*

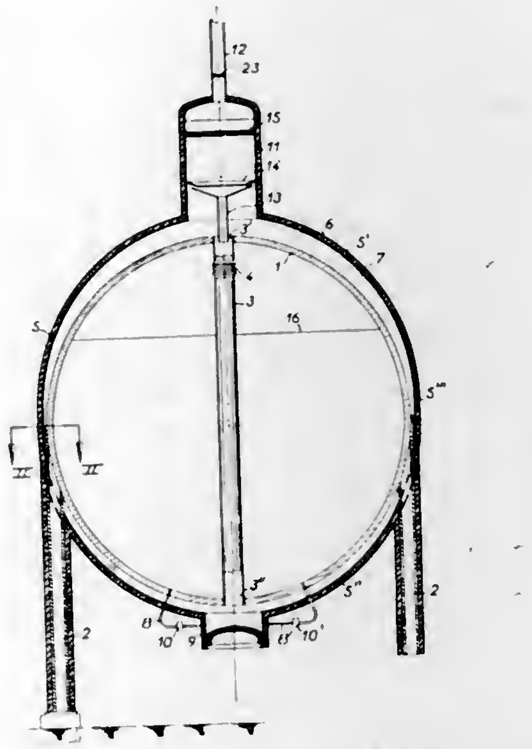


An insulation barrier in a storage container for a cryogenic fluid or the like has its thermal characteristics deteriorated so as to control the expulsion of the fluid in the container.

3,425,234
TANKS FOR LIQUEFIED GASES

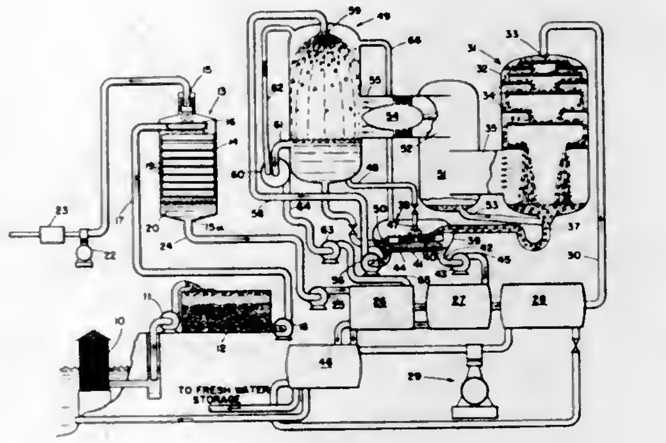
Georges Jean Henri Trepaud, 44 Rue la Boetie,
Paris, France
Filed Jan. 26, 1967, Ser. No. 611,979
Claims priority, application France, Jan. 28, 1966, 47,651; June 10, 1966, 64,962; Jan. 12, 1967, 90,845
U.S. Cl. 62—45 **25 Claims**
Int. Cl. F17c *1/12, 7/00*

A tank for a liquefied gas, of the type comprising an inner and an outer wall enclosing a narrow, annular space. Means are provided to connect to each other the respective lower ends of this annular space and of the inside of the inner wall, at least when the temperature outside of the tank increases dangerously; thereby the liquefied gas rising upwardly through the annular space is at least partly vaporized by absorbing the heat transmitted from the outside of the tank. Means are further provided, near to the upper end of the annular space, to separate the vaporized gas from the still liquefied gas, to exhaust the vaporized gas in the atmosphere, and to return the still liquefied gas down to the lower end of the annular space.



3,425,235
SOLVENT PURIFICATION

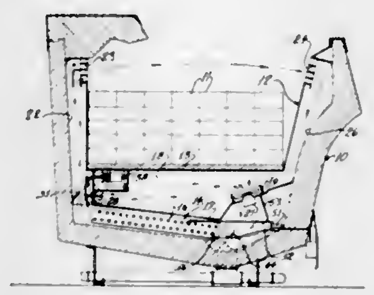
Robert B. Cox, 1583 Palmer St., Pomona, Calif. 91766
Filed May 26, 1955, Ser. No. 511,228
U.S. Cl. 62—58 **36 Claims**
Int. Cl. B01d *9/04*



1. In a water solution containing salts dissolved therein, the method of purifying the water which comprises: deaerating the raw salt solution by subjecting the raw salt solution to a pressure sufficiently low to remove gases contained in the raw salt solution; vaporizing a portion of the deaerated salt solution at a pressure sufficiently low to produce ice crystals in the remaining aqueous salt water solution; removing the resulting water vapor; compressing the water vapor to a pressure sufficiently high to permit it to condense when placed in heat exchange relationship with the ice crystals; removing the mixture of ice crystals and remaining aqueous salt solution; separating the ice crystals from the remaining aqueous salt solution; and bringing the separated ice crystals into direct heat exchange relationship with the compressed water vapor.

3,425,236
REFRIGERATING SYSTEM WITH AIR CONTROL MEANS

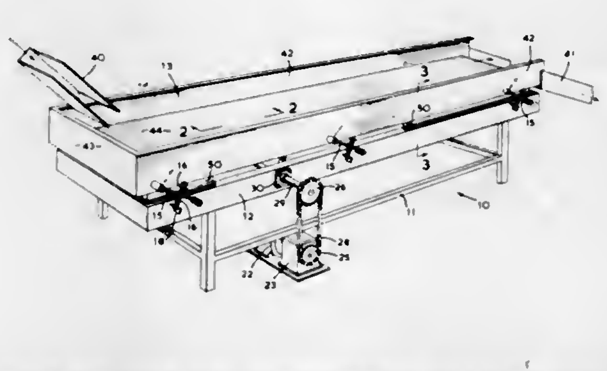
William R. Streed and Beauchamp Nolin, Montgomery, Ala., assignors to Nolin Manufacturing Company, Inc., a corporation of Alabama
Filed Feb. 21, 1967, Ser. No. 617,611
U.S. Cl. 62—140 **3 Claims**
Int. Cl. F25d *21/02, 17/06;* **A47f** *3/04*



A refrigerating system having a cooling cycle and a defrost cycle with air passing from a discharge side of a cooling unit in heat transfer relation to an area to be cooled and then back to a receiving side of the cooling unit. An air by-pass communicates the means for circulating air adjacent the discharge side of the cooling unit with the means for circulating air adjacent the receiving side of the cooling unit and an air control member controls the flow of air through the by-pass and adjacent the area to be cooled.

3,425,237
VIBRATING FOOD FREEZER

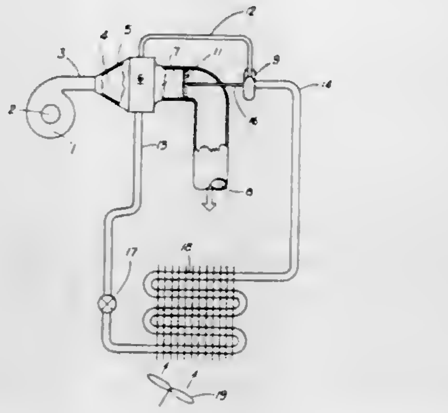
Willis S. McLeese, 88 Dunvegan Road, Toronto,
Ontario, Canada
Filed Aug. 22, 1966, Ser. No. 573,905
Claims priority, application Canada, Sept. 2, 1965, 939,711
U.S. Cl. 62—380 **3 Claims**
Int. Cl. F25d *25/04, 13/00;* **B65g** *27/10*



In an apparatus for continuously freezing food items by passing refrigerated air upwardly through the food items, the food items are conveyed through a refrigerating zone by means of a vibratory conveyor having a foraminous surface, the conveyor agitating or fluidizing the items. The apparatus provides a closed air-circulating path whereby the refrigerated air is continuously circulated through the foraminous tray and past the food items and over refrigeration coils.

3,425,238
TURBINE DRIVEN COMPRESSOR ARRANGEMENT

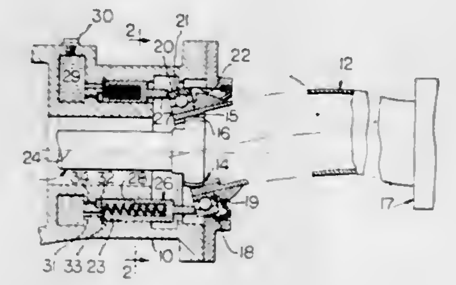
Stig G. Sylvan, South Pasadena, Fla., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed May 19, 1967, Ser. No. 639,850
U.S. Cl. 62—507 **3 Claims**
Int. Cl. F25b *1/04, 39/04*



The invention relates to a system where a condensible-vaporizable working fluid is compressed by a turbine driven compressor and the compressed fluid is cooled in a heat exchanger disposed in the stream of motive fluid which provides power for the turbine.

3,425,239
SHAFT DAMPER

Robert J. Baier, Claymont, Del., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 10, 1967, Ser. No. 615,231
U.S. Cl. 64—6 **10 Claims**
Int. Cl. F16c *1/00, 23/08;* **F16d** *3/12*

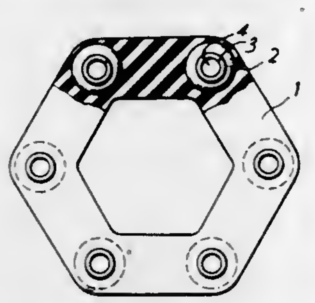


An apparatus for providing damping of rotating shafts, wherein the apparatus acts to dampen the shaft deflections by acting in response to the angular deflections of the rotating shaft. The damper accomplishes the damping action by using the support bearing of the shaft in effect as a wobble plate for purposes of acting on the cylinder of the damper, whereby the bearing and the damper structure act to dampen shaft deflections.

3,425,240
FLEXIBLE SHAFT COUPLING

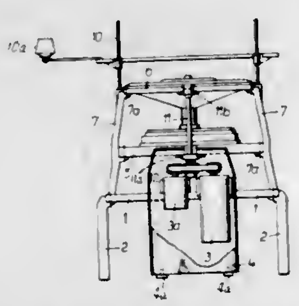
Otto Feller and Paul Vossieck, Burscheid, Germany, assignors to Goetzewerke Friedrich Goetze AG, Burscheid, Germany
Filed Dec. 21, 1966, Ser. No. 603,489
Claims priority, application Germany, Jan. 13, 1966, G 45,699
U.S. Cl. 64—11 **5 Claims**
Int. Cl. F16d *3/16*

A flexible shaft coupling is formed from a plurality of elastic springs connected together to form a polygonal ring, with a plurality of approximately spherical metallic coupling elements interposed betwen the springs and embedded in the elastic material for connecting the flexible shaft coupling to coupling plates.



3,425,241
CIRCULAR KNITTING MACHINE

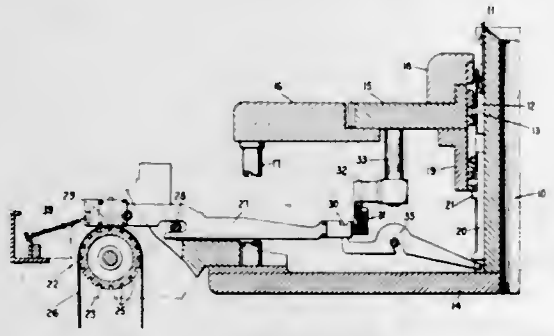
Alfred Planck, Rottenburg am Neckar, Germany, assignor to Fouquet-Werk Franz & Planck, Rottenburg am Neckar, Germany, a corporation of Germany
Filed Mar. 18, 1965, Ser. No. 440,748
Claims priority, application Germany, Mar. 19, 1964, F 42,361
U.S. Cl. 66—8 **6 Claims**
Int. Cl. D04b *9/06*



Three legs symmetrically arranged support a take-up drive support ring; three upstanding arms, symmetrically arranged, support the cylinder drive support ring and at their topmost part the dial drive support assembly; the drive motors are secured to a housing which is separately supported from the floor, so that all weight of the drive arrangement is taken off the frame, thus preventing distortion due to uneven loading or and unsymmetrical vibration during operation, permitting increase of the upper diameter of the machine; further, the drive arrangement can be mounted beyond the perimeter of the machine, thus providing for ease of access.

3,425,242
PATTERN LEVER CONTROL

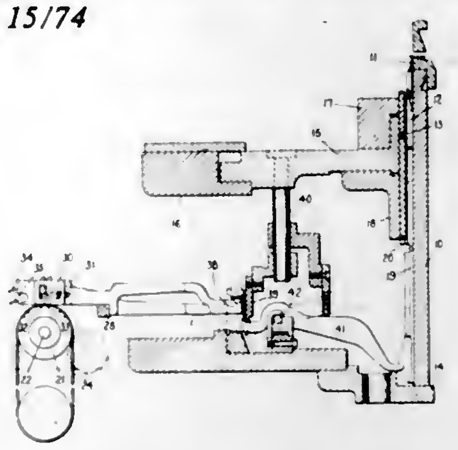
Frederick C. Wiesinger, Feasterville, Pa., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees
Filed May 8, 1967, Ser. No. 636,738
U.S. Cl. 66—50 **2 Claims**
Int. Cl. D04b *15/74*



A knitting machine control cam for activating patterning levers of a knitting machine which utilize spring biased detents adapted to function in cooperation with a perforated tape advanced by a grooved drum, and said cam including a second camming portion for centralizing said detents of the selected levers within their respective perforations to prevent contact with and wear upon the edges of the latter at the termination of each lever selection.

3,425,243
PATTERN SELECTING MECHANISM

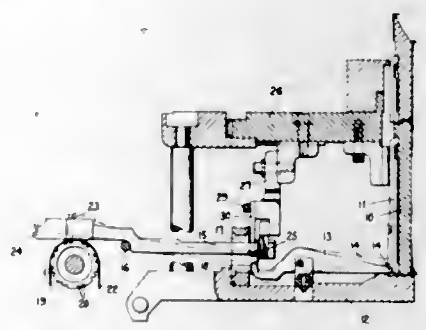
Frederick C. Wiesinger, Feasterville, Pa., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees
Filed June 23, 1967, Ser. No. 648,460
U.S. Cl. 66—50 **3 Claims**
Int. Cl. D04b *15/74*



A pattern selecting mechanism for a knitting machine having a means for increasing the number of selecting levers actuated by an endless strip pattern of conventional width, thereby permitting an increase in the number of knitting instrumentalities normally utilized in such machines.

3,425,244
PATTERN LEVER RELIEVING DEVICE

Frederick C. Wiesinger, Feasterville, and Michael A. Petko, Philadelphia, Pa., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees
Filed Dec. 6, 1967, Ser. No. 688,465
U.S. Cl. 66—50 **3 Claims**
Int. Cl. D04b *15/74*



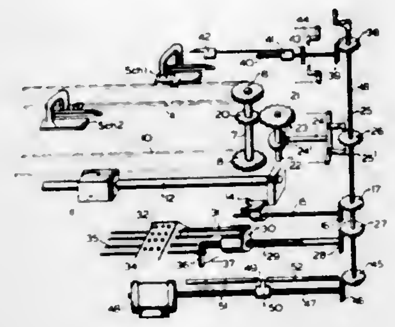
A holdover cam for the selecting levers of a knitting machine patterning mechanism for influencing those levers not selected to initiate a knitting function at a particular feeding station. A cam for lifting non-selected pattern levers out of contact with the pattern card during the interval when selections are not possible.

3,425,245
FLAT KNITTING MACHINES

Karl Essig, Wurttemberg, Germany, assignor to H. Stoll & Company, Wurttemberg, Germany, a partnership
Filed May 13, 1966, Ser. No. 549,901
Claims priority, application Germany, May 16, 1965, St 23,829
U.S. Cl. 66—64 **8 Claims**
Int. Cl. D04b *7/04, 15/70*

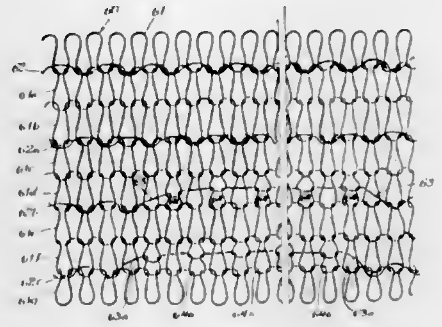
A multiple unit flat knitting machine has two or more knitting units arranged one behind the other or one behind and one beside another. The cam carriages of the

units are driven by a common endless driving element which passes around two rotary guide components and is reciprocated by drive means which enable both the length of stroke and the speed of travel of the cam carriages to be infinitely varied. A patterning arrangement common to all knitting units is associated with the drive means and influenced by the latter for effecting longitudinal displacements of and rendering operative and inoperative the control members which influence the knitting of the pieces of fabric being produced. The cam reversing elements are disposed in groups which are automatically adjustable in the longitudinal direction of the machine corresponding to the current length of the strokes. These elements are brought into effective position through partial rotation of respective shifting rods, triggered by the patterning means.



3,425,246
PROTUBERANCE COVERING TUBULAR ELASTIC GARMENTS

Herbert Knohl, Seneca, S.C., assignor to The Kendall Company, Walpole, Mass., a corporation of Massachusetts
Filed Sept. 22, 1966, Ser. No. 581,319
U.S. Cl. 66—171 **14 Claims**
Int. Cl. D04b *21/18;* **A41b** *7/00*

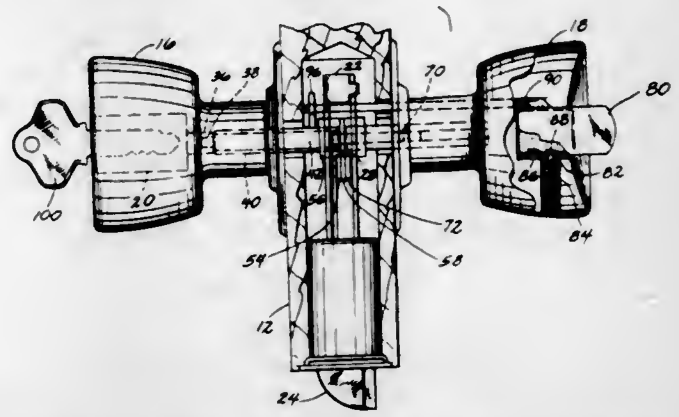


Tubular, jersey-knit garments incorporating elastomeric yarns in selected areas wherein the elastomeric yarn is locked in every course in which it occurs, major portions extending coursewise as, for instance, in inlay yarn and one or more selected areas each extending only partially around the tubular circumference as a convexity stretchable in all directions.

3,425,247
LATCH ASSEMBLY

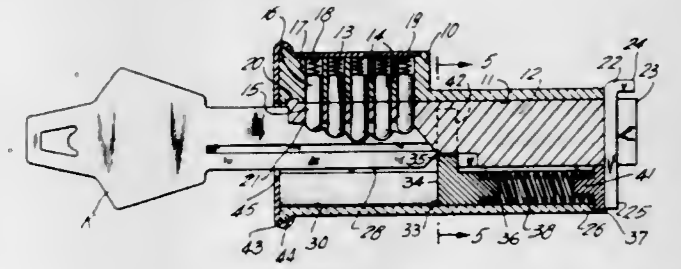
Berwyn E. Etter, St. Petersburg, Fla., assignor of twenty percent to Eli S. Jenkins as trustee
Filed Jan. 28, 1966, Ser. No. 523,584
U.S. Cl. 70—150 **4 Claims**
Int. Cl. E05b *1/00;* **E05c** *1/12*

A latch assembly is comprised of a movable latch unit and three independently operating latch actuating units. Two of the latch actuating units are each comprised of a knob and a latch actuating means interconnected by a shaft. The third unit is a key mechanism connected by a shaft to a latch actuating means.



3,425,248
KEY EJECTOR LOCK WITH ANTI-PICK FEATURE

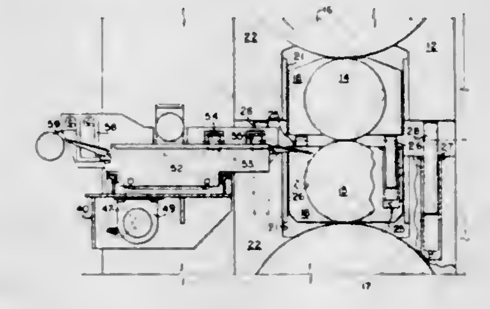
Robert Armand Duval, Fitchburg, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Apr. 13, 1967, Ser. No. 630,747
U.S. Cl. 70—421 **2 Claims**
Int. Cl. E05b *17/12, 27/02, 63/00*



A lock apparatus having key ejector means which automatically remove the key from the lock in the locked position thereof, the ejector mechanism functioning in the locked position to maintain the lock plug and housing in predetermined aligned position, thus to prevent picking the lock by torque wrenching techniques.

3,425,249
ROLLING MILL

Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1965, Ser. No. 487,486
Claims priority, application Great Britain, Sept. 29, 1964, 39,689/64
U.S. Cl. 72—12 **8 Claims**
Int. Cl. B21b *37/04, 39/20*



A rolling mill wherein there is provided means for compressing at least, in part, certain components of the mill on either side of the rolls thereby to cause differential pressure to be exerted along the width of the strip so as to cause the workpiece to be guided as it issues from the mill and/or rolled so as to reduce or remove the camber in the workpiece. The compression of the mill parts on either side is effected by rapidly operating fluid piston cylinder assemblies arranged between the chocks on either side of the rolling mill pass line. In the strip guiding mode rollers are arranged on the opposite sides of the strip after it passes through the mill, either of which is contacted on lateral displacement of the strip from a given reference point which displacement effects through an electrical hydraulic control system operation of either one of the compression piston cylinder assemblies.

3,425,250

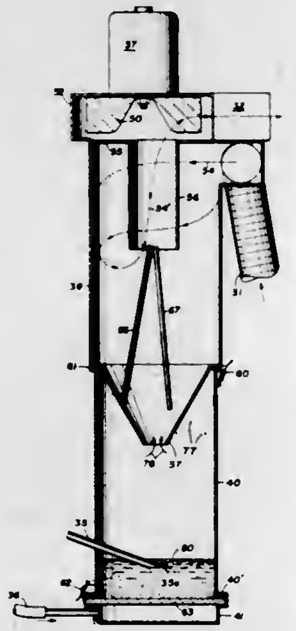
PEENING BEAD CLEANER

Louis A. Farris, Jr., Dallas, and Luther W. Young, Arlington, Tex., assignors to Surcon Surface Conditioning Products, Dallas, Tex., a corporation of Texas

Filed Oct. 22, 1965, Ser. No. 502,185

U.S. Cl. 72—53 **6 Claims**

Int. Cl. B21d *31/06;* **B01d** *29/10;* **B04c** *5/04*



A peening material separator includes an elongated separator enclosure through which a truncated bottom cone provides a channel. A duct structure passes through an air-tight upper closure member on the separator enclosure and extends centrally downward to an intermediate point along the length of the separator enclosure. A motor driven impeller creates a low pressure at the upper end of the duct structure and withdraws air from the enclosure. Peening material is tangentially delivered into the separator enclosure at the upper end thereof, whereby enlarged particles of the peening material fall through the truncated bottom cone to a collecting chamber and small particles of the peening material are carried from the separator enclosure through the duct structure. The large particles which fall into the collecting chamber are supported upon a porous baffle through which pressurized air is passed to fluidize the large particles. A suction tube extends through the wall of the separator enclosure to selectively withdraw the large particles.

3,425,251

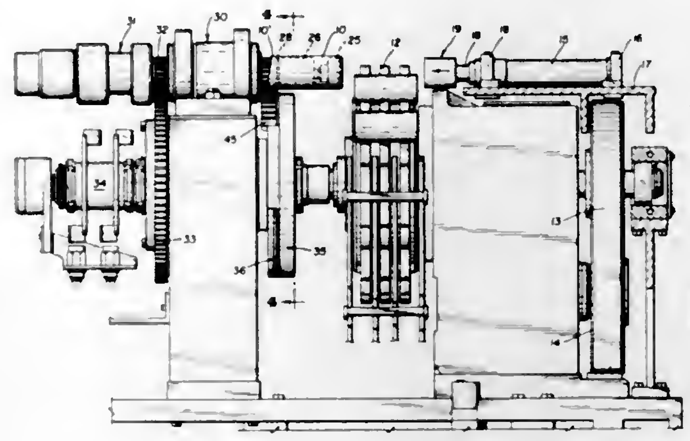
CAN TRIMMER AND SCRAP DISPOSING MECHANISM

John Hardy Maytag, Denver, Colo., assignor to Coors Porcelain Company, Golden, Colo., a corporation of Colorado

Filed July 18, 1966, Ser. No. 570,114

U.S. Cl. 72—71 **16 Claims**

Int. Cl. B23d *5/12;* **B21d** *43/28, 51/26*



A can trimmer and scrap disposing mechanism which comprises means for trimming the can body by cutting it circumferentially to predetermined length and forming an endless scrap ring, and means for tearing or severing the ring transversely and corrugating the severed ring to form ridges and grooves which extend transversely of the scrap strip and parallel to the axis of the can body. The trimming of the can body is done by cooperating cutting blades, one of the blades being a cutter sector on a rotated tool carrying wheel. The severing of the scrap ring and the corrugation of the scrap strip are done by cooperating knurl devices, one of which is a toothed sector mounted on the tool carrying wheel and circumferentially spaced thereon from the cutter sector. This construction obviates possibility of damage to the can body which results when the can body is slit longitudinally before the can body is trimmed to predetermined length.

3,425,252

BELT-CONTROLLED WINDING DEVICE FOR METAL STRIPS

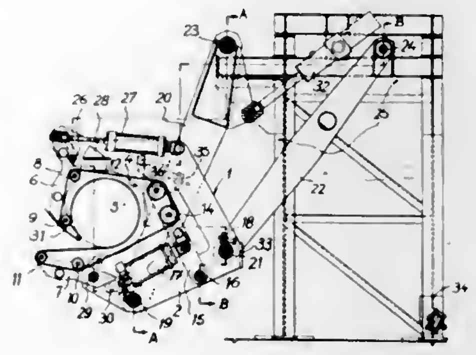
Georges P. Dehaine and Pierre G. Maige, Thionville, France, assignors to Societe Lorraine de Laminage Continu, Paris, France, a French society

Filed May 5, 1966, Ser. No. 547,937

Claims priority, application France, May 11, 1965, 16,539

U.S. Cl. 72—148 **2 Claims**

Int. Cl. B21c *47/12;* **B65h** *54/02*



A belt-controlled winding device for metal strips comprising a framework having an opening formed therein and which carries belt return rollers and a pivotable withdrawal arm. The framework being articulately mounted on a fixed supporting frame by means of a front and a rear pair of arms and wherein the framework is suspended from the fixed supporting frame in such a manner that the axes of articulation of the front arms are farther apart than the axes of articulations of the rear arms and the distance between the axes of articulation on the fixed supporting frame is farther apart than the distance between the axes of articulation on the framework.

3,425,253

METHODS AND APPARATUS FOR REDUCING THE THICKNESS OF METAL

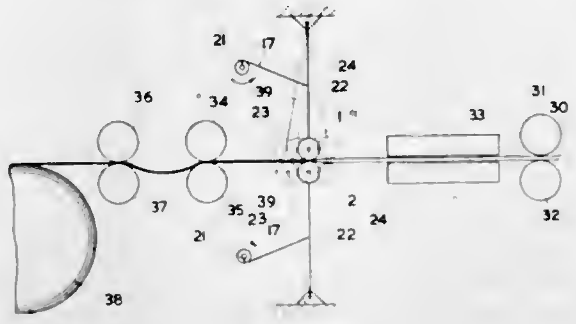
Karel Saxl, Sutton Coldfield, England, assignor to Imperial Metal Industries (Kynoch) Limited, London, England, a corporation of Great Britain

Filed Feb. 28, 1966, Ser. No. 530,615

Claims priority, application Great Britain, Mar. 8, 1965, 9,739/65

U.S. Cl. 72—189 **8 Claims**

Int. Cl. B21b *31/20, 21/00, 45/02*



Method and apparatus for reducing the thickness of metal in which a pair of freely rotatable work rolls disposed on opposite sides of the metal are oscillated in synchronism upon a pair of oscillatable arms to subject the metal to rolling action of the work rolls, and in which means are included for increasing and decreasing the stiffness of the machine and thereby the resistance to displacement of the rolls away from theoretical arcuate paths of oscillation during role oscillation, respectively, in one direction and in the opposite direction.

3,425,254

ROLLING OF SLABS

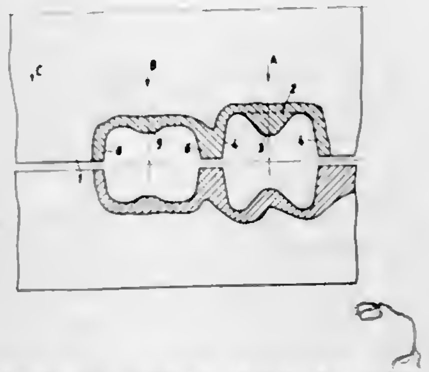
Walter Bayer, Duisburg, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany

Filed Mar. 3, 1964, Ser. No. 349,022

Claims priority, application Germany, Mar. 14, 1963, M 56,114

U.S. Cl. 72—198 **4 Claims**

Int. Cl. B21d *1/02;* **B21b** *41/02, 1/08*



1. In a method of rolling, with the aid of grooved bloomer rolls, slabs into blocks of substantially square cross-section, the step comprising first rolling through one groove, each elongated slab positioned with its width upright so that the narrower surfaces will form the top and bottom faces of the slab while engaging the central face section of the slab with an annular raised first ridge projecting radially in said one groove from the groove base for a first height, thereafter rolling each slab in the same position through a second groove while engaging the central face section with an annular raised second ridge projecting radially in said other groove from the groove base for a second height, said first height of said first ridge projecting from the groove base being considerably larger than the second height of said second ridge.

3,425,255

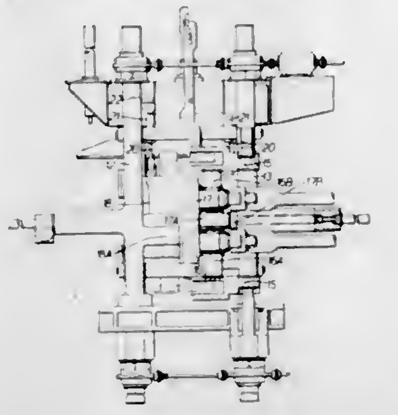
ROLLING MILL

Joseph Eric Ogle, Sheffield, and Philip Haydn Rickett, Rotherham, England, assignors to Davy and United Engineering Company Limited, Yorkshire, England

Filed Oct. 24, 1966, Ser. No. 588,844

U.S. Cl. 72—238 **7 Claims**

Int. Cl. B21b *31/12, 31/20, 29/00*



The disclosure of the present invention relates to a combination beam and section mill having beam roll guiding cheeks slidably mounted vertically in the mill housings, so as to extend parallel to the horizontal rolls and bridge the housings, each cheek being slidable between a beam mill position disposed adjacent the roll gap and section mill position permitting access to the roll gap.

3,425,256

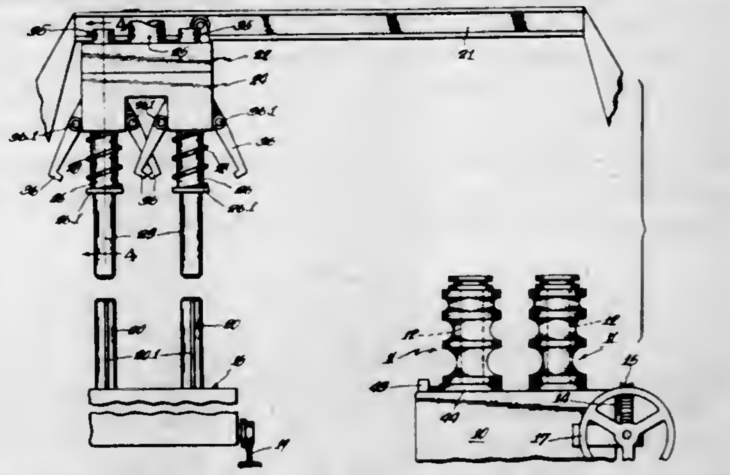
METHODS OF AND APPARATUS FOR MANIPULATING ROLLS OF MULTIPLE ROLL APPARATUS

George D. McGoogan and John P. Jones, Youngstown, Ohio, assignors to The McKay Machine Company, Youngstown, Ohio

Filed Dec. 20, 1965, Ser. No. 515,078

U.S. Cl. 72—239 **10 Claims**

Int. Cl. B21b *31/10;* **B60b** *7/06;* **B30b** *3/00*



Method and apparatus for manipulating the rolls of devices having a set of rolls arranged on respective spindles in laterally spaced relation and in practising the method, the set of device rolls are transferred en masse from respective device spindles to storage in the same spaced relation as they were when assembled with respective device spindles. A set of replacement rolls, which are stored in the same spaced relation as the device rolls, are then transferred en masse to respective device spindles.

3,425,257

FORMING APPARATUS AND FLUID SPRING THEREIN

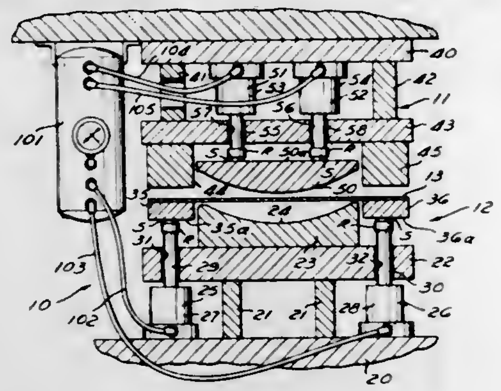
Elmer F. Heiser, 5880 Lotusdale Drive, Parma Heights, Ohio 44129

Filed Mar. 3, 1966, Ser. No. 531,555

U.S. Cl. 72—297 **16 Claims**

Int. Cl. B21d *11/04, 22/20, 24/02*

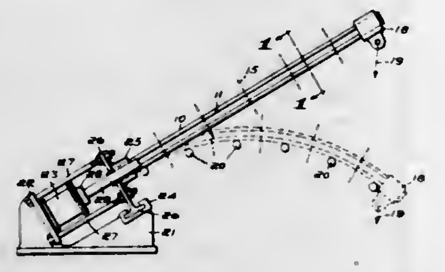
In a sheet metal forming press having piston-and-cylinder fluid springs, a separate seat member on the outer end of each piston rod has a flat lower face for flush engagement with the adjacent face of a workpiece-forming member in the press. A ball-and-socket, thrust-sustaining joint is provided between this seat member and the piston rod. A rubber sleeve encircles this joint and holds the seat member assembled to the piston rod.



3,425,258

STRETCH FORMING

John W. Dawson, Winter St., Norwell, Mass. 02061
Filed Oct. 22, 1965, Ser. No. 501,090
U.S. Cl. 72—303 **10 Claims**
Int. Cl. B21d *11/04, 31/00, 1/04*

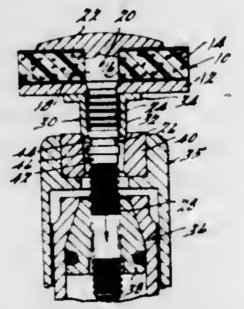


A method for stretch forming a beam places the beam in tension beyond its yield point with the force reacted as compression in a column stressed below its yield point and lying along the beam. A relatively small transverse force for deflecting the column and beam in the stressed condition conforms the beam to the desired shape and produces the desired permanent set in the beam due to further stressing resulting from the deflection.

3,425,259

SELF-RELEASING ANVIL

Charles W. Baugh, St. Clair Shores, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed June 2, 1966, Ser. No. 554,815
U.S. Cl. 72—391 **6 Claims**
Int. Cl. B21j *15/00*

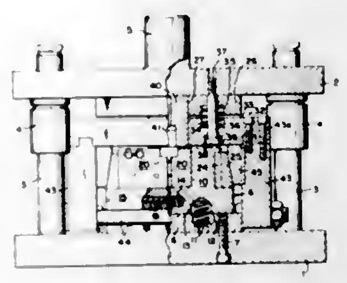


A tool for setting two-piece fasteners including a pin and a collar by applying a relative axial force between the pin and collar with the tool including a swaging anvil having a bore with a swaging portion defining an included angle in the range of from approximately 4° to approximately 6° to provide self-releasing upon pin brake without excessive tool kick.

3,425,260

DOUBLE ACTION PRESS TOOL

Roy H. Anderson and Douglas J. Lemery, Victoria, British Columbia, Canada, assignors to Atlas Chain Co., Ltd., Victoria, British Columbia, Canada
Filed Aug. 18, 1966, Ser. No. 573,303
U.S. Cl. 72—403 **8 Claims**
Int. Cl. B21j *9/20;* **B21d** *22/22, 24/06*

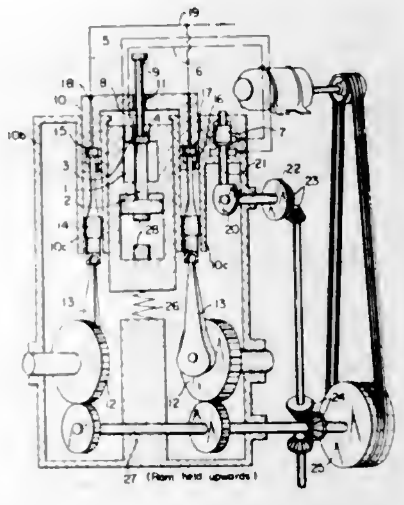


This invention relates to the die-forming of parts in a punch press wherein the material to be formed by the press action is first laterally clamped in the die incident to downward movement of the ram prior to the impact to form the part.

3,425,261

HIGH SPEED RETURNING IMPACT FORMING MACHINE

Akira Asari, Osaka-shi, Japan, assignor to Kobe Steel Ltd., Fukiai-ku, Kobe, Japan
Filed Mar. 9, 1967, Ser. No. 621,939
U.S. Cl. 72—450 **14 Claims**
Int. Cl. B21j *9/18;* **B30b** *1/32, 15/20*



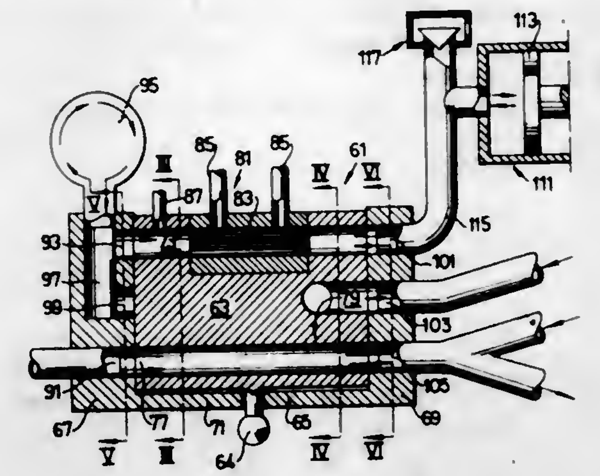
A high speed returning impact forming machine which has a high pressure gas chamber, a ram actuated at a high speed by the pressure in the chamber, a combined plunger-cylinder assembly, a valve communicated between the chamber and the cylinder, and a ram supporting member for returning the ram by being driven by a mechanical force such as a crank mechanism so as to return it in high speed.

3,425,262

DEVICE FOR CALIBRATING FLOWMETERS

Paul Herzog, Solna, Sweden, assignor to Elektromedizin und Respirator AG, Zug, Switzerland, a corporation of Switzerland
Filed Oct. 13, 1966, Ser. No. 586,438
Claims priority, application Sweden, Oct. 22, 1965, 13,712/65; July 8, 1966, 9,424/66
U.S. Cl. 73—3 **4 Claims**
Int. Cl. G01l *25/00*

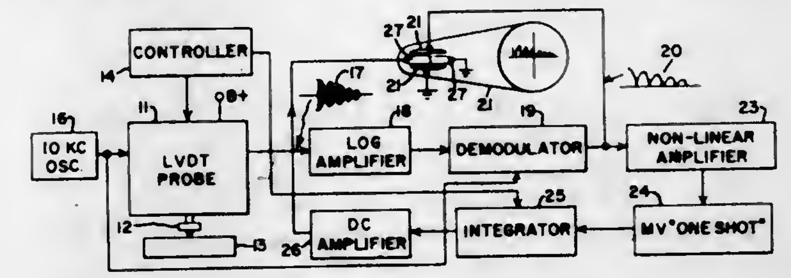
An apparatus for calibrating a pneumotachograph in which the flow meter to be calibrated is combined with the calibrating mechanism. A sliding rotating valve assembly allows the meter to be connected in either a calibrating or a measuring mode. A known but variable flow is produced by a piston-cylinder arrangement.



3,425,263

APPARATUS FOR MEASURING SOME MECHANICAL PROPERTIES OF A MATERIAL

James Franklin Elliott, Syracuse, Samuel M. Korzekwa, Baldwinsville, and Raymond J. McArthur, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 6, 1967, Ser. No. 620,781
U.S. Cl. 73—12 **11 Claims**
Int. Cl. G01n *3/02*



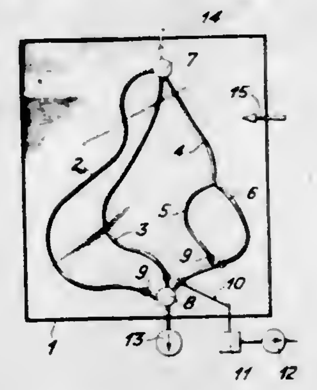
Apparatus capable of sensing the hardness and quantities relating to the ultimate tensile strength, the yield point, and the strainless hardness and displaying this information are herein disclosed. The apparatus comprises a probe operating upon the Schleroscopic principle. The probe has an indenter adapted to impact upon the material under test and to rebound successively in decaying to a rest position. In pursuing this motion, a wide range of tip pressures are produced—some adequate to achieve fully plastic flow, some partial plastic flow, and some producing only elastic collisions. The ratios between successive peaks and changes in these ratios signify changes in deformative effect upon the sample by pressure which is known by the height of the associated peaks. An oscilloscopic display is disclosed responsive to these variables and indicating the underlying material properties. Apparatus providing metered indication of certain of these properties is also disclosed.

3,425,264

METHOD AND APPARATUS FOR DETECTING A LEAK IN A HEAT EXCHANGER

Hans Frei, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Sept. 27, 1966, Ser. No. 582,330
Claims priority, application Switzerland, Oct. 5, 1965, 13,736/65
U.S. Cl. 73—40.5 **12 Claims**
Int. Cl. G01m *3/04, 3/08;* **F28f** *11/00*

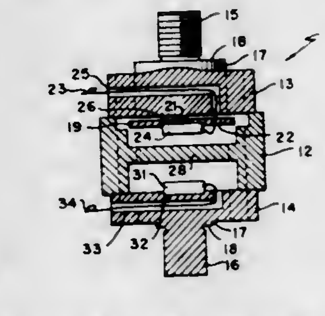
A plurality of pipelines are connected between a pair of headers. The pipelines are surrounded by an atmosphere of a gaseous tracer medium and samples of flow are removed from each of the pipelines between the headers. A detector is used to detect the samples of gas flow removed from the pipeline to detect leaks therein.



3,425,265

MINIATURE MECHANICAL IMPEDANCE HEAD

Fred Schloss, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 30, 1965, Ser. No. 510,711
U.S. Cl. 73—67.1 **7 Claims**
Int. Cl. G01n *29/00;* **G01m** *7/00*

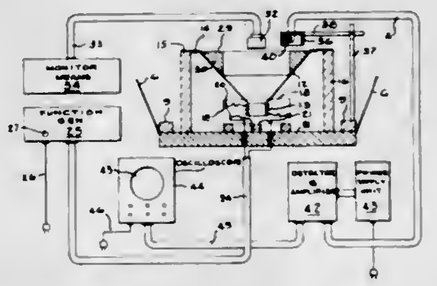


A mechanical impedance measuring device having a pedestal supported acceleration element mounted to respond to inertial bending and a force responsive element also mounted to respond to bending of the support member attached to the specimen whose impedance is being measured. The two sensors are electrostatically separated and the assembly is capable of being constructed to measure mechanical impedances of the order of one gram or less.

3,425,266

LOW LEVEL VIBRATION TEST SYSTEM

Richard C. Klinger and Marvin A. Kollodge, Minnetonka, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 11, 1966, Ser. No. 572,171
U.S. Cl. 73—71.6 **5 Claims**
Int. Cl. G01n *29/00;* **G01m** *7/00*



A test system relatively free of ambient vibrational disturbances for subjecting objects to a predetermined low-level vibration environment comprising a suspended platform, a loud-speaker mounted thereon and having a test platform attached to its speaker cone for supporting the test object, signal generating means for exciting said loud-speaker, and sensing means for detecting the vibrations at the test platform.

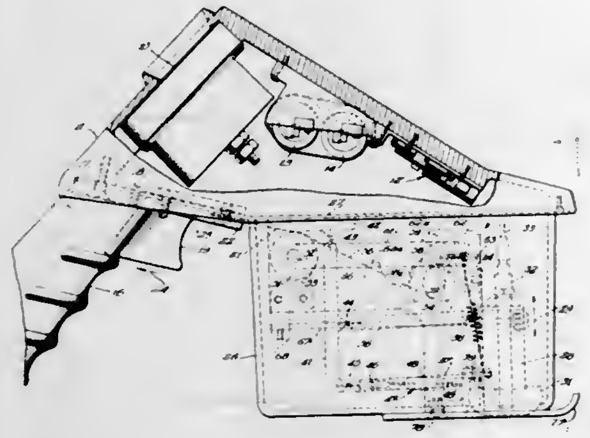
3,425,267
HARDNESS TESTER

John David Pfeiffer, Downingtown, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,194

U.S. Cl. 73—78 **15 Claims**

Int. Cl. G01n *3/30*



A hardness tester having a mechanism with a fixed portion and a movable portion and a striker connected to the movable portion. A trigger and actuating means are connected to the mechanism to move the striker in a predetermined direction and release means are provided to release the striker at a predetermined point of movement to cause the striker to move with a known kinetic energy in the opposite direction to impinge upon the surface of the material under test. Translating means are provided to develop a signal indicative of the hardness of the material and to record the signal on an indicator.

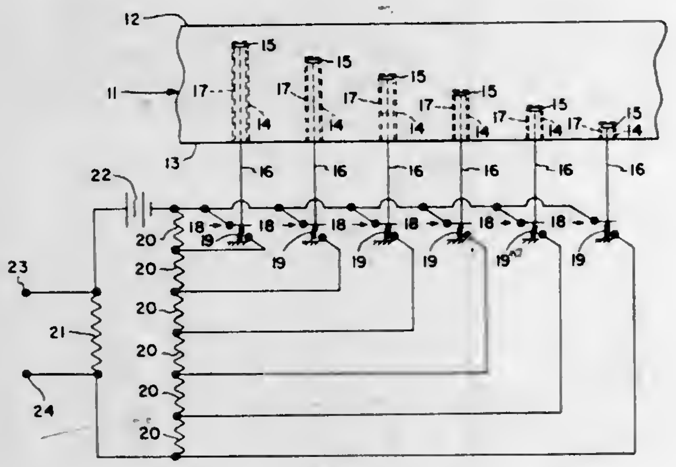
3,425,268
ABLATION SENSOR

Clifford H. Nelson, Newport News, and Charles A. Gurtler, Yorktown, Va., assignors to the United States of America as represented by the National Aeronautics and Space Administration

Filed Mar. 22, 1965, Ser. No. 441,936

U.S. Cl. 73—86 **10 Claims**

Int. Cl. G01n *17/00*



A device for measuring the surface recession of charring and noncharring ablators. Pieces of ablative material are embedded in the ablation material at different predetermined levels. Each piece of ablative material holds a switch open until the ablation material ablates to the piece of ablative material. Then the piece of ablative material melts thereby allowing the switch to close. An electrical circuit is used to monitor all of the switches to determine the ones that are open and the ones that are closed.

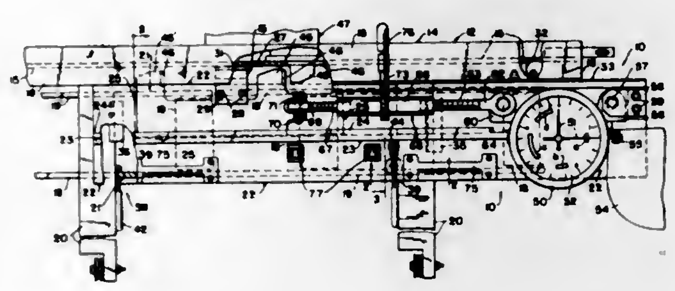
3,425,269
LOCK TESTER FOR AIRCRAFT CARGO HANDLING SYSTEM

Conley H. Snow, Royal Oak, Mich., assignor to Brooks & Perkins, Incorporated, Detroit, Mich., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 593,927

U.S. Cl. 73—88 **19 Claims**

Int. Cl. G01n *3/16*



A tester for aircraft load restraining locks features a portable support having a slidable dog engageable with a part of the lock to apply testing force to that part. The dog is connected by a mechanical advantage turnbuckle unit to an instrument recording the force. The tester has means to quickly mount the same for successive testing of a series of locks.

3,425,270
TEST STAND FOR FUEL INJECTION PUMPS

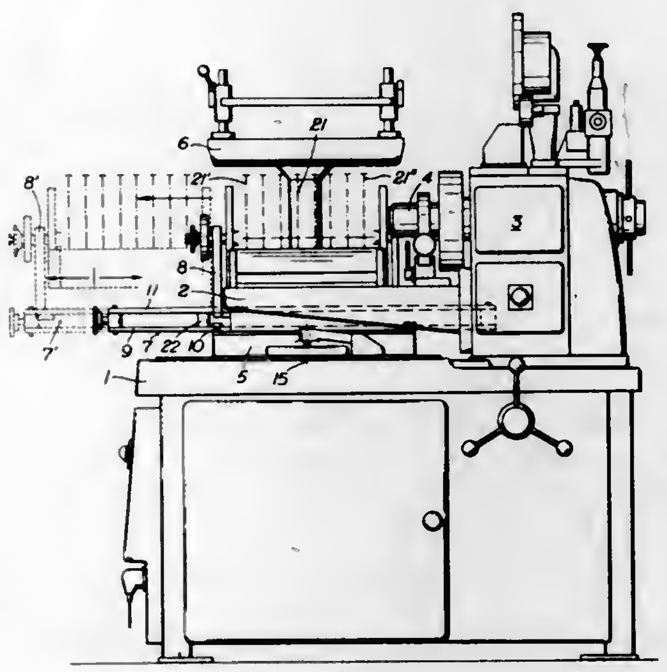
Richard Hainz, Salzburg, Austria, assignor to Friedmann & Maier, Salzburg, Austria

Filed Aug. 23, 1966, Ser. No. 574,349

Claims priority, application Austria, Aug. 24, 1965, A 7,782/65

U.S. Cl. 73—119 **1 Claim**

Int. Cl. G01m *15/00*



A test stand for fuel injection pumps in which a holder for measuring glasses is slidably mounted on a frame which in turn is slidably mounted on a support for a series of nozzles for movement parallel to such nozzles. The frame is defined by two spaced apart substantially parallel rails interconnected to provide a single structure with the holder being mounted on one of the rails and the other of the rails being mounted on the support.

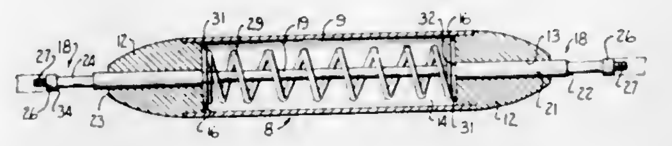
3,425,271
ELECTRICAL CONTACT TEST TOOL

Robert B. Hendry, 45833 Warm Springs Blvd., Fremont, Calif. 94538

Filed Aug. 15, 1966, Ser. No. 572,356

U.S. Cl. 73—141 **2 Claims**

Int. Cl. G01r *31/04*



The device disclosed is for checking the proper seating of electrical contact pins within a connector plug and comprises, a body having a chamber therein, a rod disposed in said body and mounted for axial movement therein, spring means in said chamber normally positioning said rod in one position of axial adjustment, said rod having an end portion disposed exteriorly of said body and having means thereon for engaging an electrical contact, and indicator means on said end portion for visually indicating the amount of rod movement when the tool is pressed against a contact being tested.

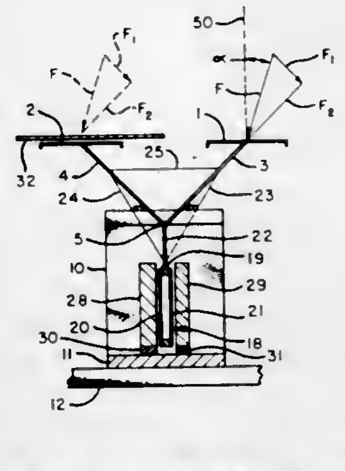
3,425,272
TWO-FORCE-COMPONENT MEASURING DEVICE

Earl D. Knechtel, Mountain View, and William C. Pitts, San Jose, Calif., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 19, 1966, Ser. No. 574,290

U.S. Cl. 73—142 **13 Claims**

Int. Cl. G01e *5/12*



A measuring device which separately measures the two vector components of a test force. Two force targets are pivotally balanced about a single axis of rotation. Each target is alternately exposed to the two-component test force. One target is deflected by only the first component. The other target is deflected by only the second component. A nulling system coupled to the targets imparts a restoring force when a particular target is deflected. The magnitude of the restoring force is a direct function of the particular force component.

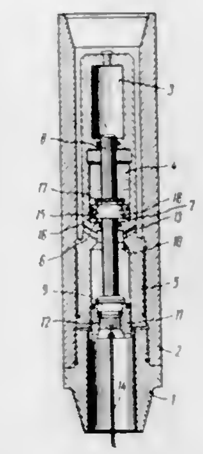
3,425,273
SYSTEM FOR DETERMINING FORMATION CHARACTERISTICS

Kamil Gumerovich Khamzin, ulitsa Sovetskaya 30, kv. 3, and Pavel Sergeevich Lapshin, Prospect Oktyabrya 45/2, kv. 35, both of Ufa, U.S.S.R.

Filed Aug. 17, 1965, Ser. No. 480,305

U.S. Cl. 73—155 **6 Claims**

Int. Cl. E21b *49/00*



Systems for determining formation characteristics, more specifically valve gears controlling the process of formation testing by producing open and closed test periods without interference on the operator's part. The open and closed periods are produced automatically during longitudinal movement of the rod relative to other parts of the casing with the rod passing through three chambers isolated from each other with one end of the rod remaining in the gas-filled chamber, its middle part traversing the chamber of the hydraulic time delay and the other end connected to the valve head being disposed in the valve box exposed to the effect of hydraulic pressure of the formation for the well. The longitudinal rod movement is caused by the difference is pressures acting on the butt ends of the rod on the side of the gas-filled chamber and valve box.

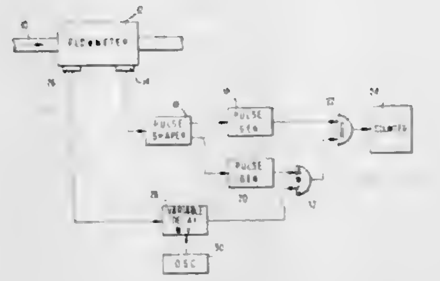
3,425,274
FLOWMETER MEASURING SYSTEM

Larry C. Clement, Jack Hammand, Jack R. Hulme, and Carl W. Zimmerman, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,758

U.S. Cl. 73—194 **11 Claims**

Int. Cl. G01f *1/04*



An electrical measuring system in which electrical pulses from a flowmeter are selectively gated to a counter in response to changes in a physical characteristic of the fluid. An indication of the rate of flow is available even during the intermittent interruption of the flow responsive signals by the gate. In a second embodiment the gating of the flow responsive pulses is controlled by a comparison of one fluid physical characteristic responsive signal with a time based signal initiated at a frequency related to a second physical characteristic of the fluid.

3,425,275
AUXILIARY METERING APPARATUS

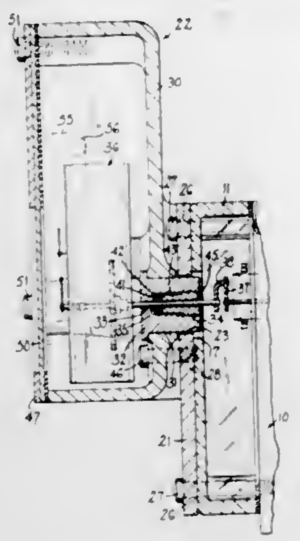
Alvah A. Russell, Jr., Glastonbury, and Howard L. Pearson, Durham, Conn., assignors to Ripley Company, Inc., Middletown, Conn., a corporation of New York

Filed Apr. 3, 1967, Ser. No. 627,993

U.S. Cl. 73—195 **1 Claim**

Int. Cl. G01f *1/00*

An auxiliary metering apparatus for mounting on a gas meter assembly, which includes a sealed enclosure for supporting an auxiliary meter therein, a shaft supported in a bore in said enclosure and passing therefrom, the shaft being adapted for coupling between the auxiliary meter and a meter of the gas meter assembly, an O-ring in the bore positioned about the shaft, and a plug member having a bore therein for supporting the shaft, said bore applying pressure to said O-ring to force it tightly over the shaft.



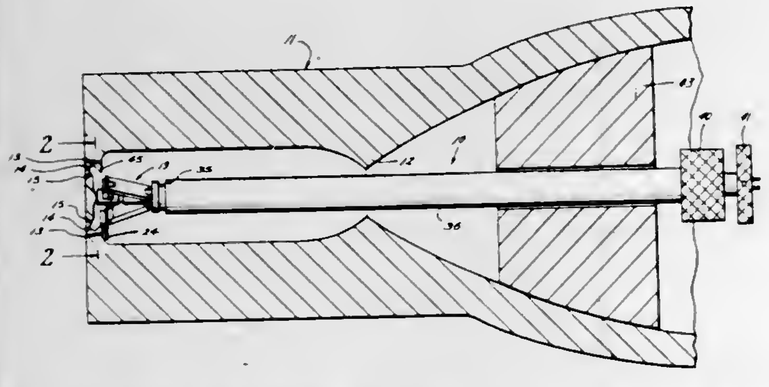
3,425,276
FLOW TEST DEVICE

Bernard J. Rosenbaum and Mike Oberschmidt, Pasadena, and John J. Fitzgerald, League City, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 19, 1966, Ser. No. 574,283

U.S. Cl. 73—198 **7 Claims**

Int. Cl. G01f ***1/00***



A fluid flow sensor attached to a collapsible linkage device which is insertable in its collapsed position through the restricted throat of a rocket motor combustion chamber and then externally manipulated to properly position the sensor at the various injector ports for testing fluid flow therethrough. The sensor is on one of three expandable fingers carried by a mandrel. Relative rotation between the inserted mandrel and a threaded sleeve causes the linkage to expand and position the sensor over one of the injector ports.

3,425,277
ELECTRICAL THERMAL FLOWMETER

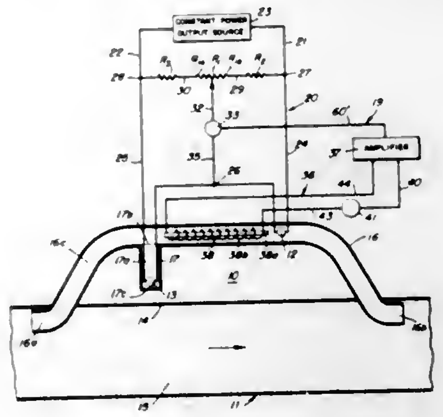
Max M. Adams, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Nov. 14, 1966, Ser. No. 593,999

U.S. Cl. 73—204 **6 Claims**

Int. Cl. G01f ***1/00***

A flow meter is shown comprising a pair of thermistors in opposite arms of a Wheatstone bridge which is energized by a constant power output source. One of the thermistors is isolated from a liquid flow path while the other thermistor is disposed in the flow path. A heating element is disposed upstream of the thermistor in the flow path. Unbalance in the Wheatstone bridge adjust flow of current to the heating coil to maintain equal resistances in the two thermistors. Current flow to the heating coil provides measurement of the flow rate. A second embodiment shows the same principle employed to measure fuel-to-air ratio.



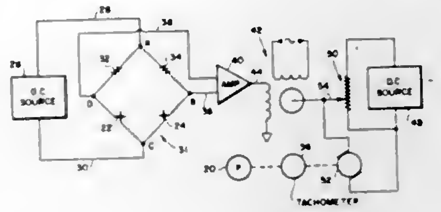
3,425,278
FLOWMETER

Edmund E. Buzza, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Dec. 22, 1966, Ser. No. 603,871

U.S. Cl. 73—204 **11 Claims**

Int. Cl. G01f ***1/00***



A flowmeter in which a pair of flow rate responsive elements, such as thermistors, are positioned in first and second flow channels, at least one of which carries the fluid the flow rate of which is being measured. A pump is mounted in the second channel. A control system including the thermistors produces an output signal proportional to the difference in the rate of flow of fluid in the two channels and delivers such signal to the pump to vary the output of the pump until there is an equal rate of flow of fluid through the channels. The output of the pump is a function of the rate of flow of fluid through at least one of the channels.

3,425,279
VARIABLE RESTRICTION FLUID FLOWMETER

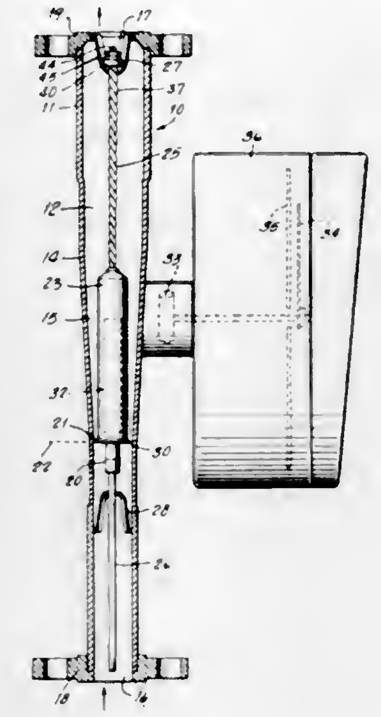
William Collins Conkling, Essex Fells, and Charles William Mosher, West Caldwell, N.J., assignors to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware

Continuation-in-part of application Ser. No. 540,878, Apr. 7, 1966. This application Mar. 20, 1967, Ser. No. 624,316

U.S. Cl. 73—209 **21 Claims**

Int. Cl. G01f ***1/00***

A device for damping vertical float oscillation in a variable restriction fluid flowmeter, including a stem having a helical thread and extending vertically from the float along the fluid passage of the meter, and an apertured member loosely threaded on the stem so that the stem is movable vertically relative to the apertured member only by rotation relative to the apertured member. The apertured member is held in the fluid passage against rotation and vertical displacement at least while the float and stem are moving downwardly; hence downward float movement is necessarily accompanied by rotary threading motion of the stem through the apertured member (and concomitant rotation of the float), which retards the rate of float descent.



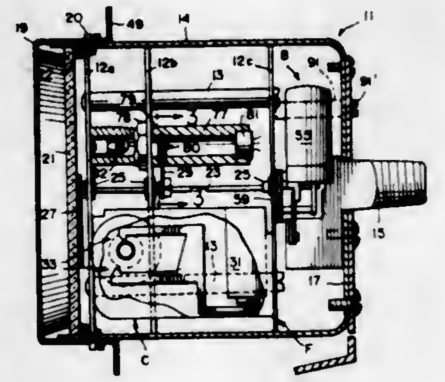
3,425,280
ELECTRONIC INSTRUMENT FOR MEASURING FLUID FLOW PAST FLUID PRESSURE SENSING MEANS

Merrill J. Foster, Fox River Grove, Ill., assignor to Marine Industries, Inc., Barrington, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 479,185, Aug. 12, 1965. This application Sept. 13, 1966, Ser. No. 579,099

U.S. Cl. 73—212 **14 Claims**

Int. Cl. G01f ***1/04***



An instrument for determining and indicating speed and distance traveled by a vessel, such as a boat, in a fluid medium, and an instrument for measuring velocity and volume of fluid flowing in a confined flow channel past a station, said instruments embodying a housing with velocity, and distance or volume indicating means driven by a Bourdon tube connected with a Pitot tube and associated electronic circuitry, including a photoconductive cell, a constant intensity light source and an interposed shutter actuated by the Bourdon tube to vary intensity of cell-impinging light, and an electronic counting system including a timing capacitor and a unijunction transistor to to varying resistance of the photoconductive cell, the actuate a mechanical counter at a frequency responsive counter having numbered indicia wheels indicating distance traveled by the vessel or volume of fluid which has flowed past the station.

3,425,281
VACUUM GAUGE APPARATUS

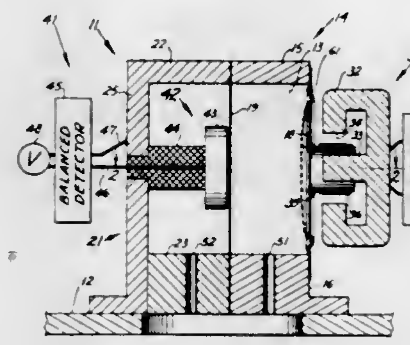
Alfred Barz, Cologne-Sulz, Germany, assignor to Leybold Holding Atkiengesellschaft, a Swiss joint-stock company

Filed Jan. 10, 1966, Ser. No. 519,645

Claims priority, application Germany, Jan. 15, 1965, L 49,723

U.S. Cl. 73—398 **9 Claims**

Int. Cl. G01l ***9/12***



The gauge housing structure defines a test chamber and an auxiliary chamber separated by a flexible membrane. When the gauge is connected to a vessel for the purpose of measuring the pressure therein, those chambers are communicated with the vessel by independent passages. The test chamber also includes a movable wall portion, to which is attached the armature of a drive mechanism. Surrounding the armature is an electrical winding of a low frequency generator which coacts with a fixed permanent magnet to produce periodic movement of the movable wall portion so as to cause periodic variation in the size of the test chamber. A sensing circuit includes a capacitor having a fixed electrode within the auxiliary chamber, the other electrode being defined by the flexible membrane separating the chambers. The capacitor is coupled to a balanced detector; and a volt meter is coupled to the output of the balanced detector. The conductances of the independent passages connecting the two chambers with the vessel are in the same ratio as the volume of the two chambers. The drive mechanism is energized by an alternating current of constant magnitude to exert a periodic force of constant magnitude in the movable wall portion. The resulting movement of the flexible membrane produces a capacitance change which is detected in the balance detector, and the detector output signal measured by the volt meter is proportional to the total gas pressure in the vessel.

3,425,282
SUSPENSIONS FOR ACCELEROMETERS AND THE LIKE

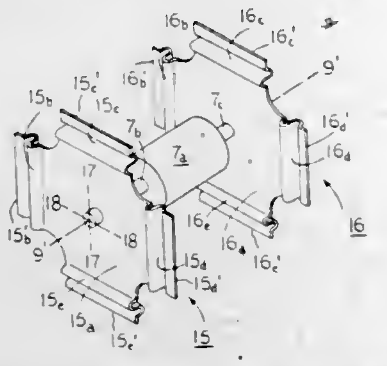
Leonard P. Entin, 24 Alden Road, Wayland, Mass. 01778

Filed July 27, 1965, Ser. No. 475,119

U.S. Cl. 73—514 **9 Claims**

Int. Cl. G01p ***15/00***

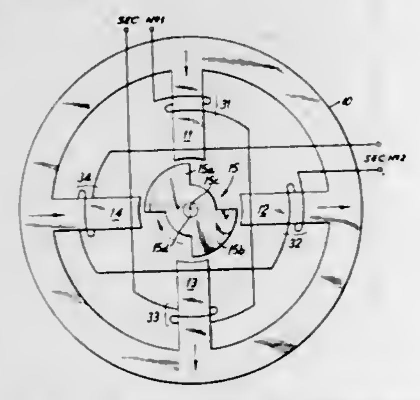
A suspension which constrains a member to translational movements along a single axis includes a pair of axially-spaced suspension units each having a rigid central portion connected with a marginal array of at least three corrugated flexure sections in which the corrugation surfaces are defined by straight lines transverse to the axis, the flexure sections in each of the suspension units being disposed in a regular polygon configuration with discontinuities at the vertices of that configuration. Outer edges of the corrugated flexure sections are secured



to a support for the member, and the latter is secured to the rigid central portions of the suspension units.

3,425,283
RATE GYROSCOPE

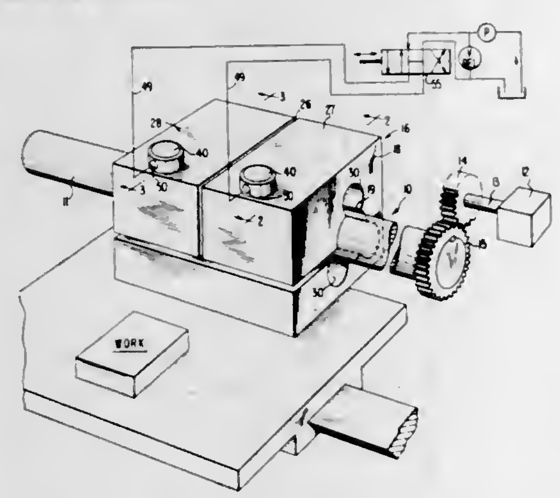
Leo Wiesner, Kew Gardens, N.Y., assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 9, 1965, Ser. No. 486,132
U.S. Cl. 74—5.6 **5 Claims**
Int. Cl. G01c *19/28*



A rate gyroscope employs an electromagnetic pickoff system. The system includes a rotor and a stator. The stator has a plurality of poles and a primary winding on each of the poles. A first series of secondary windings is wound on even numbered poles and a second series of secondary windings is wound on odd numbered poles. The output voltages of the two series of windings are rectified by a pair of balanced semi-conductor diodes and the rectified voltages are electrically compared.

3,425,284
LINEAR ACTUATOR

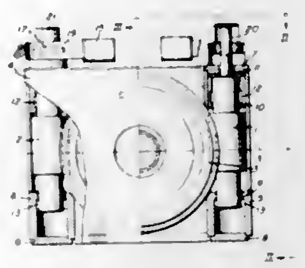
Russell S. Shelton, Paducah, Ky., assignor to Crounse Corporation, Paducah, Ky., a corporation of Kentucky
Continuation-in-part of application Ser. No. 577,934, Sept. 8, 1966. This application June 29, 1967, Ser. No. 655,985
U.S. Cl. 74—25 **21 Claims**
Int. Cl. F16h *21/16*



A linear actuator for converting rotary motion to linear motion, including an elongated rotary shaft and a roller block supported for linear movement along the axis of the shaft. The roller block includes a base and a spring block supported for relative pivotal movement and actuator means operable to selectively vary the degree of frictional contact between the rollers and the shaft.

3,425,285
DRIVE FOR ROTARY OBJECTS

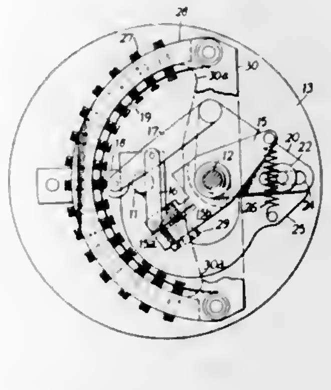
Walter Kaadell, Anders Reimers vag 13, Stockholm, Sweden, and Jozsef Piroska, Kallangsvagen 16, Lidingo, Sweden
Filed Mar. 2, 1966, Ser. No. 531,256
Claims priority, application Sweden, Mar. 5, 1965, 2,932/65
U.S. Cl. 74—29 **8 Claims**
Int. Cl. F16h *1/12, 19/04, 19/08*



There is provided a drive for rotary objects such as winding drums and the like including a toothed driving wheel adapted for connection with the object to be rotated. The driving wheel is driven by a pair of rotary screws, each permanently meshed with the teeth of the driving wheel. The screws are mounted for respective reciprocating longitudinal movement so that alternately one screw is moved longitudinally without turning, thus advancing the driving wheel, while the other screw is longitudinally advanced simultaneously, but additionally rotated so that no axial load is transmitted between the second screw and the driving wheel.

3,425,286
CONVERSION OF ANGULAR MOVEMENTS

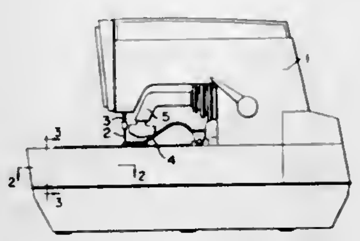
Stafford Malcolm Ellis, Shorne near Gravesend, Kent, England, assignor to Elliott Brothers (London) Limited, London, England
Filed Jan. 26, 1967, Ser. No. 611,964
Claims priority, application Great Britain, Feb. 5, 1966, 5,162/66
U.S. Cl. 74—63 **9 Claims**
Int. Cl. F16h *21/42, 53/00*



An apparatus capable of producing a predetermined rotational output, through a part of a revolution, of an output shaft in response to a predetermined rotational input through a part of a revolution of an input shaft. A series of members are linked between a first member rigidly mounted on the input shaft and a fourth member rigidly mounted on the output shaft. One of the members has an end which cooperates with a camming surface, and has the other end pivotally connected to a lever which is in direct abutting engagement with the member rigidly connected to the output shaft. Rotation of the input shaft causes rotation of the output shaft in a proportion depending upon the shape of the camming surface.

3,425,287
FABRIC CLAMP DRIVE FOR AUTOMATICALLY CONTROLLED SHORT SEAM SEWING MACHINES

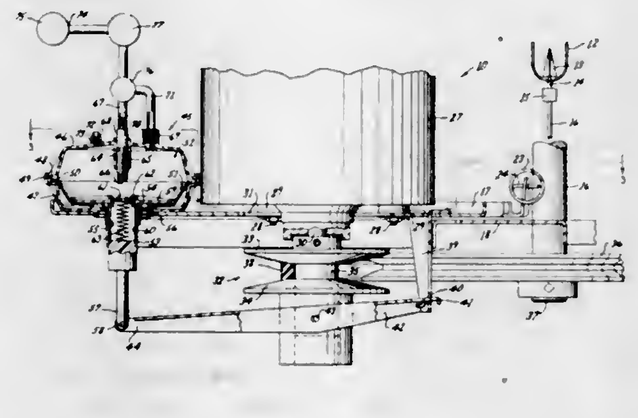
Eberhard Wider, Leongert, near Stuttgart, Germany, assignor to Union Special Maschinenfabrik, G.m.b.H., Stuttgart, Germany
Filed Dec. 15, 1966, Ser. No. 602,034
Claims priority, application Germany, Dec. 15, 1965, U 12,274
U.S. Cl. 74—119 **16 Claims**
Int. Cl. F16h *29/08;* **D05b** *3/04*



Reversible, mechanical driving provisions for reversing the driving direction of the cloth clamp of an automatically controlled short seam sewing machine includes a cloth clamp driving train adapted to be driven from a usual rotary input, a reversible one-way wedging roller overrunning clutch for providing intermittent driving motion to the cloth clamp and means interconnecting the rotary input and the clutch for providing an intermittent oscillatory input motion to the clutch and including provisions for phase-shifting the input motion to the clutch 180° upon reversal of the output direction of the clutch.

3,425,288
FLUIDIC OPERATED SPEED CONTROL MEANS

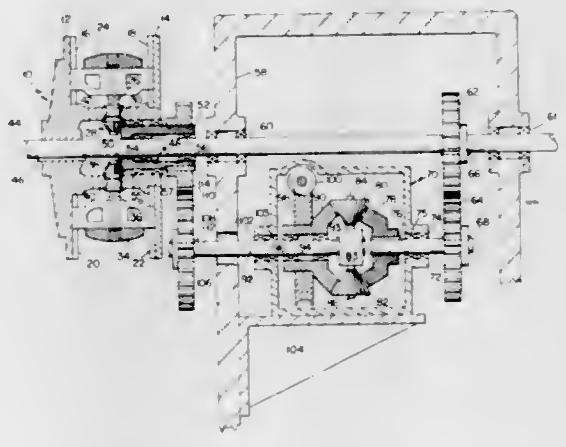
Robert L. Golden, Greensburg, and Harvey J. Shopsky, Latrobe, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,792
U.S. Cl. 74—230.17 **20 Claims**
Int. Cl. F16h *5/56*



Speed control means for varying the speed of spin of a washing compartment of a washing machine wherein a variable sheave drive pulley is carried by an electric motor fixed to a support member that is pivotally mounted to a stationary frame means carrying the driven part of the washing machine, a pneumatic actuator being carried by the movable support and being interconnected to a lever that is pivotally mounted to the movable support and operatively interconnected to the movable sheave of the drive pulley whereby evacuation of the actuator will pivot the lever to a predetermined position to cause movement of the movable sheave of the variable speed pulley.

3,425,289
ADJUSTABLE PULLEY

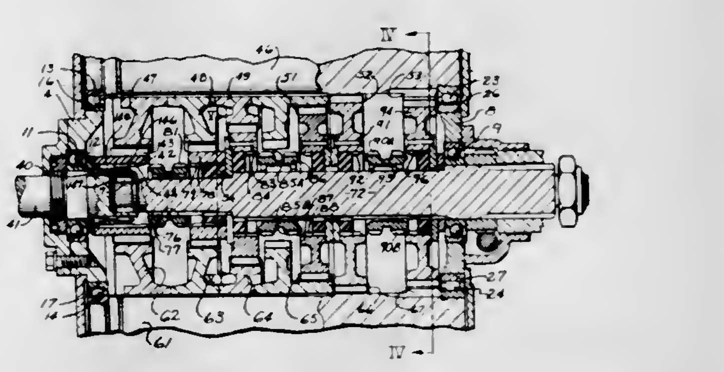
Robert Randall Henry, Andover, Mass., assignor to Hamblet Machine Co., Lawrence, Mass., a corporation of Massachusetts
Filed Aug. 28, 1967, Ser. No. 663,637
U.S. Cl. 74—230.19 **10 Claims**
Int. Cl. F16h *55/56*



An adjustable pulley carried on a rotatable pulley shaft and having a coaxial bevel gear adjustment member in combination with a phase shifting differential transmission, having an input shaft drivingly interconnected to said pulley shaft, an output shaft drivingly interconnected to said adjustment member, drive means drivingly interconnecting said input and output shafts, and phase shifting means interconnected with said drive means for changing the phase relationship of said input and output shafts, the drive ratio of said pulley and said adjustment member being 1:1 in a uniform direction.

3,425,290
TWIN COUNTERSHAFT CONSTRUCTION WITH ALL MAIN GEARS MOUNTED CONCENTRICALLY ON MAIN SHAFT

Charles M. Perkins, Phoenix, Ariz., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 577,278, Sept. 6, 1966. This application May 9, 1968, Ser. No. 728,077
U.S. Cl. 74—331 **10 Claims**
Int. Cl. F16h *3/08, 57/00*

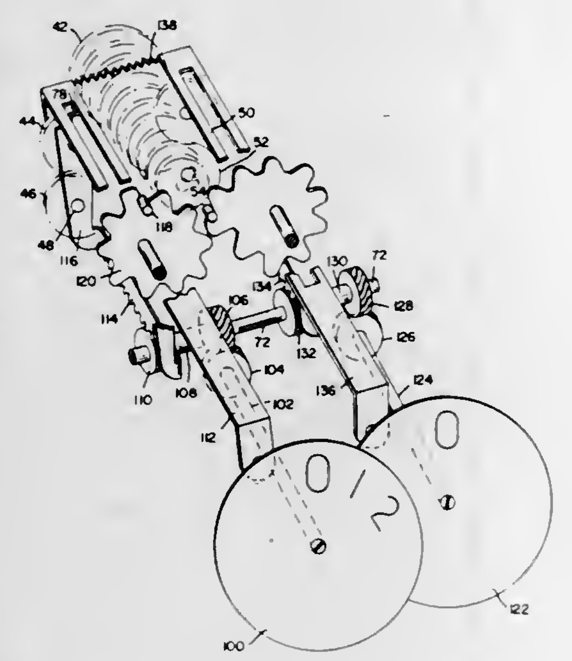


A means for equalizing the torque on all elements of a multicountershaft transmission wherein a clearance in addition to manufacturing tolerance is provided between all meshing elements.

3,425,291

PRICE-SETTING MECHANISM FOR COMPUTING COUNTERS

Leif J. Sundblom, 18042 Lamson Road, Castro Valley, Calif. 94546
Filed Feb. 17, 1967, Ser. No. 616,948
U.S. Cl. 74—348 **8 Claims**
Int. Cl. F16h *3/28, 3/36*

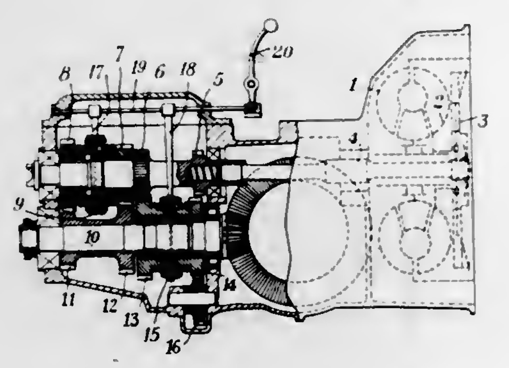


The longitudinal and rocking motion of pick-off gears during their movement from one gear of a conical gear stack to another is accomplished by way of cams and rack-and-pinion means in such a manner that the input motion can be purely rotary and that the depth of engagement of the pick-off gear and the stack gear are controlled.

3,425,292

SYNCHROMESH TRANSMISSION

Jean G. Cadiou, 26 Rue Desrenandes, Paris, France
Filed Sept. 27, 1966, Ser. No. 582,365
Claims priority, application France, Oct. 15, 1965, 35,094
U.S. Cl. 74—359 **1 Claim**
Int. Cl. F16h *3/12*

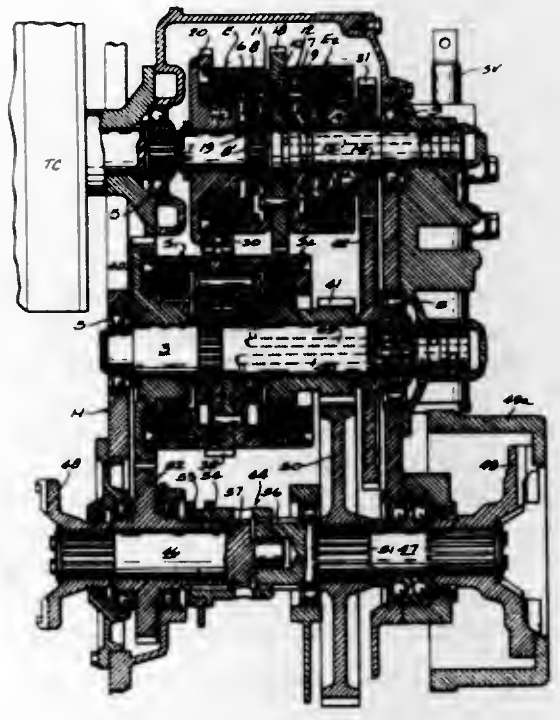


A transmission for automotive vehicle comprises a primary shaft rigidly connected to the driven member of a hydraulic coupling of which the driving member is actuated from the vehicle engine with the interposition of a clutch, and a secondary shaft rotatably driven from said primary shaft and actuating the wheels of the vehicle. Each one of these two shafts carries two pairs of gears each meshing with a pair of gears carried by the other shaft. In each assembly comprising two pairs of gears in mutual meshing engagement one pair is rigid with the shaft carrying same and the other pair consists of two gears rotatably mounted on the other shaft, one of these last-named gears being adapted to be locked at will to this shaft. In one of these two assemblies consisting of two pairs of gears in mutual meshing engagement, one of the gears of one pair meshes with the corresponding gear of the other pair through the medium of a reversing gear.

3,425,293

POWER TRANSMISSION AND CONTROL SYSTEM THEREFOR

Henryk S. Krawczyk, Brussels, and Horst G. Steinhagen, Waterloo, Belgium, assignors to Twin Disc, Incorporated, a corporation of Wisconsin
Filed Feb. 13, 1967, Ser. No. 615,575
U.S. Cl. 74—360 **14 Claims**
Int. Cl. F16h *3/10;* **F16d** *67/00*



Power transmissions using a plurality of hydraulically actuated clutches for gear selection for direction and speed, and a hydraulic system for control thereof. The control system includes a modulating valve for the hydraulic clutch actuator which valve acts in combination with a flow sensing valve, the flow sensing valve acting to insure proper operation of the modulating valve and a particularly smooth shift. The flow sensing valve senses the fluid flow to the clutch when a shift occurs, and this flow sensing valve has means for dumping the fluid from the modulating valve and directly to the sump; in this manner, gradual pressure build-up and very smooth shift of the transmission results.

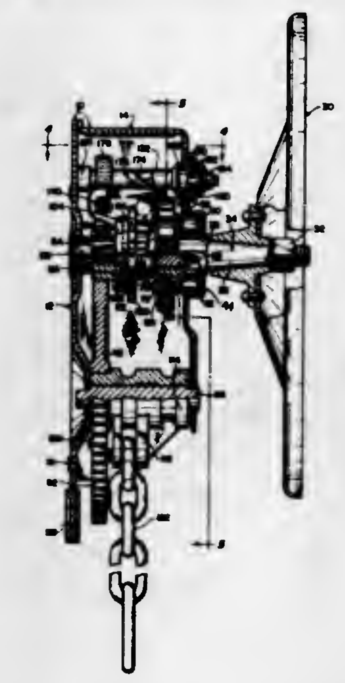
3,425,294

NON-SPIN HAND BRAKE ASSEMBLY WITH QUICK RELEASE MECHANISM THEREFOR

Wayne G. Klasing, New Lenox, Ill., assignor to Klasing Hand Brake Co., Joliet, Ill., a corporation of Illinois
Filed Mar. 31, 1967, Ser. No. 627,402
U.S. Cl. 74—505 **7 Claims**
Int. Cl. G05g *1/08;* **F16d** *13/76, 67/02*

A hand brake assembly for railway cars in which a self-energizing friction clutch associated with the hand wheel shaft permits a graduated release of the car brakes and prevents spinning of the hand wheel. A manually operable

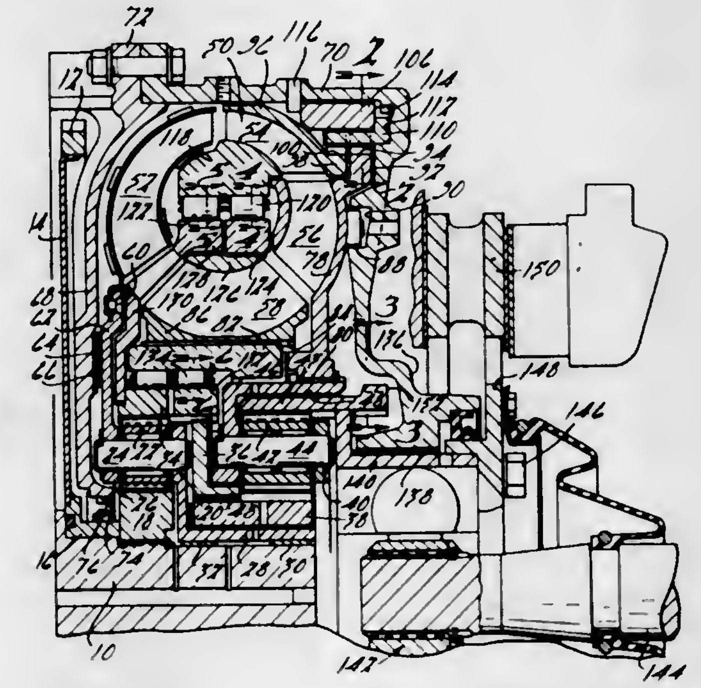
quick release of the car brakes is made possible by the provision of a second manually shiftable jaw clutch in the power train between the hand wheel shaft and the chain winding drum.



3,425,295

HYDROMECHANICAL INFINITELY VARIABLE POWER TRANSMISSION MECHANISM

Alexander H. Galaniuk, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 12, 1967, Ser. No. 674,911
U.S. Cl. 74—677 **8 Claims**
Int. Cl. F16h *47/04, 47/08*

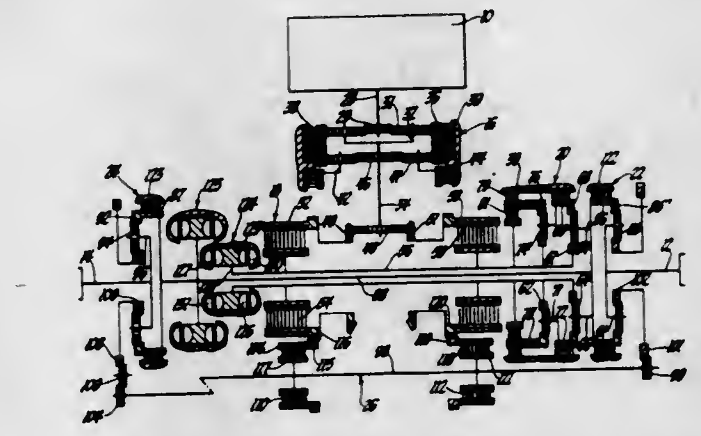


This specification discloses a hydromechanical power transmission mechanism for an automotive vehicle driveline having infinitely variable torque ratio characteristics. The torque ratio variation is accomplished without the use of friction clutches or brakes. A split torque delivery path is established between the vehicle engine crankshaft and the driveshaft during acceleration from a standing start, one portion being hydrokinetic and the other portion being mechanical. The torque of the hydrokinetic portion fades away as acceleration continues. During operation of the vehicle under steady-state cruising conditions, the torque delivery path is substantially mechanical.

3,425,296

POWER TRAIN

William G. Livezey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,420
U.S. Cl. 74—720.5 **25 Claims**
Int. Cl. F16h *37/06, 47/00;* **B62d** *11/00*

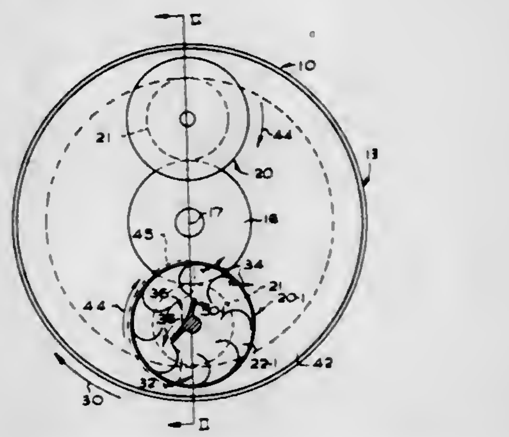


A power train in the preferred embodiments has a multiratio unidirectional drive unit providing drive from the power train's input to a forward and reverse drive unit. The forward and reverse drive unit is connected by a multiratio unidirectional drive unit to a pair of speed differential drive units which are coupled and are connected to drive the power train's two outputs with compound hydrodynamic braking provided in all drive ranges. In one embodiment, steer clutch drives are provided between the forward and reverse drive unit and the coupled speed differential units for steering. In another embodiment, a hydrostatic steer drive is provided between one output of the forward and reverse drive unit and the coupled speed differential units to provide infinitely variable ratio steering.

3,425,297

FLUID TORQUE TRANSMITTER

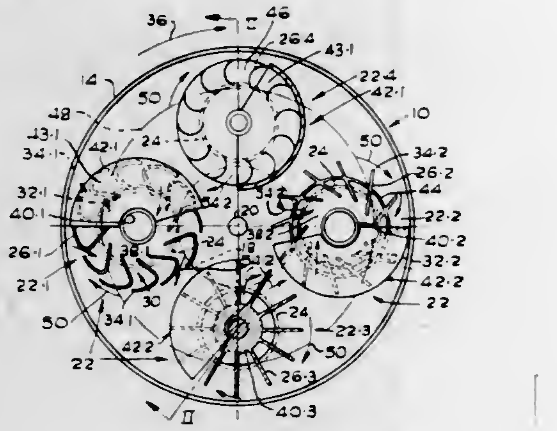
Eric Helmuth Friedmann, Kenilworth, Cape Town, Cape Province; Hendrik Cancrinus, Rondebosch, Cape Province; Timothy Richard Trembath, Plumstead, Cape Town, Cape Province; and Philip John Fourie, Tokai, Cape Province, Republic of South Africa, assignors to Inpower Works (Proprietary) Limited
Filed Oct. 24, 1966, Ser. No. 589,079
Claims priority, application Republic of South Africa, Nov. 1, 1965, 65/5,892
U.S. Cl. 74—752 **13 Claims**
Int. Cl. F16h *57/10, 3/74*



This invention relates to a fluid torque transmitter adapted for the generation of torque by centrifugal force acting on an unbalanced mass of fluid entrapped in an entrapment zone offset from the axis of a planet wheel. The planet wheel is rotatably mounted on a carrier and is drivingly connected with a driven wheel coaxial with the carrier. It is adapted to reject entrapped fluid from the said zone when the planet wheel rotates about its axis relative to the carrier, and which includes diverting means for diverting such rejected fluid back into the zone.

3,425,298
FLUID TORQUE TRANSMITTER

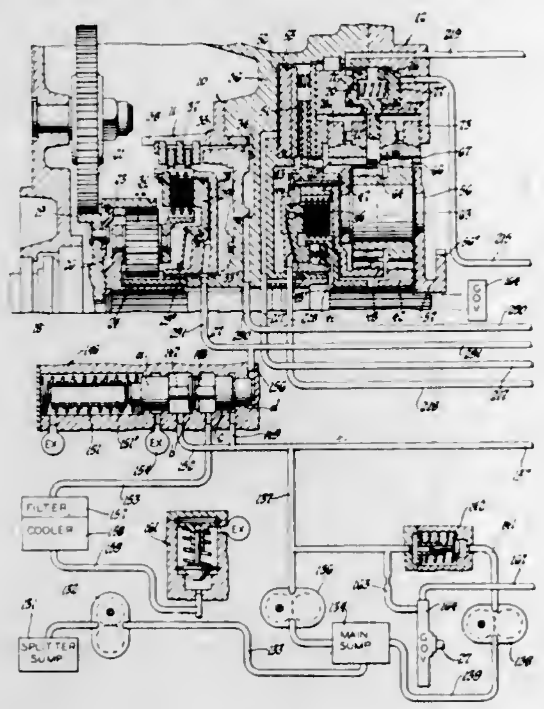
Eric Helmuth Friedmann and Timothy Richard Trembath, Cape Town, Cape Province, Hendrik Cancrinus, Rondebosch, Cape Province, and Philip John Fourie, Tokai, Cape Province, Republic of South Africa, assignors to Inpower Works (Proprietary) Limited
Filed Sept. 30, 1966, Ser. No. 583,279
Claims priority, application Republic of South Africa, Oct. 1, 1965, 65/5,339
U.S. Cl. 74—752 **10 Claims**
Int. Cl. F16h *3/74, 57/10*



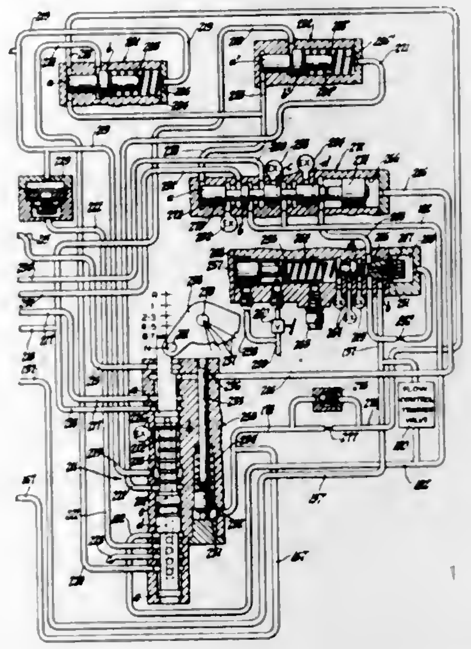
A fluid torque transmitter which includes a carrier rotatable about its axis relative to a wheel co-axial therewith, planet wheels rotatably mounted on the carrier about axes eccentric to the carrier axis, and meshing with the driven wheel. Each planet wheel has liquid-entrapping means including liquid retainers spaced circumferentially about the planet wheel axis and a shroud fast with the carrier and disposed on the leading side of the liquid retainers relative to the direction of rotation of the carrier about its axis.

3,425,299
TRANSMISSION

Mark E. Fisher, Carmel, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,073
U.S. Cl. 74—752 **11 Claims**
Int. Cl. F16h *3/74, 47/00*

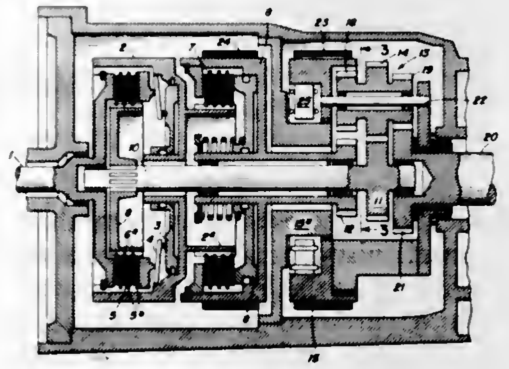


The transmission shown has range gearing and splitter gearing in combination to provide low, intermediate and high range drives in conjunction with one splitter drive and the splitter ratio drive intermediate each range ratio drive and has a manual and automatic control for establishing these ratios. The fluid operated control system selectively supplies fluid to a plurality of range ratio establishing devices to establish low, intermediate and high ratios and a low intermediate signal and an intermediate high signal. A governor supplies governor pressure to the splitter shift valve for controlling the splitter gearing. The governor pressure is positively controlled by two expansible chamber or accumulator devices, one positively moved for charging by the high intermediate pressure signal and for discharging by the low ratio pressure and the other positively moved for charging by the high ratio pressure and for discharging by the low intermediate pressure signal so that on each range upshift one accumulator is positively discharged and on each range downshift one accumulator is positively charged to control the pressure to insure single ratio shifts.



3,425,300
SPEED CHANGE GEARING DEVICES

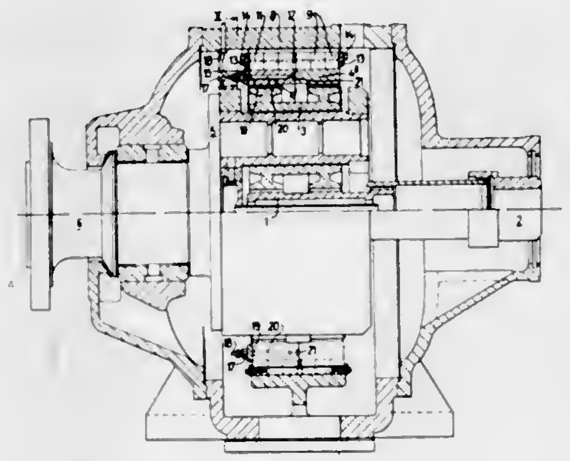
Minoru Ohya and Sumio Uozumi, Toyota-shi, Japan, assignors to Toyota Motor Co., Ltd., Aichi-ken, Japan, a corporation of Japan
Filed July 5, 1966, Ser. No. 562,735
Claims priority, application Japan, July 5, 1965, 40/40,257
U.S. Cl. 74—763 **12 Claims**
Int. Cl. F16h *57/10*



A transmission apparatus for providing three forward speeds, a neutral and a reverse is provided with a minimum of operating elements so as to reduce bulk and weight, and with only external gears thereby eliminating the need for costly internal gearing. The basic structure includes at least one planetary gear system mounted in a carrier to be driven by two clutched sun gears, one through an idler gear, and a gear driven by a planetary pinion.

3,425,301
EPICYCLIC HELICAL GEARBOXES

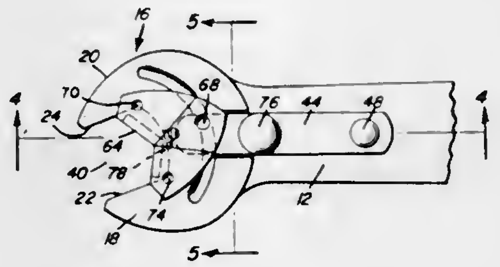
James Forrest Shannon, Cheshire, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 8, 1966, Ser. No. 570,791
Claims priority, application Great Britain, Aug. 10, 1965, 34,223/65
U.S. Cl. 74—801 **10 Claims**
Int. Cl. F16h *57/04, 1/42*



An epicyclic gearing having a split annulus, the ring gears forming the two parts whereof are resiliently mounted for radial and torsional flexibility and with means for supplying oil under pressure between the facing surfaces of the two ring gears.

3,425,302
END WRENCH WITH SELECTIVELY USABLE JAW FACE SHIM MEANS

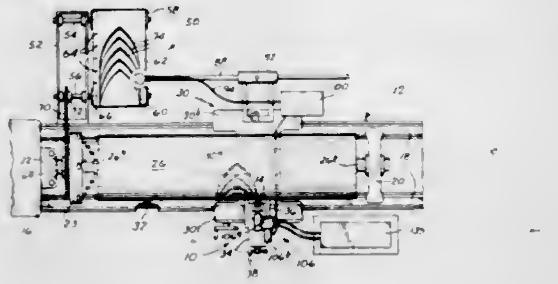
Wilbur A. Davis, R.R. 1, Mahomet, Ill. 61853
Filed July 5, 1967, Ser. No. 651,271
U.S. Cl. 81—185 **11 Claims**
Int. Cl. B25b *13/24, 13/38*



A shim structure adapted for use on an end wrench including a pair of opposing jaw members provided with opposing jaw faces and including spaced apart detached corresponding end portions, the shim structure including a pair of shim portions with one of the shim portions being positionable between the jaw faces and adjacent one of the latter to reduce the effective spacing between the faces and the other shim portion being alternately positionable between the jaw faces adjacent the other of the faces to further reduce the effective spacing between the jaw faces.

3,425,303
METHOD AND APPARATUS OF PRODUCING RELIEF PATTERN

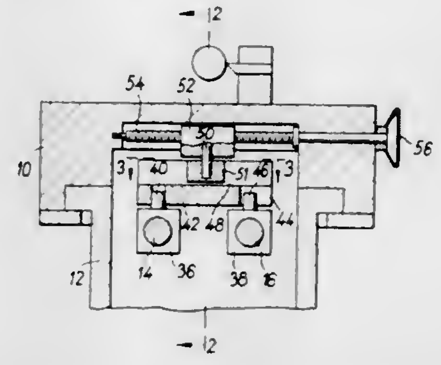
Lawrence G. Buckley, Bellevue, Wash., assignor to Welsh Panel Company, Bellevue, Wash., a corporation of Washington
Filed Oct. 3, 1966, Ser. No. 583,556
U.S. Cl. 82—14 **13 Claims**
Int. Cl. B23b *3/28;* **B23d** *43/00*



A method of producing a design in relief as part of the surface of an embossing element comprising preparing a master design in two dimensions on a pattern surface, scanning the pattern surface with a medium sensor passed over it in successive adjacent traverses, and with signals produced by such sensor controlling the cutting of a work element with a cutting tool, whereby the work element is cut away to reproduce in the work element a design in three dimensions related to the master design appearing on the pattern surface. The third dimension of the design reproduced is the projection of such design from a background level in the work element.

3,425,304
SPINDLE FEED MECHANISM FOR A SLIDE

Karl Beisswenger, 38 Hauptstrasse, 7321 Bortlingen, Germany
Filed Sept. 14, 1966, Ser. No. 579,422
Claims priority, application Germany, Sept. 21, 1965, B 83,820
U.S. Cl. 82—21 **3 Claims**
Int. Cl. B23b *21/00;* **F16h** *1/18, 1/20*

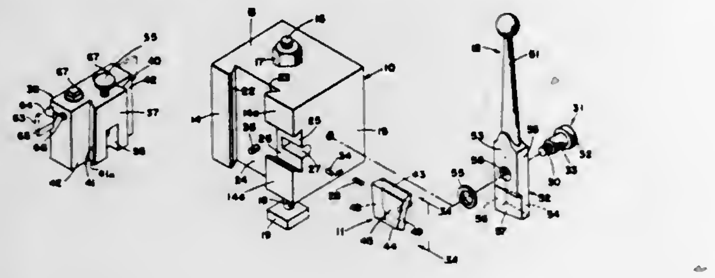


A feed mechanism for a slide guided on a frame comprises a pair of threaded spindles rotatably mounted on the frame, each spindle engaging a nut. The nuts are connected by a lever; and the lever is adjustably connected with the slide. Owing to a difference of the leads of the spindles or owing to different rotary speeds of the spindles, the nuts travel with slightly differing speeds. The velocity of feed of the slide is adjustable by adjustment of the connection between the lever and the slide.

3,425,305
TOOL POST AND TOOL HOLDER

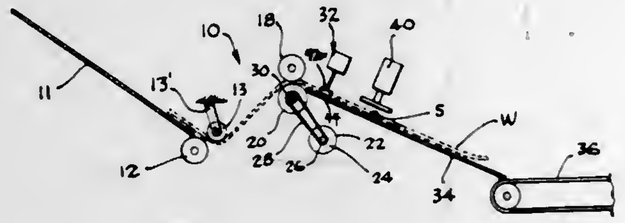
Henry A. Cocco, Broomall, Pa. 19008
Filed Sept. 2, 1966, Ser. No. 581,418
U.S. Cl. 82—36 **10 Claims**
Int. Cl. B23b *29/00*

A tool post and tool holder insertable thereinto; the tool holder having a dovetail wedge mounting projection extending laterally from its rear face longitudinally in the direction of insertion into the tool post, one side surface of the dovetail being inclined at an angle so that the width of the dovetail decreases from a maximum at the tool post insertion end to a minimum at the opposite working end of the wedge; the tool post including a block having a dovetail recess extending through the front face from the top to the bottom and locking slide channel which opens into the recess through a wall of the block which defines one side surface of the recess, a locking slide slidably disposed in the slide channel, and an operating handle engaged with the locking slide to respectively drive the locking slide into the recess to overlyingly engage the angularly inclined wedge side surface and thereby lock a tool holder therein, and permit retraction of the locking slide from the recess to release the tool holder and permit withdrawal from the tool post block. Also provided is a tool holder carried adjusting screw rotatable to cause the tool holder to be shifted to a desired position in the tool post together with an adjustable friction lock engaged with the threads of the adjusting screw to prevent undesired rotation and insure precisely repeatable positioning of the tool holder within the tool post.



3,425,306
WEB CONDITIONING APPARATUS

Justin J. Wetzler, Evanston, Ill., assignor to F. W. Means & Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 28, 1965, Ser. No. 505,512
U.S. Cl. 83—210 **1 Claim**
Int. Cl. B26d *5/32*

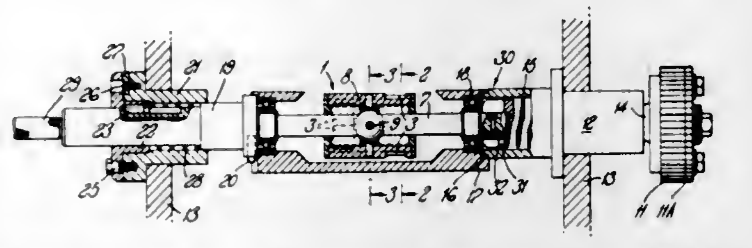


A web conditoning apparatus for severing a continuous web into predetermined lengths including a power source to withdraw webbing from the conditioning apparatus and means to sense the passage of a seam defined between successive predetermined lengths of webbing to control the power means and a device to sever the continuous web at the seams after sensing of passage of a seam past the sensing device.

3,425,307
APPARATUS FOR CUTTING CONTINUOUS WEBS OF PAPER OR LIKE MATERIAL

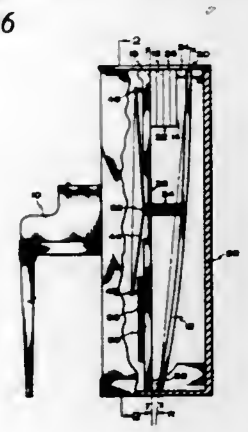
Eryk Stefan Doerman, London, England, assignor to Molin Machine Company Limited, London, England, a corporation of Great Britain
Filed Mar. 28, 1966, Ser. No. 537,828
Claims priority, application Great Britain, Mar. 29, 1965, 13,215/65
U.S. Cl. 83—346 **8 Claims**
Int. Cl. B26d *1/40;* **B23d** *25/02*

In a cutting device having a rotating cutter head to cut material against a drum surface, the cutter head is mounted on a spherically shaped portion of a shaft by an encircling ring and a cross pin extending through the shaft and the head, the ring being also connected to the head by stub pins at right angles to the cross pin, the arrangement permitting limited universal movement of the head so that the cutters can align themselves with the drum surface.



3,425,308
PIANO SOUNDING BOARD

Edwin R. Astin, 519 West 3000 South, Bountiful, Utah 84010, and Donald L. Weight, 206 West Second North, Salt Lake City, Utah 84103
Filed June 23, 1966, Ser. No. 559,958
U.S. Cl. 84—192 **6 Claims**
Int. Cl. G10c *3/06*



An upright piano which includes a sounding board positioned in the piano to pass between the back face of the piano's wrest plank and the back side of the piano with the board's top edge positioned proximate the top face of the piano. The sounding board can be positioned at an angle with the front face of the wrest plank and a reversed crown can be placed in the board that curves convexly away from the wrest plank's front face.

3,425,309
HEADS OF DRUMS, BANJOS, TYMPANI AND THE LIKE MUSICAL INSTRUMENTS

Abraham Isidore Elzas and Abraham Samuel Elzas, both of Maynooth Road, Celbridge, Ireland
No Drawing. Filed Feb. 18, 1964, Ser. No. 345,595
Claims priority, application Ireland, Feb. 26, 1963, 162/63
U.S. Cl. 84—414 **7 Claims**
Int. Cl. G10d *13/02*

A drum head comprising a fabric woven from polyester fibre yarn.

3,425,310
BALANCED AND COUPLED TUNING FORK MOUNTING STRUCTURE FOR SUPPRESSING REED VIBRATION

Boris F. Grib and Robert R. Shreve, Huntington, N.Y., assignors to Philamon Laboratories Inc., Westbury, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 339,762, Jan. 23, 1964. This application Dec. 6, 1966, Ser. No. 599,522
U.S. Cl. 84—457 **13 Claims**
Int. Cl. G10g *7/02*

A pair of tuning forks is provided having electrical drive and pick-up means, each of the forks having a pliant section between the heel and the tines. The heels of the

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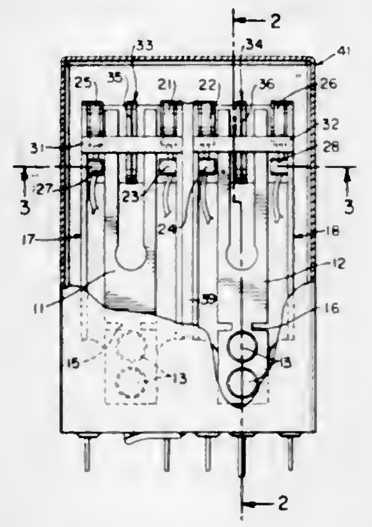
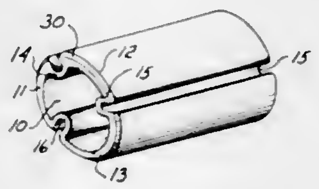
respective forks are physically coupled together to in effect form a third tuning fork with each one of the coupled forks acting as a tine for the third fork. Each of the coupled forks, which would otherwise be vibratable independently as a reed, is strongly urged to vibrate only in unison with the other fork of the pair thus permitting suppression of undesirable reed mode vibrations of the tuning forks.



3,425,311
SPRING PIN

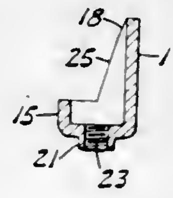
Ralph M. Levy, Abington, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1966, Ser. No. 599,516
U.S. Cl. 85—8.3 **3 Claims**
Int. Cl. F16b *19/00, 7/00*



A spring pin having a plurality of arcuate segments interconnected by tension lobes. The arcuate segments have the same radius of curvature and their centers of curvature lie on a circle concentric to the geometric center of the pin. As a result, when the pin is unstressed, the arcuate segments do not lie on a true circle. However, as the pin is compressed radially, the centers of curvature move toward the geometric center of the pin and when the centers of curvature fall on the geometric center of the pin, the arcuate segments lie on a true circle.

3,425,312
WEDGE NUT

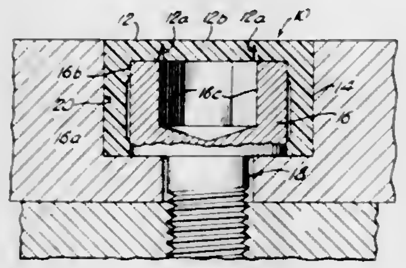
Herbert J. McCauley, 86 Dana Road, Buffalo, N.Y. 14216
Filed Aug. 8, 1966, Ser. No. 571,088
U.S. Cl. 85—32 **2 Claims**
Int. Cl. F16b *37/00, 33/04*



A wedge nut for bicycle stems having a drawn sheet metal cup-shaped body portion consisting of a radial end wall and an annular wall extending axially therefrom with the annular wall cut at an angle to the axis to provide opposed wedging surfaces, together with a coaxial tubular formation extending from the radial wall in a direction opposite to the aforesaid annular wall, the tubular portion being internally threaded to receive a clamping screw.

3,425,313
PROTECTIVE AND LOCKING CAP FOR SOCKET-HEAD CAP SCREWS

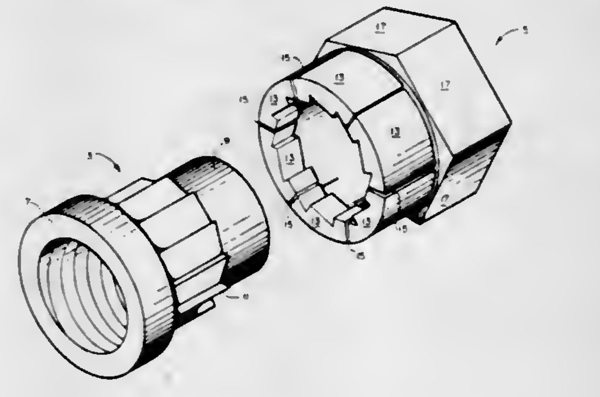
Joseph P. Villo, Rydal, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa.
Filed Nov. 4, 1966, Ser. No. 592,196
U.S. Cl. 85—53 **5 Claims**
Int. Cl. F16b *15/02, 39/02*



A cap to fit over the head of a counterbored socket-head cap screw which frictionally engages the side of the counterbore and the side of the head of the cap screw to provide a lock which resists rotation of the screw and also seals the screw to preclude entry of moisture and foreign matter. A knock-out portion is provided in the cap to allow for removal of the socket head screw.

3,425,314
SPRING BEAM LOAD LIMITING NUT

John F. Ohlson, 214 Canterbury Road, Havertown, Pa. 19083
Filed Aug. 9, 1967, Ser. No. 659,545
U.S. Cl. 85—61 **7 Claims**
Int. Cl. F16b *2/04;* **B25b** *5/16*

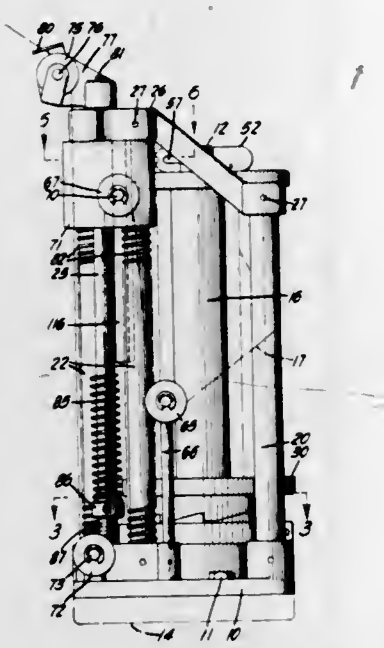


A unique torque limiting nut which utilizes the cantilever beam principle in controlling the amount of torque that is applied during the nut tightening operation. The nut includes an internally threaded member and a driver member having cooperating frictionally engaging means therebetween to permit rotation of the threaded member by the driver member, and said driver member additionally having means to permit the frictionally engaging means to slip past one another upon reaching a predetermined torque.

3,425,315
STRAND CARRIER FOR BRAIDING MACHINES

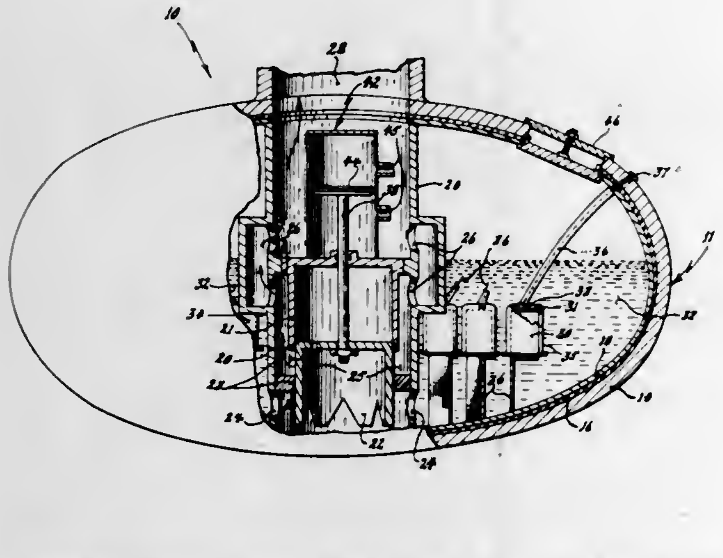
Robert H. Kaufmann, Temple, Donald Richard, Wyomissing, and John L. Wily, Reading, Pa., assignors, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,506
U.S. Cl. 87—22 **8 Claims**
Int. Cl. D04c *3/24*

Strand carrier for high speed braiding machines having a rotatable bobbin from which strand material is withdrawn to be fabricated into braided material on the machine, a first toothed member on the carrier releasably connected to the bobbin, overrunning clutch means associated with the first toothed member for permitting rotation of the first toothed member with the bobbin in the strand withdrawing direction while preventing rotation of the first toothed member and bobbin in the direction opposite to the strand withdrawing direction, a second toothed member fixed against rotation but movable axially into and out of holding engagement with the first toothed member, a shifting lever connected to the second toothed member, and a tension member movable by the strand from a strand take-up position to a position in which it operates the shifting lever to disengage the second toothed member from the first toothed member to permit movement of the first toothed member and bobbin in the strand withdrawing direction.



3,425,316
EXOTHERMIC STEAM GENERATOR

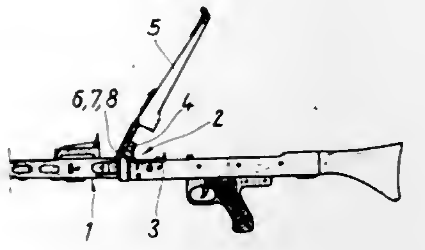
William D. Egbert and Bryan E. Nixon, Phoenix, Ariz., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 4, 1967, Ser. No. 658,992
U.S. Cl. 89—1.818 **5 Claims**
Int. Cl. F41f *3/04*



An exothermic steam generator for cold launching a silo-based missile or rocket having an outlet through which high pressure steam escapes in order to launch the missile upon the actuation of two separate signals.

3,425,317
MACHINE GUN WITH RAISABLE CARTRIDGE FEEDER COVER

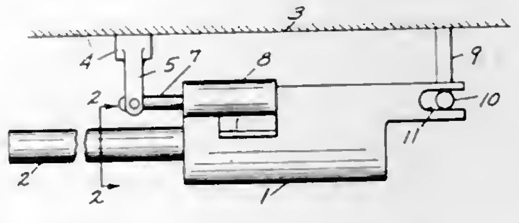
Hartmut Menneking, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Sept. 25, 1967, Ser. No. 670,266
Claims priority, application Germany, Sept. 27, 1966, R 44,209
U.S. Cl. 89—33 **8 Claims**
Int. Cl. F41d *9/00;* **F41c** *25/00*



A machine gun, which comprises a cartridge feed and a feeder cover masking the cartridge feed. Pivot means are provided for hingedly securing the feeder cover to the machine gun, which pivot means includes a locking device for securing the feeder cover in any one of a plurality of positions.

3,425,318
RECOIL ISOLATOR FOR MACHINE GUNS AND THE LIKE

Albert Simeon Whitehill, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1966, Ser. No. 601,588
U.S. Cl. 89—42 **10 Claims**
Int. Cl. F41f *19/00;* **B60g** *11/52*



Recoil is isolated by supporting the gun of mass *m* and firing frequency *f* for bodily movement relative to a supporting structure and by connecting spring means of spring constant *k* in recoil force resisting relation between the gun and the supporting structure, the natural frequency f_n of the gun on said supporting means as given by the formula

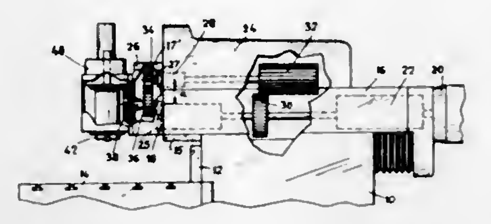
$$f_n = \frac{1}{2\pi}\sqrt{\frac{k}{m}}$$

being a small fraction of the firing frequency *f*, whereby the transmissibility of the recoil force to the supporting means is substantially less than the recoil force.

3,425,319
MILLING MACHINE WITH PIVOTAL SPINDLE HEAD

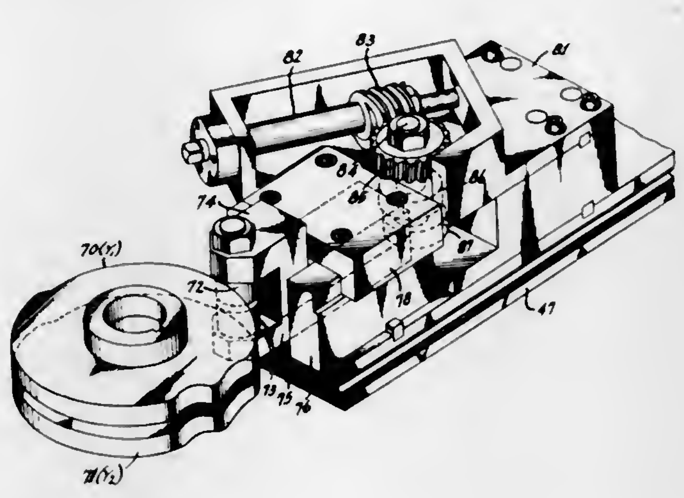
Horst Lanzenberger, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich W. Deckel, Zug, Switzerland
Filed Feb. 6, 1967, Ser. No. 614,245
Claims priority, application Germany, Feb. 7, 1967, D 49,305
U.S. Cl. 90—11 **10 Claims**
Int. Cl. B23c *7/00, 1/00, 3/00*

A machine tool, such as a milling machine, with two working spindles for operation on a workpiece on a clamping table, where both spindles share a common drive means. One working spindle is a horizontal spindle and the other is a vertical spindle pivotally mounted to an adaptor which in turn is pivotally mounted to the horizontal spindle housing at a distance above the horizontal spindle. The vertical spindle is pivotally movable to an uppermost and a lowermost working position and in one of these positions the horizontal working spindle is free for operation on the workpiece, simultaneously with operation of the vertical working spindle, if desired, without moving the vertical spindle to a nonworking position or removing it from the machine, as required in the past.



3,425,320
APPARATUS FOR FORMING CONTOURS

Nils Hoglund, 296 Hartshorn Drive, Short Hills, N.J. 07078
Filed Jan. 13, 1967, Ser. No. 609,099
U.S. Cl. 90—13 **5 Claims**
Int. Cl. B23c *1/16, 1/18, 5/00*

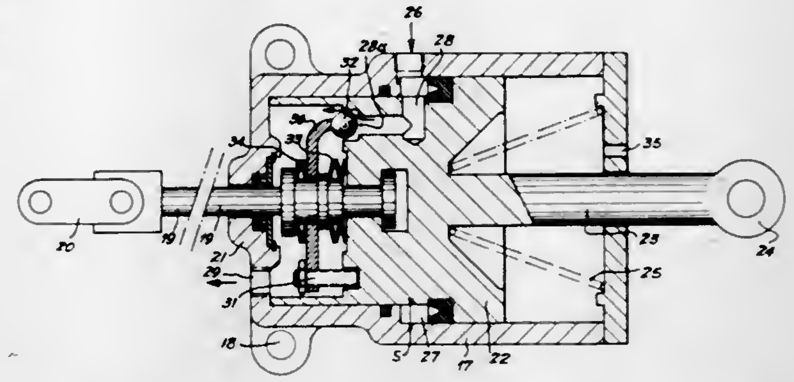


An apparatus having a cutting tool movable in a plurality of dimensions for forming contours of various kinds, including slots and apertures in a work piece and having an adjustable mechanism for increasing or decreasing the width of the cutting path of the cutting tool from a mean path.

3,425,321
SINGLE ACTION HYDRAULIC ASSISTANCE DEVICES

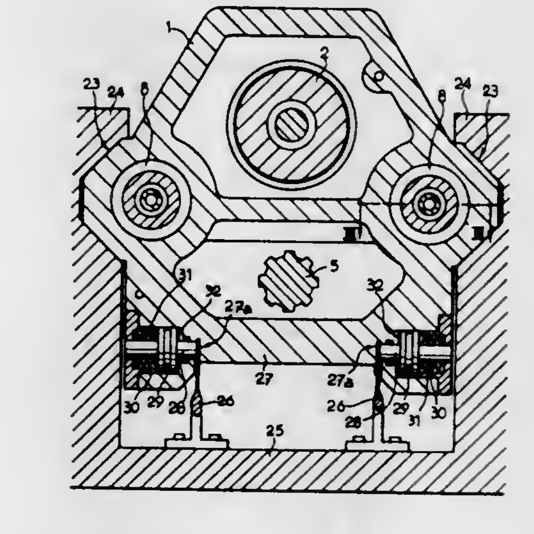
Rene Lucien, 56 Blvd. Maillot, Neuilly-sur-Seine, France, and Yves Pascal, 51 Rue Perier, Montrouge, Hauts-de-Seine, France
Filed July 9, 1965, Ser. No. 470,830
Claims priority, application France, July 10, 1964, 981,562; May 11, 1965, 16,518
U.S. Cl. 91—49 **3 Claims**
Int. Cl. F15b *13/042, 11/08;* **F01b** *15/00*

A hydraulic assistance device in which a piston is in a jack body and one is fixed, and the other is movable and connected to a member to be actuated, the piston and jack body defining a working chamber coupled to a source of pressure fluid and connected via an orifice to an evacuation chamber leading to exhaust, a freely displaceable ball valve being positioned adjacent the orifice and acted on by a rocker-arm operated by a control member to directly control the position of the ball relative to the orifice and thereby the pressure of the fluid in the working chamber.



3,425,322
HYDRAULIC SLIDE CONTROL

Mosè Zucchellini, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Sept. 12, 1966, Ser. No. 578,659
Claims priority, application Italy, Sept. 17, 1965, 21,038/65
U.S. Cl. 92—27 **3 Claims**
Int. Cl. F15b *15/26;* **F01b** *15/02, 31/00*

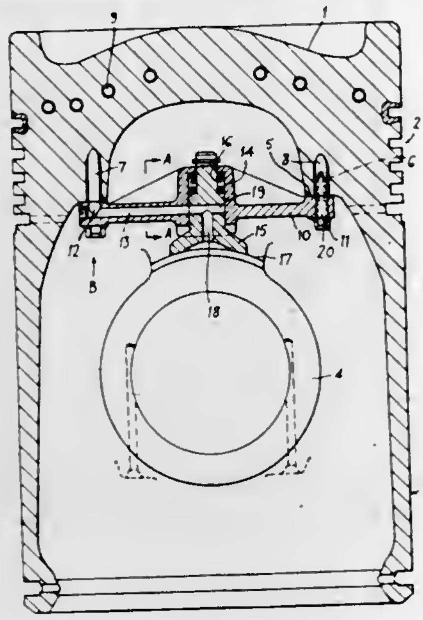


A hydraulic slide control for a machine slide carrying a spindle to be moved axially relative to a stationary machine part includes a pair of hydraulically interconnected double acting cylinders positioned between the slide and stationary machine part symmetrically and parallel to the axis of movement of the slide. Auxiliary cylinders with spring biased pistons are positioned on the slide to normally brake and hold the slide with respect to the stationary machine part, but upon application of hydraulic pressure simultaneously to all cylinders the braking force of the auxiliary cylinders is released.

3,425,323
PISTONS FOR INTERNAL COMBUSTION ENGINES

Harold Taylor Hill, Brockenhurst, and Douglas Alexander Law, Lymington, England, assignors to Wellworthy Limited, Lymington, England, a British company
Filed July 1, 1966, Ser. No. 562,262
Claims priority, application Great Britain, July 9, 1965, 29,279/65
U.S. Cl. 92—186 **4 Claims**
Int. Cl. F01b *31/08;* **F01p** *1/04, 3/06*

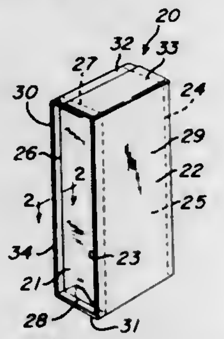
This invention relates to a piston having a spiral gallery for cooling oil cast into its crown, and a transverse bridging member secured at its opposite ends to opposed shoulders within the piston, into which shoulders the opposite ends of the spiral gallery open. The bridging member has a central oil pick-up element co-operable with the small end of a connecting rod to pick up oil



therefrom, the pick-up element communicating, via a gallery within the bridging member which extends from the pick-up element to one of the opposed shoulders, with the spiral oil gallery in the crown.

3,425,324
CONTAINER CONSTRUCTION AND METHOD AND APPARATUS FOR MAKING THE SAME

William C. Becker and Robert L. Boegershausen, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Original application Oct. 6, 1965, Ser. No. 493,406, now Patent No. 3,325,077, dated June 13, 1967. Divided and this application Apr. 19, 1967, Ser. No. 660,534
U.S. Cl. 93—36.01 **12 Claims**
Int. Cl. B31b *11/60, 11/74*

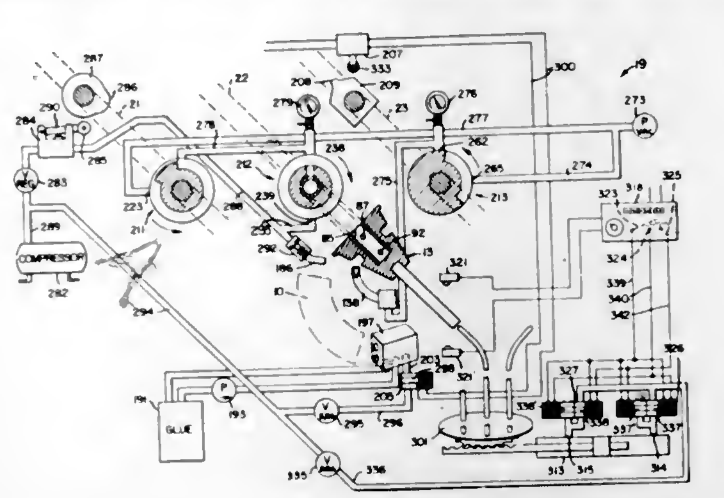


1. A method for making a container construction or the like comprising the steps of forming a flexible bag-like liner to enclose a product therein, and disposing and securing a rigid board means about said liner so that said board means has opening means therein exposing said liner, said board means being so disposed and secured that the exposed surface of said liner is spaced inwardly from the periphery of said opening means whereby said board means protects said liner.

3,425,325
FORMING APPARATUS FOR CONICAL PAPER BANDS AND THE LIKE

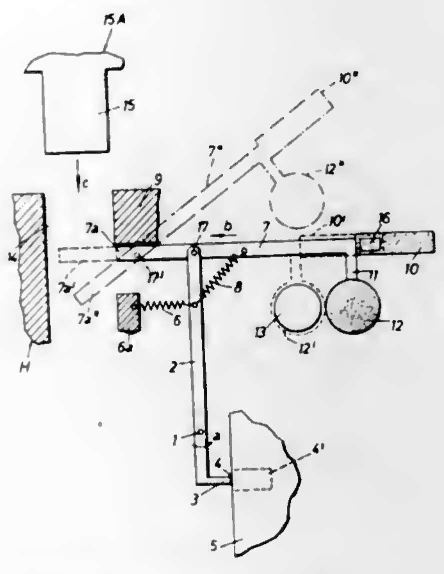
Ira R. Lynch, Daly City, Calif., assignor to Papercone Corporation, San Francisco, Calif., a corporation of California
Filed Aug. 30, 1966, Ser. No. 575,997
U.S. Cl. 93—79 **10 Claims**
Int. Cl. B11c *7/02;* **B65h** *37/00;* **B65g** *57/16*

Apparatus for forming a band, which may take a frusto-conical shape, from a flat, elongated blank of paper or other curlable material. Means are provided for supporting a supply of blanks, blank transfer means successively transfer individual blanks from the supply to a rotatable blank curling assembly having an annular surface, each blank is held on said surface for curling into a band upon rotation of the curling assembly, and band ejection means axially displace the band from the curling assembly for stacking or other handling.



3,425,326
CAMERA WITH EXPOSURE METER

Erwin von Wasielewski, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Munich, Germany
Filed Oct. 22, 1965, Ser. No. 500,864
Claims priority, application Germany, Nov. 13, 1964, A 47,603
U.S. Cl. 95—10 **17 Claims**
Int. Cl. G01j *1/00*

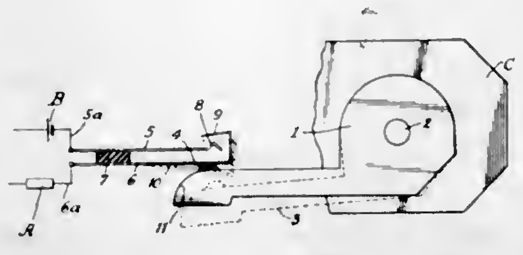


A photographic camera which is used with different types of films furnished in containers having markers indicating the film type therein. A detector is movable from a first to a second position in response to engagement with markers of containers respectively containing outdoor and indoor film whereby the detector moves a filter across the light path on engagement with the marker which indicates indoor film. A lighting unit can be attached to the camera to thereby move the detector to a third position in which the detector adjusts the exposure meter.

3,425,327
PHOTOGRAPHIC CAMERA WITH EXPOSURE ADJUSTING DEVICE

Josef Stüper, Maichingen, Wurttemberg, and Markus Wieland, Stuttgart-Bad Cannstatt, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart-S, Germany, a corporation of Germany
Filed Jan. 28, 1966, Ser. No. 523,703
Claims priority, application Germany, Feb. 6, 1965, Z 9,669
U.S. Cl. 95—10 **5 Claims**
Int. Cl. G01j *1/52*

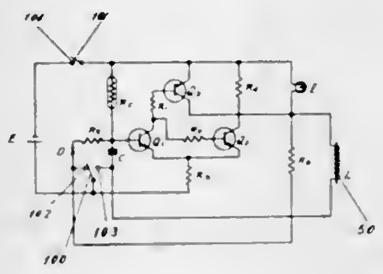
A photographic camera is provided with an exposure meter circuit and a switch for closing and opening this circuit is arranged adjacent the free end of a manually operable shutter tensioning and film advancing lever. The switch is closed by said lever in its initial position but



may be opened when the lever is pivoted a short distance in a direction which is opposite to the direction in which the lever tensions the shutter and advances the film.

3,425,328
PHOTOGRAPHIC EXPOSURE CONTROL SYSTEM

Yasunori Ichijo, Kawasaki-shi, and Yukio Nakamura, Chiba-ken, Japan, assignors to Kabushiki Kaisha Hattori Tokeiten
Original application June 30, 1964, Ser. No. 379,155, now Patent No. 3,373,672, dated Mar. 19, 1968. Divided and this application Nov. 23, 1966, Ser. No. 596,583
U.S. Cl. 95—10 **3 Claims**
Int. Cl. G01j *1/52*

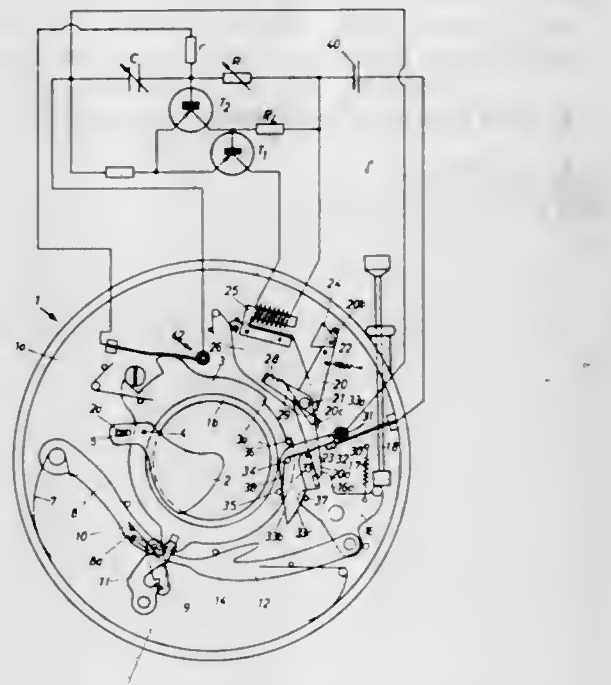


A camera lens shutter electronic control circuit is shown for selectively varying the effective exposure time in accordance with the aperture opening and ambient light conditions. The control circuit comprises a transistorized R-C timing circuit where the resistance component is a cadmium sulphide cell whose resistance varies inversely with the intensity of light impinging thereon, to selectively vary the charging time constant of the R-C circuit.

3,425,329
PHOTOGRAPHIC SELF-COCKING SHUTTER WITH ELECTRONIC SHUTTER SPEED CONTROL

Franz W. R. Starp, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed July 11, 1966, Ser. No. 568,717
Claims priority, application Germany, July 9, 1965, P 37,222
U.S. Cl. 95—53 **11 Claims**
Int. Cl. G03b *9/60*

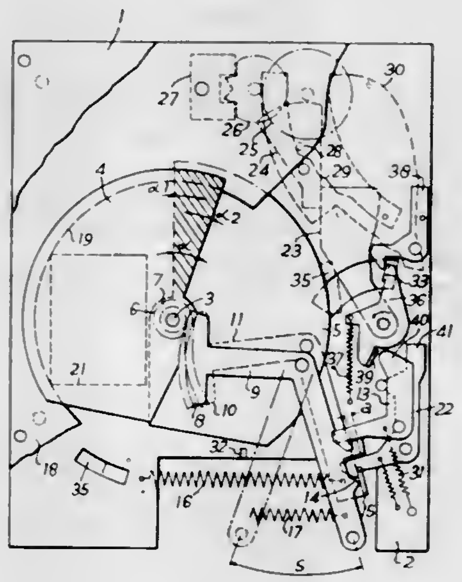
1. A photographic shutter comprising a blade (**2**) movable from a closed position to an open position to a closed position; locking means (**28**) to lock said blade in its open position; an electromagnet (**25**) connected to said means to actuate the same; a timing circuit connected to said electromagnet to control the operation thereof; a first switch (**30, 31**) connected to said timing circuit to control the operation thereof, said switch comprising a movable member (**30**); a shutter trigger (**18**), positioning means (**33**) moving with said shutter blade to engage said movable member and to permit said switch to close in order to energize said timing circuit and said electromagnet only when said shutter trigger is actuated; means (**16, 12, 8, 9, 11, 3**) connecting said shutter trigger; and means (**35**) to engage said positioning means when said locking



means has locked said blade in its open position to prevent said positioning means from opening said switch until said timing circuit has caused said electromagnet to release said locking means.

3,425,330
PHOTOGRAPHIC SHUTTER

Rolf Noack, Johannes Weise, and Wolfgang Riedel, Dresden, Germany, assignors to Veb Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed Sept. 30, 1965, Ser. No. 491,635
U.S. Cl. 95—60 **1 Claim**
Int. Cl. G03b *9/26*

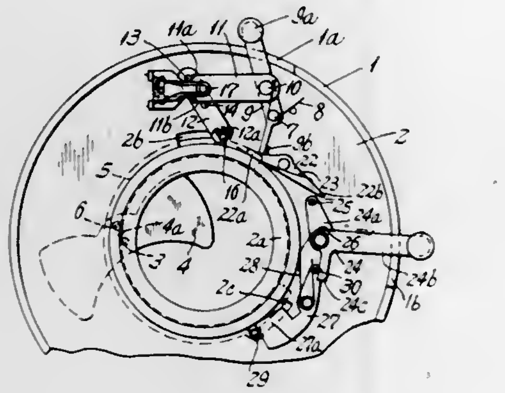


The photographic shutter is provided with a pair of shutter discs, both being rotatable in one direction successively under spring action to open and to close the aperture and in the other direction together in overlapping relation with each other to prevent light passing through the aperture. The discs during their movement together are coupled together by means of a lost motion connection having an angular dimension of overlap which is reduced by lugs angularly displaced from each other, said lugs being released successively by pawls.

3,425,331

PHOTOGRAPHIC SHUTTER WITH SWINGING-THROUGH BLADES

Richard Theurer, Hofen, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed Dec. 22, 1965, Ser. No. 515,527
Claims priority, application Germany, Dec. 28, 1964, G 42,396
U.S. Cl. 95—61 **8 Claims**
Int. Cl. G03b *9/00, 9/20*

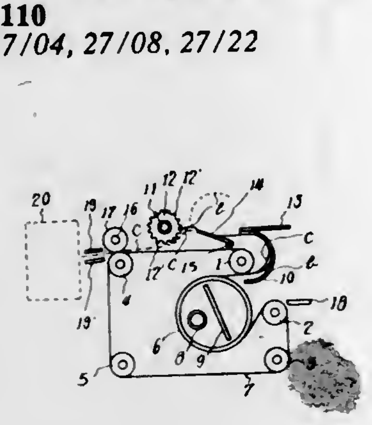


A photographic camera with swinging-through blades that has a blade operating ring and a driving device coupled to the blade operating ring. There is also provided a load transmission member alternately reciprocating the driving device first in one direction of rotation and then in the opposite direction of rotation. Two control pawls are provided which are similarly shaped and shearlike in design, these pawls being associated with the load transmission member. A spring is positioned to spread the pawls apart and two stops are situated on the driving device and cooperate alternately with the pawls during the cocking process, thereby causing one of the two driving edges situated on the load transmission member to engage one of the respective stops.

3,425,332

AUTOMATIC SEPARATION SYSTEM FOR SENSITIVE PAPER AND ORIGINAL PAPER IN COPYING MACHINE

Yasusuke Dohi, 322 Ishibashi-cho, Ko, Ikeda, Osaka Prefecture, Japan, and Tatsuo Aizawa, 6–34 Kuwazu-cho, Higashisumiyoshi-ku, Osaka, Japan
Filed Feb. 14, 1966, Ser. No. 527,343
U.S. Cl. 355—110 **6 Claims**
Int. Cl. G03b *27/04, 27/08, 27/22*

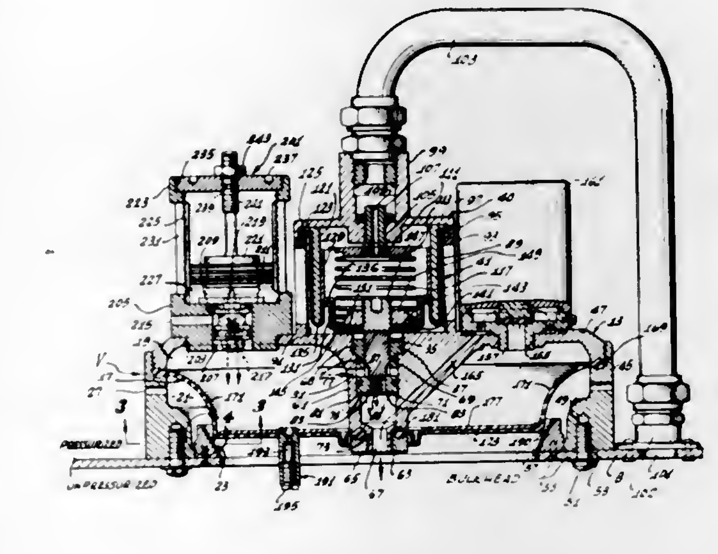


Apparatus for separating the copy sheet material from a master after exposure in an exposing station from which the copy sheet and master are guided into a concave surface which causes separation of the master from the copy sheet. The concave surface guides the leading edges of the copy sheet and master over a guiding plate to a gear means which engages the copy sheet arresting the forward motion of the leading edge thereof thereby producing a hump which moves the leading edge of the master away from the copy sheet for easy grasping and separation. The gear means is driven at a slower rate than the leading edge of the copy sheet moves in a direction away from the master.

3,425,333

PRESSURE CONTROL VALVE FOR AIRCRAFT

Millard A. Wachter, 23305 Cohasset, Canoga Park, Calif. 91304
Filed Sept. 5, 1967, Ser. No. 665,628
U.S. Cl. 98—1.5 **10 Claims**
Int. Cl. B64d *13/00*



A pressure control valve for controlling the pressure differential between the cabin of an aircraft and the atmospheric pressure. The pressure control valve includes a housing which forms a cylindrical cavity having an open end surrounded by a valve seat which defines a flow opening. A main diaphragm is supported from the housing and forms a flexible wall and a valve gate. The wall, when the valve gate is seated on the seat, cooperates with the housing to form an annular sensing chamber on the outside of the wall; the inside of the flexible wall, further, cooperates with the gate and back portion of the cavity to form a control chamber at the rear of the cavity. The housing also forms a cabin port for passage of air from the cabin to the cabin sensing chamber. The housing includes a relatively small bleed passage for communication of air from the cabin to the control chamber and a relatively large exhaust passage for passage of air from the central chamber to the atmosphere.

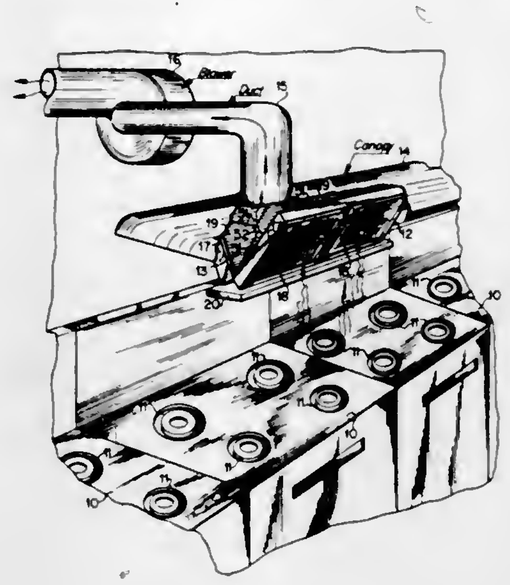
Valve means is provided for controlling air flow out the exhaust passage and is responsive to a pre-determined pressure differential between atmospheric and cabin pressure to exhaust said control chamber and enable the air in the cabin sensing chamber to act on the first flexible wall and move the gate from the valve seat.

3,425,334

HEAT ARRESTING GREASE EXTRACTING FILTER ASSEMBLY

Richard E. Brown, Lyndhurst, and William A. Janson, Pepper Pike, Ohio, assignors to North American Rockwell Corporation, a corporation of Delaware
Filed May 3, 1967, Ser. No. 635,923
U.S. Cl. 98—115 **1 Claim**
Int. Cl. F23j *11/00;* **F23l** *17/04;* **E06b** *7/08*

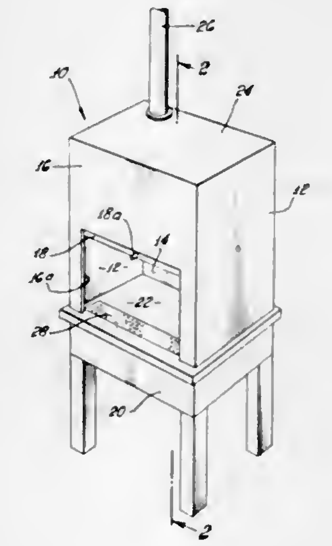
A grease extracting filter and a heat arrestor combination having a temperature sensitive fusible link in cooperation with an extension spring to close the louvers and prevent heat and flame from passing through the louvers above a predetermined temperature level.



3,425,335

LABORATORY FUME HOOD

Ernest L. Black, Palos Verdes Peninsula, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Continuation-in-part of application Ser. No. 549,260, May 11, 1966. This application Jan. 24, 1968, Ser. No. 700,167
U.S. Cl. 98—115 **6 Claims**
Int. Cl. F23j *11/00;* **F24f** *9/00*

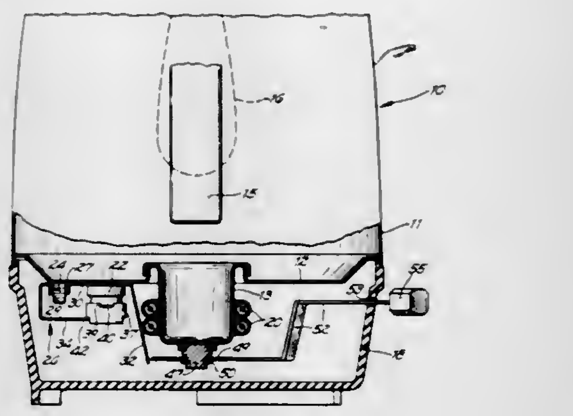


Absence of working area turbulence and positive separation of outside air and fume hood air is achieved in a fume hood having an elongated air flow directing grill in the bottom wall, underlying the openable front wall, and communicating with a pressurized air supply to displace air in a vertical air curtain flow pattern across the hood front to positively separate inside and outside air volumes and to simultaneously induce a circular flow of air within the hood to define a central working zone free of turbulent air. Furthermore, the air constituting the curtain can incorporate biologically active materials.

3,425,336

COFFEE MAKER

Dale E. Bufkin, Willard G. Murphy, and Ronald E. Yount, Macon, Mo., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed May 5, 1967, Ser. No. 636,366
U.S. Cl. 99—281 **6 Claims**
Int. Cl. A47j *31/35;* **F27d** *11/02;* **H05b** *3/68*

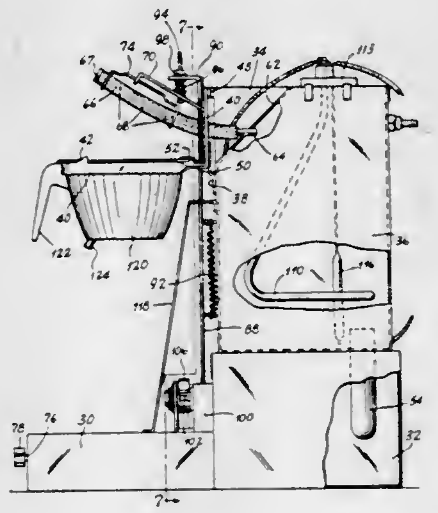


A manually operated structure for regulating the brewing time by varying the effective heat transfer from the wall of a vessel to a fixed value heat sensitive element of a controlling switch member.

3,425,337

COFFEE BREWING DEVICE

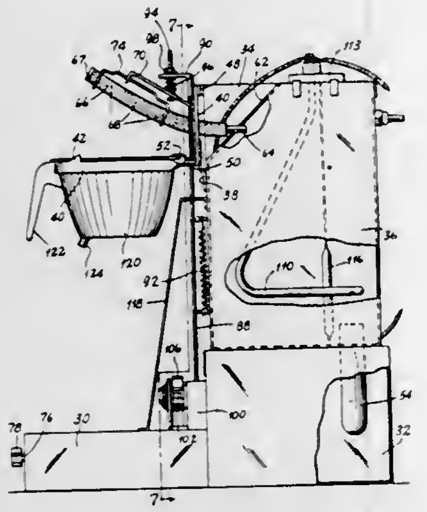
Enioch C. Vittoe, 1213 S. Pasfield, Springfield, Ill. 62704
Original application May 13, 1965, Ser. No. 455,435, now Patent No. 3,369,477, dated Feb. 20, 1968. Divided and this application Aug. 22, 1967, Ser. No. 662,358
U.S. Cl. 99—281 **9 Claims**
Int. Cl. A47j *31/057, 31/56*



A coffee-brewing device has a water-heating tank, a water-supplying system which maintains a substantially-constant level of water within that water-heating tank, a funnel in which ground coffee can be held, a water-distributing spray connected to the outlet of that water-heating tank and which sprays hot water onto the ground coffee in that funnel, and a support which can selectively dispose the water-distributing spray above the water level in that water-heating tank to prevent the spraying of water onto that ground coffee or can dispose that water-distributing spray below that water level to cause water to spray into that ground coffee. That water-distributing spray coacts with that water level to serve as a water distributor, as a flow rate control, and as an on-off valve.

3,425,338
COFFEE BREWING DEVICE

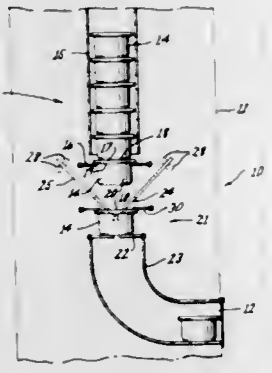
Enioch C. Vittoe, 1213 S. Pasfield, Springfield, Ill. 62704
Original application May 13, 1965, Ser. No. 455,435, now Patent No. 3,369,477, dated Feb. 20, 1968. Divided and this application Aug. 22, 1967, Ser. No. 662,357
U.S. Cl. 99—289 3 Claims
Int. Cl. A47j *31/057, 31/56*



A coffee-brewing device has spaced-apart supports on which a coffee-holding funnel is normally held; and that funnel will temporarily hold hot water to brew coffee, and then will permit the brewed coffee to drain into a suitable container through a discharge spout. That spout is located adjacent the side of the funnel to which the handle is attached; and projections on the spaced-apart support will force the user to raise that side of the funnel and will thus tend to cause any residual brewed coffee in the funnel to flow away from the spout so the funnel will be essentially drip-free.

3,425,339
VENDING APPARATUS FOR DISPENSING RECONSTITUTED FOOD IN CONTAINERS

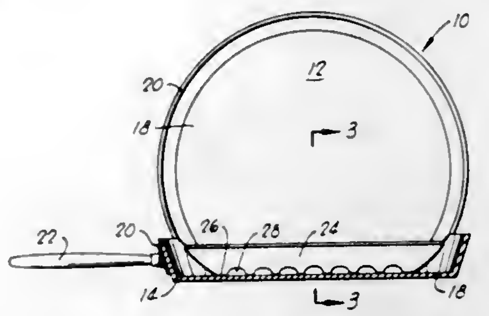
Frederick R. Fleischman, Powhatan, Va., and George A. Rutledge, Pelham, N.Y., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,074
U.S. Cl. 99—357 4 Claims
Int. Cl. A23l *3/10, 3/34*



A vending apparatus having tapering probe means for puncturing into a sealed container of freeze-dry food to inject steam therein to reconstitute the food before the container is dispensed out of a dispensing opening of the apparatus, the probe means initially puncturing into the container a predetermined amount and then being partially retracted to form vent means around the probe for venting the steam being injected into the container.

3,425,340
COOKING UTENSIL

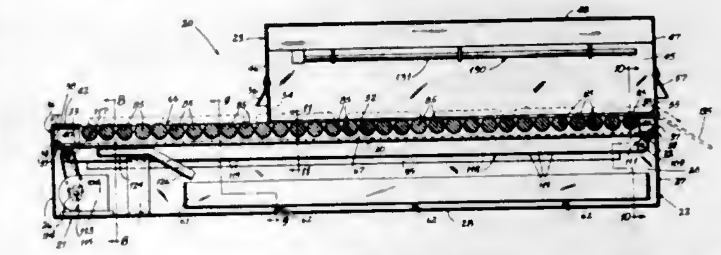
Joel S. Price, 912 NW. 37th, Oklahoma City, Okla. 73118
Filed June 16, 1967, Ser. No. 646,570
U.S. Cl. 99—422 10 Claims
Int. Cl. A47d *37/10*



A double frying pan wherein food, such as an egg, is cooked on one side in one pan and then inverted into the other pan for cooking on the other side. A turning plate is positioned between the pans in a postion to engage an edge of the food being moved from one pan into the other to facilitate turning the food.

3,425,341
HAMBURGER BROILER

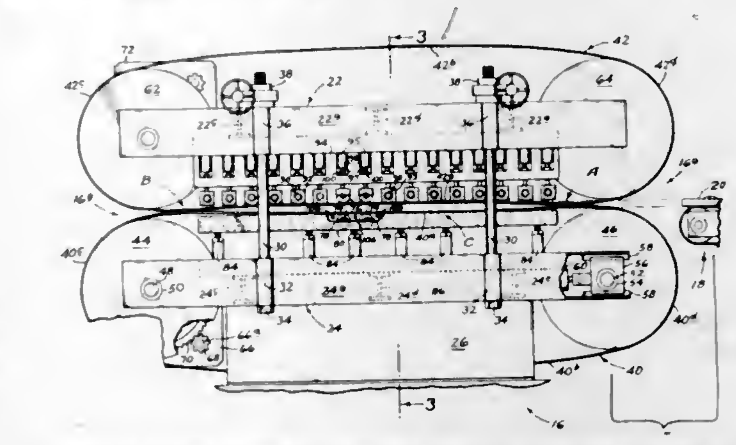
William L. McGinley, 6142 Averill Way, Dallas, Tex. 75225
Filed Oct. 3, 1966, Ser. No. 583,515
U.S. Cl. 99—423 11 Claims
Int. Cl. A47j *37/04;* **A21b** *1/40;* **F27b** *9/14*



A fully automatic broiler and grill that simutaneously broils and grills hamburgers or other meats as the hamburgers are conveyed through a cooking area. A housing for a cooking area and a row of individual rotatable grid rollers which transfer hamburger patties over the upper surfaces of the rollers in succession, carrying the patties through the cooking area at a predetermined rate of travel where controlled heat radiated from the heating units in the cooking area broils the hamburgers from above and heats the grid rollers to grill the hamburgers from below.

3,425,342
PRESS WITH DEFORMABLE CYLINDERS

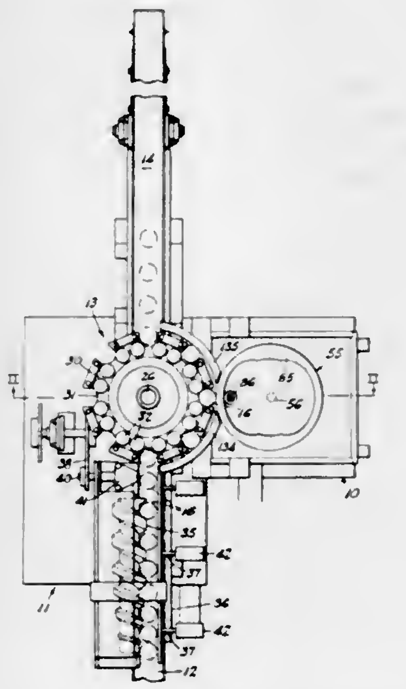
Neil Malarkey, Jr., Seattle, Wash. (Rte. 2, Box 2126, Bainbridge Island, Wash. 98110)
Filed Apr. 18. 1966, Ser. No. 543,343
U.S. Cl. 100—151 5 Claims
Int. Cl. B30b *5/06;* **B27d** *3/04*



A continuous press including a pair of resilient, flexible belts, each movably trained over a pair of spaced pulleys, with the belts having opposed closely-spaced runs defining a path for movement of a workpiece through the press, and with such runs having compressive bending stresses adjacent their outer surfaces and tensive bending stresses adjacent their inner surfaces. The opposing runs are positioned to be deformed by a workpiece on the path, so as to have compressive bending stresses adjacent their outer surfaces which are greater than those which exist prior to such deformation.

3,425,343
ROTARY SCREEN DECORATING MACHINE

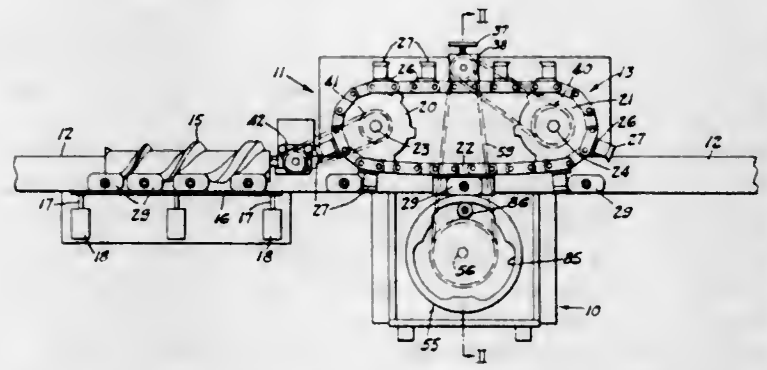
Benjamin E. Jaeger, Plano, Ill., assignor to Brockway Glass Company, Inc., Brockway, Pa.
Filed Oct. 20, 1965, Ser. No. 498,820
U.S. Cl. 101—36 2 Claims
Int. Cl. B41f *17/12;* **B41l** *13/06*



A silk screen stencil decorating apparatus for bottles wherein the stencil is an arcuate surface consisting of a portion of the peripheral wall of a vertical drum with the articles presented in tangency with the drum to be frictionally rotated thereby in synchronism with the drum. A vertical squeegee inside of the drum at the line of tangency presses ink through the stencil against the bottle and ink is flowed downwardly along the squeegee and continuously returned from a well at the bottom of the drum to the upper end of the squeegee.

3,425,344
ROTARY SCREEN DECORATING MACHINE

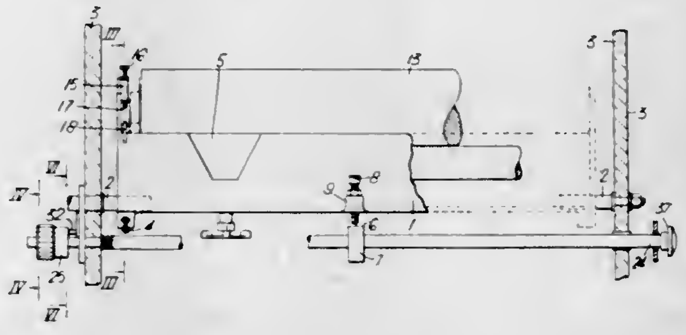
Benjamin E. Jaeger, Plano, Ill., assignor to Brockway Glass Company, Inc., Brockway, Pa.
Filed Oct. 20, 1965, Ser. No. 498,723
U.S. Cl. 101—37 2 Claims
Int. Cl. B41f *17/12;* **B41l** *13/06*



A silk screen stencil decorating apparatus for bottles wherein the stencil is an arcuate surface consisting of a portion of the peripheral wall of a continuously rotating vertical drum with the articles moved bodily continuously past the drum at the same speed as the surface speed of the drum. A vertical squeegee inside of the drum at the line of tangency presses ink through the stencil against the bottle and ink is flowed downwardly along the squeegee and continuously returned from a well at the bottom of the drum to the upper end of the squeegee.

3,425,345
APPARATUS FOR APPLYING A LIQUID TO ROTARY SURFACES OF PRINTING MACHINES

Albert George Ronald Gates, London, England, assignor to Gestetner Limited, London, England, a British company
Filed Mar. 3, 1967, Ser. No. 620,400
Claims priority, application Great Britain, Mar. 9, 1966, 10,423/66
U.S. Cl. 101—148 17 Claims
Int. Cl. B41l *25/02;* **B41f** *31/26*



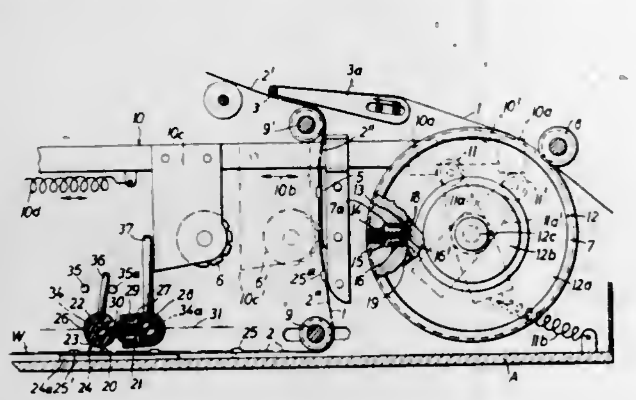
This invention provides apparatus for applying a liquid to a rotary surface of a printing machine, comprising a pair of contacting rotating rollers one arranged for partial immersion in liquid in a reservoir; the other roller being arranged for transfer of liquid from the one roller to a rotary surface, the assembly of rollers and reservoir being pivotable between a liquid applying position and an inoperative position by a mechanism driven by the printing machine and incorporating an adjustable timing device which after initiation of a manual control, holds the roller assembly in contact with the rotary surface for a predetermined number of cycles of the printing machine and then automatically activates pivoting back to the inoperative position.

3,425,346
LABEL DISPENSER

Wilhelm Voigt, Haus No. 95, Zwingenberg (Neckar), and Oscar Kind, Brentanostrasse 31, Hirschhorn (Neckar), Germany
Filed Feb. 26, 1964, Ser. No. 347,601
Claims priority, application Germany, Feb. 27, 1963, M 55,912
U.S. Cl. 101—292 25 Claims
Int. Cl. B41f *13/24;* **B65h** *25/02*

1. An apparatus for imprinting and dispensing a comparatively stiff adhesive-coated tape carried by one side of a flexible carrier strip and forming therewith an elongated web provided with unevennesses which are spaced from each other longitudinally of the strip, comprising advancing means operative to effect intermittent advances of the web lengthwise through distances exceeding the distance between consecutive unevennesses and including a slip clutch arranged to yield in response to a predetermined resistance to further advance of the strip; a deflector adjacent to the other side of the strip at a point ahead of said advancing means and arranged to deflect the strip sufficiently to effect at least partial separation of tape from the other side of the strip; an imprinting device including a pair of normally spaced cooperating printing members

located at a point ahead of said deflector and at the opposite sides of the web, one of said printing members being movable toward the other printing member; an arresting device including a sensing member arranged to detect consecutive unevennesses and arresting means for arresting the web in response to detection of an unevenness so as to produce said predetermined resistance to further advance of the strip; and actuating means arranged to move said one printing member toward the other printing member in synchronism with said arresting device and to simultaneously operate said advancing means so that said printing members imprint the tape while the arresting device is effective to hold the strip against movement.



3,425,347

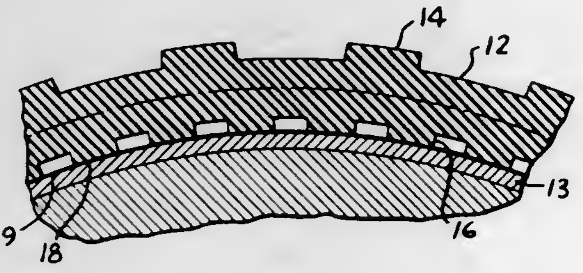
RESILIENT PRINTING PLATE

Wallace D. Nard, Chicago, Ill., assignor to Electrographic Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 446,195, Apr. 7, 1965. This application Feb. 29, 1968, Ser. No. 712,331

U.S. Cl. 101—376 **6 Claims**

Int. Cl. B41f *13/10;* **B41n** *1/22*



A printing plate including a rubber layer having an outer printing surface and an inner mounting surface formed by a pattern of spaced uniform projections which relieve tension and concavity of the printing surface when the layer is mounted and adhesively secured to a curved backing member. The projections comprising the mounting surface may be formed from a softer rubber than the printing surface so that they may readily yield and deform when the printing surface is subjected to excessive localized pressures.

3,425,348

CLAMPING ARRANGEMENT FOR BLANKET IN PRINTING PRESS

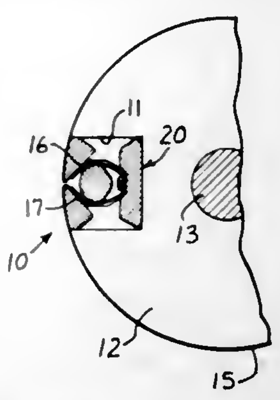
Carl J. Hermach, Westchester, and Leonard Tafel, La Grange, Ill., assignors to Mieble-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 536,122

U.S. Cl. 101—415.1 **9 Claims**

Int. Cl. B41l *29/06*

A clamping arrangement for clamping a blanket in an undercut groove in a printing press cylinder which employs longitudinally extending springs for clamping the ends of the blanket against the undercut surfaces with a central cam shaft for selectively activating the springs.



The springs are bowed to produce automatic takeup of a blanket as the press is run.

3,425,349

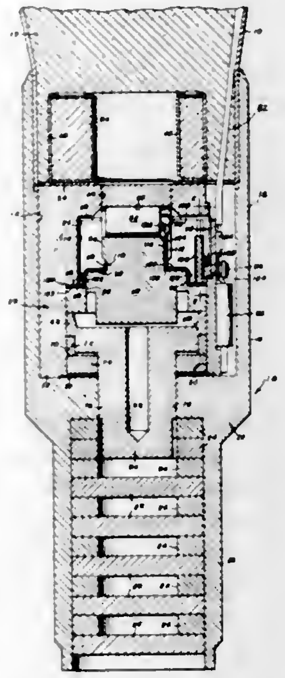
RIFLE GRENADE FUZE

Ronald E. Bowles, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 21, 1957, Ser. No. 679,803

U.S. Cl. 102—65.2 **3 Claims**

Int. Cl. F42b *11/42*



1. An improved rifle grenade, said grenade comprising: a tube; a cylindrical fuze well having an open end and a bottom in one end of said tube; bullet decelerating means in the opposite end of said tube; a housing in said fuze well, said housing having one end in contact with the bottom of said fuze well; an explosive in contact with the other end of said housing opposite said one end thereof; a cavity in said explosive; an inwardly projecting shoulder in said other end of said housing; a first electrically conducting coating on the housing shoulder; switch means electrically connected to said first conductive coating; an opening in said other end of said container communicating with said cavity; a plunger having first and second ends in said housing, said first end positioned in said opening and constructed and arranged for insertion into said cavity; a detonator mounted in said first end, the second end of said plunger positioned adjacent said bullet decelerating means; inner and outer shoulders on said plunger intermediate said first and second ends thereof; a frangible section connecting said inner and outer shoulders; said section constructed so as to break upon receiving a bullet-produced impact of some predetermined magnitude; a second electrically conductive coating on said shoulders; an electrical connection between said detonator and said second conductive coating, said outer shoulder retaining said plunger in the housing opening with the inner shoulder and said second conductive coating spaced from said first conductive coating, said second coating and said inner shoulder positioned to abut said first coating and said housing shoulder, said bullet deceleration means being positioned to drive said tube when penetrated by a bullet and constructed so as to allow said bullet to pass therethrough and impact against said second end of said plunger, thereby breaking said frangible section and driving said detonator into said cavity, said inner shoulder and said second conductive coating abutting said housing shoulder and said first conductive coating, said switch thereupon initiating detonation of said detonator by means of abutting conductive coatings.

3,425,350

PRE-ESTABLISHED SPLINTERING SHELL

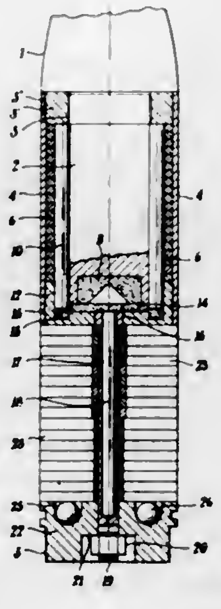
Mario Zunino and Giannino Corsi, Rome, and Francesco Sammartino, Colleferro, Italy, assignors to Bombrini Parodi-Delfino S.p.A., Rome, Italy

Filed Mar. 27, 1967, Ser. No. 626,135

Claims priority, application Italy, Apr. 9, 1966, 7,917/66

U.S. Cl. 102—67 **10 Claims**

Int. Cl. F24b *13/48*



A shell including a fuse the base of which contacts a directioned booster, a first set of metal rings located about the fuse, a second set of metal rings occupying the entire cross-sectional area of the shell, and detonating elements in order to cause the pre-established break of said rings.

3,425,351

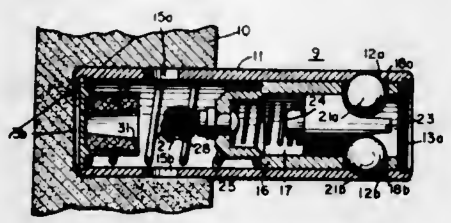
SETBACK-RESPONSIVE IGNITER FOR ORDNANCE PROJECTILES

Clayton Fyfe, Milwaukee, Wis., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 21, 1954, Ser. No. 476,864

U.S. Cl. 102—70 **2 Claims**

Int. Cl. F42c *15/00*



1. In a thermal battery having a mass of combustible material, an igniter responsive to acceleration forces, said igniter comprising: a cylindrical shell inserted in said material, the inner surface of said shell having two opposed recesses near its forward end, said shell having a plurality of flame-propagation openings near its rearward end; a hollow cylindrical striker body having two opposed apertures alignable with said two recesses, said striker body being slidable axially in said shell; two balls protruding axially into said apertures and recesses thereby preventing sliding of said striker body; a setback pin interposed between said balls and preventing inward motion of said balls, said setback pin being axially slidable within said striker body; first spring means within said striker body biasing said setback pin axially in the forward direction; second spring means biasing said striker body axially in the forward direction; a friction body on the rearward end of said striker body; and a friction-ignitible body at the rearward end of said shell; the above-identified elements being so constructed and arranged that said setback pin moves rearward on predetermined setback thereby permitting said balls to move inward and permitting said striker body to move rearward on continued setback thereby causing said friction body to strike and ignite said ignitible body, flame from said ignitible body thereupon propagating through said openings to said mass of combustible material.

3,425,352

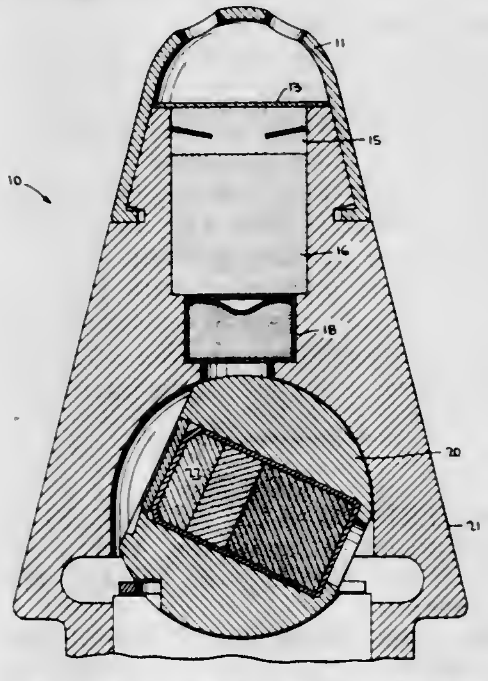
PROJECTILE FUZE CAPABLE OF SELF-DESTRUCTION

Charles N. Whelan, Potomac, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 9, 1967, Ser. No. 681,665

U.S. Cl. 102—71 **4 Claims**

Int. Cl. F42c *9/00, 9/16*



A projectile fuze capable of self-destruction. Upon firing, a frangible cover placed in the nose of the fuze is shattered exposing a pyrophorus material to the air. The pyrophorus material spontaneously ignites on contact with air and initiates a delay train. When the delay powder burning reaches the primer, a detonation occurs. If the fuze should hit a target prior to the self-destruct initiation the nose will crush firing the primer causing the round to explode.

3,425,353

ARMING AND SAFETY MECHANISM FOR A DRAG CHUTE RETARDED BOMB

Michael A. Halling, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

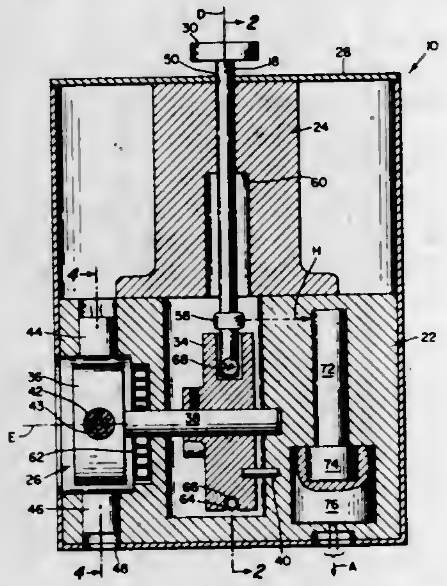
Filed Jan. 4, 1966, Ser. No. 518,729

U.S. Cl. 102—76 **6 Claims**

Int. Cl. F42c *15/12*

1. An arming device for use with a drag chute retarded aerial bomb, comprising, in combination:

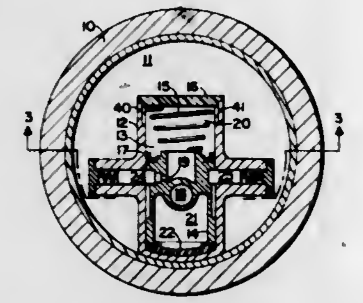
(a) a frame adapted to be affixed to an aerial bomb,
(b) a rotor supported by the frame, having a radial latch receiving opening and a first detent means for locking said rotor in a predetermined initial position,
(c) a slideable member adapted for rectilinear motion in a direction aligned with the latch opening of the rotor when the latter is in its initial position, and having a rotor latching position and a rotor release position, the outer end of the slideable member being adapted for attachment to the shrouds of the drag chute,
(d) abutment means associated with the slideable member and the frame for transmitting parachute drag forces to the frame when said member is in the rotor release position,



(e) first spring means connected between the slide member and the rotor for urging the slide means toward its rotor latching position in absence of a parachute drag force, and for urging the rotor to rotate in one angular direction to an armed position when the slideable member is moved to its rotor release position under force of the drag chute,
(f) timing means associated with the detent means adapted to release same to unlock the rotor for rotation of a predetermined time after said slideable member moves from said rotor latching position.

3,425,354
CENTRIFUGALLY ARMED FUZE

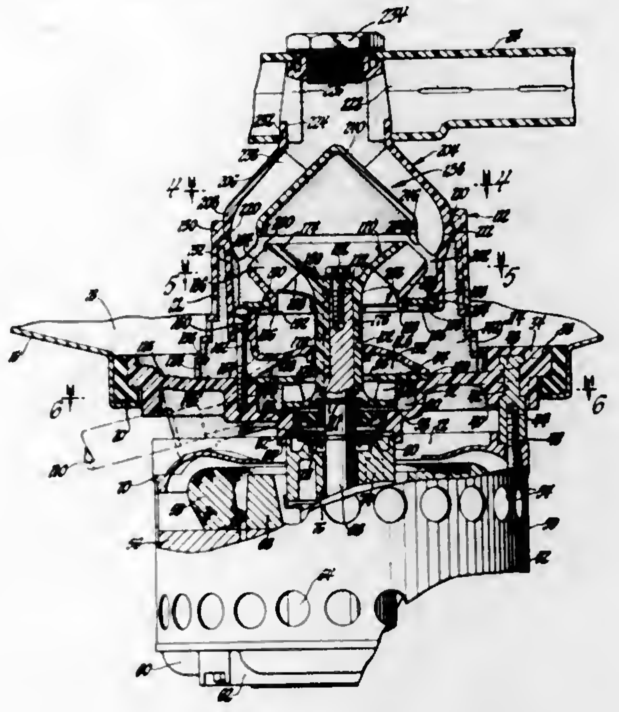
Donovan Carlson, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 678,910
U.S. Cl. 102—79 **4 Claims**
Int. Cl. F42c *9/06, 15/26*



An arming and time delay mechanism for a spin operated fuze. The fuze employs a buoyant slider member mounted in a housing filled with a fluid having adequate density to float the slider member and having long-term stability and relatively uniform viscosity over a broad temperature range. In the unarmed condition the slider member is held away from the axis of rotation by centrifugal or by setback or environment actuated locking arrangement.

3,425,355
DISHWASHER PUMP ASSEMBLY

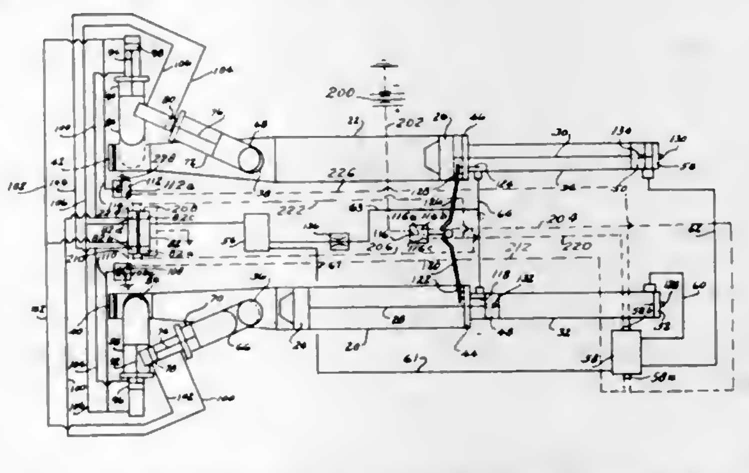
Frank E. La Flame, Dayton, and Gordon F. MacFarland, Kettering, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 14, 1967, Ser. No. 653,413
U.S. Cl. 103—3 **4 Claims**
Int. Cl. F04b *19/04;* **F04d** *13/02;* **B08b** *3/04*



In preferred form, a plural pump assembly in a dishwasher including a motor for driving a drain pump and a wash pump, the wash pump having a turbo impeller with a sealing ring on a depending skirt that defines an axial inlet throat in which is located in axial impeller for emulsifying soft food particles passing into the turbo impeller and for draining the turbo impeller to unload the pump drive motor during a drain cycle of dishwasher operation.

3,425,356
CONTROL SYSTEM FOR CONCRETE PLACER

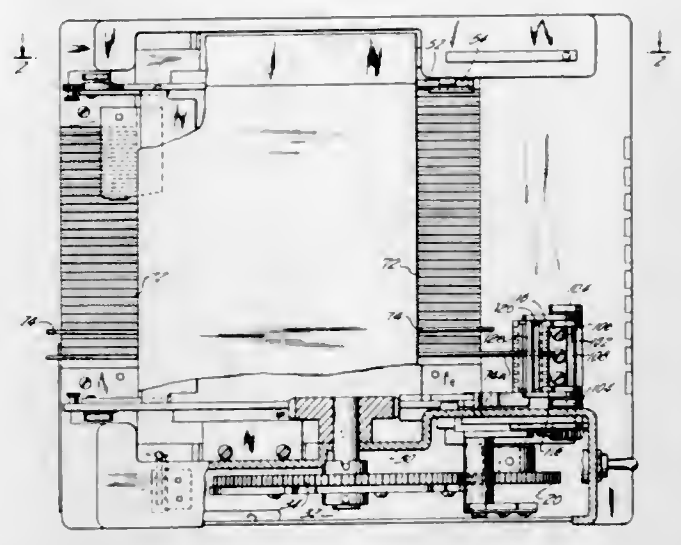
Richard H. Mott, Sioux Falls, S. Dak., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 31, 1967, Ser. No. 612,839
U.S. Cl. 103—49 **3 Claims**
Int. Cl. F04b *17/00, 7/00, 49/00*



A control system for a concrete pump having a pair of power cylinders respectively connected to supply lines and delivery lines with valves in each of said lines. One delivery line valve is normally closed while its associated supply valve is open with the position of the other two valves being reversed. The control system incorporates means for closing the two open valves at the end of the stroke of each power cylinder before direction of the cylinder travel is reversed. The system also incorporates means for insuring a full stroke for each power cylinder.

3,425,357
PERISTALTIC PUMP WITH REGULAR AIR BUBBLE INTRODUCTION

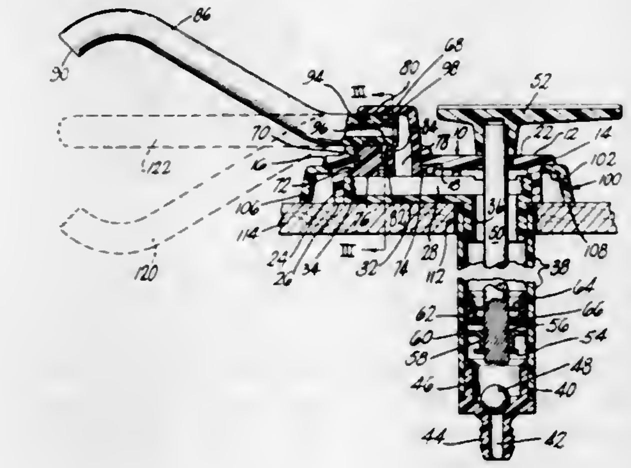
Theodore Bilichniansky, Hopewell Junction, Jack Isreeli, Mamaroneck, and William J. Smythe, Rye, N.Y., assignors to Technicon Corporation, a corporation of New York
Filed Aug. 23, 1967, Ser. No. 662,795
U.S. Cl. 103—149 **5 Claims**
Int. Cl. F04b *43/12*



A peristaltic type pump has a plurality of pump tubes in side by side relation and a plurality of rollers, each operable in sequence to concurrently engage against a platen, to progressively occlude the tubes along their lengths, and to release the tubes, to advance fluids therethrough; an additional assembly including a pressure pin and a pad for normally occluding therebetween at least one of the pump tubes; and adjustable means for causing the pin and pad to release the tube periodically, once between the occasions of successive rollers releasing the tubes. A linkage is provided coupling the platen to the additional assembly, so that release of the platen from the tubes causes a release of the pin and the pad from the tubes.

3,425,358
COUNTERMOUNTED GALLEY PUMP

Eugene Le Roy Kilbourn, Marshall, and James M. Barker, Battle Creek, Mich., assignors to H & H Engineering Division, Barker Manufacturing Co., Battle Creek, Mich., a corporation of Michigan
Filed Jan. 10, 1967, Ser. No. 608,393
U.S. Cl. 103—178 **4 Claims**
Int. Cl. F04l *21/04;* **B67d** *5/42*



A small, manually operated, noncorrodible pump, normally employed to pump water, which may be mounted in a countertop or other horizontal panel to draw liquid from a reservoir located below the pump. Special features of the invention relate to the general construction, to the connection of the spout to a swivelable spout support, and the provision of a spacer which may be optionally employed with the pump mounting body to vary the mode of installation.

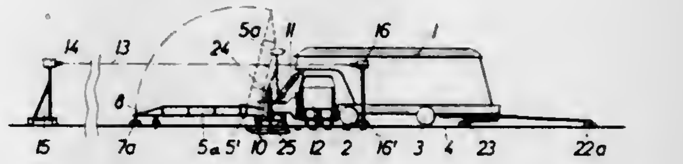
3,425,359
APPARATUS FOR HANDLING TRACK INSTALLATIONS

Hiroshi Kawamura, Kozi Mukaihara, Hiroshi Ito and Kiyoshi Akimoto, Tokyo-to, and Yaichiro Atsumi, Toshihiko Taniguchi, Sadayoshi Takahashi and Ichiro Saito, Nagoya-shi, Japan, assignors to Nippon Kokuyu Tetsudo, Tokyo-to, Japan, a juridical person of Japan, and Nippon Sharyo Seizo-Kabushiki Kaisha, Nagoya-shi, Aichi-ken, Japan, a joint-stock company of Japan
Filed Sept. 12, 1967, Ser. No. 667,227
Claims priority, application Japan, Sept. 20, 1966, 41/61,681, 41/61,682
U.S. Cl. 104—2 **5 Claims**
Int. Cl. E01b *33/00, 29/02*

A track installation such as a turnout (switch and frog) is handled and replaced by a track changing device consisting essentially of a number of portal hoisters straddling the track at the work site, a long main beam hoisted by the portal hoisters, and runners which can move along the main beam and have rail clamps for holding the new or old track installation. The entire apparatus and new or old track installation can be stowed into a compact form for transportation to and from the work site on trucks with tiltable load platforms.

3,425,360
MOBILE TRACK CORRECTING MACHINE

Franz Plasser and Josef Theurer, both of Johanesgasse 3, Vienna, Austria
Filed Jan. 12, 1966, Ser. No. 520,289
Claims priority, application Austria, Jan. 18, 1965, A 349/65; Mar. 9, 1965, A 2,116/65
U.S. Cl. 104—8 **14 Claims**
Int. Cl. E01b *33/00, 29/20*

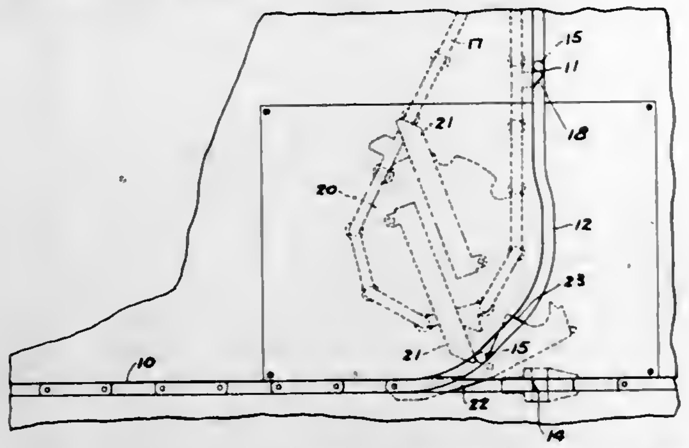


The frame of a mobile track liner carries a means for exerting a lateral thrust against a selected rail, and an elongated element extends between the rails to receive the back pressure of the lateral thrust. One end of the thrust receiving element is connected to the machine frame and its other end to a truck arranged on the track at a point spaced from the machine frame.

3,425,361
POWER AND FREE CONVEYOR TRANSFER SYSTEM

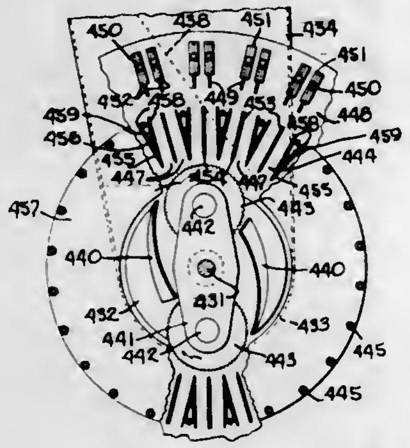
Leonard J. Bishop, Birmingham, Mich., assignor to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan
Filed Aug. 29, 1966, Ser. No. 575,890
U.S. Cl. 104—172 **21 Claims**
Int. Cl. B61b *9/00;* **B61j** *3/04*

A power and free conveyor system comprising a main track and main conveyor and a branch track and branch conveyor with a transfer zone between the main track and the branch track. A plurality of carriers are adapted to be engaged by means on the main and branch conveyors. A transfer device is provided for transferring a carrier from one of the main and branch conveyors to the other across the transfer zone. The transfer device comprises a rotatable member driven in timed relation to the conveyor to which the carrier is to be transferred. A plurality of radially extending arms are provided on the rotatable member. Each arm is supported for movement in a substantially straight line only.



3,425,362
MEANS FOR COMPACTING FORAGE CROPS

Vernon J. Lundell, Cherokee, Iowa, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles, a corporation of the Netherlands Antilles
Continuation-in-part of applications Ser. No. 797,210, Mar. 4, 1959; Ser. No. 30,000, May 18, 1960; Ser. No. 74,919, Dec. 9, 1960; Ser. No. 110,224, May 15, 1961; Ser. No. 140,876, Sept. 26, 1961. This application Nov. 20, 1961, Ser. No. 153,599
U.S. Cl. 107—14 **21 Claims**
Int. Cl. A23k *1/20;* **A21c** *11/16;* **A01d** *43/00*

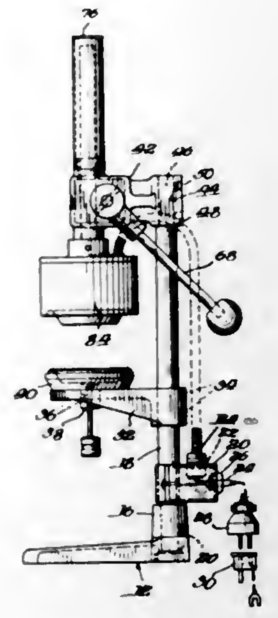


21. In a machine of the class described for the production of extrusion products from compressible material having varying frictional and compressibility characteristics: die means having a plurality of similar die openings receivable of such material fed thereto for extrusion therethrough, said die means including a plurality of positionable elements operative respectively on the openings for effecting adjustment of the resistances thereof to the passage of material therethrough; and regulating means acting on and controlling the elements for automatically and simultaneously causing selective adjustment of the resistances in the openings to compensate for variations, in each opening and among the openings, of the frictional and compressibility characteristics of the material received in the openings and thereby to produce in the openings such respective resistances as will maintain a substantially uniform pressure of the same predetermined value on the material compacted therein.

3,425,363
PASTRY SHELL PRESS

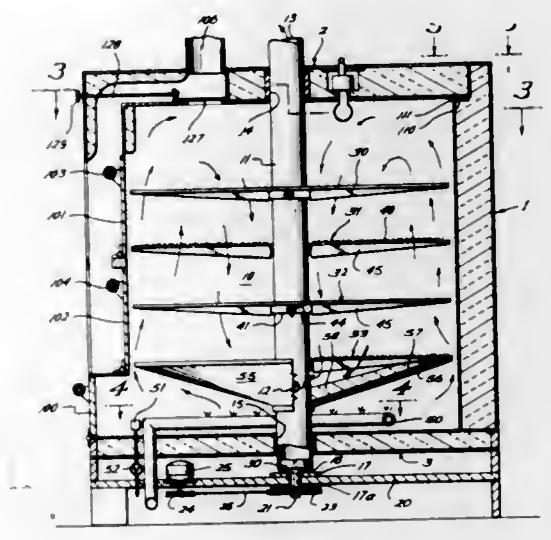
Fred S. Carbon, Buchanan, Mich. 49107
Filed May 24, 1965, Ser. No. 457,912
U.S. Cl. 107—15 **3 Claims**
Int. Cl. A21c *11/00;* **A23g**

A pastry shell press having a cavital die which receives the pastry dough and a cooperating movable die having a dough contacting surface which is heated to a thermostatically controlled temperature, high enough to superficiously dry the surface of the dough contacted thereby as it is momentarily pressed to shape, the drying being sufficient to avoid sticking of the dough to the movable die surface, and the cavital die having a movable end wall which is operable to eject the pressed shell therefrom.



3,425,364
ROTATING SHELF OVEN

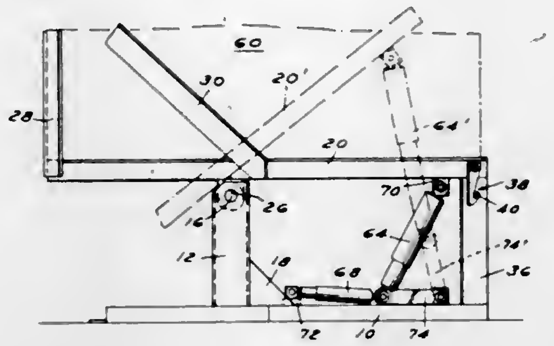
James N. Martin, Jr., 214 Highview, San Antonio, Tex. 78228
Filed May 1, 1967, Ser. No. 634,959
U.S. Cl. 107—60 **13 Claims**
Int. Cl. A21b *1/26;* **F27b** *9/16*



A rotating shelf or carrousel oven suitable for baking of foodstuffs and particularly adaptable for use in commercial establishments, comprises a plurality of rotatable shelves disposed in a heat insulated zone on a rotatable flue tube. The gas flow in the oven is established such that hot gases generated in the bottom of the heat insulated zone travel upwardly along the peripheral walls of the oven and downwardly proximate the flue tube. The spent gases enter the flue tube below the lowermost shelf and are exhausted. To provide uniform temperature on all shelves and to establish this heat flow pattern, an insulative baffle or shield is provided on the bottom of the lowermost shelf.

3,425,365
TILT TABLE

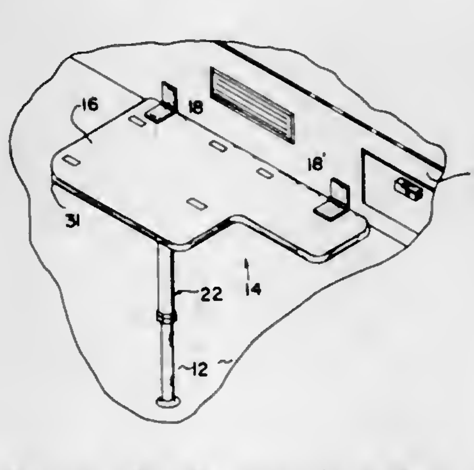
Robert E. Thoreson, Birmingham, and Arthur E. Maus, Detroit, Mich., assignors to Thoreson-McCosh, Inc., Detroit, Mich., a corporation of Michigan
Filed Sept. 13, 1966, Ser. No. 579,034
U.S. Cl. 108—6 **2 Claims**
Int. Cl. A47b *27/18;* **A47f** *5/12*



1. A table having a tiltable top comprising a base adapted to rest upon a floor, a pair of rigid support members connected to the base and upstanding therefrom in spaced apart relation, a shaft extending between and supported by said support members adjacent opposite ends of the shaft, a square table top member having a flat upper surface and at least two bearing blocks depending from the top member and journaled on said shaft for permitting pivotal movement of the top member with respect to said base, an upright stop member fixed to said base and projecting into abutment with said table top member at one corner thereof when the latter is in its horizontal position, the longitudinal axis of said shaft extending under said table top member parallel to and spaced laterally from a diagonal of the top member in a direction opposite said one corner, and dampening means for retarding table movement including first extensible damper means connected at one end to said base and second extensible damper means connected at one end to said table member, with the opposite ends of said first and second damper means being coupled together, whereby initial table movement is retarded primarily by said first damper means and further table movement is retarded primarily by said second damper means.

3,425,366
MOBILE DESK FOR VEHICLES

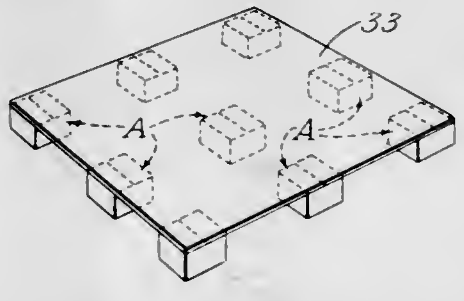
Hughie G. Lindsey, P.O. Box 1167, Andrews, Tex. 79714
Filed Nov. 13, 1967, Ser. No. 682,166
U.S. Cl. 108—45 **6 Claims**
Int. Cl. A47b *3/08, 5/06, 23/04*



A mobile desk for vehicles which includes a table having an edge portion adapted to be placed adjacent the instrument panel of a vehicle where it is secured thereto by spaced apart brackets attached therebetween. The table is provided with a cut-out which is large enough to enable a person's body to be comfortably seated therein. An inverted U-shaped channel member is attached to the bottom of the table and forms a reinforcing means for the desk while at the same time transmits force in a supporting leg which depends therefrom and into contact with the floor of the vehicle. The spaced apart brackets are provided with depending lugs located at one extremity thereof whereby the brackets may be inverted for use in an automobile while the lugs may be placed in the opposite position for use in a truck to thereby regulate the height of the table with respect to the seat of the vehicle. High friction means are provided on the upper surface of the desk and cooperate with a coacting high friction means provided on the bottom surface of the writing pads and the like which rest on the desk to thereby prevent the material supported by the desk from inadvertently moving about.

3,425,367
PALLET OF CORRUGATED PAPERBOARD AND THE LIKE

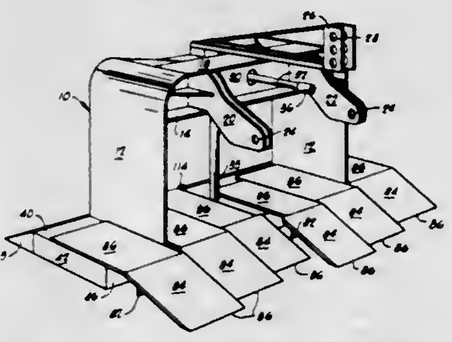
Carl A. Oravez, Milwaukee, Wis., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Mar. 16, 1967, Ser. No. 623,624
U.S. Cl. 108—51 **3 Claims**
Int. Cl. B65d *19/34*



The pallet comprises a platform sheet usually formed of corrugated paperboard or solid fibre to which is secured a plurality of spaced legs arranged in a pattern to permit handling of the platform by a fork lift truck or other material handling equipment. Each leg comprises a sheet of foldable material cut and creased to provide a rectangular bottom panel having side walls hinged to the edges thereof. Two opposed side walls include extensions each foldable to provide a hollow vertical cell resting upon the bottom panel and substantially coextensive in height with the side walls. The remaining opposed side walls are provided with partial top panels which overlie the cells and support tuck flaps insertable between the cells to hold the structure assembled.

3,425,368
STUBBLE MUSHING AND DIRT REMOVING APPARATUS

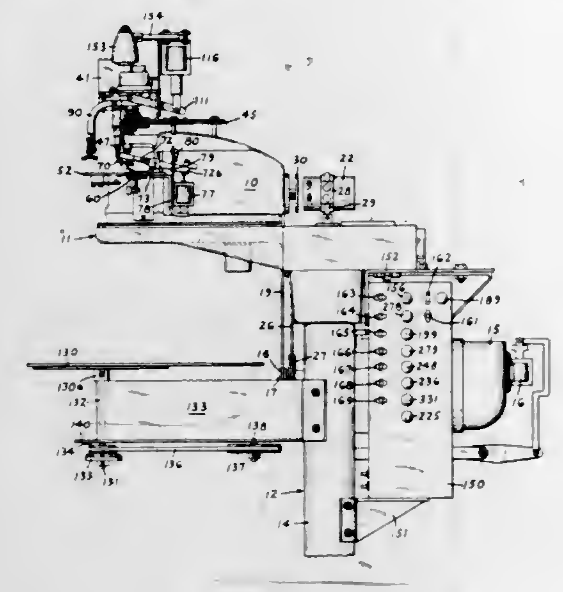
Freddie J. Haynes, 1025 Woodcrest Drive, Midwest City, Okla. 73110
Filed Dec. 16, 1966, Ser. No. 602,361
U.S. Cl. 111—6 **20 Claims**
Int. Cl. A01c *23/02;* **A01b** *35/00*



An apparatus adapted to remove a layer of soil, deposit a fertilizer, and cover the fertilizer with the layer of soil previously removed.

3,425,369
AUTOMATIC SEWING APPARATUS

Robert L. Kosrow, Elk Grove Village, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed July 12, 1966, Ser. No. 564,613
U.S. Cl. 112—2 **33 Claims**
Int. Cl. D05b *23/00;* **D05c** *3/02*

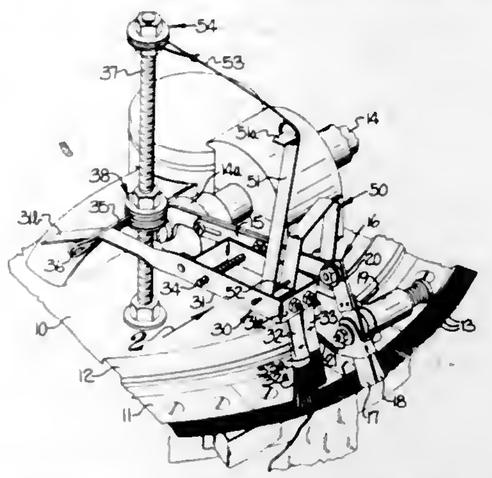


1. Apparatus for automatically performing stitching operations on successive edge portions of work pieces applied to a stationary work supporting surface which comprises: a sewing machine having work advancing and stitch forming means, means for driving said sewing machine, means for engaging and guiding an edge of the work-piece to be stitched as it is advanced by said work advancing means through the stitch forming zone of said machine, said work-piece having a plurality of edges to be stitched which are at a sharp angle in relation to each other, means for automatically engaging and turning the work-piece relative to the work supporting surface upon completion of the stitching of one of the edges thereof to substantially aline another edge of the work-piece in the direction of advance of the work, work supporting means providing said stationary work supporting surface along which the work-piece is advanced as it is being stitched, a presser foot adapted to retain a portion of the work-piece against said work supporting means as a line of stitching is being applied thereto, and means for automatically lifting said presser foot from the work-piece and retaining the presser foot out of engagement with the work-piece as the latter is being turned by said turning means into a new angular position in relation to said direction of advance of the work-piece.

3,425,370
CUTTING AND DOFFING MEANS FOR HOSIERY LOOPERS

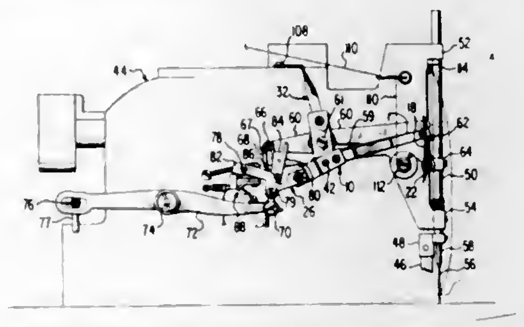
George F. Starnes, Taylorsville, N.C., assignor of fifty percent each to Glenn A. Starnes, and Wynn E. Starnes, Hickory, N.C.
Filed Oct. 20, 1966, Ser. No. 588,164
U.S. Cl. 112—25 **10 Claims**
Int. Cl. D05b *7/00, 65/02, 71/02*

1. In a hosiery looper machine having a rotary circular series of radially extending dial points movable about a substantially vertical axis and also having a sewing mechanism for forming a seam from a seaming thread looped through and over complementary loops of a hose impaled on the dial points, the combination of doffing brush means having bristles disposed adjacent and above the level of said dial points and located subsequent to said sewing mechanism with respect to the direction of rotation of said dial points, means imparting radially outward active and radially inward inactive strokes to said brush means in a reciprocatory manner substantially parallel to the radially projecting dial points, and means operatively associated with said stroke imparting means for moving at least some of said bristles downwardly between adjacent dial points during each active stroke to remove said impaled hose therefrom and for withdrawing said bristles from between said dial points during each inactive stroke.



3,425,371
BUTTONHOLE SEWING MACHINE AND ATTACHMENT

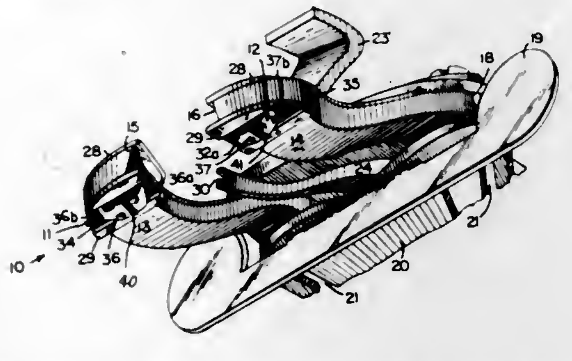
Henry Evangelista, 1812 2nd Ave., Altoona, Pa. 16602
Filed May 2, 1967, Ser. No. 635,448
U.S. Cl. 112—68 **2 Claims**
Int. Cl. D05b *3/06, 81/00*



Automatic buttonhole sewing apparatus includes a gravity-actuated sewing machine attachment operative to prevent cutting of the buttonhole in response to such thread breakage as would cause the buttonhole peripheral reinforcing seam to be incomplete. A hook formed in a pivoted arm member swings to engage the knife driving linkage of the machine in response to breakage of thread in the machine to prevent cutting of the fabric.

3,425,372
BUTTONHOLE SPREADER

Cavas M. Gobhai, 115 Brattle St., and Amarjit Chopra, 12 Concord Ave., both of Cambridge, Mass. 02138, and Harry Schoener, 144—55 Melbourne Ave., Flushing, N.Y. 11367
Filed Dec. 4, 1964, Ser. No. 415,878
U.S. Cl. 112—114 **16 Claims**
Int. Cl. D05b *3/06*

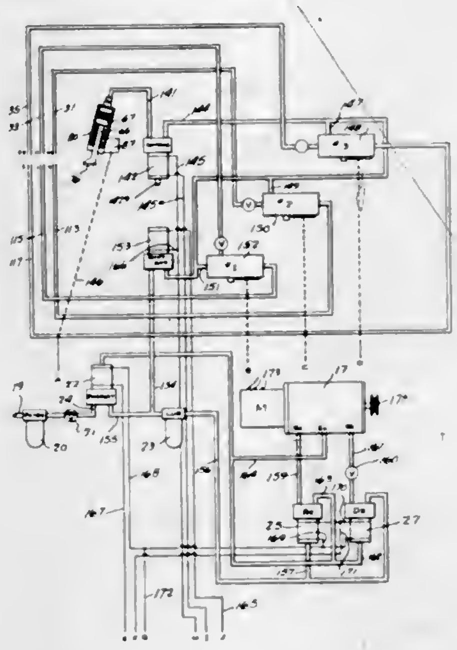


1. A buttonhole spreader for use in connection with a sewing machine, said spreader comprising:

means for supporting said spreader,
means for application of a downward force on said spreader,
and spring means on said spreader for directly engaging a material defining a buttonhole and for translating said downward force into lateral movement.

3,425,373
WORK PIECE SENSOR AND TAPE CUTOFF FOR SEWING MACHINES

Robert F. Miller, Robin Court, R.D. 2, and Roy E. Miller, 1301 Stuart Drive, both of Mechanicsburg, Pa. 17055
Continuation-in-part of application Ser. No. 504,395, Oct. 24, 1965. This application Oct. 31, 1967, Ser. No. 695,812
U.S. Cl. 112—130 **11 Claims**
Int. Cl. D05b *37/04, 69/00;* **B26d** *5/38*

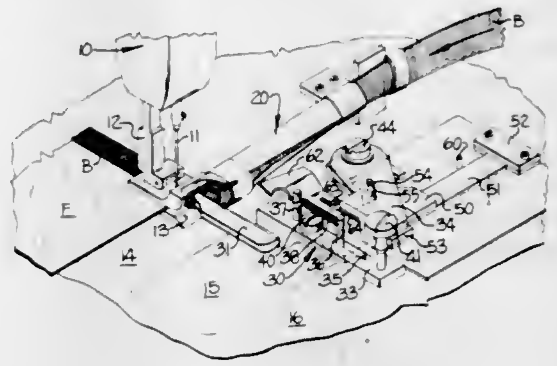


The present machine is for affixing binding tapes to articles and including attachments for such machines which allow the machine to be run either manually or automatically. In the automatic position of the attachments, they start the machine, upon presentation of a work piece to the machine, cut the tape at the start and finish of the work and stop the machine automatically. Also the operator can run the machine manually and stop the machine at any time when running the machine in said automatic position of the attachments.

3,425,374
APPARATUS FOR FORMING MITERED CORNERS IN BINDING STRIPS ATTACHED TO FABRIC

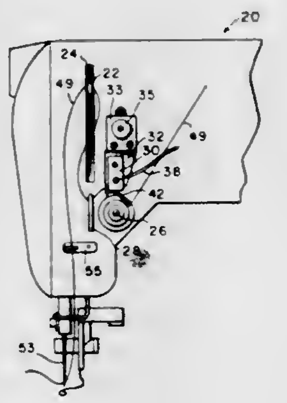
Alex Mircoff, Linden, N.J., assignor to Butte Knitting Mills, division of Jonathan Logan, Inc., Spartanburg, S.C., a corporation of Delaware
Filed Aug. 7, 1967, Ser. No. 658,807
U.S. Cl. 112—138 **6 Claims**
Int. Cl. D05b *35/06*

Apparatus for forming mitered corners in binding strips attached to fabric by a sewing machine including a binding strip guide for guiding a binding strip transversely to the edge of the fabric and everting and guiding the binding strip longitudinally in overlapping relationship along the edge of the fabric. The apparatus includes stitching the binding strip and fabric to approximately the trailing edge of the fabric and holding the nonstitched, everted, folded edge in its normal position by a mitering finger guide, while turning the fabric with the needle out approximately 90° to position another edge of the fabric for stitching, to form a folded-over mitered corner in the binding strip. The mitering finger guide is mounted for longitudinal movement to be moved forwardly carrying the fabric forwardly a predetermined distance to allow the new line of stitching to start inwardly of the leading edge and generally at the fold line in the mitered corner.



3,425,375
THREAD CONTROL

Herbert V. Jacobs, Merion Station, and Michael L. Wajda, Philadelphia, Pa., said Wajda assignor to Jacobs Machine Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1966, Ser. No. 585,120
U.S. Cl. 112—218 **5 Claims**
Int. Cl. D05c *11/00;* **G08b** *21/00;* **D03d** *51/34*



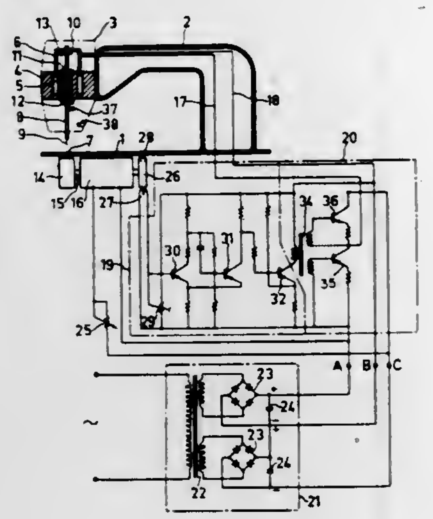
A thread control for a sewing machine of the lock stitch type which comprises means responsive to the tension on the thread for providing a first signal when the thread is taut. The means responsive to the tension on the thread provides a second signal when the thread is not taut. Means responsive to the first and second signals are provided for determining that the thread is broken if the first signal is not received within a predetermined period after the second signal is received.

3,425,376
ELECTRIC DRIVING MEANS FOR SEWING MACHINES

Per Gunnar Brynge and Erik Gustaf Bertil Reenstierna, Huskvarna, Sweden, assignors to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed June 15, 1964, Ser. No. 375,098
Claims priority, application Sweden, July 1, 1963, 7,260/63
U.S. Cl. 112—220 **20 Claims**
Int. Cl. D05b *69/10;* **H01h** *47/32;* **H02p** *5/16*

1. In a sewing machine of the type adapted to have a reciprocating needle, electric driving means comprising:
at least two cooperating working devices, comprising a loop-taker and a sewing needle holder including a needle bar, said needle holder being mounted for

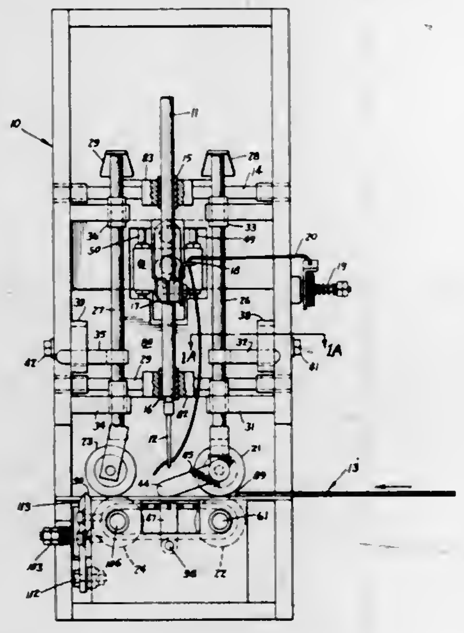
reciprocation longitudinally of the longitudinal axis of the needle;
a pulse motor drivingly connected to one of said loop-taker and said needle holder and in combination therewith comprising first working means;
an electric motor drivingly connected to the other of said loop-taker and said needle holder and in combination therewith comprising second working means;
a pulse generator for generating exciting pulses;
means driving said pulse generator in synchronism with said second working means;
a current source;



an electronic control assembly interconnected between said pulse generator and said pulse motor for receiving current from said current source and exciting pulses from said pulse generator and to put out current pulses; and
means transmitting said current pulses to said pulse motor as driving input thereof whereby said one working means is driven in timed relationship with said second working means.

3,425,377
SEWING MACHINE

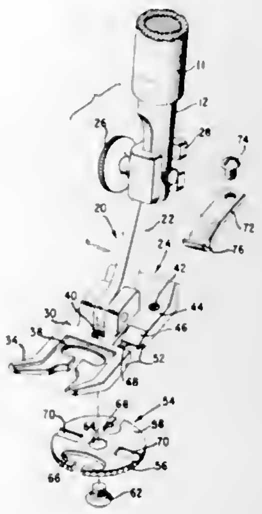
Edward H. Scharmer, Jr., Pine City, Minn., assignor to Minneapolis Sewing Machine, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 5, 1965, Ser. No. 477,572
U.S. Cl. 112—221 **5 Claims**
Int. Cl. D05b *69/02, 65/02, 27/12*



A sewing machine continuously driving and moving the material to be sewn and having a cooperating needle and looper producing the chain stitching; the needle being reciprocated into and out of the fabric, and being moved rectilinearly along with the fabric while inserted into the fabric; the looper coacting with the needle and producing stitching and moving with a rocking motion along and opposite to the direction of material travel and a sliding motion transversely of the direction of travel and to opposite sides of the needle during the stitching.

3,425,378
MULTIPLE SEWING MODE PRESSER-FOOT

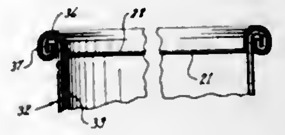
Ronald M. Kaplan, Cedar Grove, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 16, 1967, Ser. No. 623,649
U.S. Cl. 112—235 **7 Claims**
Int. Cl. D05b *29/08*



A sewing machine presser-foot that may be adjusted while in place on the sewing machine to accommodate either zigzag or straight sewing and which includes a sole plate having formed in its undersurface a circular recess in which is rotatably mounted a disc formed with differently shaped openings, one elongated for zigzag sewing and another circular for straight stitch sewing. The disc may be manually rotated to position any one of the openings selectively in the path of endwise reciprocation of the sewing machine needle.

3,425,379
METHOD OF MAKING A METALLIC CONTAINER

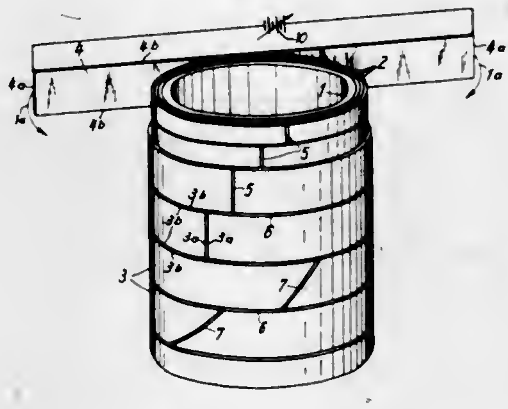
Herbert E. Collins and Fred Ward Holloway, Jr., Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 18, 1964, Ser. No. 390,296
U.S. Cl. 113—120 **14 Claims**
Int. Cl. B21d *51/00;* **B21c** *9/02*



An aluminum-containing sheet or foil has a coating applied to both sides thereof. The coating includes oleic acid or an ester of oleic acid. The coating can comprise a suitable solvent, such as hexane, toluol or isopropinol. The coating is applied to the sheet and then dried as by passing able solvent, such as hexane, toluol or isopropanol. The coated sheet can then be placed in a forming die to draw it into a receptacle or the like. The coated sheet resists rupturing in the die because of its coating. A cover may be sealed to the flange of the receptacle and the coating enhances the sealing characteristics of the flange. The cover may be an aluminum containing foil or sheet with a polyethylene layer to be heat sealed to the flange.

3,425,380
TANK AND METHOD OF MANUFACTURING SAME

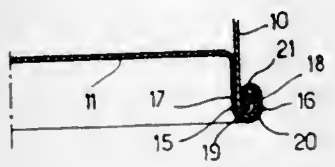
Helmut Krainer, Essen, and Reinhard Müller and Wolfhard Reich, Essen-Bredeney, Germany, assignors to Beteiligungs- und Patentverwaltungs-G.m.b.H., Essen, Germany
Filed Oct. 27, 1964, Ser. No. 406,857
Claims priority, application Germany, Nov. 15, 1963, B 74,287
U.S. Cl. 113—120 **17 Claims**
Int. Cl. B21d *51/24;* **F17c** *1/04*



A method of building a large tank made of shells surrounding a core, wherein each shell is made of axially adjacent rings which are formed by bending sheet metal strips around a core, or a previously completed shell, and welding the edges of the strips together to form ring junctures. The ring junctures of adjacent rings of each shell are out of alignment with each other, and the ring junctures and also the circumferential edges of the rings of successive shells are out of alignment with each other.

3,425,381
MANUFACTURE OF METALLIC CONTAINERS

Eugène Wessely, Colombes, France, assignor to Futs Metalliques Gallay S.A., Paris, France, a corporation of France
Filed June 17, 1966, Ser. No. 558,352
Claims priority, application France, June 18, 1965, 21,391
U.S. Cl. 113—120 **4 Claims**
Int. Cl. B21d *51/32, 19/14*

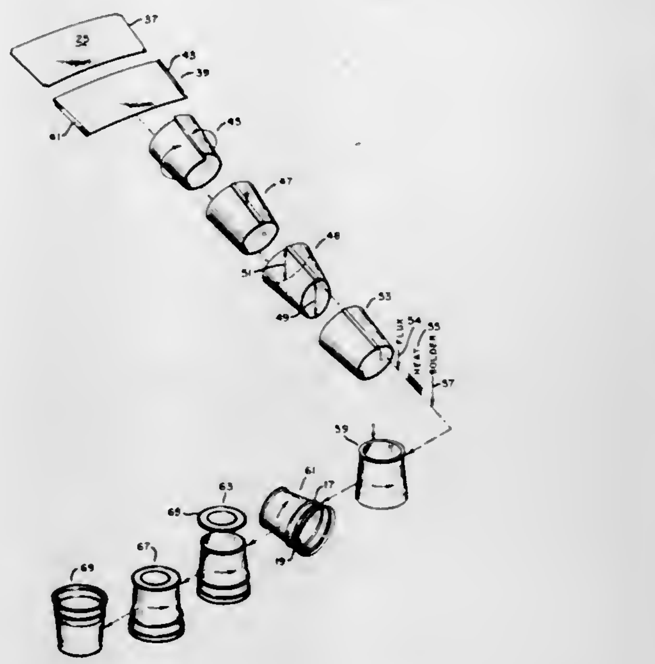


A process of securing bases in the ends of metallic container bodies by upsetting contiguous peripheral portions of the bases and container ends, in which overlapping bent-over peripheral base and container end portions are knurled to roll them over to produce a joint having seven superposed thicknesses of the base and the container body. At the end of the roll-over movement, a polymerized liquid is injected between at least some of the thicknesses of the metal of the base and container body.

3,425,382
TAPERED, STACKING AND NESTING CAN

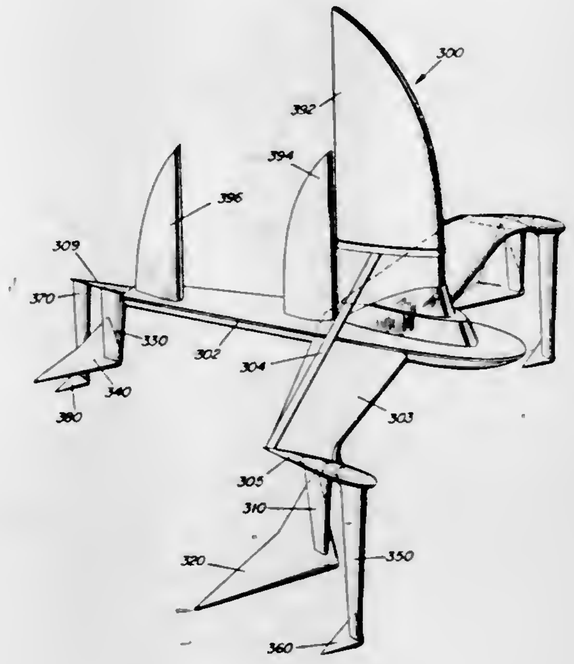
Thor E. Johnson, San Francisco, Calif., assignor to M. J. B. Company, a corporation of Delaware
Filed Feb. 9, 1967, Ser. No. 614,905
U.S. Cl. 113—120 **3 Claims**
Int. Cl. B21d *51/10*

A tapered can is provided which will nest without a lid and which can be stacked with a lid on, the lid having an annular groove to receive the bead of the bottom of the next adjacent can. A novel method of making the can is employed wherein the normally round section of the can is deformed into an oval shape to transfer the partially formed can body from a body forming station to a soldering station.



3,425,383
HYDROFOIL METHOD AND APPARATUS

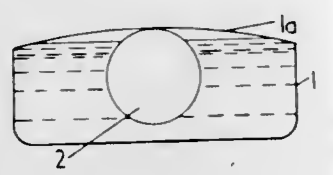
Paul A. Scherer, Glenn Dale, Md., assignor to Paul A. Scherer, as agent
Filed Aug. 11, 1965, Ser. No. 478,971
U.S. Cl. 114—66.5 **13 Claims**
Int. Cl. B63b *1/20*



High aspect ratio displacement foils which buoyantly support craft above water, craft having combinations of displacement and dynamic hydrofoils, methods for operating craft with displacement and dynamic hydrofoils, and symmetrical foils and external flaps are described herein.

3,425,384
STABILIZING ARRANGEMENTS FOR FLOATING BODIES

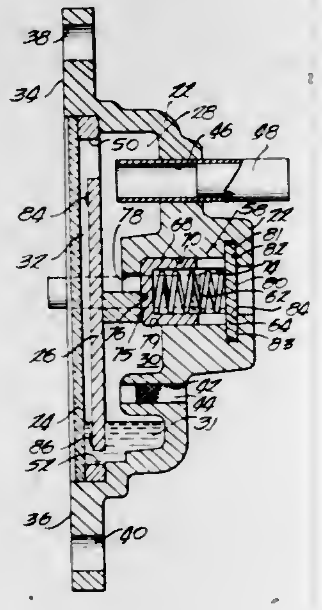
John Bell, Beckenham, Kent, England, assignor to Muirhead & Co. Limited, Beckenham, Kent, England, a British company
Filed Sept. 11, 1967, Ser. No. 666,866
Claims priority, application Great Britain, Oct. 20, 1966, 46,950/66
U.S. Cl. 114—125 **15 Claims**
Int. Cl. B63b *43/06*



A floating member in the liquid in a tank moves from side to side of the tank with the ship's roll and by displacing the liquid in the tank stabilizes the ship. The floating member is free to move from side to side and moves in a path of pronounced curvature.

3,425,385
AIR RESTRICTION GAUGE

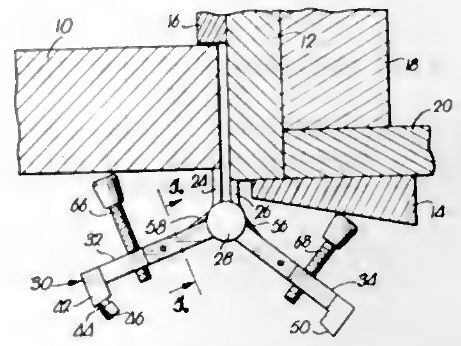
Charles Broad, Jr., Westchester, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 415,940
U.S. Cl. 116—70 **8 Claims**
Int. Cl. G01l *19/12, 19/06;* **H01b** *29/28*



A gauge to indicate air restriction by providing first and second chambers interconnected by a sight passageway with indicating fluid normally contained in one of the chambers. The other of the chambers is connected to an air system in which the restriction is to be gauged whereby a predetermined vacuum in the air system will draw fluid through the sight passageway into the second chamber. The second chamber is of sufficient capacity to retain the entire volume of indicating fluid to preclude withdrawal thereof into the air system.

3,425,386
DOOR ALARM

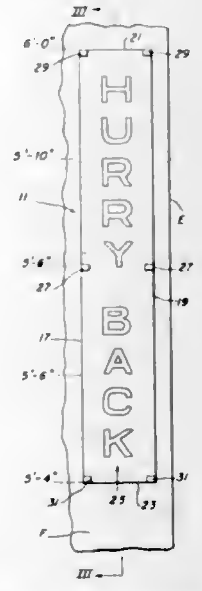
Max L. Campbell, 5109 Brentwood Road, Topeka, Kans. 66606
Filed Nov. 30, 1966, Ser. No. 598,106
U.S. Cl. 116—87 **4 Claims**
Int. Cl. G08l *13/08*



A percussion cap firing mechanism is mounted on the hinge of a door such that the mechanism will be tripped upon opening of the door to provide an audible alarm.

3,425,387
DISGUISED SCALE MEANS FOR APPROXIMATING THE HEIGHT OF A HOLD-UP MAN

Charles R. Mitchell, 4814 Parkside Ave., Memphis, Tenn. 38117
Filed Aug. 28, 1967, Ser. No. 663,698
U.S. Cl. 116—114 **2 Claims**
Int. Cl. G01d *21/00*

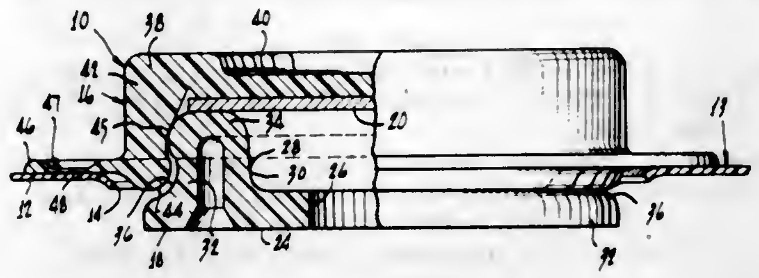


A small, thin, flat, narrow, short base adapted to be secured vertically flat against a wall surface in a bank or other commercial building. The base having a word or phrase formed on the front surface thereof with the alphabetical characters of the word or phrase being arranged vertically and further with the base having two or more vertically aligned marks spaced apart along the longitudinal extension of the base and spaced apart in inches: The base being useful for providing a disguised scale means for approximately the height of a robber as he walks by the base.

3,425,388
HUMIDITY INDICATOR

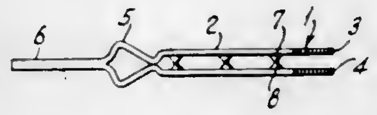
Robert E. West, Yardley, Pa., assignor to Cascade Industries, Inc., Edison, N.J., a corporation of New Jersey
Filed Nov. 13, 1967, Ser. No. 681,974
U.S. Cl. 116—114 **6 Claims**
Int. Cl. *21/00*

Separately connected, cuplike inner and outer support members clamp between them a humidity-responsive element. The members are sealably mounted in an opening of a plastic container, by heat-sealing a peripheral lip of the outer member to the edge of the container opening. The inner member allows free communication between the container interior and the humidity-responsive element, different areas of which change color according to the percentage of humidity within the container. The outer member has a central sight window through which said areas can be viewed.



3,425,389
PLACE MARKER AID

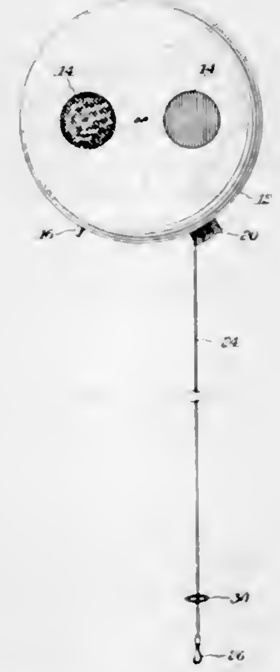
Gloria C. Sacco, 150 E. 116th St., New York, N.Y. 10029, and Emanuel R. Arcieri, 556 Revere Ave., Bronx, N.Y. 10465
Filed Aug. 28, 1967, Ser. No. 663,816
U.S. Cl. 116—119 **3 Claims**
Int. Cl. B42d *9/08*



A singular slotted elongated member having one end open and the other end closed, the closed end formed with resilient extensible coiled form for expansion and attached thereto there is an extended tab member for maintaining a writing area. The internal surface of said slot is constructed with depending elements arranged to engage paper pages and to adhere thereon, but slidably adjusted relative thereto.

3,425,390
EMERGENCY SIGNAL BALLOON APPARATUS

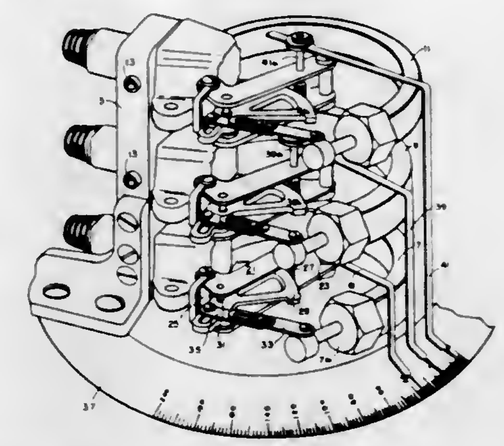
John Isaac Salmi, Ray, Minn. 56669
Filed Aug. 14, 1967, Ser. No. 660,457
U.S. Cl. 116—124 **5 Claims**
Int. Cl. G09f *9/00*



Emergency signal balloon apparatus including an inflatable balloon which can be stored in collapsed form on a boat or the like and which can be immediately inflated with a lighter-than-air gas during an emergency to signal an alarm.

3,425,391
TRIPLEX PRESSURE GAUGE

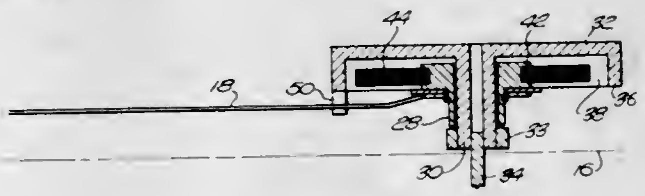
Allan Honigman, Cherry Hill, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 23, 1966, Ser. No. 538,180
U.S. Cl. 116—129 **2 Claims**
Int. Cl. G09f *9/00;* **G01l** *7/04, 19/12*



The present invention relates to a novel and improved multiplex fluid pressure gauge that measures and compares a plurality of independent fluid pressure loads simultaneously. The improved multiplex gauge includes a plurality of Bourdon type pressure sensitive tubes mounted one above the other and a pointer for each pressure sensitive tube, each pointer being connected to its respective pressure sensitive tube and positioned and contoured so as to rotate on an axis common with each of the other pointers and in a plane in parallel with and adjacent the other pointers above a common pressure calibrated dial.

3,425,392
SHOCK PROTECTED NEEDLE MOUNT FOR GAUGES

Robert D. Bond, Waltham, Mass., assignor to B. C. Ames Company, Waltham, Mass., a corporation of Massachusetts
Filed May 25, 1966, Ser. No. 552,962
U.S. Cl. 116—129 **6 Claims**
Int. Cl. G09f *9/00*

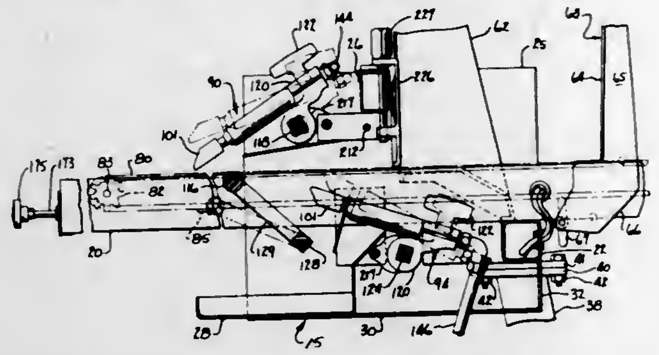


The needle indicator for dial-type gauges is protected from shocks, overtravel and other abnormal forces by means of a coil spring operatively associated with the gauge arbor. A hub is fixed to the arbor and engages the outer end of the spring. A collar is rotatably mounted about the center of the hub and engages the inner end of the spring as well as carrying the needle indicator. A stop is provided on the hub to limit the angular movement of the needle in one direction and yet permits overtravel of the arbor without damage to the needle, the excess motion being taken up by the spring.

3,425,393
ADHESIVE APPLICATOR APPARATUS

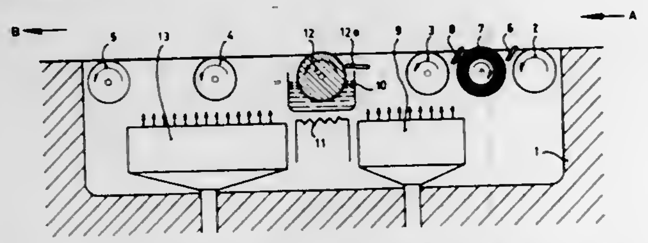
Lewis M. Shuh, Davenport, and Richard W. Tucker, Bettendorf, Iowa, assignors to Compacker, Inc., Davenport, Iowa, a corporation of Iowa
Filed Apr. 19, 1965, Ser. No. 448,929
U.S. Cl. 118—2 **19 Claims**
Int. Cl. B05b *7/24;* **B31b** *1/62*

A conveyor for advancing a carton in flat collapsed condition past upper and lower pairs of adhesive applicators. The upper pair of adhesive applicators being disposed in the path of travel to apply adhesive entirely across the outside of the top lead flaps and then moved to an inoperative position. The lower pair being located away from the carton and then moved into engagement to apply adhesive entirely across the outside of the bottom trailing flaps. A cyclically operable motor drives the conveyor. An adhesive bucket stores the adhesive under pressure of shop air. Controls are provided for adjusting the positions of various parts to accommodate various size cartons.



3,425,394
DEVICE FOR WAXING SKIS

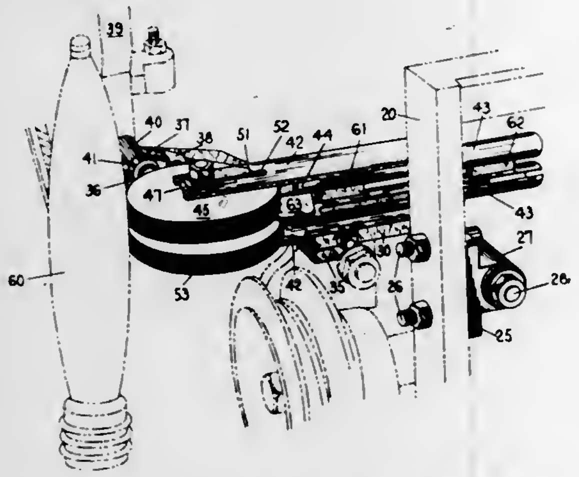
Henri Rey, Crans-sur-Sierre, Switzerland
Filed Jan. 11, 1966, Ser. No. 519,883
U.S. Cl. 118—66 **4 Claims**
Int. Cl. B05c *1/02*



In a ski waxing device imbedded in the ground, a conveyor adapted to convey a skier from an entrance to an exit, cleaning devices for cleaning the base of the skis progressively as they are conveyed along, a warmer to warm the base of the ski, a distribution cylinder having an absorbent porous surface partially submerged in a source of liquified wax and serving to both convey the skier along and to apply a layer of wax on the warm base of the skis, and a blower positioned after this cylinder for cooling the layer of wax on the skis as the skier reaches the exit of the device.

3,425,395
MECHANISM FOR MARKING YARN ON SPUN BOBBINS

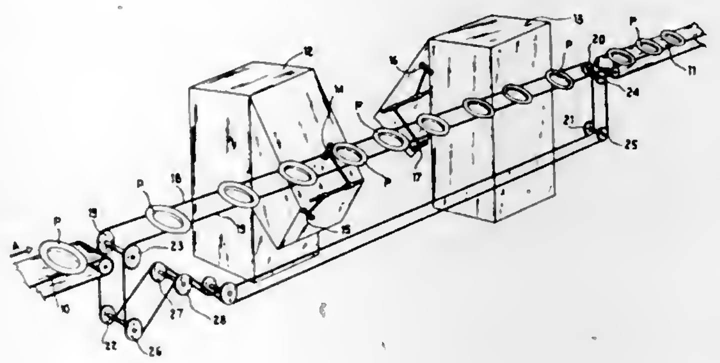
John A. Cugini, Hopedale, Mass., and Leo L. Chabot, Cumberland, R.I., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar, as trustees
Filed July 27, 1967, Ser. No. 656,392
U.S. Cl. 118—232 **7 Claims**
Int. Cl. B05c *1/12*



A marking apparatus having wheels movable tangentially to a row of wound bobbins with a chalk supply biased against the rim of the wheel for depositing color traces thereon.

3,425,396
EQUIPMENT FOR VARNISHING CERAMIC STOCK SEMI-FINISHED PRODUCTS, IN PARTICULAR CROCKERY

Gianni B. Margola, Milan, Italy, assignor to Societá Ceramica Italiana Richard Ginori S.p.A., Milan, Italy
Filed Feb. 9, 1966, Ser. No. 526,098
Claims priority, application Italy, Sept. 15, 1965, 9,042/65
U.S. Cl. 118—316 **5 Claims**
Int. Cl. B05b *13/02;* **B05c** *11/16*



Apparatus for coating ceramic articles including an endless wire conveyor which contacts only small portions of the articles while they are sprayed on top and bottom by plural spray nozzles located in a spray booth.

3,425,397
ANIMAL LITTER PREPARATION

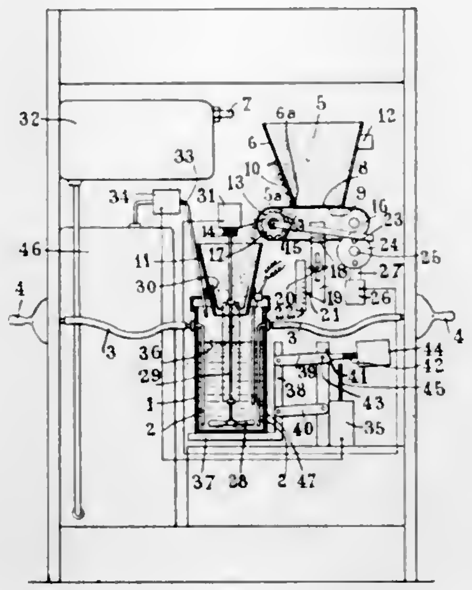
Benjamin M. Schulein, St. Louis, and Benjamin M. Schulein, Jr., St. Louis County, Mo., assignors to Neumond, Inc., St. Louis, Mo., a corporation of Missouri
No Drawing. Filed Jan. 13, 1967, Ser. No. 608,966
U.S. Cl. 119—1 **1 Claim**
Int. Cl. A01k *67/00*

A preparation for animal litters for absorbing, and neutralizing the odors of, animal waste matter comprising a chlorophyll-containing agent and an absorptive agent intermixed in dry, granule form.

3,425,398
APPARATUS FOR DISPENSING ARTIFICIAL FOOD TO YOUNG ANIMALS

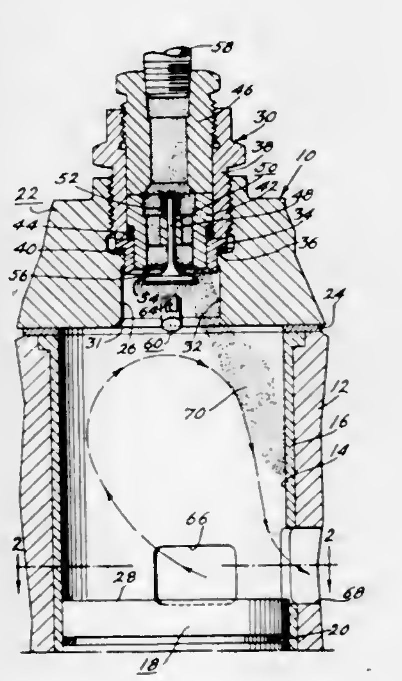
Rene Buffy, Menetreux-le-Pitois, and Adolphe Tartar, Blendecques, France, assignors to S.A.B.E. Specialites Alimentaires pour le Betail, Societe Anonyme, Pas de Calais, France
Filed Oct. 28, 1966, Ser. No. 590,276
Claims priority, application France, Feb. 25, 1966, 51,115; July 18, 1966, 69,723; Sept. 1, 1966, 74,912
U.S. Cl. 119—51.11 **8 Claims**
Int. Cl. A01k *5/02, 9/00*

1. Apparatus for dispensing artificial food to sucking animals, comprising a container having an inlet opening, at least one connected to said container, a hopper having a lateral wall and a lower outlet opening and containing powder food such as powdered milk, the outlet opening of the hopper containing the food powder being disposed at a higher level than the inlet opening of said container, these inlet and outlet openings being offset laterally from each other, a substantially horizontal endless belt conveyor interposed under the hopper between said two openings, a motor for driving said conveyor to draw a layer of powder from the bottom of said hopper and discharge same into said container, a notch formed in the lower portion of the lateral wall of said hopper, on the side opposite to said container, above said conveyor, a shutter vertically movable above said conveyor and partially closing said notch to permit the adjustment of the thickness of said powder layer transferred by said conveyor, means for supplying said container with liquid such as water, and means for dissolving or mixing in said container said powder and said liquid before the solution or mixture reaches the teat.



3,425,399
STRATIFIED CHARGE GAS ENGINE

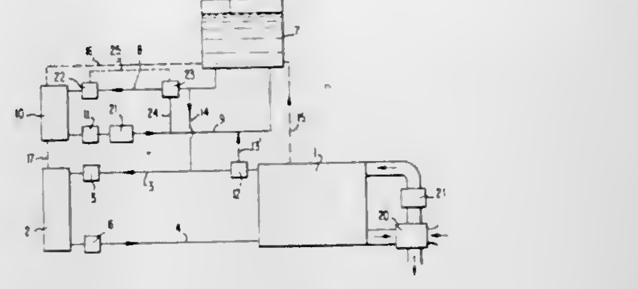
Raymond G. Ward and Julius E. Witzky, San Antonio, Tex., assignors, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed May 23, 1966, Ser. No. 552,032
U.S. Cl. 123—32 **9 Claims**
Int. Cl. F02b *9/06, 1/08;* **F02d** *39/04*



A gaseous fuel internal combustion engine having a check valve connected with a source of gaseous fuel at a low pressure opening into the combustion chamber and adapted to automatically admit fuel to the combustion chamber during scavenging thereof. A glow plug extends into the combustion chamber being positioned with respect to the scavenging air flow substantially parallel with or upstream of the check valve whereby the gaseous fuel charge is moved across the glow plug for ignition during the compression stroke of the engine.

3,425,400
LIQUID COOLING SYSTEM OF AN INTERNAL COMBUSTION ENGINE

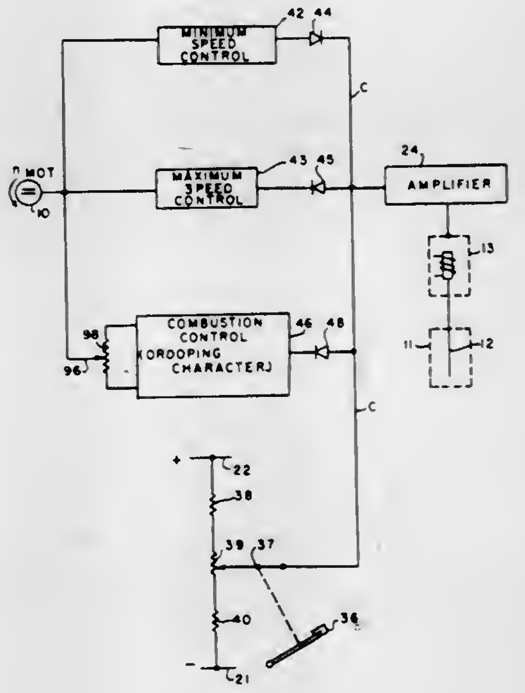
Hans O. Scherenberg, Stuttgart-Heumaden, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 27, 1966, Ser. No. 589,986
Claims priority, application Germany, Oct. 28, 1965, D 48,535
U.S. Cl. 123—41.08 **19 Claims**
Int. Cl. F01p *7/16, 3/12;* **F02b** *41/00*



A fluid cooling system for an internal combustion engine including a main cooling circulatory system and an auxiliary cooling circulatory system wherein either the entire auxiliary cooling system or only a reservoir therein may be selectively connected to the main cooling system through thermostatic control, a portion of the auxiliary cooling system being available for cooling a charging-air line connected to the internal combustion engine.

3,425,401
ELECTRONIC CONTROLLER FOR DIESEL ENGINE

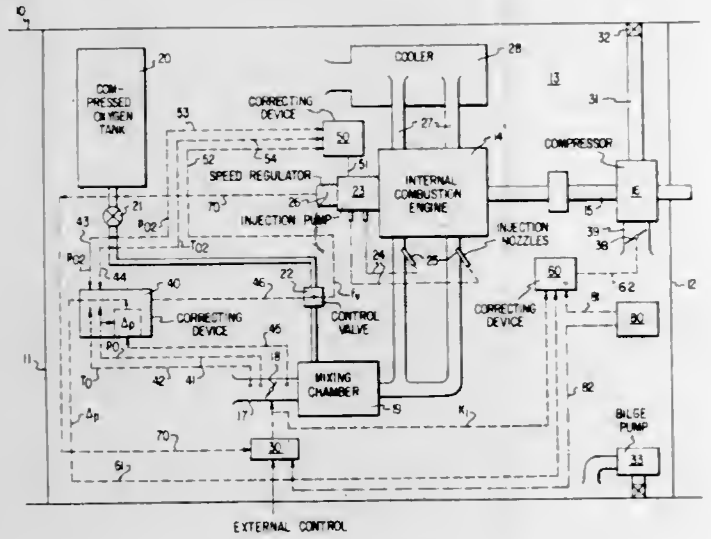
Herbert Lang, Asperg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany
Filed Mar. 21, 1967, Ser. No. 624,869
Claims priority, application Germany, May 20, 1966, B 87,208
U.S. Cl. 123—102 **14 Claims**
Int. Cl. F02d *11/10;* **H01h** *35/06, 35/10*



A fuel control, typically a pedal for a vehicle type diesel engine provides, by control of a potentiometer, a voltage proportional to pedal setting to control an electromagnetic fuel valve; three similar non-linear circuits, each fed by a speed-dependent voltage, are connected to the potentiometer to change the resistance regardless of pedal setting and thus limit maximum and minimum speed of the engine and further provide override limit of fuel supply at intermediate speeds to prevent excessive fuel, and thus, smoking; the non-linear circuits include breakdown diodes and temperature-compensation circuits, and are connected to the potentiometer by diodes; they include adjustable circuit elements to easily match the performance characteristic of different diesel engines.

3,425,402
INSTALLATION FOR REGULATING AN INTERNAL COMBUSTION ENGINE OPERATING ACCORDING TO A RECIRCULATING METHOD, ESPECIALLY UNDERWATER CRAFTS

Josef Reisacher, Fellbach, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 5, 1966, Ser. No. 570,473
Claims priority, application Germany, Aug. 7, 1965, D 47,924
U.S. Cl. 123—119 **19 Claims**
Int. Cl. F02m *7/00;* **B63b** *37/00;* **F01n** *1/14*

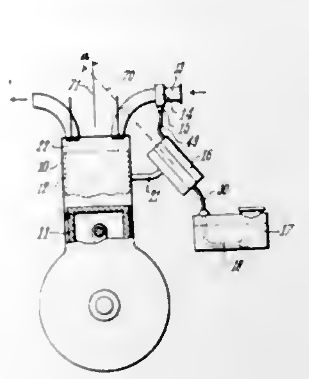


In a recirculating exhaust internal combustion engine for underwater craft, the oxygen supply and the fuel supply are each controlled by separate correcting means dependent upon the prevailing position of the throttle valve. The oxygen valve correcting means is dependent upon the pressure and temperature of the oxygen ahead of the control valve and on the pressure and temperature of the sucked-in gases at the throttle valve. The fuel supply control correcting means is dependent upon the pressure and temperature of the oxygen upstream of the oxygen control valve.

3,425,403
INJECTION PUMP ARRANGEMENT FOR COMBUSTION ENGINE

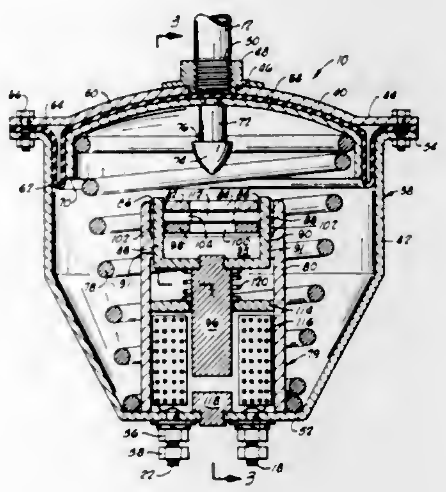
Michael G. May, 15 Ober Strasse, 7000 Stuttgart-Berg, Germany
Filed July 26, 1966, Ser. No. 567,976
Claims priority, application Germany, July 27, 1965, M 66,130
U.S. Cl. 123—139 **20 Claims**
Int. Cl. F02m *49/00;* **F02b** *3/00;* **F02d** *3/00*

The usual flow type carburetor for supplying fuel and air to a piston type internal combustion engine is replaced by a fuel system in which a diaphragm type fuel pump is operated by gas pressure pulsations occurring during piston movements, preferably transmitted through a fluid link connection from the engine to one side of the pump diaphragm. Fuel from the other side of the diaphragm is fed under pressure and in metered amounts directly through a conduit to a fuel injection nozzle discharging into the engine air intake adjacent a movable air throttle valve. Movement of this valve operates a fuel metering rod in the nozzle to vary the rate of fuel flow in relation to rate of airflow past the throttle valve in the idle range of throttle positions.



3,425,404
PRE-OILING DEVICE FOR ENGINES

James E. Lamkin, Tulsa, Okla., assignor of fifty percent to Marion E. Lamkin, Asmara, Ethiopia
Filed June 28, 1965, Ser. No. 467,213
U.S. Cl. 123—196 **1 Claim**
Int. Cl. F01m *5/00;* **G01f** *11/08;* **F15b** *15/26*

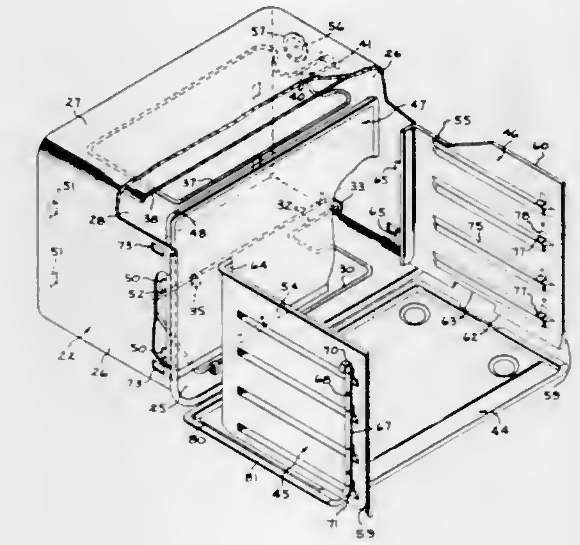


An apparatus for supplying lubricating fluids to an engine prior to start-up of operation, the apparatus comprises a pump housing having an oil reservoir in one end which is connected to the engine lubricating system; the oil reservoir within the housing end is defined by a flexible diaphragm which can be spring actuated to force lubricating fluid out of the reservoir and into the oil receiving parts of the engine. The diaphragm positioning is controlled by a solenoid and latch assembly which is contained within the housing, and which is actuated to release the diaphragm such that pre-oiling lubricant is forced into the engine.

3,425,405
DOMESTIC OVEN WITH REMOVABLE WALL PANELS

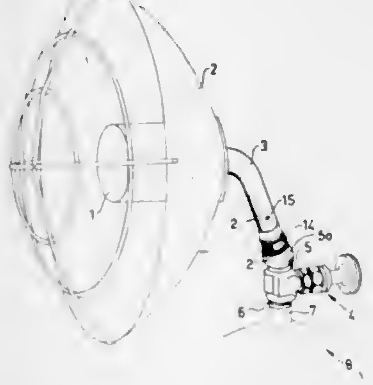
Raymond L. Dills, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1967, Ser. No. 669,428
U.S. Cl. 126—19 **5 Claims**
Int. Cl. A21b *1/00*

This invention relates to a domestic cooking oven having an oven cavity formed by a box-like oven liner and a front-opening access door. The oven liner is furnished with close-fitting removable wall panels that cover the bottom wall, the opposite side walls, and the rear wall of the oven liner. A mating tab and hole connecting means serves as the supporting means between each panel and the adjacent wall of the oven liner so that each removable panel is independently supported and may be handled without interference from the other panels. The inner most surface of the panels may be coated with a resinous coating such as polytetrafluoroethylene or silicone having a low food soil adhesion characteristic to facilitate the ease of cleaning the panels at the kitchen sink. Another alternative would be to coat the panels with a high temperature resistant porcelain enamel so that the panels may be removed from the oven liner and stacked in a separate high temperature self-cleaning oven to undergo the removal of the food soil by a pyrolytic process.



3,425,406
RADIATION HEATER

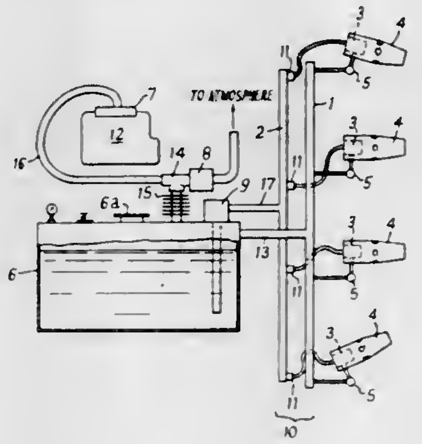
Carl-Anker Mejyr, Flen, Sweden, assignor to Primus-Sievert Aktiebolag, Sundbyberg, Sweden, a corporation of Sweden
Filed Jan. 31, 1967, Ser. No. 612,888
Claims priority, application Sweden, Aug. 11, 1966, 10,890/66
U.S. Cl. 126—92 **9 Claims**
Int. Cl. F24c *3/04;* **F16b** *7/00;* **F16l** *21/00*



A gas burning radiation heater including pivot structure permitting rotational movement of the heater relative to its fuel supply source. Also included is a releasable anti-rotation structure operatable to selectively maintain the heater in any one of a number of predetermined fixed positions.

3,425,407
SPRAYING AND FLAME CULTIVATION IN AGRICULTURE

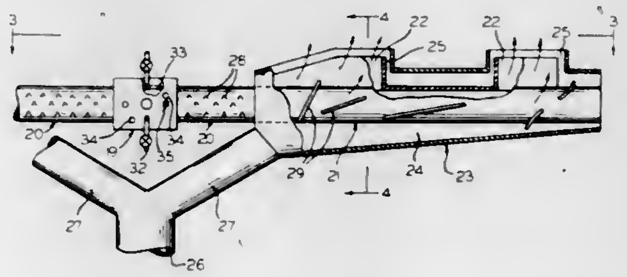
George T. Furman, North Wembley, England, and Reginald Percy Fraser, deceased, late of Kingston Hill, Surrey, England, by Barclays Bank Limited, executors, North Wembley, England, assignors to Urquhart's (1926) Limited, Middlesex, England, a British company
Filed Dec. 29, 1966, Ser. No. 605,930
Claims priority, application Great Britain, Dec. 29, 1965, 55,131/65
U.S. Cl. 126—271.2 **11 Claims**
Int. Cl. F23c *5/00;* **B05b** *1/24*



Apparatus for flame cultivation employing liquid fuels. A tank for the liquid fuel is connected to a plurality of two-fluid atomisers adjustably mounted on a boom. Exhaust gases from a tractor propulsion engine are adjustably throttled to create a back-pressure and at least a proportion of the gases is fed to the tank to expel liquid to the atomisers and to the atomisers to constitute the atomising fluid.

3,425,408
TRACK SWITCH HEATER

Marius Vinet, Montreal, Quebec, Canada, assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 691,516
U.S. Cl. 126—271.2 **8 Claims**
Int. Cl. F23c *5/00*

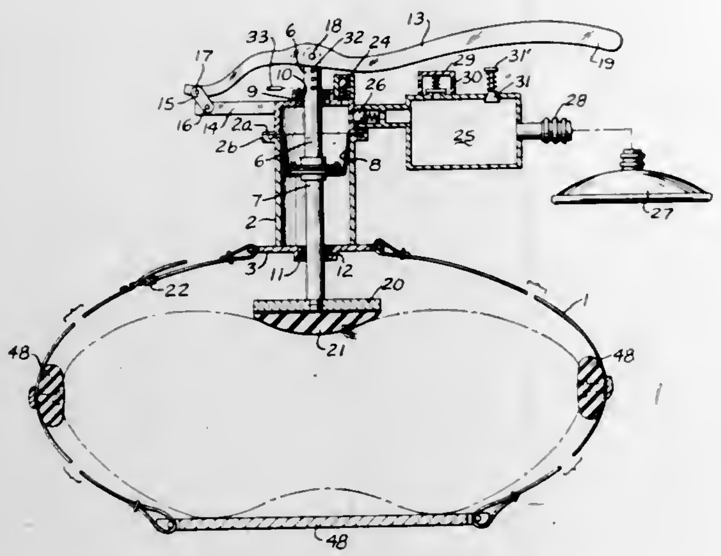


Track switch heater for generating and applying heat to track rails at track switches to remove snow and ice and maintain the switches in operative condition.

3,425,409
RESUSCITATOR

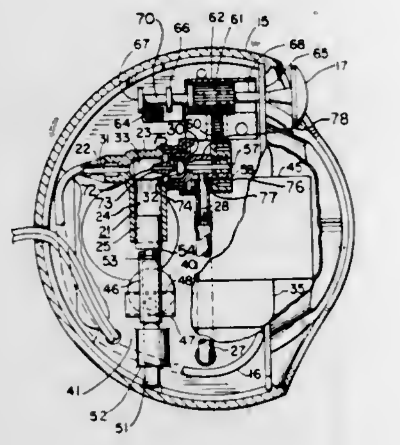
Max Isaacson, 420 W. Nottingham Road, and Benjamin Smilg, 3876 Dorset Drive, both of Dayton, Ohio 45405
Filed Nov. 8, 1965, Ser. No. 506,639
U.S. Cl. 128—28 **5 Claims**
Int. Cl. A61h *31/00, 23/04;* **A62b** *7/00*

A resuscitation device in which a piston actuated pad is in contact with the sternum of a patient and applies pressure impulses to the sternum upon downward movement of the piston within a cylinder, and a chest circumventing belt is placed around the patient to immobilize him. Upward movement of the piston actuates a oneway valve to draw air into an accumulator chamber which is connected to a facemask to deliver air to the patient. The amount of air and number of pulses of air delivered to the patient as well as the exhalation period may be controlled by a manipulatable relief valve in the accumulator chamber or a separate double acting valve may be provided which is actuated by pressure from the resuscitation device to deliver and remove air to the lungs of a patient and is actuated into another position by the patient to permit exhalation.



3,425,410
FLUID PRESSURE CONTROL FOR ORAL HYGIENE APPARATUS OF THE WATER JET TYPE

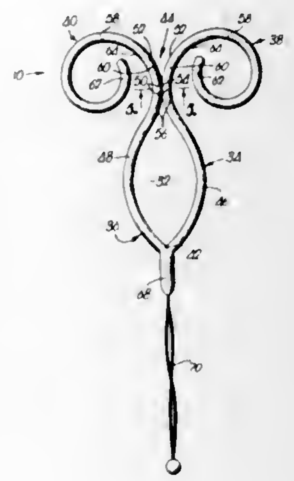
Michael A. Cammack, Fort Collins, Colo., assignor, by mesne assignments, to Aqua Tec Corporation, Denver, Colo., a corporation of California
Filed Sept. 8, 1966, Ser. No. 577,913
U.S. Cl. 128—66 **5 Claims**
Int. Cl. A61h *9/00;* **F04d** *21/02;* **A61c** *17/02*



1. A system for treating gum tissue by applying spaced pressure pulses of liquid to depress discrete areas of gum tissue with the spacing of said pulses one from the other of duration which provides for rebound time for said gum tissue comprising a liquid pump of the reciprocating type having a piston therein and an intake port and a discharge port, means for supplying fluid to said intake port, means for preventing reverse flow of fluid through said intake port, means for reciprocating said piston for alternating drawing liquid through said intake port and producing pressure pulses in said cylinder whereby a pulsed flow of liquid is produced through said discharge port, and means for modifying the action of said means for preventing reverse flow for affording limited reverse flow through said intake port to return a portion of the fluid through said intake port to modify the pressure of fluid discharged through said discharge port.

3,425,411
INTRA-UTERINE DEVICE

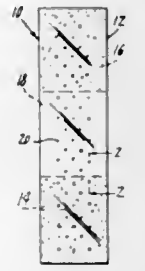
Ralph R. Robinson, 2024½ Cumberland Ave., Middlesboro, Ky. 40965
Continuation-in-part of application Ser. No. 489,693, Sept. 23, 1965. This application May 19, 1966, Ser. No. 551,414
U.S. Cl. 128—130 **7 Claims**
Int. Cl. A61f *5/46;* **A61m** *31/00*



An intra-uterine contraceptive device has an elongated loop which elongates during contraction of the uterine walls, increasing the area of surface contact to resist expulsion. Such elongation of the loop spreads a pair of elements into tight seating relationship to the mouths of the fallopian tubes, thereby resisting expulsion still further. Concave arms complementally receive a convolution of each element in nested relationship thereto during inward flexing of the concavo-convex arches of the loop.

3,425,412
TRANSPARENT BANDAGE

Richard A. Pope, Belton, Tex.
(Box 1201, Garland, Tex. 75040)
Filed May 20, 1966, Ser. No. 551,622
U.S. Cl. 128—156 **3 Claims**
Int. Cl. A61l *15/01;* **A61f** *13/02;* **A61b** *19/00*

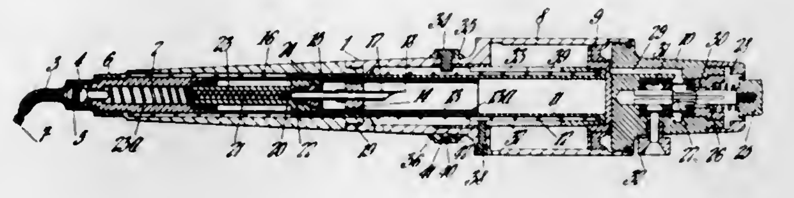


A laminated bandage to permit the observation of a wound without removal of the bandage from the body of the wearer and comprising a strip of transparent material have a central perforated or apertured portion extending the entire width of the strip, and adhesive means on a pair of remotely disposed ends of the strip and on a common side thereof to secure the strip on the body of the wearer.

3,425,413
MULTI-DOSAGE JET INJECTOR

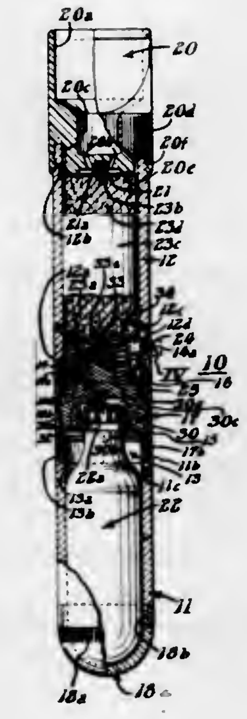
Richard Russell Stephens, Brisbane, Queensland, Australia, assignor to The Amalgamated Dental Company Limited, London, England, a British company
Filed Apr. 26, 1966, Ser. No. 545,473
Claims priority, application Great Britain, Apr. 30, 1965, 18,402/65
U.S. Cl. 128—173 **9 Claims**
Int. Cl. A61m *5/22;* **F16k** *1/00, 15/00*

A jet injector having a reciprocatory mount for a reservoir of liquid to be injected and driven means being connected with the mount for imparting a rectilinear drive stroke and return stroke thereto. Means are provided to releasably secure a reservoir of injection liquid to the mount and a plunger carried by the mount is arranged for communication with the liquid. A cylinder in which the plunger is received for the expulsion of liquid therefrom on a drive stroke of the plunger is provided and a first-way valve is located to prevent return of liquid from the cylinder to the plunger on the drive stroke thereof. A mount for a nozzle communicates with the cylinder for receiving liquid expelled therefrom and a second one-way valve serves to prevent the ingress of air into the cylinder on a return stroke of the plunger.



3,425,414
INHALANT DISPENSER

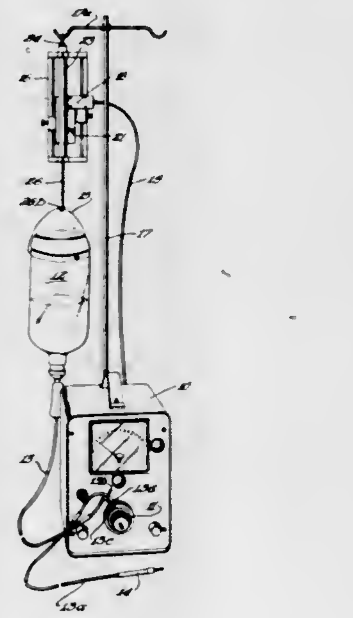
William J. La Roche, 222 Righters Mill Road, Penn Valley, Montgomery County, Pa.
Filed May 28, 1965, Ser. No. 459,722
U.S. Cl. 128—201 **14 Claims**
Int. Cl. A61m *15/02, 15/06*



A positive pressure inhalant device is shown and described having a capsule compartment and a separate inhalant cartridge compartment with an independently movable dividing means separating the compartments with at least one passageway in the dividing means providing communication from one compartment to the other. The dividing means is also provided with piercing means for puncturing a gas-containing capsule positioned in the first compartment and for piercing one end of an inhalant cartridge positioned in the second compartment. A mouthpiece is also provided having piercing means for puncturing the other end of the inhalant cartridge.

3,425,415
CONTROLLED INFUSION SYSTEM

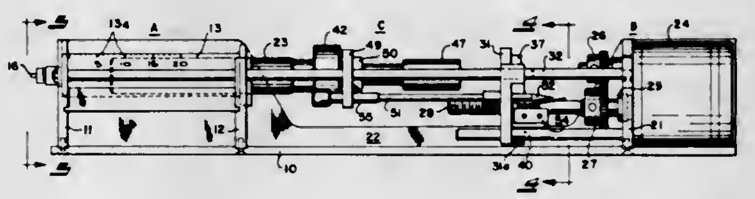
Ernest S. Gordon, Sunnyvale, Calif., and Ronald B. Schwab, Evergreen Park, and Leander O. Thunberg, Riverdale, Ill., assignors to IIT Research Institute, Chicago, Ill., a corporation of Illinois
Filed May 2, 1966, Ser. No. 546,957
U.S. Cl. 128—214 **3 Claims**
Int. Cl. A61m *5/20;* **F04b** *43/08;* **B67d** *5/08*



A system for the controlled infusion of liquids into the body by means of a positive pump for accurate flow rates. The device also includes a calibrated cut-off unit to cut off the flow after a pre-determined volume has been pumped through the system.

3,425,416
HYPODERMIC INJECTION SYRINGE CONTROLLED BY PRESSURE OF DISCHARGE

Horton Hampton Loughry, 8359 Wilson Mills Road, Chesterland, Ohio 44026
Filed May 23, 1966, Ser. No. 552,277
U.S. Cl. 128—218 **6 Claims**
Int. Cl. A61m *5/20;* **F04b** *49/02;* **F04d** *15/00*

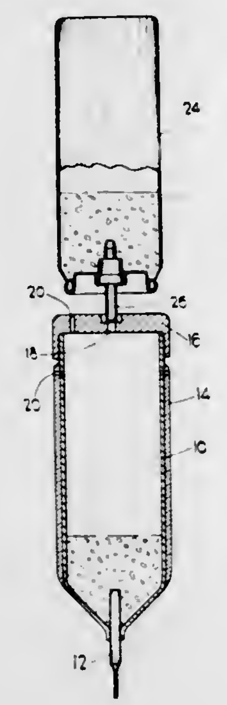


A non-reciprocating, power-operated hypodermic injection syringe or the like for the injection of fluids into patients adapted for intermittent operation in response to the back pressure of its discharge, thereby to avoid exceeding a predetermined maximum discharge pressure. In one form, the hypodermic injection syringe includes a discharge chamber adapted to contain an isolated, batch load. A plunger is adapted for generally unidirectional movement within the chamber by means of power actuation to force a portion of the load from the discharge chamber. Lost-motion control means interconnects the plunger and the power actuation and de-energizes the latter when the back pressure to the discharge from the chamber reaches the predetermined maximum. At this time the motion of the plunger is tentatively interrupted. When the back pressure falls below the predetermined maximum, the lost-motion control means re-energizes the power means to commence once again the unidirectional movement of the plunger so as to discharge fluid from the chamber.

3,425,417

REFRIGERABLE CRYOGENIC PROBE FOR SURGICAL USE

Maurice S. Kanbar, 2 E. 75th St., New York, N.Y. 10021, and Raymond David Sudarsky, 422 E. 58th St., New York, N.Y. 10022
Filed Feb. 24, 1965, Ser. No. 434,969
U.S. Cl. 128—303.1 **2 Claims**
Int. Cl. A61b *17/36;* **F25d** *3/10;* **A61m** *19/00*



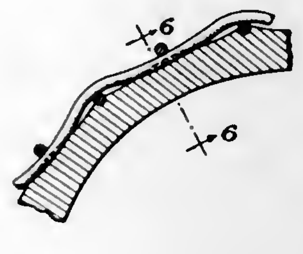
An instrument adapted particularly for eye surgery in which the free end of a small metal probe is maintained during operation at an extremely low temperature. The base member of the instrument, from which the metal probe extends, is hollow and contains a limited amount of refrigerant in liquid form adapted to evaporate at substantially atmospheric pressure. This evaporation takes place adjacent the metal probe, the inner end of which extends within the lower end of the base member and into the pool of liquid refrigerant so that the probe will be maintained at an extremely low temperature. The base member of the instrument from time to time, and while in use, may have its supply of liquid refrigerant replenished from a supply of liquid refrigerant under pressure in a commercial refrigerant container.

To replenish the liquid refrigerant within the base member, the supply container is forced against the end of the base member opposite the metal probe to open the discharge valve in the supply container and permit liquid refrigerant from the container to flow into the space within the base member surrounding the inner portion of the probe through a filling opening provided within the base member.

3,425,418

ARTIFICIAL BLOOD VESSELS AND METHOD OF PREPARING THE SAME

Milos Chvapil, Milan Krajlcek and Miloslav Adam, Prague, Czechoslovakia, assignors to Spofa, Sdružení podniků pro zdravotnickou Vyrobu, Prague, Czechoslovakia
Continuation-in-part of application Ser. No. 330,221, Dec. 10, 1963. This application Apr. 15, 1964, Ser. No. 359,973
Claims priority, application Czechoslovakia, June 15, 1962, 5,644/62
U.S. Cl. 128—334 **5 Claims**
Int. Cl. A61b *17/04;* **A61f** *1/24;* **A61l** *17/00*

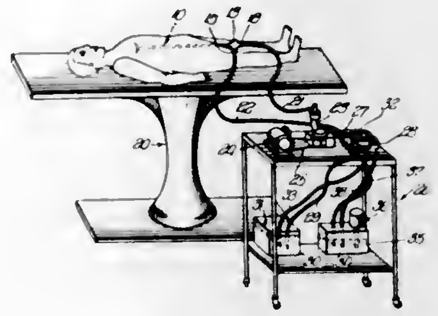


An artificial blood vessel includes a tanned collagen tube strong enough to be self-supporting, and impregnated with an anti-coagulant which is covered with open mesh fabric secured to the tanned collagen by an outer wall portion of collagen in the native chemical state thin enough not to close the pores in the fabric.

3,425,419

METHOD OF LOWERING AND RAISING THE TEMPERATURE OF THE HUMAN BODY

Angelo Actis Dato, Via Genova 4, Turin, Italy
Filed July 2, 1965, Ser. No. 469,294
Claims priority, application Italy, Aug. 8, 1964, 17,699/64
U.S. Cl. 128—400 **9 Claims**
Int. Cl. A61f *7/12;* **A61b** *17/36;* **A61m** *29/00*



A method for inducing moderate hypothermia in man through the use of a thermal exchange catheter adapted to be inserted within the flowing blood stream in the body. Fluid temperature changing means, together with valve and pump means, is provided to circulate the fluid through the catheter so as to achieve the desired rate of thermal exchange between the walls of the catheter and the blood flowing around the catheter.

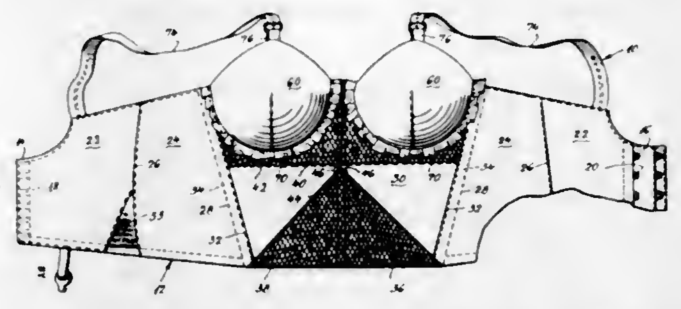
3,425,420

BRASSIERE WITH CUPS ATTACHABLE BY ZIPPER MEANS

Dora Steinberger, 2157 Broadway, New York, N.Y. 10023
Filed Dec. 5, 1966, Ser. No. 599,117
U.S. Cl. 128—460 **6 Claims**
Int. Cl. A61f *5/03;* **A41c** *3/06*

A strapless brassiere having removable breast pockets which are removable selectively from the front of the garment when it is desired to feed an infant. The brassiere

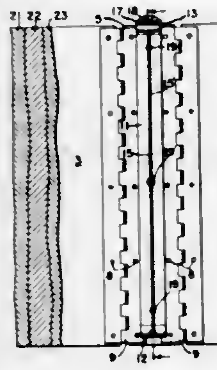
includes a body having end, central and intermediate panels. Means is provided on the end panels for fastening the body around the body of the wearer. The central panel has cutout portions in the top edge thereof, and removably secured to such cutout portions are breast pocket structures, such securement including co-acting zipper fastener elements on the cutout portions and on the breast pocket structures.



3,425,421

DIRECTORY COVER

Morton Feder, 3828 W. Whitton Ave., Phoenix, Ariz. 85019
Filed Jan. 27, 1967, Ser. No. 612,261
U.S. Cl. 129—38 **7 Claims**
Int. Cl. B42f *11/02;* **B42d** *3/00*



A directory cover having a spine panel and front and rear panels of hard laminated plastic, with continuous metal hinges connecting the front and rear panels to the spine panel, and a metal assembly for holding the directory, which assembly includes a metal spine riveted to the plastic spine panel and having two inwardly directed projections, a top swivel or hanger connected to one of the projections, and at least one stiff wire for holding a directory and having one end pivotally connected to one of the projections and the other end formed as a hook for insertion into an opening provided in the other projection, and an alternate suspension accessory unit provided when center suspension is desired.

3,425,422

ROTARY HUSKING UNIT

Clinton D. Prosser, East Moline, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,685
U.S. Cl. 130—5 **14 Claims**
Int. Cl. A01f *11/06*

1. A husking unit comprising:

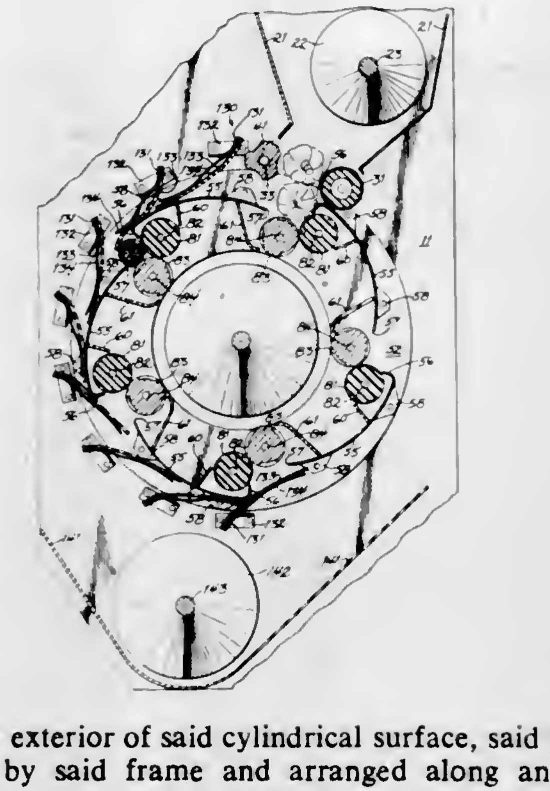
a frame;

a cylindrical rotor mounted for rotation on said frame along a generally horizontal axis, the cylindrical surface of said rotor including a plurality of ear carrier plates spaced from each other to provide axially aligned slots in said cylindrical surface;

sets of husking rolls carried by said cylindrical rotor beneath said cylindrical surface adjacent said axially aligned slots;

feed means located above the cylindrical rotor for receiving and depositing ear corn in axial alignment on the surface of said cylindrical rotor;

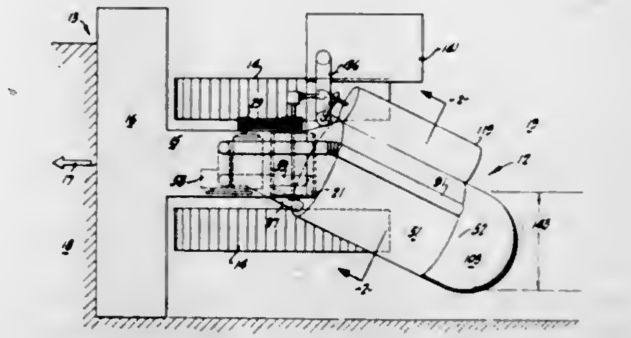
a plurality of pressure pads biased into engagement with the exterior of said cylindrical surface, said pads carried by said frame and arranged along an arc concentric to the rotor axis and extending from said feed means to the bottom of said cylindrical rotor.



3,425,423

GRAIN SEPARATOR

Ross B. McKenzie, 8115 Rio Linda Blvd., Elverta, Calif. 95626
Filed Aug. 24, 1966, Ser. No. 574,628
U.S. Cl. 130—27 **5 Claims**
Int. Cl. A01f *12/44*



1. An apparatus for separating grain from straw comprising:

(a) a fore and aft frame mounted on a grain harvester including a transverse thresher cylinder, said frame being located aft of the thresher cylinder;

(b) a stationary circular cylindrical drum mounted on said frame, the axis of said drum being angularly oriented with respect to the harvester path and being inclined rearwardly and downwardly;

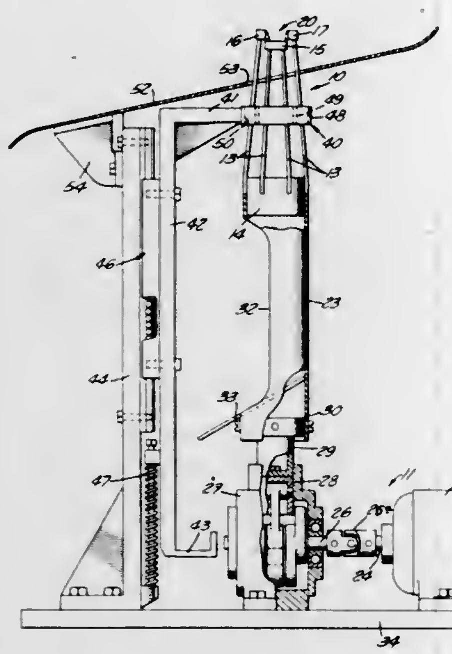
(c) a rotatable circular cylindrical foraminous tube within said drum in coaxial relation therewith, said tube being radially spaced from said drum to afford an annular grain-receiving chamber therebetween;

(d) a stationary deflector structure within said tube, said deflector structure including a deflector plate located adjacent the discharge side of the thresher cylinder and angularly inclined to the thresher cylinder to deflect the material discharging therefrom; and,

(e) blower means connected to said drum for passing air through said drum in a rearward direction, the air current being sufficient to drive straw through said drum to discharge therefrom and being insufficient to carry grain therethrough, said grain falling onto and passing through said foraminous tube into said annular grain-receiving chamber.

3,425,424
APPARATUS AND METHOD FOR STRIPPING BRUSSELS SPROUTS

Hugh O. Brown, 2434 E. Santa Ysabel, Fullerton, Calif. 92631
Filed Oct. 11, 1965, Ser. No. 494,634
U.S. Cl. 130—30 **7 Claims**
Int. Cl. A01d *45/00*



An apparatus and method for severing brussels sprouts from their stalks comprising severing means having an opening therein for receiving a stalk. The severing means is substantially frusto-conical and has an arcuate opening therein. Driving means are coupled with the severing means for imparting a reciprocating motion thereto substantially coaxially with respect to the longitudinal axis of the stalk. The arcuate opening presents a relatively dull edge which severs the sprouts from the stalk.

3,425,425
METHOD OF PUFFING TOBACCO STEMS

John D. Hind, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 4, 1967, Ser. No. 607,171
U.S. Cl. 131—140 **2 Claims**
Int. Cl. A24b *9/00, 3/18, 3/12*

This disclose relates to an improved tobacco product resulting from an improved process for puffing tobacco stems. The improvement in the process involves treating the stems, prior to puffing by any of the known puffing methods, with a solution containing a water-soluble carbohydrate. The resulting puffed stems can be incorporated in tobacco products.

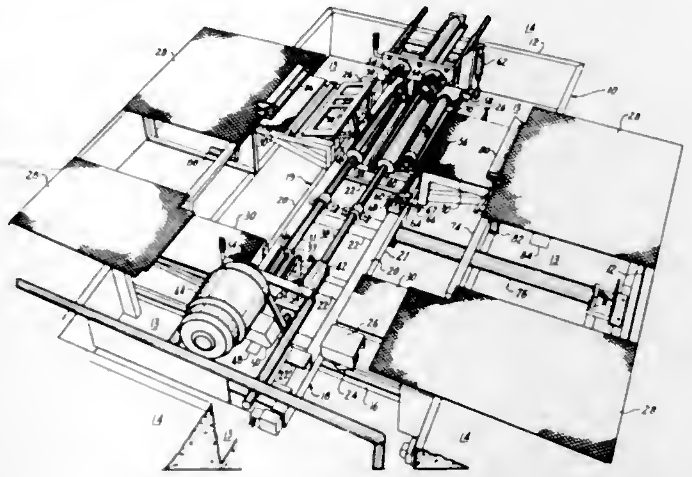
3,425,426
NAIL PATCH AND METHOD OF APPLICATION

Frederic P. Welanetz, 13055 Moorpark St., Apt. 4, North Hollywood, Calif. 91604
No Drawing. Filed Sept. 16, 1965, Ser. No. 487,893
U.S. Cl. 132—73 **12 Claims**
Int. Cl. A45d *29/00*

Nail repair is provided for by a patch material of very shear thickness fabric impregnated with a binding solution i.e. cellulose nitrate which is solvent activatable to adhere the nail patch material to the nail.

3,425,427
WHEEL WASHER

Dan A. Andersen, 818 Vineyard Ave., Duarte, Calif. 91010
Filed Feb. 9, 1966, Ser. No. 526,229
U.S. Cl. 134—6 **9 Claims**
Int. Cl. B08b *1/00;* **B60s** *3/00;* **A46b** *13/04*



A device and method for receiving, locating, revolving and brushing a pair of wheels at one end of an automobile while simultaneously supplying water and detergent thereto to effect complete and rapid cleaning of the pair of wheels.

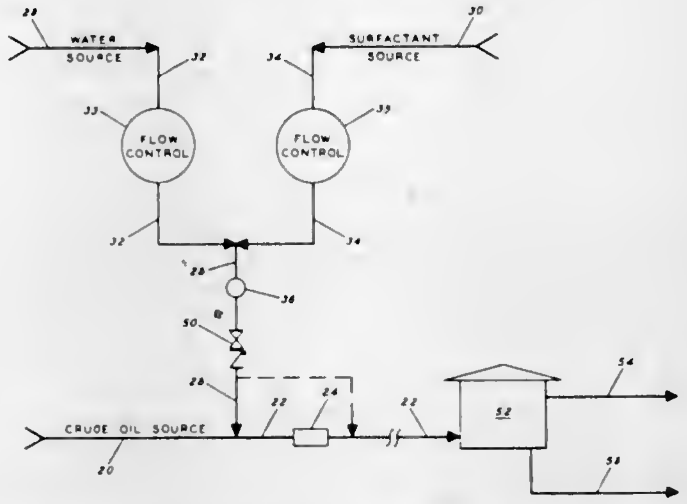
3,425,428
TENT-SUPPORTING CONSTRUCTIONS

Arthur Schwartz, P.O. Box 2183, Waco, Tex. 76703
Filed May 31, 1967, Ser. No. 642,527
U.S. Cl. 135—15 **1 Claim**
Int. Cl. A45f *1/16;* **F16b** *5/00*

The invention concerns improved means for connecting the material of a tent to a supporting pole therefor, which includes a coupling element secured to and depending from the underside of the tent material and having a shank and an enlarged head at the lower end thereof, a pole having a side aperture adapted to laterally receive the coupling element, a member on the upper end of the pole having a slot communicating with the side aperture in the pole for receiving the shank of the coupling element but preventing passage of the enlarged head of the coupling element therethrough, and a retaining sleeve rotatably mounted on the pole and having an aperture opening through the upper end thereof and adapted to register with the side aperture and end slot in the pole in one position of rotation of the sleeve to permit the coupling element to be inserted in and withdrawn from the pole and in another position of rotation closing the side aperture in the pole to prevent disconnection of the coupling element from the pole.

3,425,429
METHOD OF MOVING VISCOUS CRUDE OIL THROUGH A PIPELINE

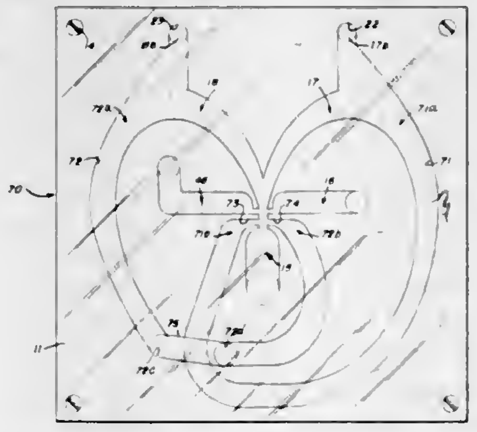
Arthur V. Kane, Maracaibo, Zulia, Venezuela, assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Jan. 11, 1967, Ser. No. 608,687
U.S. Cl. 137—13 **6 Claims**
Int. Cl. F17d *1/16;* **B67d** *5/60*



A method of transporting crude oil through a pipeline by injecting an aqueous solution of nonionic surfactant into the pipeline to contact the crude oil and to effect a flowing pressure drop decrease in the pipeline and thereafter reducing the amount of surfactant solution being injected into the pipeline to less than 5 percent of the crude oil concurrently injected into the pipeline to maintain the flowing pressure drop decrease.

3,425,430
FLUID-OPERATED SYSTEM

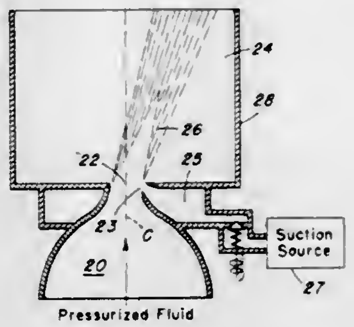
Billy M. Horton, Rock Creek Hills, Md.
(9712 Kensington Parkway, Kensington, Md. 20795)
Continuation-in-part of application Ser. No. 848,878, Oct. 26, 1959, which is a continuation-in-part of application Ser. No. 855,477, Nov. 25, 1959. This application Aug. 24, 1960, Ser. No. 51,754
U.S. Cl. 137—81.5 **66 Claims**
Int. Cl. F15c *1/10;* **F15d** *1/12;* **G06m** *1/12*



1. A fluid-operated system comprising: means adapted to issue a continuous fluid stream under pressure, apertures positioned to receive fluid issuing from said means, and control means positioned to deflect said stream, said control means adapted to issue a stream of fluid against said continuous fluid stream thereby varying the quantity of fluid received by each aperture, means connected to said apertures responsive to variations in the quantity of fluid received by said apertures, and means communicating with at least one aperture adapted to feed back a stream of fluid against said continuous stream of fluid.

3,425,431
CONTROL APPARATUS AND METHODS

Gunnar Heskestad, East Brunswick, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,416
U.S. Cl. 137—81.5 **8 Claims**
Int. Cl. F15c *1/00*

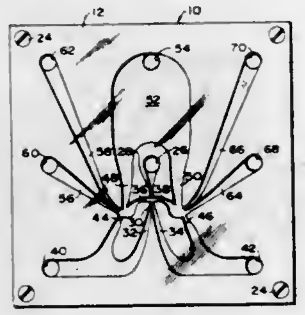


8. A bistable fluid amplifier comprising: an input power conduit including an inlet adapted to receive fluid under pressure and an outlet orifice, the walls of said inlet being tapered continuously to a smaller dimension in the direction of flow so that the flow of fluid will be substantially free of turbulence upon entrance into the outlet orifice, the center of said outlet orifice being on a central axis perpendicular to the plane of said outlet orifice; a chamber including an inlet connected to the peripheral edge of said outlet orifice, side wall portions set back from said peripheral edge and flaring outwardly from said inlet, and first and second outlets downstream from said inlet and disposed on opposite sides of an axial plane including said central axis; a fluid divider extending into said chamber, said fluid divider including side wall portions opposite the side wall portions of said chamber and converging to a point on said central axis facing said outlet orifice and downstream therefrom, the oppositely disposed side wall portions of said chamber and said fluid divider cooperating to provide first and second fluid outlet channels exiting at said first and second outlets of said chamber; said side wall portions of said chamber and said fluid divider being disposed with respect to said outlet orifice so that when fluid from said outlet orifice flows in one of said outlet channels said flow continues until diverted to the other of said outlet channels; said peripheral edge of said outlet orifice being provided with first and second slits, said first slit being on the same side of said axial plane as said first outlet channel and said second slit being on the same side of said axial plane as said second channel; each of said slits having a width more than one-one hundredth of the width of said outlet orifice and an angle of inclination of between zero and ninety degrees; and means for selectively applying suction to said slits so that when suction is applied to one of said slits, fluid flowing from said outlet orifice is diverted, by bending over said peripheral edge, to the outlet channel on the same side of said axial plane.

3,425,432
BISTABLE FLUID AMPLIFIER

Lawrence W. Langley, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,943
U.S. Cl. 137—81.5 **14 Claims**
Int. Cl. F15c *1/00*

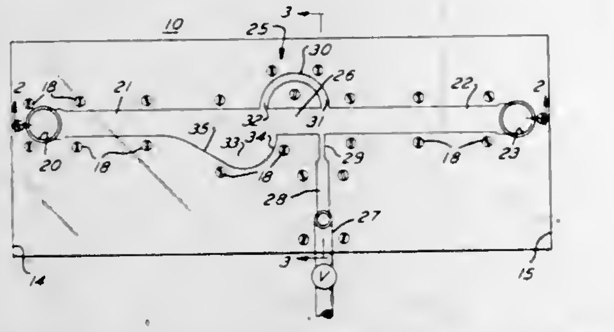
A bistable fluid amplifier is disclosed which utilizes a portion of its output fluid as its own control fluid. A portion of the output fluid, which is directed toward an exhaust chamber in the absence of an input control signal, is



directed by a control signal to a control orifice and thereby deflects a power stream from one stable condition to another.

3,425,433
FLOW CONTROL VALVE

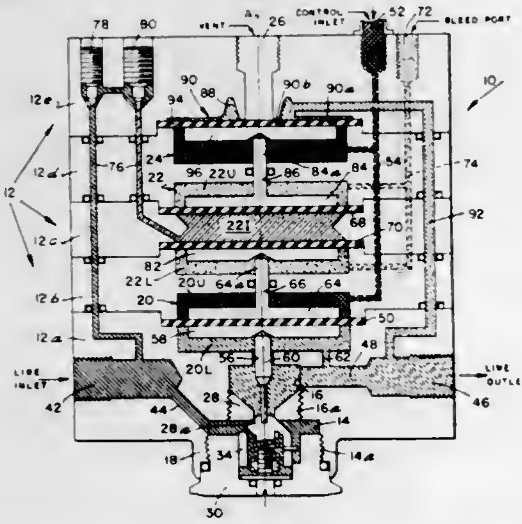
Coleman B. Moore, Uwchland, Pa., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1966, Ser. No. 543,908
U.S. Cl. 137—81.5 **8 Claims**
Int. Cl. F15c *1/20, 1/14*



Flow control valves with shut off of the main flow by a controlling fluid which is directed transversely of the main flow and which is then directed upstream of the location of the transverse directing so that it is added to the fluid of the main flow. The upstream action may include a second transverse of the main flow.

3,425,434
CONTROLLABLE, UNITARY REGULATOR AND RELIEF VALVE

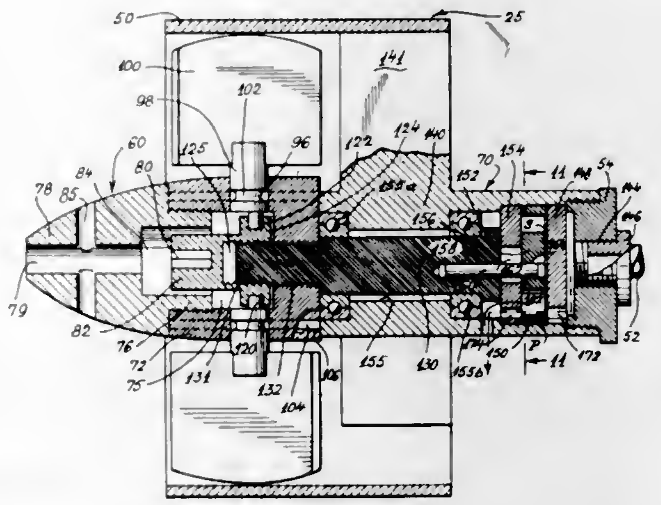
Alvah T. Strickland, Arcadia, and William G. Wilson, Altadena, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 31, 1967, Ser. No. 628,239
U.S. Cl. 137—85 **5 Claims**
Int. Cl. G05 *13/34, 7/01;* **F16k** *17/168*



The invention is a unitary regulator valve and relief valve device, which is controllable to provide a selectively variable outlet pressure in accordance with a control pressure from an independent source. The regulator includes three axially aligned chambers which are sealed from one another, consisting of two outer chambers and a center chamber. One of the outer chambers has a diaphragm which is the actuator for the regulator valve with the device output pressure acting thereon against the control pressure. The other of the outer chambers has a diaphragm which is the actuator for the relief valve with the device's outlet pressure acting thereon against the control pressure. The center chamber has two axially spaced diaphragms with a bias pressure in the compartment formed therebetween, and with ambient pressure acting upon the outer sides of the diaphragms. Mechanical couplings transmit the bias pressure forces exerted against each of the center chamber diaphragms to the adjacent valve actuator diaphragm, with a direction of application of the force against that of the outlet pressure. The regulator valve includes a valve element which is spring loaded in a direction tending to close the valve. The resilience of the valve loading spring is adjustable, which provides an adjustment of the cracking pressure of the relief valve.

3,425,435
ROTARY OSCILLATING PISTON PUMP ADDITIVE INJECTION DEVICE FOR FLUID DELIVERY SYSTEM

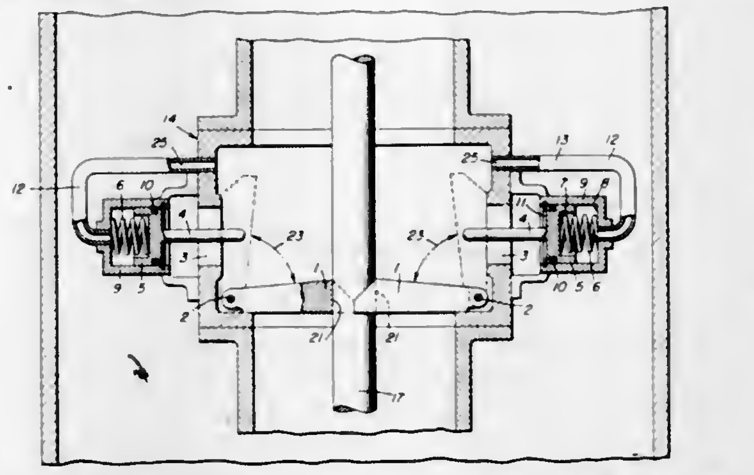
Romano Garabello, Brooklyn, N.Y., assignor, by mesne assignments, to Metropolitan Petrochemicals Co., Inc., New York, N.Y., a corporation of New York
Filed Sept. 28, 1966, Ser. No. 582,560
U.S. Cl. 137—99 **10 Claims**
Int. Cl. B67d *5/56;* **B01f** *3/08;* **G05d** *11/03*



1. A device for injecting an additive fluid into a main stream of liquid flowing in a conduit, comprising a stator having a generally cylindrical body, means for supporting said stator in a stationary position inside and axially of said conduit so that said stream of liquid passes by and around said body, said body having an axially extending chamber, a shaft rotatably supported in said chamber and extending axially therein, means preventing axial movement of the shaft in said body, a rotor having multiple radially extending vanes pitched at an angle to the axis of said body, said rotor being rotatably supported at and by one end of said shaft outside said body so that said liquid flowing in said conduit turns the rotor, revolvable valve means in said body, said body having an inlet opening at one end for said additive fluid, said body having an outlet opening communicating with said chamber, said valve means being disposed in said chamber in a passage for fluid between said inlet and outlet openings, and means operatively interconnecting said shaft and valve means so that the valve means alternately opens and closes said passage to discharge said additive fluid into said stream of liquid when the rotor rotates in said stream of liquid.

3,425,436
VALVE STRUCTURE FOR SELF-PRIMING PUMPS

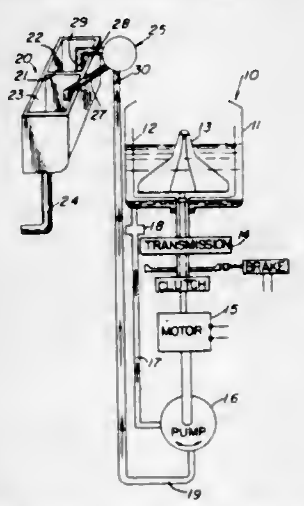
Pellegrino E. Napolitano, Brooklyn, N.Y., assignor to Hudson Engineering Company, Hoboken, N.J., a corporation of New Jersey
Filed June 10, 1966, Ser. No. 556,723
U.S. Cl. 137—107 **8 Claims**
Int. Cl. F04d *9/00*



A valve structure for an automatically recycling self-priming pump to be mounted in the pump discharge pipe. An aperture is formed in the housing of the valve to divert a portion of the pumpage to the outside of the discharge pipe to a well which feeds the pump inlet. A two-position flapper valve is contained within the housing of the valve structure and occupies either a position closing the pump discharge or a position closing the aperture. A piston and cylinder arrangement is provided with a projecting piston rod extending through the aperture to contact the flapper valve when it is seated against the aperture as during normal pumping. A coil spring biases the piston to urge the rod against the flapper valve, and a tube connects the cylinder with the interior of the valve housing for pressure equalization. When the system is operating normally, the flapper valve is up, seated on the aperture. When the pump loses its prime, the forces on opposite sides of the flapper valve are equalized via the tube communicating with the cylinder, and the coil spring forces the piston and piston rod to unseat the flapper valve so that it moves to its position closing the discharge colume. In this position, the aperture is unblocked, and liquid in the pump discharge column downstream of the flapper valve can flow through the aperture and back to the pump inlet to reprime.

3,425,437
FLUID CONTROL DEVICE FOR AUTOMATIC LAUNDRY MACHINES

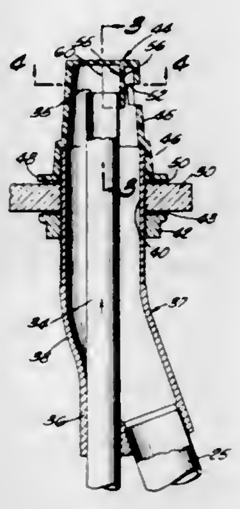
Carl J. Knerr and William C. Silva, Herrin, and Curtis R. Hartley, West Frankfort, Ill., assignors, by mesne assignments, to Fedders Corporation, a corporation of New York
Filed Feb. 2, 1967, Ser. No. 613,640
U.S. Cl. 137—119 **15 Claims**
Int. Cl. D06f *41/00, 39/08;* **G05d** *7/06*



A suds-saver device for use with laundry machines having a pump for emptying suds-water and rinse water from the laundry machine tub and flow of the suds-water to a storage reservoir and the rinse water to a drain, the device having valve mechanism manually settable to direct suds-water, under pump pressure, to the reservoir and operable, by the pressure of the suds water, to automatically condition the valve to subsequently direct rinse water to the drain.

3,425,438
ANTISYPHON DEVICE

Fay O. Suffron, Los Angeles, Calif., assignor to American Metal Products Corp., Los Angeles, Calif., a corporation of California
Filed Oct. 4, 1965, Ser. No. 492,540
U.S. Cl. 137—216 **2 Claims**
Int. Cl. E03c *1/10*

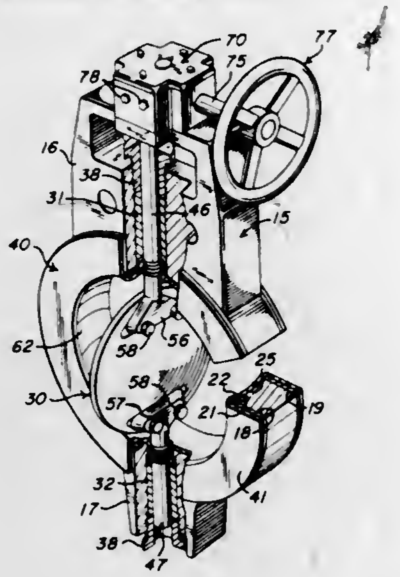


1. An antisyphon device comprising means providing an air gap chamber having an opening providing an air gap, inlet conduit means communicating with said chamber, outlet conduit means communicating with said chamber, said inlet conduit means having a discharge opening spaced from said opening providing an air gap, means extending between the said discharge opening and an end of said air gap chamber, said means being constructed to form a barrier extending across said air gap chamber in a position between said discharge opening and said air gap opening, the said means including an arcuate portion having a radius of curvature substantially the same as that of said discharge opening and said barrier means having sufficient extent as to extend below said air gap opening, said air gap chamber being circular in cross-section and having a top wall and side walls, its opening being in a side wall thereof, said barrier having an arcuate portion adjacent said air gap opening, said arcuate portion being connected to and extending downwardly from the top wall of said air gap chamber, and including flat portions positioned along a diameter of said air gap chamber connecting the edges of said arcuate portion to the side walls of said air gap chamber and supporting the arcuate portion within the air gap chamber.

3,425,439
BUTTERFLY VALVE

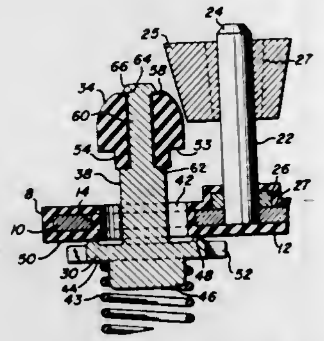
Donn W. Duffey and Jack L. Wissman, Dayton, Ohio, assignors to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York
Filed Oct. 19, 1965, Ser. No. 497,826
U.S. Cl. 137—375 **8 Claims**
Int. Cl. F16l *58/00;* **F16k** *1/22, 41/00*

Butterfly valves for corrosion resistant service include a one-piece polytetrafluoroethylene resin liner while the valve disk is a corrosion resistant material such as titanium or a metal covered with polytetrafluoroethylene. The disk is offset and provides a 360° seat formed by the liner and a resilient rubber backing member between the liner and the body. Adjustable seals are provided for each stem of the valve disk.



3,425,440
VALVING UNIT FOR SINGLE LEVER FAUCET

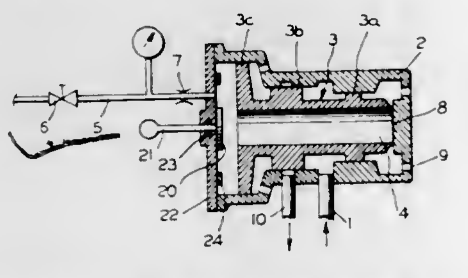
Peter M. Van Wingen, Grand Rapids, Mich., assignor to Wolverine Brass Works, Grand Rapids, Mich., a corporation of Michigan
Filed May 18, 1966, Ser. No. 551,057
U.S. Cl. 137—454.6 **15 Claims**
Int. Cl. F16k *11/18, 1/38*



A valving unit for a single lever faucet comprises a plate with a pair of openings therein. Like valving members for each of said openings each includes a stem which extends loosely through one of the openings and which has a valve head on its lower end and a cam follower dimensioned and journaled for free rotation axially upon its upper end.

3,425,441
SAFETY DEVICE FOR PROTECTION AGAINST EXCESS FLUID PRESSURE

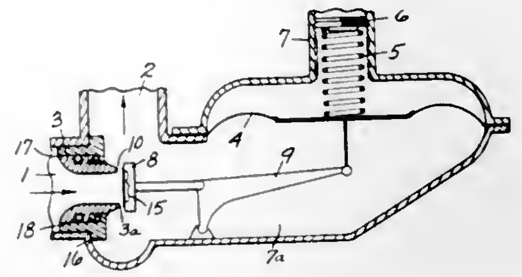
Helmut Bauer, Basel, Switzerland, assignor to Maschinenfabrik Burckhardt A.G., Basel, Switzerland, a Swiss company
Filed Dec. 29, 1967, Ser. No. 694,625
Claims priority, application Switzerland, Jan. 12, 1967, 416/67
U.S. Cl. 137—467 **8 Claims**
Int. Cl. F16k *17/28, 17/168*



A high pressure safety valve which through the use large cross-section flow path effects a short response time.

3,425,442
PRESSURE REGULATOR

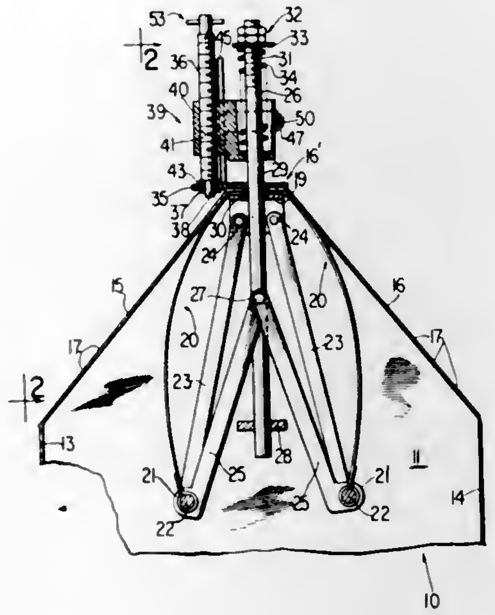
Dwight N. Johnson and Albert R. Cameron, Fullerton, Calif., assignors to American Meter Company, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,488
U.S. Cl. 137—505.15 **1 Claim**
Int. Cl. G05d *16/18;* **F16k** *31/12*



A spring loaded diaphragm type pressure regulator having two regulating valves whose relative position is controlled by the diaphragm and is also controlled by a piston subject to a force equal to the difference between the inlet and outlet pressures and to the counter force of a spring which deflects in proportion to the first force so the relative position of the regulating valve varies with the inlet pressure in which the diaphragm is lowered as the inlet pressure increases and thereby cancels out or compensates for the effect of inlet pressure on the regulating valve.

3,425,443
AIR CONDITIONING

William E. Smith, Charlotte, N.C., assignor to Buensod-Stacey Corporation, New York, N.Y., a corporation of Ohio
Filed Sept. 23, 1965, Ser. No. 489,665
U.S. Cl. 137—512.15 **7 Claims**
Int. Cl. G05d *7/01;* **F24f** *13/08;* **F16k** *13/00*



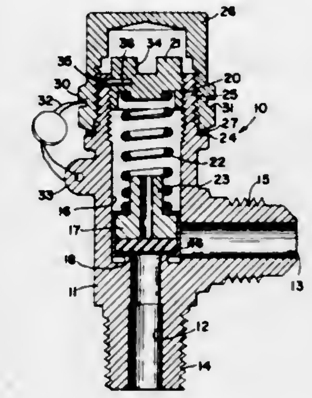
Air conditioning system device for controlling air therethrough in conjunction with a calibrated arrangement for presetting the volume of air passable through the device.

3,425,444
RELIEF VALVE

Evan Jones, Evanston, Ill., assignor to Henry Valve Company, Melrose Park, Ill., a corporation of Illinois
Filed Jan. 10, 1966, Ser. No. 519,678
U.S. Cl. 137—540 **2 Claims**
Int. Cl. F16k *17/06, 25/04, 17/30*

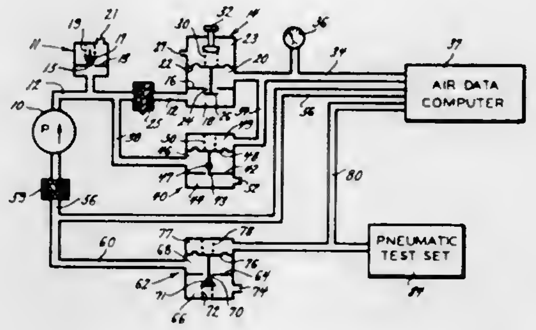
A relief valve for use in lines containing refrigerants or the like, in which a valve body is provided which includes an inlet and an outlet, and a connecting passageway, a fixed valve seat disposed therein, and a movable

valve seat adapted to be moved into co-operating sealing relation therewith. Spring means is provided for moving a piston which contains a valve seat means on the ends thereof axially within a piston chamber, and into a position engaging the valve seat. The movable valve seat is a laminated material which comprises a resilient, rubber backing material, and a very thin film of a synthetic plastic material on one surface thereof. In use, the rubber provides resiliency and enables the seat to obtain a good seal, while the plastic face material is resistant to softening by the product contained in the lines, and does not become tacky or adherent to the valve seat in use.



3,425,445
CONTROL SYSTEMS

Donald E. Moehlenkamp, Florissant, Mo., assignor to Conductron Corporation, Charles, Mo., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,519
U.S. Cl. 137—565 **9 Claims**
Int. Cl. G05d *16/20, 7/06*

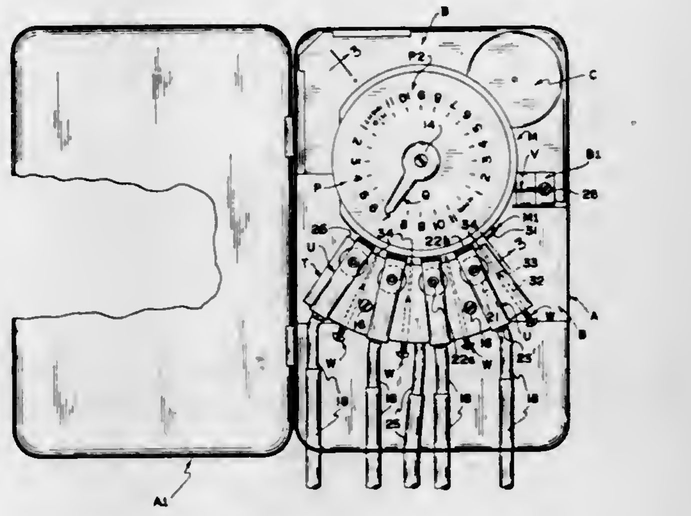


Masses of air are moved toward an inlet port of a device and those masses of air are kept under a predetermined pressure by using an air-moving pump to force those masses of air through a pressure regulator; and further masses of air are moved away from an outlet port of that device and those further masses of air are kept under a lesser predetermined pressure by using a further pressure regulator.

3,425,446
ALTERNATE, VARIABLE TIMING CONTROL FOR HYDRAULIC DEVICES

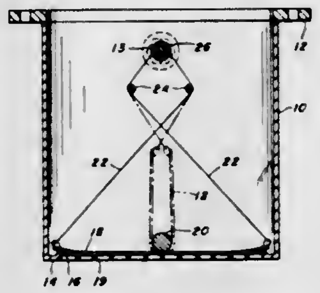
Darl D. McNown, 1625 Yosemite Parkway, Merced, Calif. 95340
Filed June 12, 1967, Ser. No. 645,413
U.S. Cl. 137—624.16 **9 Claims**
Int. Cl. F16k *11/16, 31/48;* **E02b** *13/00*

A clock controlled device for opening one or more hydraulic bleed-off lines in succession, the device being adjustable so that the clock will open the bleed-off lines at desired time intervals and for the length of time desired. Each bleed-off line controls a water valve and opens the valve only when the bleed-off line is opened. The device can open the bleed-off lines in succession every day, every second, fourth or eighth day and each line can be kept open from a few minutes to an hour. The water controlled valves can be used in an irrigation system or the like. The device also can be used for other fluid systems.



3,425,447
GAS-DUCT VALVE WITH FLEXIBLE CLOSURE

Marshall J. McCullough, Chicago, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 513,001
U.S. Cl. 137—625.12 **2 Claims**
Int. Cl. F16k *7/14, 1/34, 31/52*

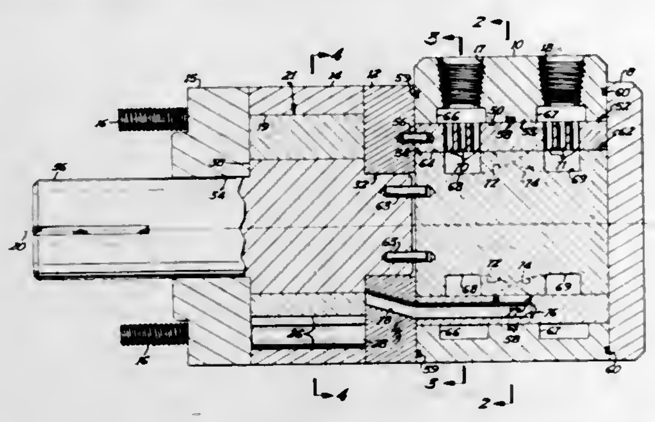


A valve comprising a housing defining a passageway and a knife edge valve plate seat disposed around the interior of the housing, a flexible valve plate adapted for positioning within the housing so that it will engage the knife edge valve plate seat in a gas-tight relationship. Means are also provided to support the valve plate when in the closed position and to fold the flexible valve plate about a restraining means to open the valve.

3,425,448
FLUID PRESSURE BALANCED VALVE

Jack W. Peterson, Brooklyn Center, Minn., assignor to Char-Lynn Company, Eden Prairie, Minn., a corporation of Minnesota
Filed July 1, 1966, Ser. No. 562,140
U.S. Cl. 137—625.24 **1 Claim**
Int. Cl. F16k *5/12, 5/14, 25/00*

A fluid pressure balanced valve comprising a sleeve affixed in a casing and a valve member moveably positioned within the sleeve, the casing having a first annular channel in communication with openings in the sleeve, and the valve member having a second annular channel in fluid communication with the first annular channel, the first and second channels positioned in axially overlapping relation with the sleeve between, whereby pressure on



the external surface of the sleeve is overcome by corresponding pressure on the internal surface of the sleeve.

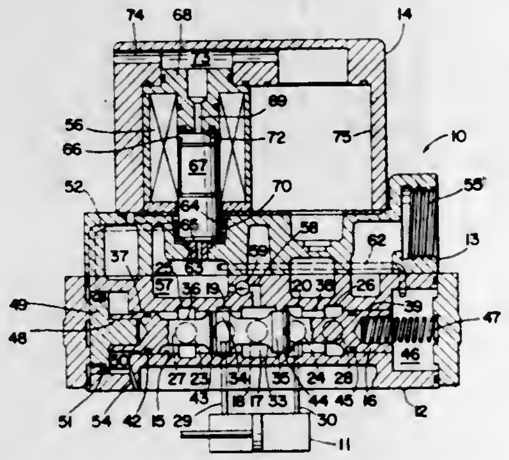
3,425,449
SOLENOID CONTROLLED VALVE

Kurt Willy Hjlmar Leibfritz, Norridge, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Nov. 10, 1966, Ser. No. 593,365

U.S. Cl. 137—625.64 **5 Claims**

Int. Cl. F16k *31/12*



1. In a valve assembly, a housing having fluid inet, exhaust, and motor chambers, a valve element movable to a first operating position in which it connects the motor chamber to the inlet chamber and movable to a second operating position in which it connects the motor chamber to the exhaust chamber, said valve element having a first piston portion exposed to a first piston chamber and a second piston portion a smaller area than the first piston portion exposed to a second piston chamber, passage means connecting the inlet chamber to both said piston chambers, check valve means closing communication between said passage means and said inlet chamber when the pressure of fluid in said inlet chamber is less than the pressure of fluid in said passage means, a vent port, pilot valve means operable to a first position in which is connects the first piston chamber to the vent port and closes communication between the first piston chamber and said passage means whereby fluid in the second piston chamber moves the valve element to one of its operating positions, said pilot valve also being operable to a second position in which it closes communication between the first piston chamber and the vent port and opens communication between the first piston chamber and the passage means whereby fluid under pressure in said first piston chamber moves the valve element to its other operating position, said second piston chamber being of a size to contain a sufficient amount of fluid under pressure whereby when the check valve means is closed and the pilot valve means is operated for connecting the passage means to the first piston chamber fluid will flow from said second piston chamber to the first piston chamber via said passage means for moving said valve element as aforesaid, and means to operate said pilot valve means.

3,425,450
FLUID-FLOW CONTROL VALVE

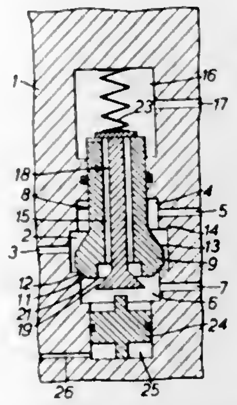
Frank Pawling, deceased, late of Cheltenham, England, by Ruth Corfe Pawling, executrix, Cheltenham, England, assignors, by mesne assignments, to Dowty Mining Equipment Limited, Cheltenham, England, a British company

Filed Dec. 28, 1966, Ser. No. 605,510

Claims priority, application Great Britain, Jan. 13, 1966, 1,705/66

U.S. Cl. 137—630.22 **2 Claims**

Int. Cl. F16k *11/04*



A fluid-flow control valve includes two two-position valve elements one within the other in a common housing, itself having one inlet and three outlets. When both valve elements are in their first positions, the inlet is in communication with a first of said outlets while the other outlets communicate with each other through the interior of the outer valve element. When the valve elements are moved to their second positions, the first outlet is isolated from the inlet, and the inlet is placed instead in communication with the second outlet, while the second outlet is isolated from the third outlet. Resilient means are provided for urging the valve elements towards their first positions, while fluid-pressure-operable actuator means are provided for moving the valve elements from their first to their second positions.

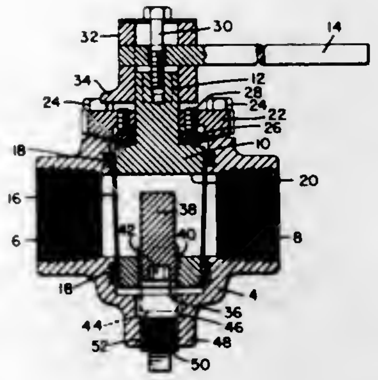
3,425,451
VARIABLE-FLOW PLUG AND VALVE

Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 23, 1966, Ser. No. 529,393

U.S. Cl. 137—637.4 **8 Claims**

Int. Cl. F16k *5/10, 5/06*



The valve disclosed comprises a tapered valve plug rotatable in a tapered chamber, with a solid stem extending axially from the larger end of the plug. The plug includes a smaller end having an end wall axially bored and internally screw-threaded to support a rotationally adjustable flow interceptor, which may be manipulated for adjustment by means of a tool insertible through a bottom opening in the valve body. Said opening of the valve body is normally closed by means of a threaded plug independent of the valve plug and the interceptor. Said interceptor is removable and replaceable, as well as adjustable, through the opening in the bottom of the valve body.

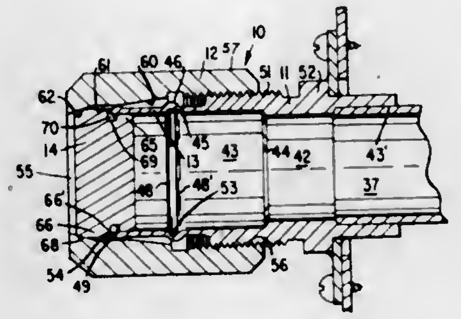
3,425,452
COUPLING

David N. Shaw, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 523,989

U.S. Cl. 138—89 **11 Claims**

Int. Cl. F25d *45/00;* **F16l** *35/00, 55/10*



A coupling device for connection to a tubular member including a female member having a relatively thin section for receiving the tubular member, said section having an annular rib so as to form with the unattached end thereof a substantial 3-point engagement with the tubular member when a male fitting causes forcible mechanical engagement between the female member and the tubular member, the configuration of the rib being such that a sealing or brazing ring may be accommodated without disturbing the 3-point feature.

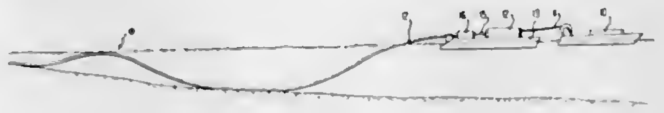
3,425,453
OCEAN PIPELINE SYSTEM

Forney Fuller, 6950 Canal Blvd., New Orleans, La. 70124

Filed Oct. 21, 1965, Ser. No. 499,535

U.S. Cl. 138—111 **7 Claims**

Int. Cl. B63b *13/00, 27/24;* **F16l** *9/14*



A multiconduit pipeline for underwater material delivery, the pipeline being coated with an anticorrosive material and weighing less per unit of cross-section than water when empty, a pair of pigs, defining a chamber between them, movably disposed in one of the conduits, a fluid disposed in the chamber, the specific gravity of the fluid varying the buoyancy of the pipeline.

3,425,454
GLASS-RESIN COMPOSITE STRUCTURE

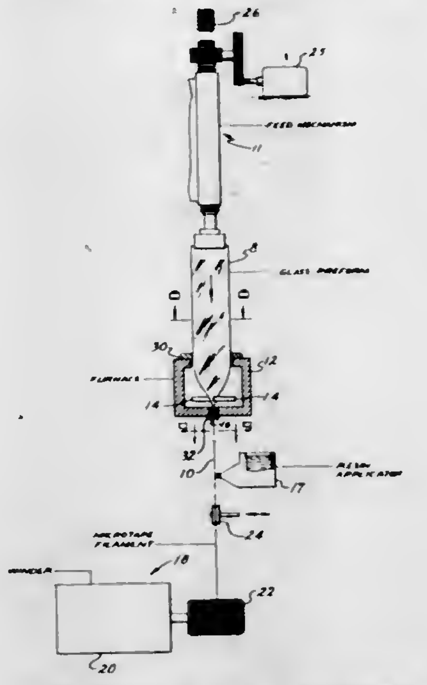
William J. Eakins, Wilbraham, Mass., and Richard A. Humphrey, Somers, Conn., assignors to De Bell & Richardson, Inc., Hazardville, Conn., a corporation of Connecticut

Filed Apr. 16, 1965, Ser. No. 448,818

U.S. Cl. 138—141 **5 Claims**

Int. Cl. F16l *9/10, 9/14;* **C03b** *37/00*

A glass resin composite structure bonded with thermosetting resin using thin microtape filament glass of noncircular cross section having substantially greater width than thickness. The glass filaments are overlapped to provide a resin path through the composite wall which is many times the thickness of the wall.



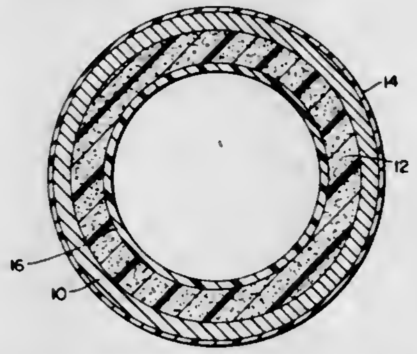
3,425,455
SPRAYED INTERNALLY INSULATED PIPE

Richard Kilpert, Berkeley Heights, Edward J. Winsor, Fanwood, and Richard H. Bauer, West Caldwell, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,591

U.S. Cl. 138—143 **2 Claims**

Int. Cl. F16l *9/14, 9/16, 9/18*



A pipe of carbon steel or similar low cost metal material is internally insulated with a sprayed plastic foam material. The interior isulation may be coated with an impervious epoxy plastic layer to produce a low cost metal conduit suitable for use at cryogenic temperatures.

3,425,456
PROTECTIVE SHEATH FOR INSULATING PIPE COVERING

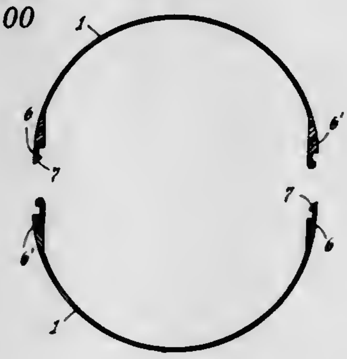
Arthur Schibig, 19, Ottostrasse 8005, Zurich, Switzerland

Filed Aug. 21, 1967, Ser. No. 662,074

Claims priority, application Switzerland, May 17, 1967, 6,950/67

U.S. Cl. 138—162 **3 Claims**

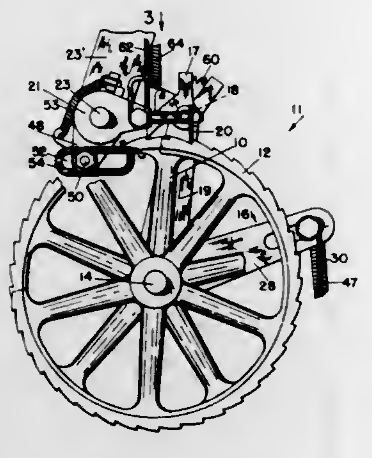
Int. Cl. F16l *9/00*



A protective sheath for insulating pipe covering has a group of adjoining members; each member is composed of plastic and is formed of two half-shells that interengage to complete a shell.

3,425,457
LET-OFF FOR TERRY

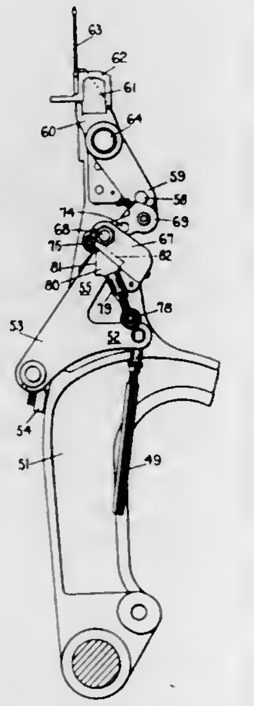
Carl P. Bergstrom, Millbury, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed May 1, 1967, Ser. No. 635,145
U.S. Cl. 139—25 **6 Claims**
Int. Cl. D03d *39/22, 41/00;* **D03c** *49/06*



An apparatus for rotatably driving a feed roll, around which terry yarn from a supply loom is trained, to feed the yarn for the formation of terry loops; and for positively holding the roll against rotation between formations of terry loops. The roll is driven by a drive pawl and ratchet arrangement and held against rotation by a hold pawl and ratchet arrangement, the hold ratchet having teeth oriented in the opposite direction from the teeth of the drive ratchet and the hold pawl being disengaged from the hold ratchet when the roll is driven.

3,425,458
REED CONTROL FOR TERRY LOOM

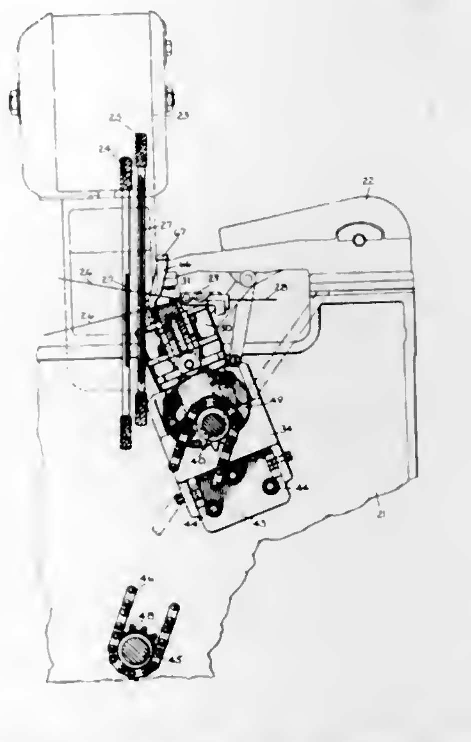
Edward C. Nichols, Upton, and Stanley C. Tiernan, Bellingham, Mass., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees of The Carolina Patent Development Trust
Filed Mar. 31, 1967, Ser. No. 627,467
U.S. Cl. 139—26 **3 Claims**
Int. Cl. D03d *39/22, 49/60, 51/42*



A variable beat-up mechanism having toggle-joint linkage for positive reed control during terry cycles and adjusting means to alter selectively the terry-loop height.

3,425,459
CAMMING BEAT-UP MECHANISM FOR LOOMS

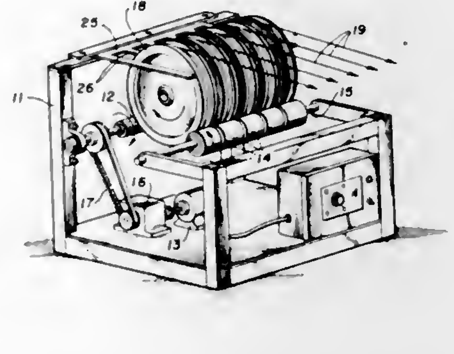
Richard L. Volpe, Hopedale, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees of The Carolina Patent Development Trust
Filed Mar. 23, 1967, Ser. No. 625,502
U.S. Cl. 139—190 **8 Claims**
Int. Cl. D03d *49/60, 49/62, 51/42*



A mechanism for providing near-vertical motion to a loom reed which has a camming face for beating-up picks of filling along a generally horizontal plane.

3,425,460
FILAMENT SUPPLY SYSTEM

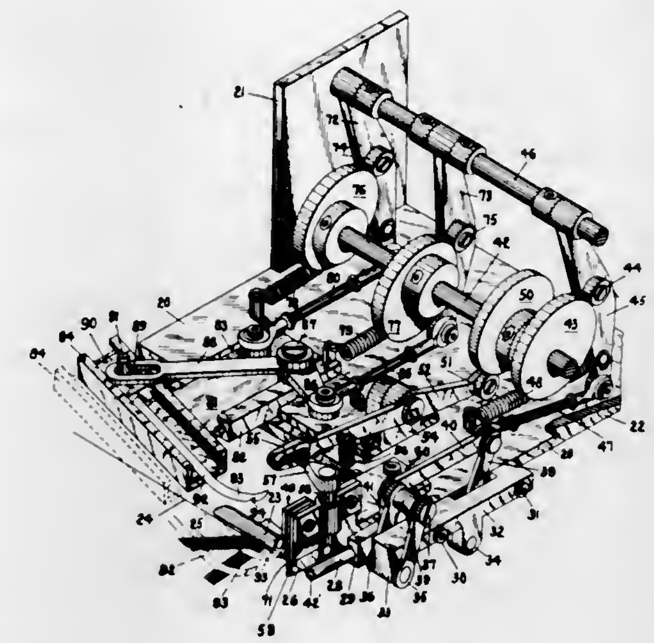
Ernest P. Carter, Durham, N.C., and Robert P. Bell, Jr., Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed July 28, 1967, Ser. No. 656,745
U.S. Cl. 139—100 **5 Claims**
Int. Cl. D03c *49/06;* **D04b** *15/44, 27/12*



The purpose of the present invention is to prevent slack in a filament or yarn being fed to a fabric-producing machine. A reel holding a supply of yarn is supported on a pair of spaced rolls in such a manner that the reel and the rolls rotate in contact with each other, the yarn on the reel being pulled off the reel by the fabricating machine as it is needed. One of the rolls is driven in a direction counter to the direction of rotation of the reel so that slippage occurs between the reel and this roll when the filament is under tension. When the fabric-producing machine pulls a length of the filament off the reel and then allows the filament to become slack the driven roll will drive the reel backward to take up the slack.

3,425,461
SELVAGE TUCKING-IN DEVICE

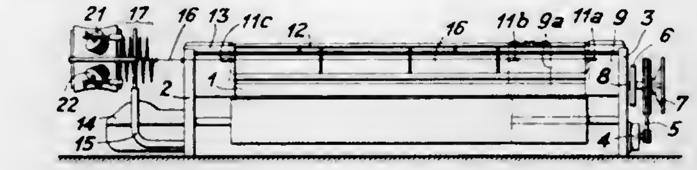
Ronald Berry, Hopedale, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees of the Carolina Patent Development Trust
Filed Oct. 14, 1966, Ser. No. 586,794
U.S. Cl. 139—122 **7 Claims**
Int. Cl. D03d *47/36, 47/48;* **D03c** *11/00*



A selvage tucking-in device for shuttleless looms having means for individually receiving and holding the end of a pick of filling extending from a warp shed, cutting said end to a uniform length and then tucking it into the shed formed by selvage yarn on the next shed opening.

3,425,462
WEFT THREAD SUPPLY AND STORAGE APPARATUS FOR GRIPPER SHUTTLE LOOMS

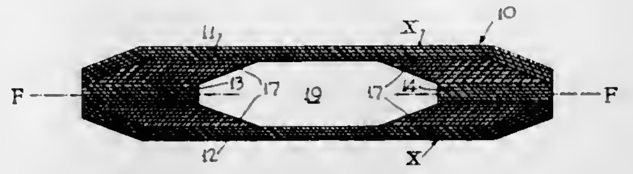
Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Oct. 4, 1966, Ser. No. 584,169
Claims priority, application Switzerland, Oct. 5, 1965, 13,750/65
U.S. Cl. 139—122 **7 Claims**
Int. Cl. D04b *15/48, 15/54, 27/10*



For looms of the gripper shuttle type, there is disclosed a weft thread intermediate storage apparatus comprising a group of levers pivoted on a common shaft and each having a thread-guiding eye in the end thereof, means to swing alternate of these levers in opposite directions between a first or thread delivery position in which the eyes are aligned in a row parallel to the common shaft and a second or thread storage position in which the eyes are not so aligned, the eyes of odd numbered of the levers being for example aligned at one position circumferentially of the common shaft while the eyes of even numbered ones of the shafts are aligned at a second position circumferentially of the common shaft, and a bar adjustably fixable either parallel or inclined to but coplanar with the common shaft and at a variable spacing therefrom and over which a thread will be stretched in passing through the eyes of successive ones of the levers when they are swung to their second position.

3,425,463
LAMINATED SHUTTLE

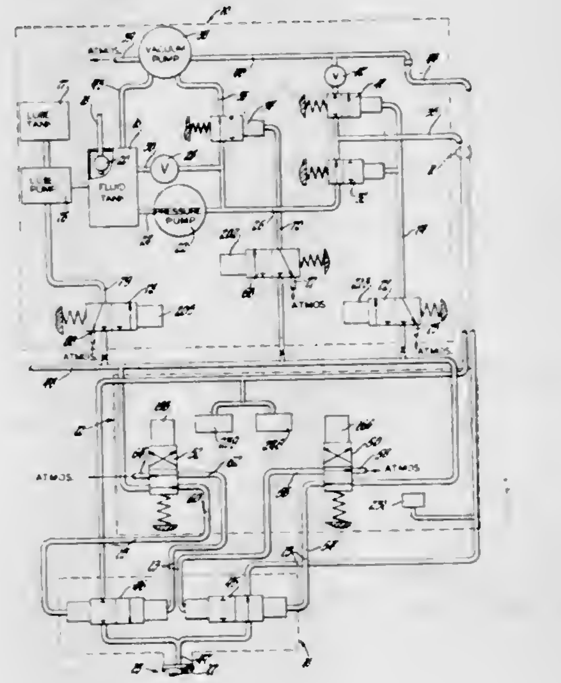
George M. Naul, Newcastle, Del., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 21, 1967, Ser. No. 655,206
U.S. Cl. 139—196 **4 Claims**
Int. Cl. D03j *5/00, 5/02*



A laminated shuttle body structure having tapered portions, interposed between its side wall and end wall portions. The tapered portions are formed of laminated sheets of material having gores cut along opposed edges which are of a length equal to that of the desired taper.

3,425,464
FLUID FILLING METHOD AND APPARATUS

Walton Hughes, Scotch Plains, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 17, 1967, Ser. No. 609,799
U.S. Cl. 141—7 **20 Claims**
Int. Cl. B65b *31/00, 1/04*

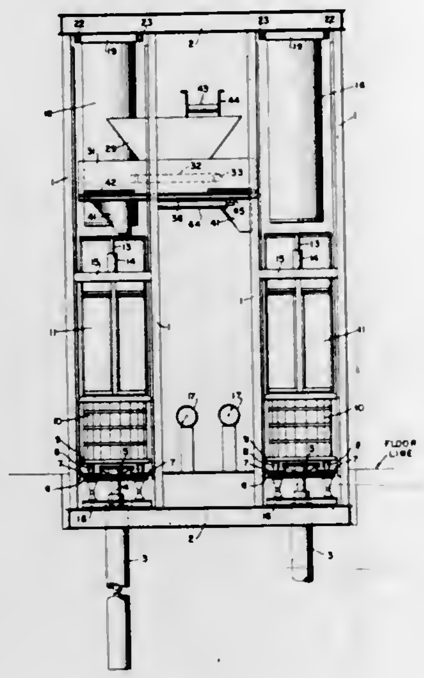


This invention relates to a method and apparatus for filling a fluid system and more particularly to such a method and apparatus employing a filling cycle having an evacuating phase, a pressurized overfilling phase and a terminating withdrawal phase to remove excess fluid.

3,425,465
UN-PACKING TWIN PRESS

Francis B. Fishburne, Asheville, N.C., and Berkley Lee Richardson, Danville, Va. (both % Fishburne Equipment Company, Inc., P.O. Box 338, Arden, N.C. 28704)
Filed Aug. 23, 1965, Ser. No. 481,492
U.S. Cl. 141—80 **4 Claims**
Int. Cl. B65b *1/24;* **B30b** *15/06*

The press comprises a pair of vertical power cylinders below the floor of the building, and upwardly moving pistons in said cylinders, dollies supporting a pair of containers and superposed chargers, and a pair of abutment heads disposed one above each charger. These abutment heads are of a size to telescope within the chargers when moved horizontally by power means into registry with the chargers, and the chargers move upwardly.

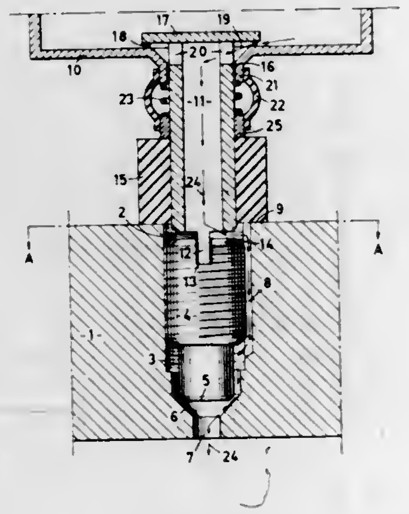


Tobacco is loaded into the top of the chargers by means of a distributing unit comprising a hopper having an opening in its bottom, beneath which opening is disposed a reversible endless conveyor. An endless supply conveyor delivers into said hopper.

The press is also provided with means by which tobacco can be packed, when desired, in rectangular cases or boxes, instead of round containers such as hogsheads, in which case chargers of rectangular cross-section are employed.

3,425,466
DEVICE FOR REFILLING THE FUEL CONTAINER OF CIGARETTE LIGHTERS

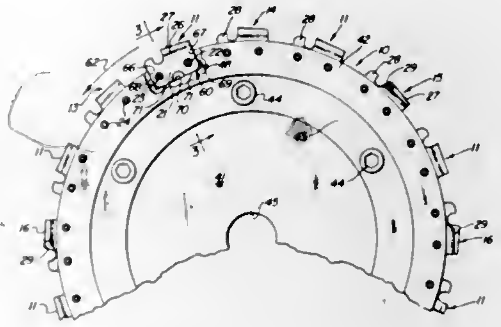
Olof Snne Grop, Maratonvagen 78,
Enskede, Sweden
Filed Mar. 22, 1967, Ser. No. 625,076
Claims priority, application Sweden, Mar. 23, 1966,
3,809/66
U.S. Cl. 141—98 **11 Claims**
Int. Cl. B65b *39/00;* **F16k** *51/00*



This invention relates to improvements in arrangements for the refilling of the fuel container of cigarette lighters from a refill container having a protruding tude with a mouth, provided with a screw driver shaped to cooperate with a screw threaded into a hole in the fuel container, so that said stop screw can be unscrewed by means of the tube, thereby establishing a connection through a bypass interconnecting the seat of said screw with one end of the hole.

3,425,467
ROUTER TOOL WITH SAW CHAIN CUTTERS

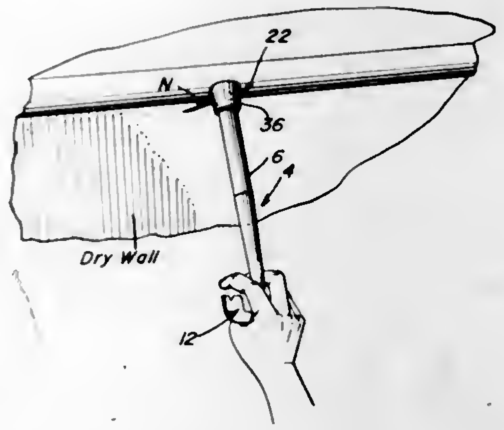
Bobby G. Willis, Eugene, Oreg., assignor to Willis-Way Corp., Portland, Oreg., a corporation of Oregon
Filed Jan. 11, 1965, Ser. No. 424,548
U.S. Cl. 144—218 **9 Claims**
Int. Cl. B27b *9/00;* **B23d** *45/10*



A plurality of allochiral, hooded teeth **11** and **12** are mounted in recesses in a laminated rotor and held therein by roll pins **24**. The rotor has a center disc **41**, recessed mounting rings **48–50** and cupped outer retaining rings **42** all of steel and also has aluminum spacing rings **51** and **52**. Inner flanges of the retaining rings **42** are bolted to the center disc **41** to secure the elements together.

3,425,468
MAGNETIC HAMMER HANDLE CAP

Eugene H. Soucy, 56 Fairwood Farms Drive, West Hartford, Conn. 06107
Filed Sept. 13, 1967, Ser. No. 667,467
U.S. Cl. 145—30 **5 Claims**
Int. Cl. B25d *1/00;* **B66c** *1/04;* **B25f** *1/00*

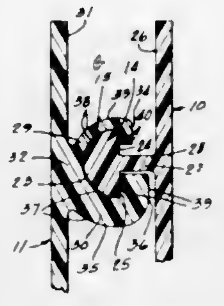


The hammer is a type expressly for use by a mechanic or other person when installing and nailing dry wall panels in place. A simple permanent magnet is plugged into a hole provided therefor in the rim of a plastic or equivalent adapter cap. The rim is sleeved over the "inner" end of the usual handle. The cap is screwed in place The magnet is firmly seated against one side to pick up, and initially tack and set the nail until it is thereinafter driven home, as usual, with the hammer head.

3,425,469
CONTAINER WITH FORCE DIFFERENTIAL FLEXIBLE FASTENER

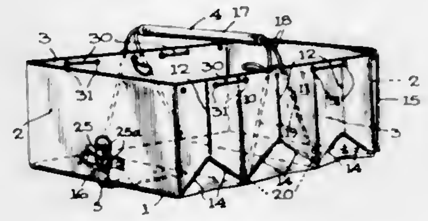
Steven Ausnit, 124 E. 61st St., New York, N.Y. 10021
Filed Apr. 6, 1966, Ser. No. 540,713
U.S. Cl. 150—3 **8 Claims**
Int. Cl. B65d *51/00;* **A44b** *19/14*

A flexible container having interlocking rib and groove elements for closing and opening the container wherein the groove element has first and second hook arms, and the rib elements has first and second ridges for engaging the hook arms of the groove element, respectively. The hook arm and/or the ridge formed at the inside of the container is shaped so as to make the container more easily opened from the outside relative to the opening force required at the inside of the container.



3,425,470
COMBINATION HANDBAG AND BASKET

Adolph Wuest, Rte. 1, Box 255A, Hartland, Wis. 53029
Filed Sept. 11, 1967, Ser. No. 666,659
U.S. Cl. 150—30 **4 Claims**
Int. Cl. A45c *7/00, 3/06*

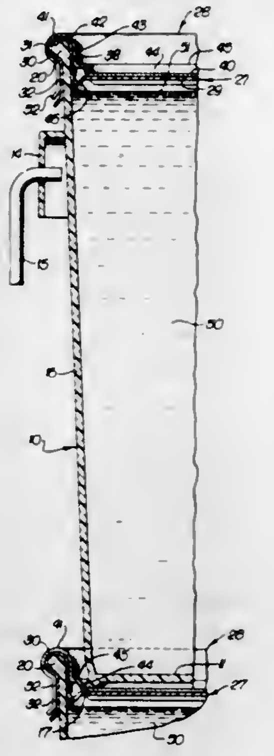


A combination handbag and basket comprising a collapsible receptacle formed of suitable material and capable of assuming several forms with the sidewalls and bottom formed to fold at three spaced points, i.e. at a central point and at two laterally spaced points, whereby the body can be totally collapsed into the form of a handbag or partially expanded at its outer wing portions to a relatively large handbag or with the end portions fully opened to provide a smaller receptacle of basket form, or the three sections can be extended to provide a relatively larger basket, the handle in each instance suspending the structure from the medial sidewall portions and a strap and cover extension adapted for securing and covering the parts in any of the desired shapes and smaller sizes.

3,425,471
PLASTIC CONTAINER WITH DOUBLE LID

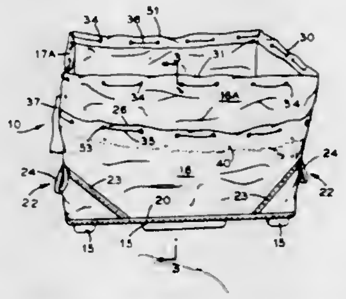
George Yates, Jr., Glendale, Calif., assignor to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,471
U.S. Cl. 150—48 **10 Claims**
Int. Cl. B65d *51/18*

A three-part sealed package consisting of a flexible plastic container having a thick solid rim over which a thin walled pocket at the periphery of a thin plastic cover fits. The closure is completed and stiffened by the presence of a stiff reinforcing top which may be of metal and provided with a damping bead entirely surrounding the rim and the pocket, whereby to engage beneath the rim and compress the wall of the pocket so that it serves as a gasket seal.



3,425,472
FLEXIBLE CARGO CONTAINER

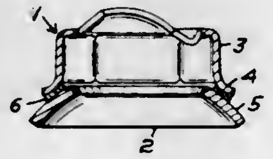
Frank J. Marino, 8802 Foster Ave., Brooklyn, N.Y. 11236
Filed Nov. 27, 1967, Ser. No. 685,887
U.S. Cl. 150—50 **6 Claims**
Int. Cl. B65d *19/06, 33/28*



A flexible walled container conformable to varying amounts of contents of the container, together with means for conveniently compacting and retaining unused wall portions of the container.

3,425,473
WASHER-NUT COMBINATION HAVING A FRANGIBLE CONNECTING ELEMENT

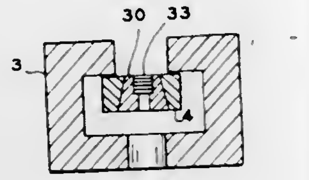
Edward A. Knowlton, Winchester, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,441
U.S. Cl. 151—38 **3 Claims**
Int. Cl. F61b *39/22, 43/00, 31/00*



In a washer-nut combination a dome-shaped sheet metal washer has a nut joined to its outer face by a nonmetallic, highly frangible bonding element.

3,425,474
MAGNETIC NUT FASTENING MEANS

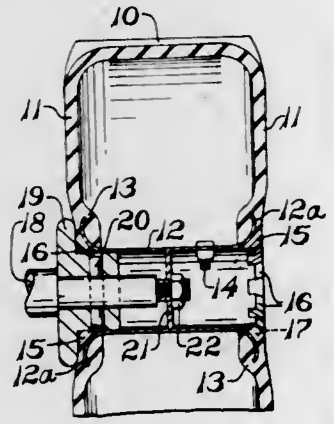
Natale Tummarello, 2073 Hillside Ave., Bellmore, N.Y. 11710
Filed Oct. 31, 1966, Ser. No. 590,738
U.S. Cl. 151—41.7 **3 Claims**
Int. Cl. F16b *39/00;* **E04b** *1/38*



The present invention provides a hollow apertured or slotted member on the wall or stair or flush with the surface thereof. The opening in slotted aperture is several times the diameter of a bolt for easy sideway alignment and the slot runs the full length of casting for other alignment necessary. A plurality of magnetic nuts are mounted in the hollow member and held by magnetic force to the upper interior across the aperture of slots.

3,425,475
INTEGRAL TIRE AND HUB

Kenneth A. Hoy, Kitchener, Ontario, Canada, assignor to B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Oct. 26, 1966, Ser. No. 589,657
U.S. Cl. 152—9 **9 Claims**
Int. Cl. B60b *9/00;* **B60c** *5/00*

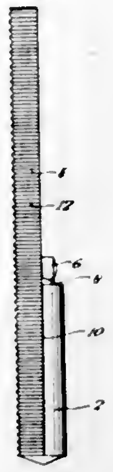


This invention relates to an integral tire and hub, and more particularly to a low-pressure pneumatic tire, of the "balloon" type, used for low speed vehicles, amphibious and applications where axle loads are light. Preferably, the invention is embodied in a construction formed of elastomeric material without reinforcing cords and secured directly to a hub of small diameter related to the tread diameter, and operating at low inflation pressures in the range of 0–5 pounds per square inch.

3,425,476
PLUGS

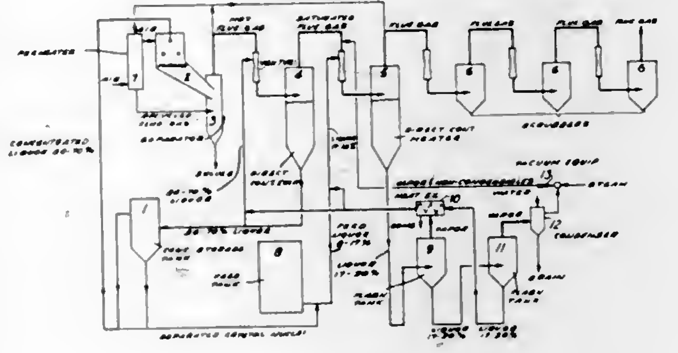
Alfred Legg, 17 Hocombe Road, Chandlers Ford, Hampshire, England
Filed Oct. 4, 1966, Ser. No. 584,202
Claims priority, application Great Britain, Oct. 5, 1965, 42,317/65
U.S. Cl. 152—370 **8 Claims**
Int. Cl. B60c *21/06*

The specification describes a tyre plug that is insertable from the exterior, it being gripped by an insertion tool intermediate its length and folded upon itself about the gripped region. On opposite sides of the fold the plug has a relatively thick body portion and a relatively thin-walled part that will lie against the body portion periphery.



3,425,477
METHOD FOR HEAT RECOVERY IN EVAPORATING AND BURNING SPENT LIQUOR

William G. Farin, Neenah, Wis., assignor to Marathon Engineering, Inc., Menasha, Wis., a corporation of Wisconsin
Filed Sept. 28, 1966, Ser. No. 582,672
U.S. Cl. 159—48 **9 Claims**
Int. Cl. B01d *1/14*



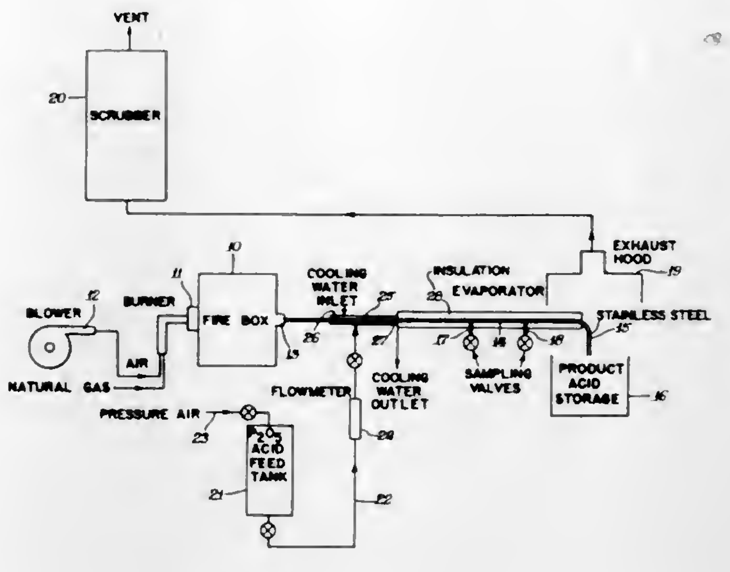
A method of evaporating and burning spent cooking liquors wherein the spent liquor is direct contact evaporated and heated by the flue gas from the burned liquor. The heated liquor is flash evaporated to a vacuum and the flash vapor utilized to preheat the liquor prior to its being [illegible]cycled and reheated by the flue gas. The flue gas is also utilized to heat water, the heated water used to heat liquor and the liquor flash evaporated to a vacuum.

3,425,478
CONCENTRATION OF PHOSPHORIC ACID

Clyde Reeder, 1884 Mason Mill Road, Decatur, Ga. 30033
Continuation-in-part of application Ser. No. 448,801, Apr. 16, 1965. This application Dec. 11, 1967, Ser. No. 689,625
U.S. Cl. 159—48 **3 Claims**
Int. Cl. C01b *25/24*

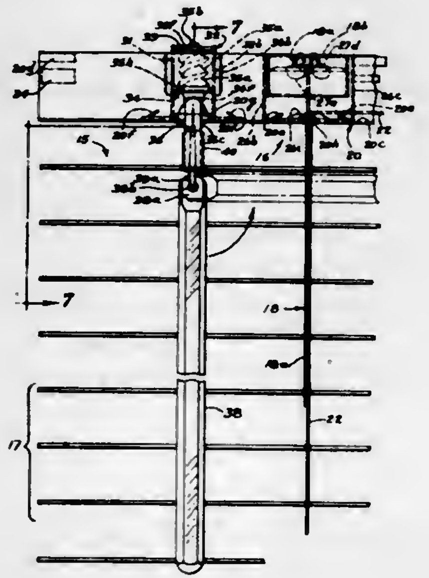
In the concentration of wet process phosphoric acids by heating the acids with hot combustion gases, the formation of insoluble by-products or solids is avoided or reduced to a minimum by passing the hot combustion gases through a short tube which is unheated from without and which is cooled at the inlet end, introducing the wet process phosphoric acid into the cooled portion of the tube for

travel in cocurrent flow with the gases through the remainder of the tube which is free of external heat whereby the acid throughout its travel avoids contact with externally heated metal surfaces and the heated acid is discharged into an enlarged expansion vessel or separation zone in which the combustion gases and evolved vapor rise and are drawn off and the acid product collected in the lower portion of the vessel.



3,425,479
VENETIAN BLIND CONSTRUCTION SUITABLE FOR LOW HEADS AND NARROW SLATS

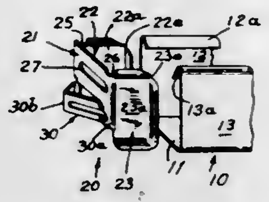
Hans K. Lorentzen, Brick Township, Joseph A. Anderle, Clifton, and Leo Abate, Wayne, N.J., assignors to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey
Filed Aug. 29, 1966, Ser. No. 575,632
U.S. Cl. 160—176 **12 Claims**
Int. Cl. E06b *9/308*



The height of the worm-and-gear tilter is reduced by placing the worm of the tilter between the gear and the front wall of the head channel of the blind. The worm shaft extends through an opening in the head channel that is spread over an area which includes the juncture of the front and bottom walls of the head channel. The projecting end of the worm shaft is provided with a quick-detachable hook on which a baton or wand of hexagonal cross section is swingably hung, the baton or wand being rotatable to tilt the slats of the blind. The diameter of the rockers which transmit the tilting motion to the ladders of the blind is reduced; and the rockers are rendered effective through an increased angle of oscillation by the sidepieces of the ladders extending across the tops of the rockers when the slats are untilted, the front sidepieces of the ladders being secured to the rear of the rockers, and the rear sidepieces of the ladders being secured to the front of the rockers.

3,425,480
END BRACE ORGANIZATION FOR VENETIAN BLIND HEAD CHANNEL OR THE LIKE

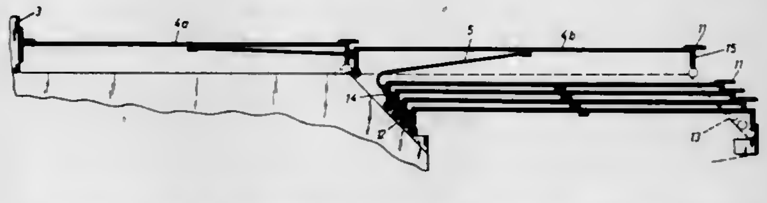
Joseph A. Anderle, Clifton, and Leo Abate, Wayne, N.J., assignors to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey
Filed May 25, 1967, Ser. No. 641,296
U.S. Cl. 160—178 **7 Claims**
Int. Cl. E06b *9/28, 9/38*



A one-piece sheet-metal brace is provided for the end of a sheet-metal Venetian-blind head-channel. The brace has a body which spans between the side walls of the channel and, at the ends of the body, there are legs which span the heights of the side walls. The legs of the brace constitute struts which extend from the bottom of the head channel to top portions of the side walls.

3,425,481
COVERING SYSTEM FOR GUIDING PATHS OF MACHINE TOOLS

Arthur Klein, Netphen, Germany, assignor to Kabelschlepp G.m.b.H., Siegen, Germany
Filed Oct. 12, 1966, Ser. No. 586,128
Claims priority, application Germany, Oct. 14, 1965, K 57,388
U.S. Cl. 160—202 **2 Claims**
Int. Cl. E06b *3/92;* **E05d** *15/12*



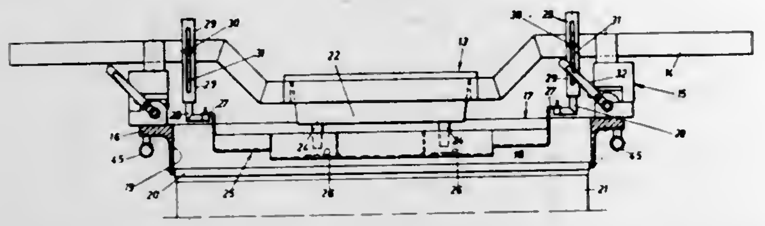
A covering arrangement for the ways of a machine tool having a carriage movable along the ways. The arrangement comprises a plurality of plate-like members which rest in superimposed relation in a recess at one end of the ways and the uppermost member is connected to the carriage to be moved thereby. Each member has a flexible element connected to the underside in the middle and to one end of the member next therebeneath. As the carriage moves away from the recess the members are pulled out of the recess one at a time and follow the carriage in abutting relation. When the carriage moves toward the recess the members move one at a time down into the recess and rest therein in superimposed relation.

The present invention concerns covering means for the guiding paths of machine tools or the like with a plurality of cover plates adapted to be displaced one above the other. These plates are intended to prevent impurifications in liquid or solid form from entering the guiding paths of machine tools. To this end, the said plates have to follow the movements of the machine element sliding on the guiding paths. The individual cover plates are coupled to each other and at the joints or butts are sealed against the entry of impurifications.

3,425,482

CONTINUOUS CASTING OF NON-FERROUS METALS

Alfons Capaul, Sierre, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a Swiss corporation
Filed June 21, 1966, Ser. No. 559,290
Claims priority, application Switzerland, June 23, 1965, 8,819/65; Sept. 8, 1965, 12,543/65
U.S. Cl. 164—4 **7 Claims**
Int. Cl. B22d *11/10, 17/32;* **B22c** *19/04*

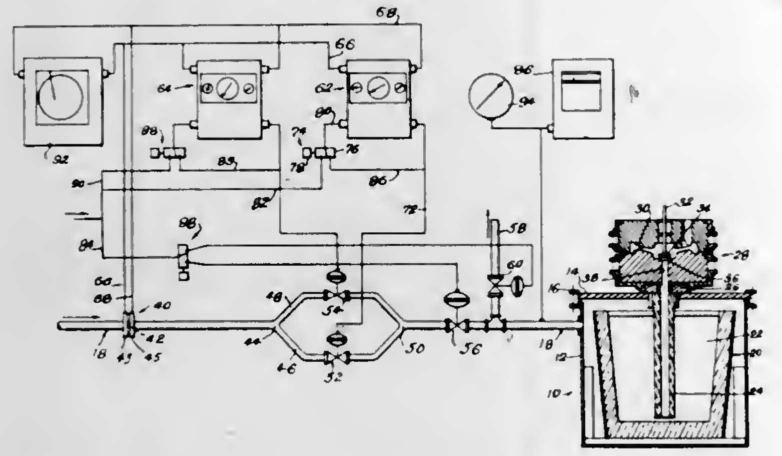


A continuous casting process, particularly for aluminum and aluminum alloys, provides for a nozzled tundish that discharges the molten metal as controlled by a float into an open mold; the nozzle and the float initially are positioned so far above the mold bottom as to preclude freezing of the float in the solidifying metal; after the descent of the casting has commenced, however, the distance between the nozzle and the mold bottom is reduced to a lower height desired for the remainder of the casting operation.

3,425,483

MEANS FOR CONTROLLING CASTING

Raymond J. Dearth, Roselle, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Continuation-in-part of application Ser. No. 298,130, July 29, 1963. This application May 13, 1966, Ser. No. 554,278
U.S. Cl. 164—155 **7 Claims**
Int. Cl. B22c *19/04;* **B22d** *17/32*



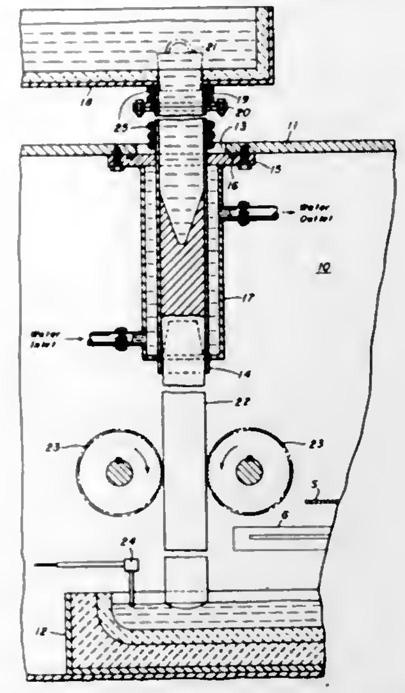
Because of variations in, for example, the viscosity of molten metal being poured by the bottom pouring method it is important to provide means to sense such variations and compensate for them. To accomplish this there is provided a metering orifice in the air inlet line to the pressure tank, and controller means for sensing air pressure differential on opposite sides of the orifice whereby valves in the line are automatically adjusted to maintain a predetermined rate of flow of air into the tank.

3,425,484

APPARATUS FOR INTRODUCING COATING METAL TO A VAPOR-DEPOSITION CHAMBER

Joseph McKay, Whittier, Calif., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,535
U.S. Cl. 164—270 **1 Claim**
Int. Cl. B22d *11/10, 11/09;* **C23c** *13/10*

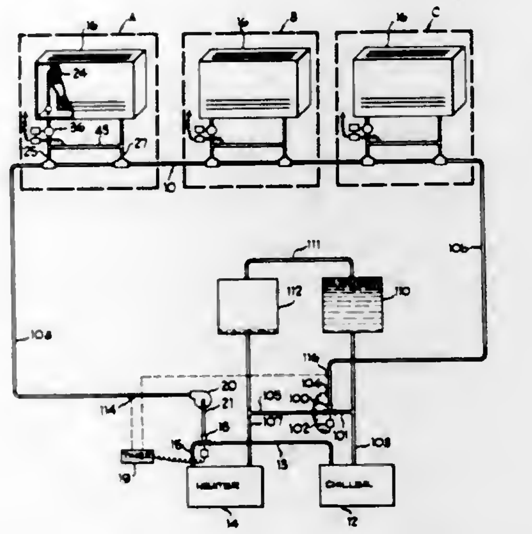
Make-up coating metal is introduced into a vacuum-deposition chamber by continuously casting molten metal through a tubular water-cooled mold suspended from the top of the chamber. The metal solidifies in the mold and on emergence therefrom into the interior of the chamber, it is again melted in descending into the crucible containing molten coating metal from which vapor is evolved for condensation on the material to be coated. Power means inside the chamber grip the casting as it leaves the mold and feed it downwardly into the crucible.



3,425,485

AIR CONDITIONING UNIT AND PUMP FOR SINGLE PIPE SYSTEM

Alwin B. Newton, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 28, 1967, Ser. No. 649,512
U.S. Cl. 165—22 **3 Claims**
Int. Cl. F24h *7/04, 9/20;* **F25b** *29/00*

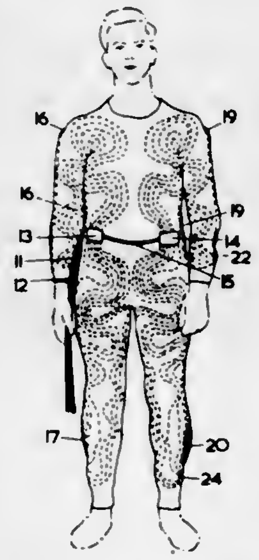


A control system for a single-pipe air conditioning system in which heated and chilled water is alternately supplied to a plurality of room or zone air handling units. The water supplied to the units is circulated through a heat exchanger in the air handling units by means of a pump which is intermittently operated. The pump is operated (1) if the room requires cooling and chilled water is available, and (2) when the room requires heating and heated water is available. Otherwise, the pump is inoperative and there is no flow through the heat exchanger. In order to reduce the length of the temperature sensing element which senses water temperature, a bypass line is provided in parallel with each of the heat exchangers, said line always passing a small amount of water at the same temepraturе as the water flowing through the main. A lightly loaded valve placed downstream from the pump insures that water does not flow through the heat exchanger unless the pump is operating.

3,425,486

GARMENTS FOR CONTROLLING THE TEMPERATURE OF THE BODY

Derek Rodney Burton, Farnborough, Bertie William Judd, Sandhurst, and Leslie Collier, Leicester, England, assignors to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Oct. 26, 1966, Ser. No. 590,158
Claims priority, application Great Britain, Oct. 28, 1965, 45,709/65
U.S. Cl. 165—46 **5 Claims**
Int. Cl. F28f *7/00;* **A61f** *7/00;* **F25d** *3/08*

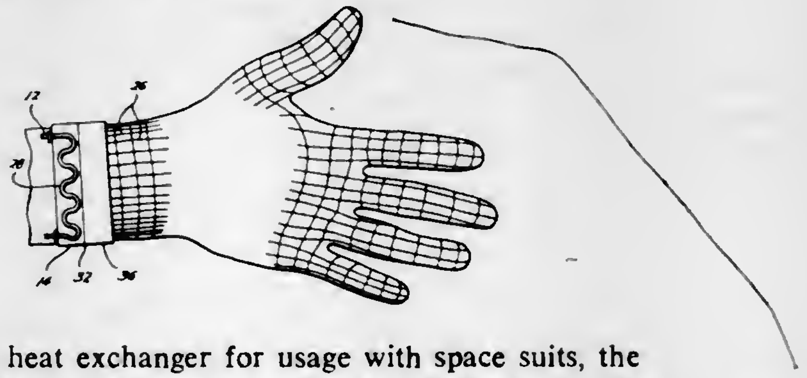


A garment for controlling the temperature of the human body by cooling or heating the skin in which a network of flexible pipes for carrying a circulating liquid is supported by the garment in heat exchanging relationship with the body. Locating means in the form of fabric tunnels are provided which freely locate the pipes such that they can slidably move within the locating means and which restrain each pipe throughout its length in a circuitous serpentine configuration out of direct contact with the body for comfort, whereby the pipe circuit as a whole can deform as a result of bending or twisting of the pipes with minimium restriction to deformation and stretching of the garment.

3,425,487

SPACE SUIT HEAT EXCHANGER

Elton M. Tucker, La Porte, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 27, 1967, Ser. No. 678,700
U.S. Cl. 165—46 **7 Claims**
Int. Cl. F28f *7/00;* **A61f** *7/00;* **F25d** *3/08*



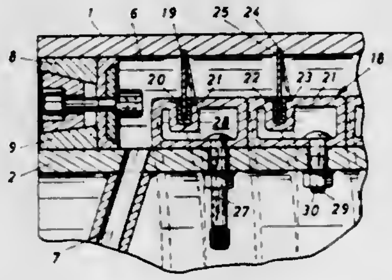
A body heat exchanger for usage with space suits, the purpose of which is to transfer thermal energy to or away from the body surface of the wearer. The heat exchanger is a very fine grid of small, flexible, high thermal conductance yarn in intimate contact with the body, which serves to transfer heat from the body surface into a liquid coolant loop, included as a portion of the assembly, through which circulates a fluid of a desired temperature.

The invention described herein was made by an employee of the United States Government and may be manufactured and used by or for the Government for governmental purposes without the payment of any royalties thereon or therefor.

3,425,488

HEAT EXCHANGE ROLL

Karl Axel Bertil Jarreby, Falkenberg, Sweden, assignor to Skandinaviska Apparatindustri Aktiebolaget Saiap, Falkenberg, Sweden, a corporation of Sweden
Filed Apr. 17, 1967, Ser. No. 631,283
Claims priority, application Sweden, Apr. 28, 1966, 5,777/66
U.S. Cl. 165—90 **12 Claims**
Int. Cl. F28d *11/00;* **B01d** *1/22;* **F28f** *5/02*

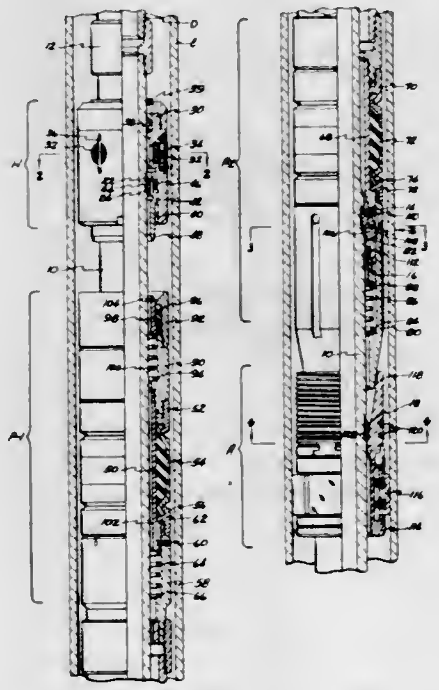


The present invention relates to a heating or cooling roller having an internal mantle and an external mantle forming between them an annular space in which a guide rail is arranged to guide the stream of heating or cooling medium along a helical path in such a way that the effect of the roller is increased.

3,425,489

WELL PACKER APPARATUS

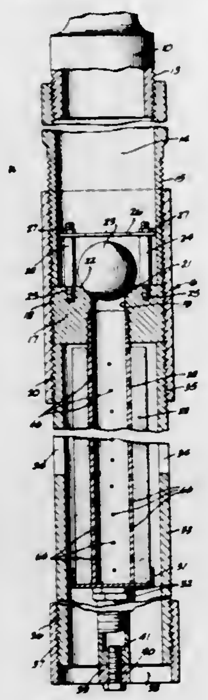
Cicero C. Brown, 8490 Katy Road, Houston, Tex. 77024
Filed Feb. 8, 1967, Ser. No. 615,023
U.S. Cl. 166—129 **11 Claims**
Int. Cl. E21b *23/00, 33/12*



A well packer apparatus adapted to be mounted on a drill string and unaffected by drilling movements of the drill string but set responsive to a longitudinal reciprocation of the drill string to control blowouts or isolate a porous portion of the well bore.

3,425,490
CLEANING ASSEMBLY

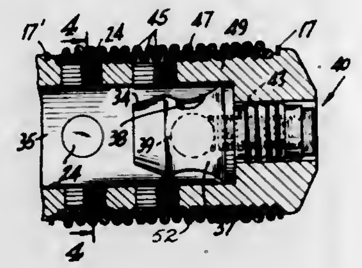
Glen G. Clayton, 330 W. 223rd St., Torrance, Calif. 90502
Substituted for abandoned application Ser. No. 501,426, Oct. 22, 1965. This application Apr. 26, 1968, Ser. No. 732,478
U.S. Cl. 166—205 **1 Claim**
Int. Cl. E03b *3/18;* **B21b** *43/08*



A well cleaning assembly having a perforated filter support pipe and a tubular filter disposed in fixed position about the support pipe and valve means removably affixed to the upper end of the support pipe so that fluid containing granular material or impurities will be pumped through the filter and filter support pipe upwardly and pass through the valve to suitable sub-surface pump means and causing the granular material or impurities to be deposited in the bottom of the well.

3,425,491
FILTER MEANS FOR DUCT-FORMING DEVICES

Solis Myron Zandmer, Banff, Alberta, Canada, assignor to Zanal Corporation of Alberta Limited, Calgary, Alberta, Canada
Filed Jan. 20, 1966, Ser. No. 521,841
U.S. Cl. 166—205 **22 Claims**
Int. Cl. E03b *3/18;* **E21b** *43/00*



A filtering device for use in well completion apparatus of the kind wherein a bore hole casing is positioned in a bore hole and duct-forming devices of acid-resistant metal are secured to the casing in alignment with the holes machined in the casing wall, the duct-forming devices including terminal tubes which are capable of being laterally extended for making contact with a producing formation. The tubes which are intended to make contact with the producing formation are at least partially enveloped by acid-resistant wire which is wrapped around the exterior surface of the tubes and secured thereto. The individual courses or turns of the wire are closely spaced in equidistant manner so as to form a dense coil or helix around the circumference of the tube. The tube body proper is traversed by a plurality of passageways in the form of holes or bores which are initially plugged by acid-soluble plugs. When the device is to be put in operation, the plugs are dissolved by acid.

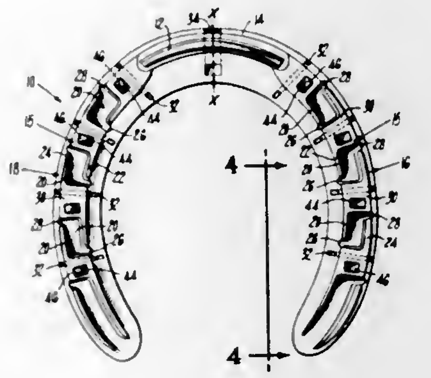
3,425,492
OIL PRODUCTION BY STEAM DRIVE

Ralph E. Gilchrist, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 10, 1966, Ser. No. 519,422
U.S. Cl. 166—272 **7 Claims**
Int. Cl. E21b *43/24, 43/20*

Oil is produced from a permeable oil stratum penetrated by an injection well and at least one offset production well by first injecting steam into the stratum thru the injection well to form a steam bubble around this well, injecting solely a gas, other than steam, thru the injection well directly behind the steam to drive the steam bubble and oil toward the production well(s), and recovering produced oil from the production well(s). Water may be injected following the gas injection and steam injection may be repeated.

3,425,493
HORSESHOE

Joseph Kulak, 73 Buell St., New Britain, Conn. 06051
Filed Feb. 8, 1967, Ser. No. 614,689
U.S. Cl. 168—4 **8 Claims**
Int. Cl. A01l *1/04*

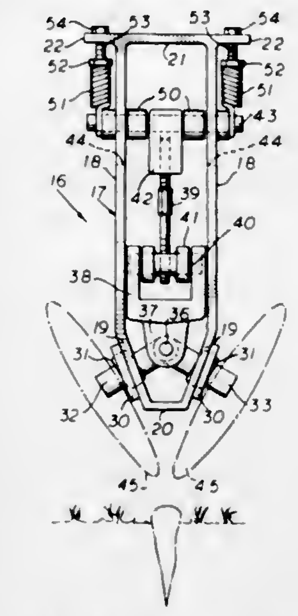


The horseshoe of this invention includes an axially spaced series of S-shaped recesses formed on a bottom face of the arms of the shoe and defining an interrupted series of built-up tread portions, and a plurality of lateral air passages are formed therethrough in transverse relation to the longitudinal axis of the shoe.

3,425,494
ROOT CROP HARVESTER

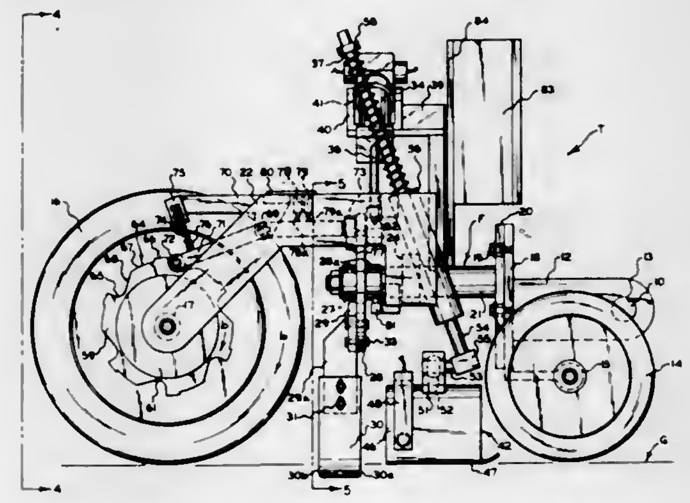
Edward W. Parrish, Westmont, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,158
U.S. Cl. 171—58 **9 Claims**
Int. Cl. A01d *13/00*

1. In a puller wheel assembly for a root crop harvesting machine wherein a pair of laterally spaced converging wheels are mounted on a traveling frame to penetrate the ground at the sides of the roots to lift them from the ground during forward travel of the machine, a supporting member connected at one end to the frame, means for mounting said wheels on said supporting member comprising, spaced pivot openings provided in the other end of said supporting member, wheel-carrying members pivotally received in said openings and having said wheels mounted on their outer ends, connecting means between the inner ends of said wheel-carrying members, and adjustable means operatively connected at one end to said connecting means and at its other end to said supporting member and adjustable to shift said connecting means and adjust the angular relationship of said wheels.



3,425,495
METHODS FOR THINNING ROW CROPS

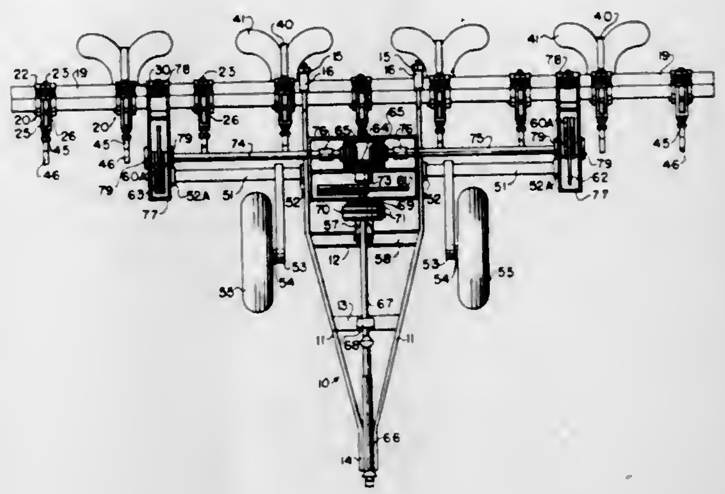
Hal B. Reeve, 1839 Arthur St. 48602; Henry J. Brettrager, 5410 East St. 48601; and Elmer A. Rader, 2003 Arthur St. 48602, all of Saginaw, Mich.
Filed Sept. 15, 1965, Ser. No. 487,380
U.S. Cl. 172—1 **13 Claims**
Int. Cl. A01b *79/00, 41/06*



1. A method of thinning growing plants planted in rows to provide a predetermined spacing between the plants in a row comprising: moving a cutter along a row of plants which are not in a constant line of the length of said spacing with the cutter disposed in the ground in position to sever the roots of plants encountered simultaneously moving along the row; a sensing means connected to raise the cutter upon sensing the presence of a plant; sensing the presence of a plant immediately ahead of the cutter and automatically raising the cutter to spare a first plant; holding the cutter in raised position for a predetermined time gauged by the speed of the cutter along the row for a sufficient time to spare the said first plant; preventing the sensing means from raising the cutter for a predetermined time gauged solely by the speed of the cutter along the row; lowering the cutter into the ground and holding it there for a predetermined time to sever the roots of all plants encountered as the cutter proceeds forwardly a designated distance and while the sensing means is prevented from raising the cutter; and then, after the cutter has moved a predetermined distance forwardly in the ground, reactivating the sensing means so that it can raise the cutter when another plant at least the designated minimum distance ahead of the said first plant is sensed.

3,425,496
VIBRATING TILLAGE IMPLEMENT

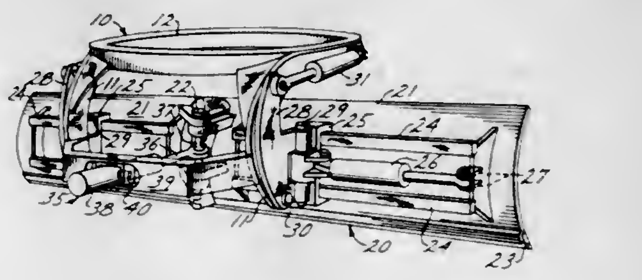
Dothan L. Shelton, 2100 S. Polk St., Amarillo, Tex. 79109
Filed Nov. 16, 1964, Ser. No. 411,330
U.S. Cl. 172—40 **5 Claims**
Int. Cl. A01b *39/10*



A tool bar carrying plows is vibrated by two eccentric weights rotating in opposite directions, one eccentric weight near each end of the tool bar. The weights are timed so that one thrusts forward as the other thrusts to the rear, thus producing a side-to-side rotation about the hitch means. A third eccentric weight may be optionally attached about a shaft parallel to the direction of draft.

3,425,497
MOTOR GRADER MOLDBOARD

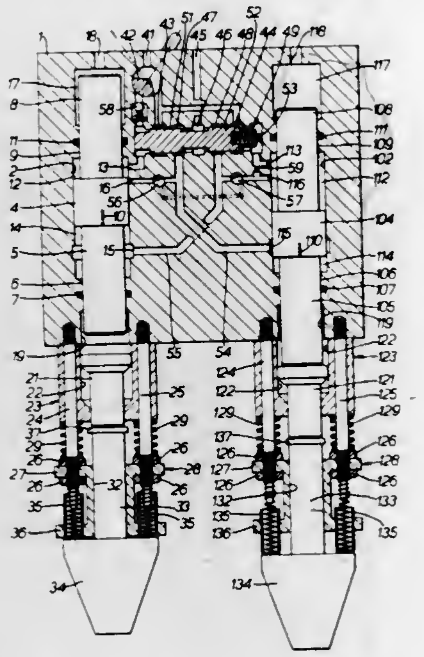
Joseph L. Strabala, Orinda, Calif., and Frank A. Grooss, Morton, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 19, 1967, Ser. No. 654,490
U.S. Cl. 172—792 **6 Claims**
Int. Cl. E02d *3/76;* **E01b** *5/06*



Motor graders have conventionally used a unitary moldboard or blades mounted on the grader circle for manipulation by the operator. Greater flexibility can be provided by hinging the moldboard so additional configurations are possible, as long as suspension rigidity between the blade and circle is maintained. A unique hinged blade structure for use in combination with a grader circle can be fabricated by joining two blade wings endwise with a hinged connection to form a moldboard, mounting slide rails on the backs of the wings, swingably supporting the slide rails in two guide brackets about an upright axis at spaced locations, mounting a shift jack between one of the wings and its supporting guide bracket for laterally shifting the moldboard, mounting the guide brackets on the circle in a pivoted connection having an axis transverse to such upright axis, and positioning a jack between the hinged connection of the wings and the circle through which the moldboard may be changed in angular disposition by operating the jacks.

3,425,498
FLUID ACTUATED VIBRATOR DEVICES

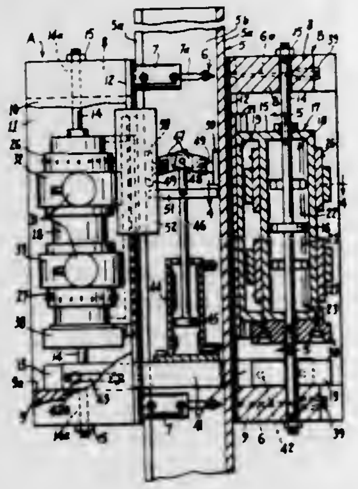
David E. Bick, Cheltenham, England, assignor to Dowty Technical Developments Limited, Cheltenham, England, a British company
Filed Nov. 10, 1966, Ser. No. 593,456
Claims priority, application Great Britain, Nov. 19, 1965, 49,304/65
U.S. Cl. 173—52 **7 Claims**
Int. Cl. F01l *15/04;* **E01g** *3/04;* **E21b** *1/00*



A percussive tool has parallel cylinders in which pistons perform their working strokes alternately under the control of a main valve. Each piston opens a pilot valve during the first part of the working stroke through which the flow of hydraulic fluid causes the other piston to retract, the speed of retraction being reduced by means of a restrictor, while the completion of retraction movement of said other piston closes the associated pilot valve, whereupon the pressure of fluid then trapped in the end of the cylinder causes the main valve to move from one operative position to the other.

3,425,499
HYDRAULIC VIBRATORY HAMMER FOR DRIVING AND OR EXTRACTING PILES AND THE LIKE

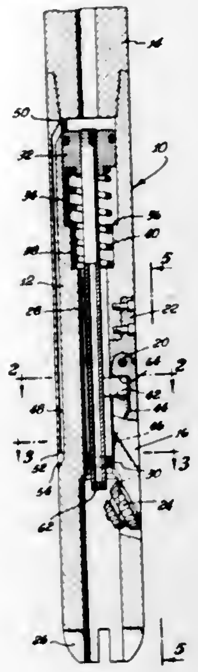
Earl H. Fisher, 630 Casgrain Ave., St. Lambert, Montreal, Quebec, Canada
Filed Nov. 4, 1966, Ser. No. 592,201
U.S. Cl. 173—125 **14 Claims**
Int. Cl. B25d *9/06*



A frame positionable around a pile and carrying a hammer which is engageable with the pile for selectively driving and extracting the same relative to the ground. The frame also carries means for step-by-step advancing itself along the pile as the hammering operation progresses.

3,425,500
EXPANDABLE UNDERREAMER

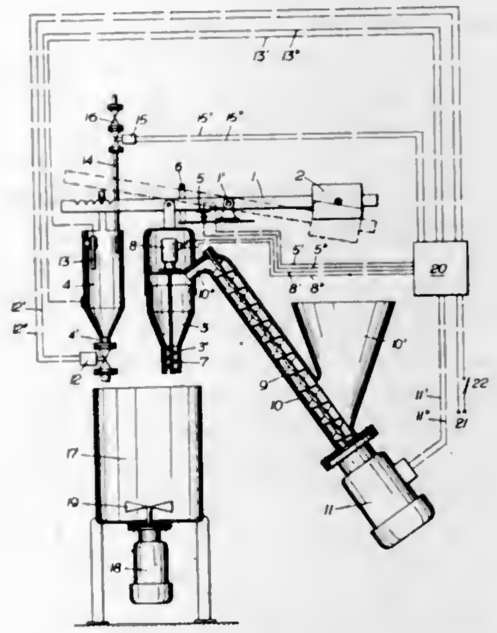
Benjamin H. Fuchs, 3842 Rose Ave., Long Beach, Calif. 90807
Filed Nov. 25, 1966, Ser. No. 597,075
U.S. Cl. 175—269 **1 Claim**
Int. Cl. E21b *9/26*



An expandable underreamer having pivoted, longitudinally arranged cutter arms which swing out from elongated slots in the body of the tool, the arms being actuated by a hydraulic cylinder and piston arrangement in the body above the arms, and jet streams of drilling fluid originating in the cylinder and passing through longitudinal passages in the body intermediate the cutter arm slots and being ejected from the body above the cutters outwardly and downwardly toward the cutting plane.

3,425,501
MIXTURE PROPORTIONING APPARATUS

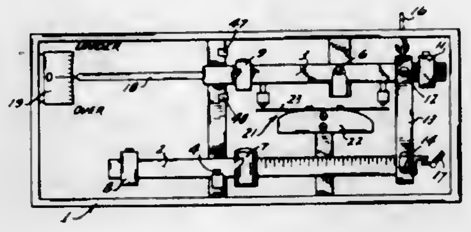
Otto Ganko, Vienna, Austria, assignor to Patentauswertung Vogelbusch Gesellschaft m.b.H., Vienna, Austria
Filed May 16, 1966, Ser. No. 550,473
Claims priority, application Austria, June 3, 1965, A 5,037/65
U.S. Cl. 177—70 **7 Claims**
Int. Cl. G01g *19/22*



A device for accurately regulating the proportions of liquid and powdered ingredients of a mixture by causing the amounts of said powder to be determined by the device by continually comparing the weight of said powder, as it is adding said powder to a mixing container, with the weight of the predetermined volume of liquid which the device also adds to the container.

3,425,502
WEIGHING SCALE

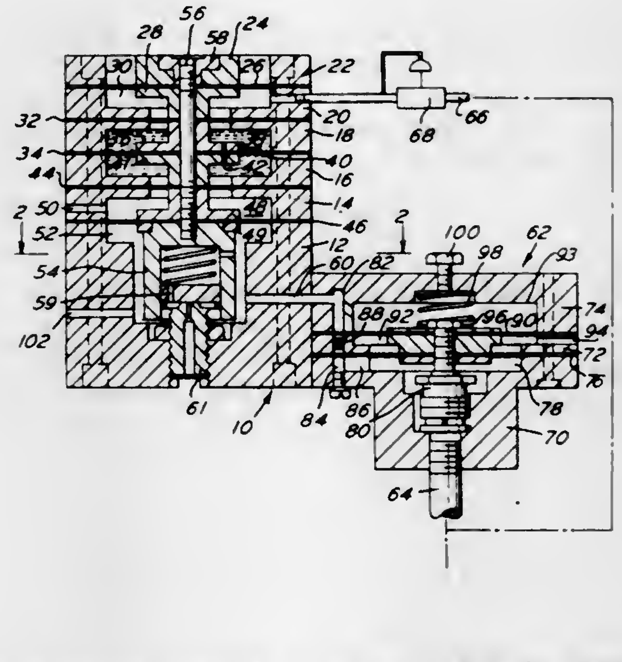
John S. Shapland, deceased, late of Champaign, Ill., by Helen R. Shapland, executrix, Champaign, Ill., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 15, 1966, Ser. No. 542,974
U.S. Cl. 177—171 **5 Claims**
Int. Cl. G01g *21/10, 23/06*



In an over and under type weighing scale oscillation of a scale beam in opposite directions from an equilibrated position causes alternate deflection of the opposite ends of a leaf spring against a cam block so that the scale will approach equilibrium with progressively increasing sensitivity as weight is added to or removed from the load during the weighing process.

3,425,503
REGULATED LOAD CELL

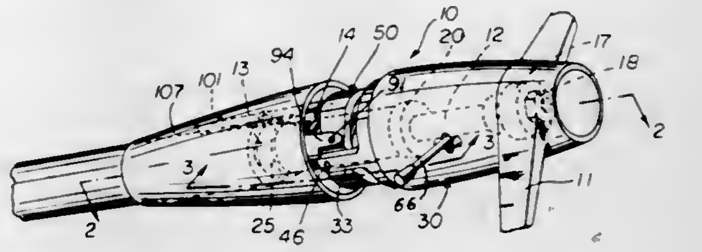
Kenneth W. Bullivant, Pitman, and Edward Kane, Millville, N.J., assignors to Kane Air Scale Company, Glassboro, N.J., a corporation of New Jersey
Filed Dec. 21, 1967, Ser. No. 692,445
U.S. Cl. 177—208 **5 Claims**
Int. Cl. G01g *5/04*



The balancing chamber in a load cell is in communication with the inlet and outlet chambers of a pressure-flow regulator. A restriction orifice is provided in a passage communicating the inlet chamber and the outlet chamber. The surface area of an expansible member defining the inlet and outlet chambers is greater in the outlet chamber than it is in the inlet chamber so as to provide a varying flow rate to the balancing chamber in a load cell.

3,425,504
STEERING MECHANISM

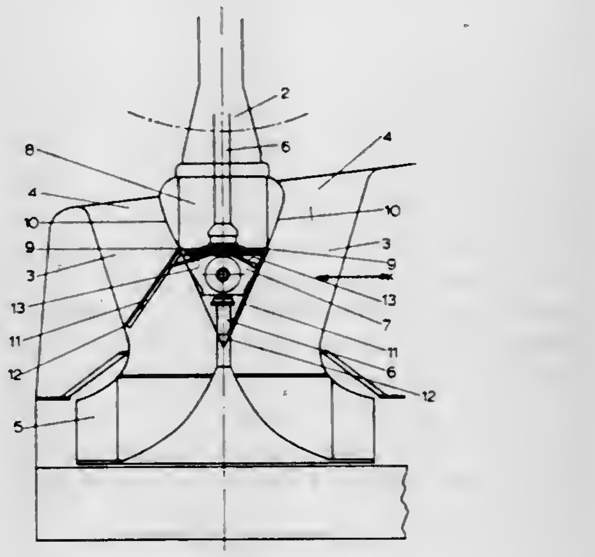
David P. Hass, Detroit, and Robert E. Stuemky, Royal Oak, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 30, 1964, Ser. No. 407,818
U.S. Cl. 180—1 **28 Claims**
Int. Cl. B62d *3/02, 1/18;* **F16c** *1/02*



A universal joint comprising a plurality of nested spring sleeves transmits rotary motion from the steering wheel of a vehicle to a driven member in the steering column of the vehicle so as to effect steering of the vehicle when the steering wheel is turned. The steering wheel is supported for pivotal movement about a tilt axis transverse to the axis of rotation of the steering wheel and is moved about the tilt axis by the action of the universal joint. The tilt axis is offest from the axis of rotation of the steering wheel. A latch mechanism holds the steering wheel in the position to which it is moved about the tilt axis. The steering wheel is also supported for movement about a tilt-away axis which is likewise offset from the axis of rotation of the steering wheel so that the universal joint also effects movement of the steering wheel about the tilt-away axis. Another latch mechanism is provided to release the steering wheel for movement about the tilt-away axis.

3,425,505
CUSHION AIR REVERSE FLOW PREVENTING MEANS

Richard Stanton Jones, Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Mar. 3, 1966, Ser. No. 531,391
Claims priority, application Great Britain, May 3, 1965, 18,564/65
U.S. Cl. 180—118 **13 Claims**
Int. Cl. B60v *1/14, 1/18*

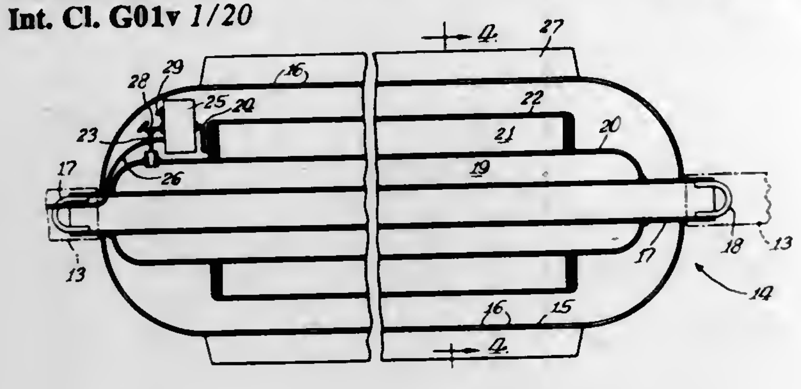


A ground effect vehicle includes a pressure source which supplies gas to a supporting gas cushion through a ducting system. Hinged flaps, each of which when closed form a continuum of a duct-forming surface, are movable to an extended position where they close off the ducts to prevent gas from the cushion from passing through the ducts.

3,425,506

OFFSHORE SEISMIC STREAMER DEPTH CONTROL SYSTEM

John S. Evans, Jr., Houston, Tex., assignor to Mandrel Industries, Inc., a corporation of Michigan
Filed June 5, 1967, Ser. No. 643,541
U.S. Cl. 181—.5 **4 Claims**
Int. Cl. G01v *1/20*

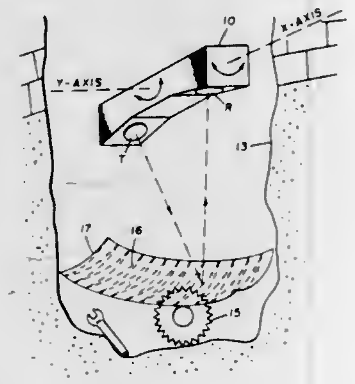


The invention provides a float for suspending, at predetermined depths, a streamer of geophones used in geophysical exploration work. The float includes presettable automatic means for creating a neutral buoyancy at the desired depth, together with individually selectable means for creating a positive buoyancy to bring the float and the streamer portion attached thereto to the surface.

3,425,507

SONIC SYSTEM FOR LOCATING OBJECTS IN THE BOTTOM OF A BOREHOLE

Richard L. Caldwell and Joseph Zemanek, Jr., Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Dec. 22, 1966, Ser. No. 604,030
U.S. Cl. 181—.5 **7 Claims**
Int. Cl. G01v *1/28, 1/38*



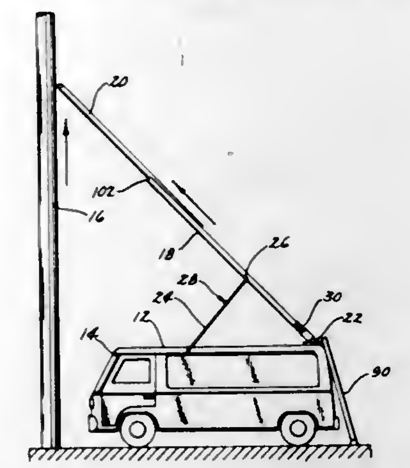
The specification discloses a method and apparatus for obtaining a visual representation of submerged objects such as junk in the bottom of an earth borehole. Preferably, a narrow beam of repetitive sonic pulses with a peak frequency of about one megacycle per second is directed toward the submerged object in a zigzag scanning raster. Sonic reflections from the submerged object are detected and are utilized to intensity modulate the electron beam of an oscilloscope which is deflected in a scanning raster related to that of the sonic beam. Thus, there is produced on the face of the oscilloscope an intensity modulated display of the submerged object.

3,425,508

EXTENSION LADDER

Eugene W. Faulstich, 209 S. Main St., Algona, Iowa 50511
Filed Sept. 21, 1967, Ser. No. 669,462
U.S. Cl. 182—18 **11 Claims**
Int. Cl. E06c *5/34, 5/44*

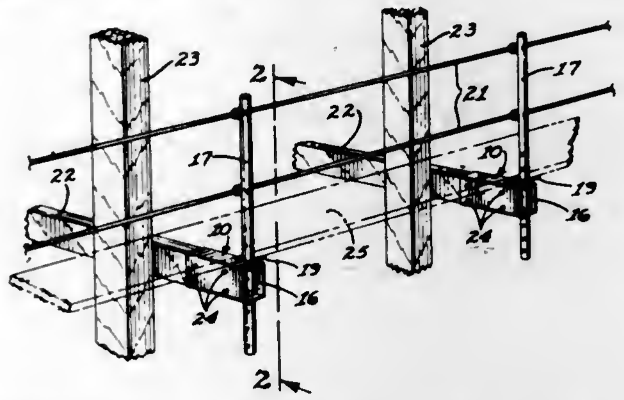
An extension ladder anchored at its lower end on the top of a truck with a support member movably engaging the ladder on its lower side for raising and lowering the ladder. An electrically powered shaft connected to a cable simultaneously extends and raises the ladder and is co-ordinated to maintain the outer end of the ladder in a common plane while being raised or lowered. Limit switches may be provided to limit the raising and the lowering of the ladder. Automatic height measuring means may be employed.



3,425,509

CONSTRUCTION SCAFFOLD SAFETY RAILING

Allen Carlton Gilbert, 4710 E. Clarendon 85018, and John R. Dolan, 70 E. Pierson 85012, both of Phoenix, Ariz.
Filed Oct. 10, 1966, Ser. No. 585,371
U.S. Cl. 182—113 **1 Claim**
Int. Cl. A47l *3/02;* **E04g** *1/16, 5/00*

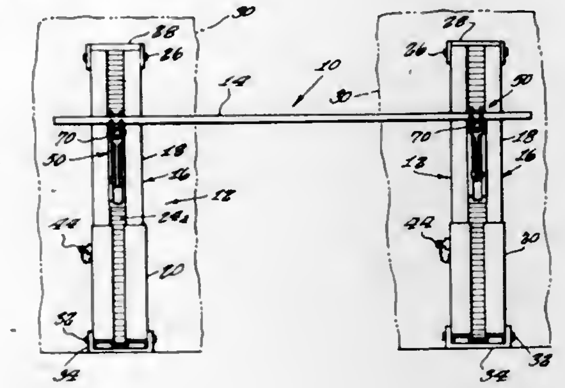


A construction scaffold safety railing element in the form of a rectangular sleeve fitting over the outer ends of horizontal joist members having upright railing support post supporting tubes formed within the outer end of the sleeve to provide a safety railing support for the scaffold.

3,425,510

PORTABLE LEAN-TO SCAFFOLDS

Fred P. Fedoryk, 71 Fig St., Central Islip, N.Y. 11722
Filed Jan. 17, 1967, Ser. No. 609,820
U.S. Cl. 182—117 **5 Claims**
Int. Cl. E06c *7/16*

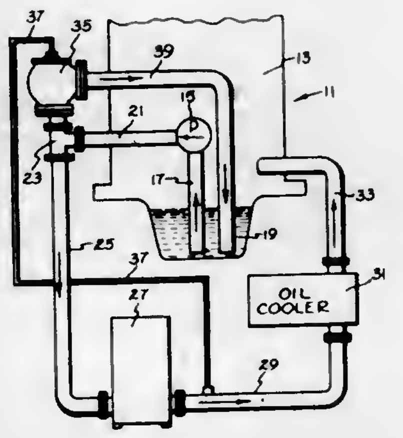


A portable lean-to scaffold which is vertically adjustable and has a footing for distributing its weight against the ground, self-aligning wall engaging shoes and friction pads for preventing a board laid across the scaffold from slipping.

3,425,511

LUBRICATION SYSTEM AND VALVE THEREFOR

Warren J. Severin, Morton Grove, Ill., assignor to William W. Nugent & Co. (Inc.), Skokie, Ill., a corporation of Illinois
Filed Mar. 16, 1966, Ser. No. 534,842
U.S. Cl. 184—6 **4 Claims**
Int. Cl. F01m *1/00;* **F16n** *17/06, 39/06*

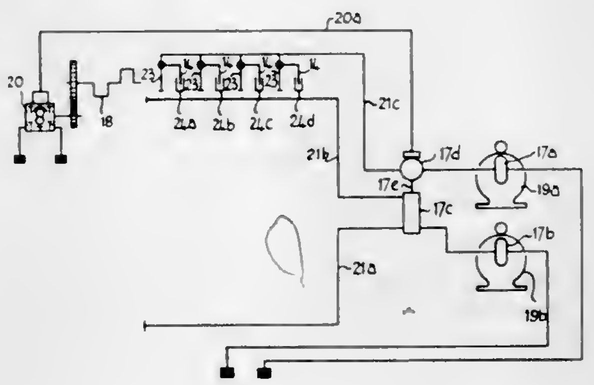


A lubrication system is provided which includes an engine having a reservoir containing lubricant, a pump for circulating the lubricant, a lubricant filter, and a valve. The valve inlet is connected both to the pump outlet and the filter and when this pressure differential is exceeded, reservoir, and a pressure-sensing port of the valve is in pressure responsive communication with the filter outlet. The valve is responsive to a pressure differential across the filter and when this pressure differential is exceeded, the output from the pump is directed back into the engine reservoir, by-passing both the filter and the portions of the engine to be lubricated.

3,425,512

INTERNAL COMBUSTION ENGINES

Virendra Singh, Stockport, England, assignor to Mirrlees National Limited, a company of Great Britain, Northern Ireland and the Isle of Man
Filed Mar. 29, 1967, Ser. No. 626,858
Claims priority, application Great Britain, Mar. 17, 1967, 12,509/67
U.S. Cl. 184—6 **1 Claim**
Int. Cl. F01m *1/02;* **F16n** *7/00, 29/00*

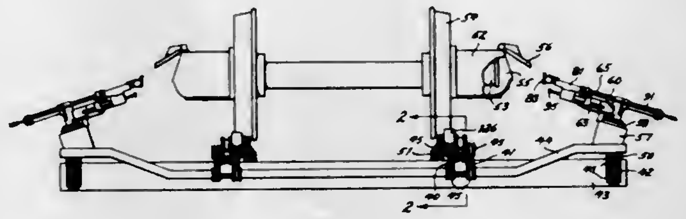


A lubrication system for an internal combustion engine having a pump, an ejector, a manifold and a valve for circulating lubricant while the engine is stationary to prevent the lubricant from forming carbon on the working parts of the engine.

3,425,513

JOURNAL BOX LUBRICATOR FOR RAILWAY CARS

Franklin G. Fisher and Luther Lewis Bollinger, Sr., Reading, Pa., assignors to Reading Company, Philadelphia, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 385,882, July 29, 1964. This application Apr. 14, 1967, Ser. No. 630,868
U.S. Cl. 184—2 **12 Claims**
Int. Cl. F16n *29/02, 7/38, 13/18*

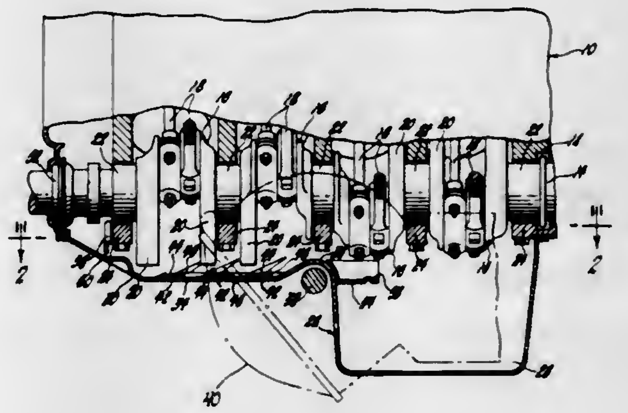


A lubricator which is capable of entering and depositing lubrication in an open journal box, but which will retract without discharging lubricant in case it encounters the closed cover of a journal box or encounters a roller bearing. In case the lubricator head moves laterally with respect to the journal box so that a safety lever mounted on the lubricator head contacts the journal box, the lubricator head also will retract by operating retracting mechanism. In case the lubricator head does not encounter a journal box, it will retract.

3,425,514

ENGINE HAVING OIL PAN WITH DEFLECTION VANES

Richard K. Shier, Westland, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,363
U.S. Cl. 184—6 **11 Claims**
Int. Cl. F01m *11/06;* **F16n** *7/36;* **F02f** *7/00*



An engine includes an oil pan having a sump portion at one end and a shallow portion at the other separated by a raised transverse tunnel arranged to provide clearance for a power output shaft to pass close to the longitudinal axis of the engine crankshaft. The transverse tunnel extends close to the center bearing cap and above the lowest positions reached by the adjacent crank throws and counterweights of the crankshaft. Flow directing diagonal vanes are arranged along the floor of the pan shallow portion sweeping back toward the raised tunnel. The vanes receive oil swept transversely across the pan shallow portion by rotation of the crankshaft and deflect the oil over the raised tunnel into the sump so as to prevent an excessive accumulation of oil in the pan shallow portion. Two alternative ways of forming the ribs are disclosed. Additional baffle means to prevent oil sloshing from the sump and forward of the shallow portion are also disclosed.

3,425,515

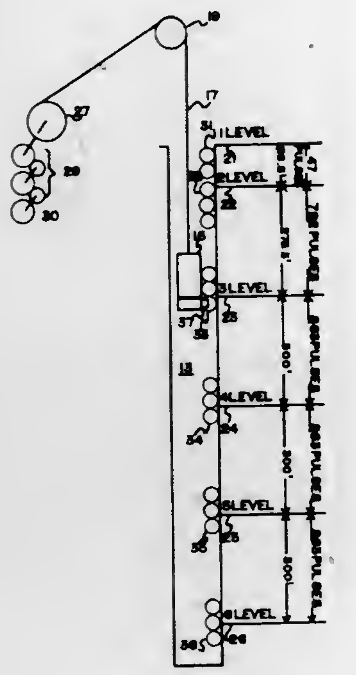
DIGITAL CONTROL FOR MINE HOIST SYSTEM

William J. McDonald, Schenectady, N.Y., and Edward B. Bynum, Jr., and William E. Cronquist, Roanoke, Va., assignors to General Electric Co., a corporation of New York

Filed June 15, 1964, Ser. No. 375,173

U.S. Cl. 187—29 **3 Claims**

Int. Cl. B66b *1/30*



1. In a mine hoist system wherein a hoist motor moves a conveyance from one level to another level in a mine shaft, a register for indicating the distance of a trip between selected levels, digital means responsive to the register for establishing a count proportional to the distance of the trip, means responsive to the movement of the conveyance for changing the count contained in said digital means, and more controlling means responsive to one or more predetermined changes of the count to alter the speed of the hoist motor in one or more increments, thereby altering the rate of movement of the conveyance.

3,425,516

GUIDE SHOES FOR ELEVATORS

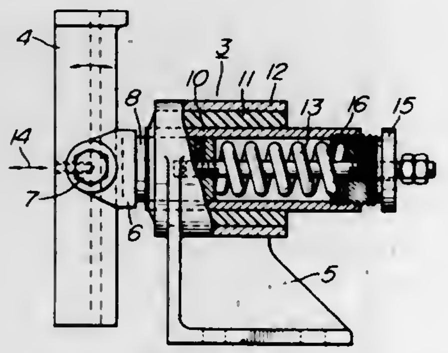
Minejiro Jin and Yugo Maruyama, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed July 1, 1966, Ser. No. 562,355

Claims priority, application Japan, July 12, 1965, 40/56,555

U.S. Cl. 187—45 **4 Claims**

Int. Cl. B66b *7/04*



The present disclosure relates to a guide shoe for an elevator cage to be engageable slidingly with the stationary guide rails of the elevator shaft. The guide shoe includes a rigid base fixedly attached to the elevator cage, a highly elastomeric bushing stressed exclusively in shear and providing the sole supporting connection between the base and a tubular portion slidably and rotatably receiving a shaft spring urged toward the guide rail and pivotally carrying the guide shoe.

3,425,517

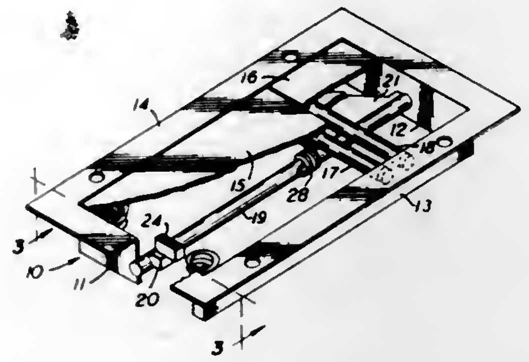
AUTOMATIC WHEEL CHOCK

Charles D. Speir, 753 Betty Lane, Hurst, Tex. 76053

Filed Nov. 22, 1967, Ser. No. 685,132

U.S. Cl. 188—32 **1 Claim**

Int. Cl. B60t *3/00*



An automatic wheel stopping device for installation in the floor of a garage, car port, or the like, and primarily comprised of a rectangular frame, an operating plate and a stopping plate, each hingedly mounted in the frame on transverse axes inwardly of the ends of the frame, a longitudinal shaft beneath the two plates, a cam on the bottom of the operating plate making contact with a lug on the shaft and a chock plate on the shaft beneath the stopping plate. When a vehicle wheel rolls onto the operating plate the shaft is rotated and, in turn, the chock plate is rotated and makes contact with and raises the stopping plate.

3,425,518

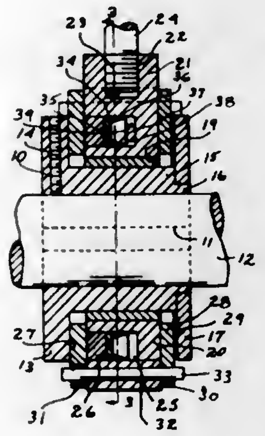
POWER-OPERATED SPREADING-TYPE DISC BRAKE

Arnold Morrow, Covington, Ky., assignor to said Arnold Morrow, Covington, Ky., and Raleigh Becknell, Cincinnati, Ohio, jointly

Filed May 26, 1967, Ser. No. 641,613

U.S. Cl. 188—72 **4 Claims**

Int. Cl. F16d *55/10, 25/00;* **B60t** *11/10*



This power brake comprises a pair of concentric brake members with the inner brake member secured to a rotating shaft and the outer brake member fixed against rotation but not necessarily fixed against axial movement. The said outer non-rotating brake member includes a portion actuatable in the direction of the axis of the rotatable shaft, and brake member secured thereto, with said axially actuatable part frictionally securing the rotating and non-rotating brake members to one another for stopping rotation of the shaft and the brake member secured thereto.

3,425,519

DISK-BRAKE SYSTEM INCLUDING PLURAL ACTUATORS

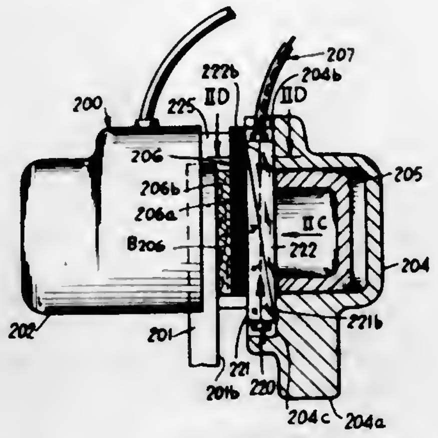
Heinz Frigger, Langen-Oberlinden, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany

Filed June 1, 1967, Ser. No. 642,915

Claims priority, application Germany, June 11, 1966, T 31,333; June 24, 1966, T 31,443, T 31,444, T 31,445; June 25, 1966, T 31,457

U.S. Cl. 188—73 **14 Claims**

Int. Cl. F16d *55/22, 65/52;* **F16h** *35/18*



The invention relates to a disk brake having a brake disk, a brake support yoke disposed along the periphery of the disk, a pair of brakeshoes flanking braking faces of the disk and an actuating piston on the support yoke for shifting the brakeshoes into engagement with said disk to brake the latter. A wedge member having at least one wedging surface converging at an acute angle toward a braking face of the disk and displaceable in the direction of convergence of the wedging surface while being interposed between the support and piston or between piston and brakeshoe actuates the brake. A Bowden cable, spindle, eccentric, cam or other means is used for applying a force to said wedge member.

3,425,520

DISK-BRAKE ASSEMBLY INCLUDING PLURAL ACTUATORS

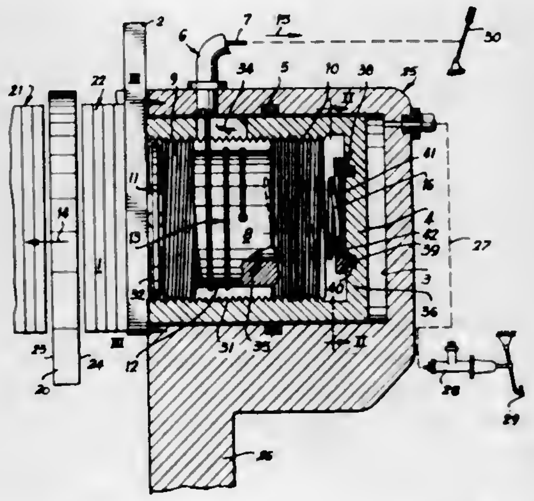
Heinz Frigger, Langen-Oberlinden, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG., Frankfurt am Main, Germany, a corporation of Germany

Filed June 8, 1967, Ser. No. 644,595

Claims priority, application Germany, June 27, 1966, T 31,464

U.S. Cl. 188—73 **9 Claims**

Int. Cl. F16d *55/30, 55/32, 65/14*



Disk brake wherein a brake-support yoke is disposed aling the periphery of the rotatable disk and an actuating piston is movably mounted on the brake yoke to displace a brakeshoe against the disk; an auxiliary mechanism is provided for advancing the brakeshoe relatively to the disk and includes a spindle threadedly engaging the piston and acting upon or connected with the brakeshoe while being rotatable relatively to the piston to advance the brakeshoe in the direction of the disk. A Bowden line operates the spindle.

3,425,521

DRUM BRAKES WITH FLOATING JAWS

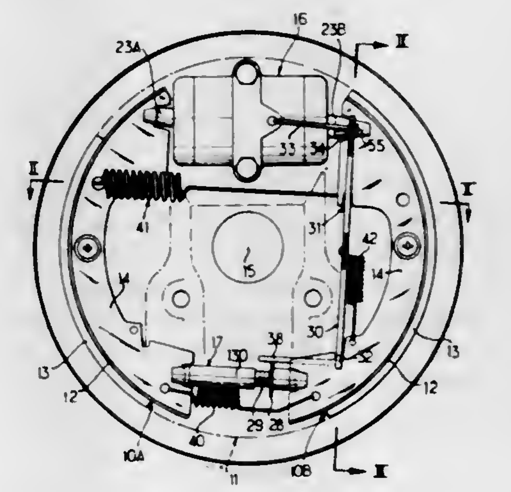
Jean Maurice, Paris, France, assignor to Société Anonyme Francaise du Ferodo, Paris, France, a corporation of France

Filed Jan. 4, 1967, Ser. No. 607,180

Claims priority, application France, Feb. 3, 1966, 48,249

U.S. Cl. 188—79.5 **14 Claims**

Int. Cl. F16d *51/14, 65/56*



The invention relates to a drum-brake having two brake-jaws mounted floating with respect to the drum, in which there are interposed between the oppositely-facing extremities of the brake-jaws: an operating cylinder containing two sliding pistons, each bearing against one of the jaws through the intermediary of a coupling rod; and a device for automatically taking-up play due to wear of the friction linings mounted on the brake-jaws, said take-up device being mounted diametrically opposite to the operating cylinder with respect to the axis of the drum, and being of the unidirectional type with step-by-step operation, driven in rotation by an actuating lever which is carried on one of said brake-jaws through an articulated coupling, and is coupled to the operating cylinder by an abutment rod parallel to the coupling rod of the brake-jaw considered.

3,425,522

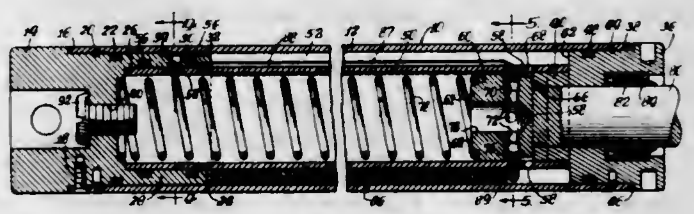
ADJUSTABLE HYDRAULIC DASHPOT

Bogdan Gryglas, Chicago, Ill., assignor to Efdyn Corporation, Chicago, Ill., a corporation of Illinois

Filed May 26, 1967, Ser. No. 641,567

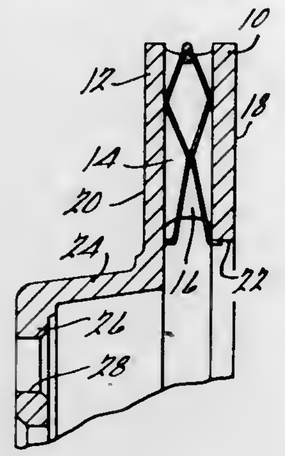
U.S. Cl. 188—97 **3 Claims**

Int. Cl. F16d *57/06*



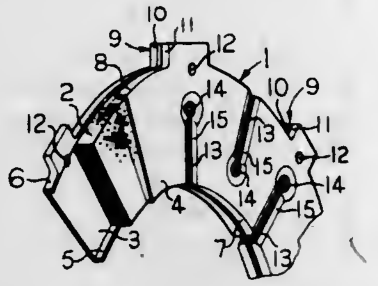
A hydraulic dashpot having a pressure tube with a port associated with orifice means through which fluid is metered upon application of impact or vibrational forces to a piston slidable in the pressure tube, and wherein the pressure tube is rotatable for regulating the flow of fluid through the port.

3,425,523
VENTILATED ROTOR WITH VIBRATION DAMPENER
Richard T. Robinette, St. Clair Shores, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed June 12, 1967, Ser. No. 645,356
U.S. Cl. 188—218 **9 Claims**
Int. Cl. F16d *65/10;* **F16f** *7/00;* **B60b** *13/00*



A resilient partially compressible vibration dampener member composed of a resilient wire formed with a loop portion having two legs integrally affixed thereto and projecting in divergent relationship therefrom. The dampener member is adapted to be removably disposed in one or a plurality of locations in radially extending open-ended apertures formed between the side walls and radially extending vanes of a rotor of a disk-type brake.

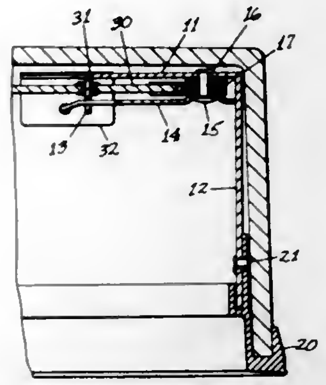
3,425,524
BRAKE DISC STRUCTURE
Douglas Dewar, Wolston, near Coventry, England, assignor to The Dunlop Company Limited
Filed July 5, 1966, Ser. No. 562,550
Claims priority, application Great Britain, July 14, 1965, 29,764/65
U.S. Cl. 188—218 **14 Claims**
Int. Cl. F16d *65/12, 65/84, 13/72*



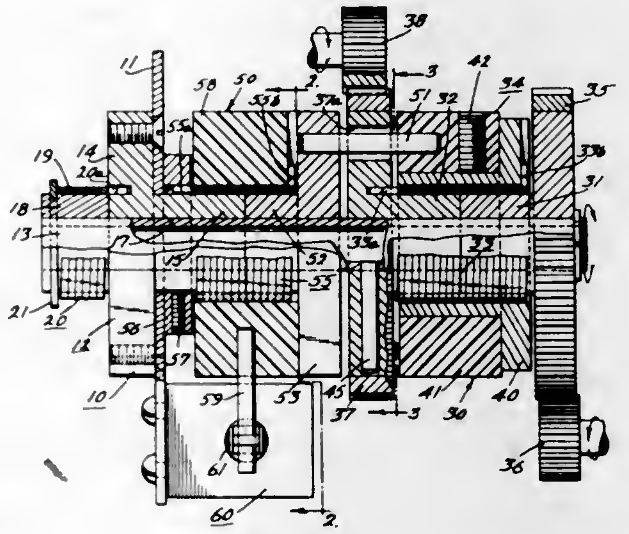
This invention is directed to a brake stator constituted by a metal shell having an internal core of high specific heat material such as beryllium, the braking surfaces being provided by the shell and the braking heat being absorbed by the core material which is adapted to be a thermal reservoir and is of lightweight properties.

3,425,525
ACCESSORY LOCKING DEVICE FOR CARRYING CASE
Don I. Korchmar, Cincinnati, Ohio, assignor to The Leather Specialty Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 28, 1967, Ser. No. 656,922
U.S. Cl. 190—49 **6 Claims**
Int. Cl. A45c *13/00*

This invention relates to an accessory for use in an attaché case, briefcase, valise, suitcase, luggage case or the like. More particularly, it is concerned with the unique yet simple locking means for temporarily securing an accessory such as a folio, expandable file, writing desk or the like to the inside of one shell assembly forming the cavity of the carrying case. The locking means comprises a fixed member having a flanged edge which engages said accessory, and a pivotal member movable from an inoperative position to an operative position in contact with said flanged edge.

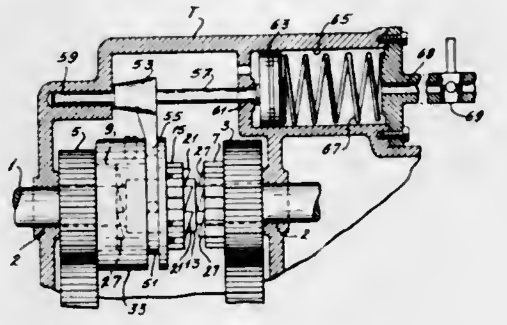


3,425,526
COIL CLUTCH WITH COIL PILOT BRAKE
John S. Baer, Medford Lakes, N.J., assignor to Precision Specialties, Inc., Pitman, N.J., a corporation of Missouri
Filed Aug. 10, 1966, Ser. No. 576,495
U.S. Cl. 192—12 **15 Claims**
Int. Cl. F16d *67/02, 23/00;* **B60l** *7/00*



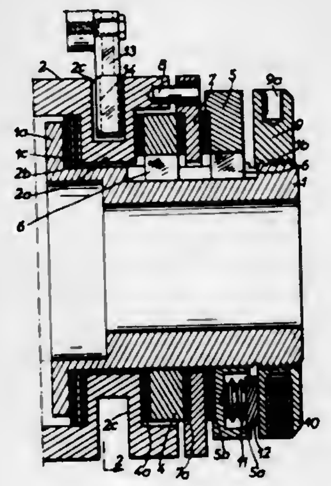
A clutch brake is provided for a spring clutch having coaxial and adjacent input and output hubs rotatably mounted on a frame and having a helical drive spring wound on and engaging the clutch surfaces of the hubs in such a way as to tend to wrap tighter as a result of the driving the output hub. One end of the spring is affixed to the output hub and the other end of the spring is affixed to a clutch control member which, when stopped, acts to unwrap the drive spring from the input hub and thereby disengage the clutch. The clutch control member has structure positively engaging the output hub following a limited predetermined amount of relative rotational movement of the output hub relative to the clutch control member. The clutch control member is stopped by brake means which includes a brake hub fixed to and rotatable with the clutch control member and a frame hub fixed to a stationary reference frame. A helical brake spring, similar to the clutch spring, is fixed between a brake control collar and the frame, and the spring is normally held out of contact with the brake hub. The spring is moved, or allowed to move, into contact with both hubs when the control collar is rotated relative to the frame and provides a brake. Backup prevention means is preferably provided between the frame and the output hub permitting normal drive rotation of the output hub but preventing essentially all reverse rotation of the output hub.

3,425,527
TRANSMISSION CLUTCH
Lloyd J. Wolf, 2425 Irving Blvd., Dallas, Tex. 75207
Filed July 7, 1967, Ser. No. 651,862
U.S. Cl. 192—48.6 **10 Claims**
Int. Cl. F16d *47/04, 11/04, 25/061*



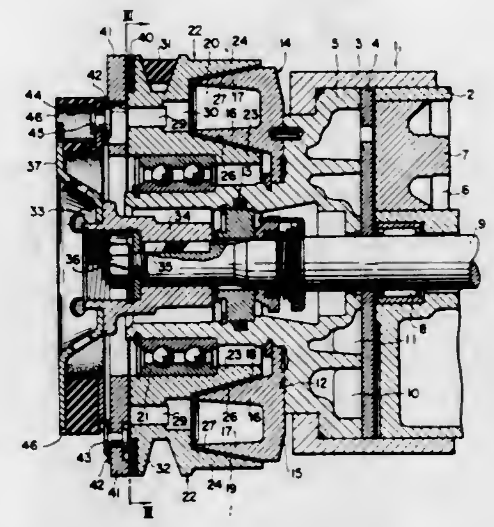
A transmission having a power input shaft and driving gears rotatably mounted thereon, a first collar slidably and nonrotatably mounted on the input shaft, radial tooth-like means on said driving gear and said collar engageable upon sliding of said collar toward said driving gear for aligning splines on said collars with splines on said driving gear, said tooth-like means being arranged to prevent reverse power flow from said driving gear to said input shaft during shifting operations, and a shift collar slidably and nonrotatably mounted on said first collar and having internal splines engaging said first collar splines and slidable therealong into engagement with said driving gear splines when said tooth-like means are in spline-aligning engagement.

3,425,528
FRICTIONAL SLIP COUPLING WITH THERMOSTATIC ALARM
Felix Perruca, 10 Place Locarno, Saint-Etienne, France
Filed Dec. 22, 1966, Ser. No. 603,805
Claims priority, application France, Jan. 7, 1966, 9,355
U.S. Cl. 192—70.27 **3 Claims**
Int. Cl. F16d *13/50, 3/50, 7/02*



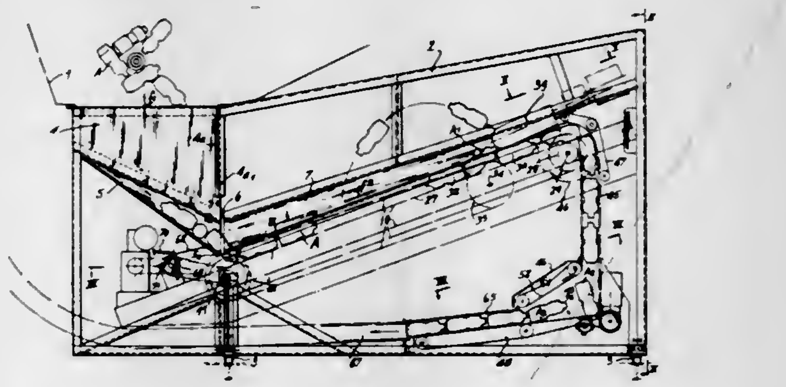
Torque-limiting arrangement in which coaxial driven and driving members are coupled axially by ring and friction members controlled by an axially applied force, the arrangement having a thermostatically controlled alarm.

3,425,529
MAGNETIC CLUTCH FOR A CAR COOLER COMPRESSOR
Shintaro Hayashi, Aichi, Japan, assignor to Toyoda Automatic Loom Works, Ltd., Aichi, Japan
Filed Oct. 3, 1966, Ser. No. 583,734
Claims priority, application Japan, July 7, 1966, 41/44,461
U.S. Cl. 192—84 **1 Claim**
Int. Cl. F16d *27/04, 13/34, 13/44*



An electromagnetic clutch, especially for a driving shaft of a car cooler compressor. The clutch has a rotor having a clutch facing fixed thereto, and a pressure plate operatively connected to a hub on the driving shaft. The rotor has inner and outer annular flanges extending rearwardly and having the opposed faces diverging, and there is provided a stator fixed to a housing and having flanges received in the space between said flanges of the rotor. An electromagnetic coil is positioned in the space between said flanges of the stator. Said magnetic coil is adapted, when energized, to attract said pressure plate against said clutch facing of the rotor into frictional contact therewith.

3,425,530
MACHINE FOR STOWING BOTTLES OR FLASKS IN AN ORDERLY POSITION FROM A BATCH OF BOTTLES OR FLASKS IN BULK
Roland Charles Elie Carter, Saint-Cloud, France, assignor to Societe d'Exploitation et de Recherches de Machines et Appareils Specialises ERMAP, Levallois-Perret, Hauts-de-Seine, France, a French company
Filed Apr. 7, 1967, Ser. No. 629,320
Claims priority, application France, Apr. 12, 1966, 57,290
U.S. Cl. 198—33 **14 Claims**
Int. Cl. B65g *47/24*



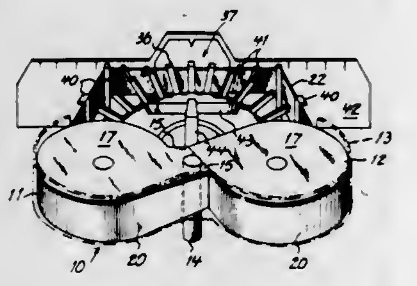
Machine for stowing bottles in an orderly position, comprising a receiving chamber for the bottles, a set of endless conveyors departing from the lower part of said chamber, two sloping deflectors contiguous with the set of endless conveyors, said endless conveyor comprising two side bells driven at different speeds and extending according to a rising plane, an assembly of rotating brushes projecting above the conveyor at its upper end for extracting the bottles not properly aligned, an accelerating device for the bottles at the end of said endless conveyor, a receiving chute for the bottles so led by the accelerating device, a selective turning device provided at the end of the chute extending approximately vertically and an evacuating conveyor for the bottles all then aligned in the same direction.

ERRATUM

For Class 197—135 see:
Patent No. 3,426,356

3,425,531
RIBBON SUPPLY UNIT

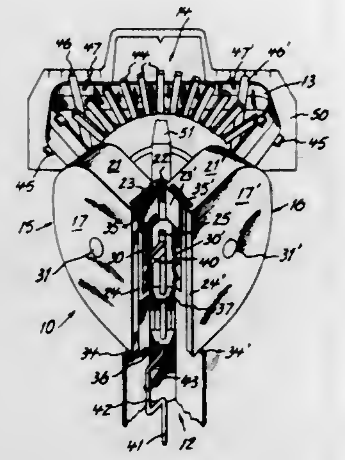
Jerome R. Fuld, Trumbull, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,887
U.S. Cl. 197—151 **1 Claim**
Int. Cl. B41j *31/12;* **G11b** *15/32;* **G03b** *1/04*



A ribbon supply unit comprising a pair of containers interconnected by unique adjusting means. The adjusting means includes a socket and rod disposed on respective containers arranged to permit the containers to be adjusted to a first position in which they are juxtaposed in the same plane or to a second position in which they are superposed one upon the other.

3,425,532
RIBBON SUPPLY ASSEMBLY

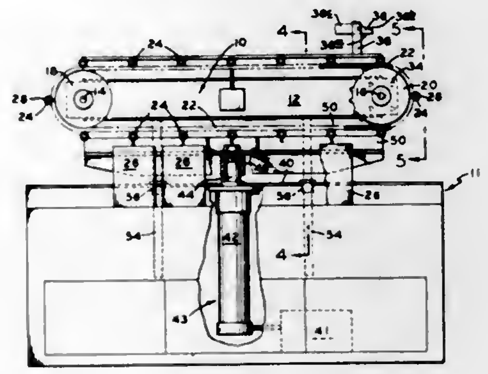
Hugh St. L. Dannatt, Rochester, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 11, 1966, Ser. No. 519,881
U.S. Cl. 197—151 **1 Claim**
Int. Cl. B41j *31/12;* **G11b** *15/32;* **G03b** *1/04*



A ribbon supply unit having a pair of containers for storing a continuous web. The containers are permanently connected by hinge means biased normally to hold the containers one folded down upon the other. Even though so connected the containers may be mounted against the bias on a support means disposing the containers in oblique intersecting planes to provide an expanse of web to a work station with ratchet wheel and pawl means uniquely disposed for taking up ribbon from either of the containers to the other.

3,425,533
CONVEYOR SYSTEM

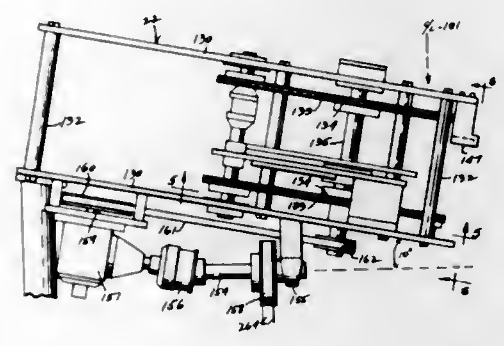
John E. Erhardt, Baltimore, Md., Kenneth S. Hirtle, Westfield, N.J., and Harry F. Osterman, Stamford, Conn., assignors to Branson Instruments Incorporated, Stamford, Conn., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,867
U.S. Cl. 198—19 **14 Claims**
Int. Cl. B65g *23/00, 15/04*



A conveyor for transferring workpieces through a series of juxtaposed stations or processing tanks. The conveyor is mounted for being lifted cyclically in a vertical direction and cam means are provided for indexing a workpiece in a horizontal direction during the last part of the upward motion. Upon completion of the upward motion, using for instance a linear actuator, the conveyor and workpiece are returned to their work position. A single motive means is used to provide the motion along the vertical and horizontal axes.

3,425,534
SWEEP TRANSFER APPARATUS FOR A DESCENDING STACK OF CELLULOSIC PADS OR THE LIKE

Richard D. Anderson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Original application Apr. 21, 1964, Ser. No. 361,455, now Patent No. 3,329,252, dated July 4, 1967. Divided and this application Dec. 13, 1966, Ser. No. 620,572
U.S. Cl. 198—23 **5 Claims**
Int. Cl. B65g *57/03, 47/24*



A sweep mechanism is provided to move a stack of accumulated pads, such as sanitary pads, off of a descending stack supporting flight or elevator. There is a pair of vertically spaced apart endless chains each trained around two idler sprockets and a power sprocket arranged in triangular fashion with the idler sprockets positioned in line at the end of the base leg of the triangle and the power sprocket at the vertex of the triangular arrangement. A pair of spaced apart parallel end plates with spacer posts therebetween serves to support parallel spaced apart shafts on which the sprockets are mounted. The whole assembled sweep is positioned at an acute angle to the horizontal with the two in line idler sprockets adjacent a descending elevator which is carrying the stack of accumulated pads to be moved or swept off the elevator during its descent. The two parallel chains have supported therebetween a pivot post on which is mounted a retractable pusher. This pusher has controls which project it behind a stack of pads and as it is moved on a downward incline with respect to the horizontal it gradually pushes a stack of pads off of the descending elevator or stack supporting flight. There is a trailing arm rigid with the pivot post for the pusher and another operating arm extending rigid from the pivot post in a generally opposite but forward position with respect to the pusher. The pivot post has a spiral spring attachment arrangement which pivots the pusher to a generally extended and pushing position. There is a first track parallel to the first run of the chain between the idler sprockets and in this track a cam roller rides that is on the end of the trailing arm so that the pusher is maintained in an extended pushing attitude.

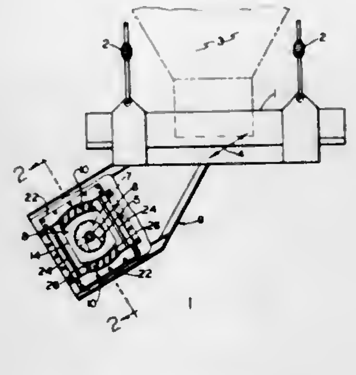
There are two more tracks which are parallel to the receding run of the chain that is the second run and one of these receives a roller on the other operating arm and causes the arm to pivot the post and the pusher to a retracted position. The trailing arm roller moves into the third track and against a yieldable spring barrier that causes the pivot post to rotate the pusher to an extended and ready pushing position. The third run of the chain carries the extended pusher back for another pushing operation.

ERRATUM

For Class 198—33 see:
Patent No. 3,425,530

3,425,535
CURVED RUBBER BRICKS

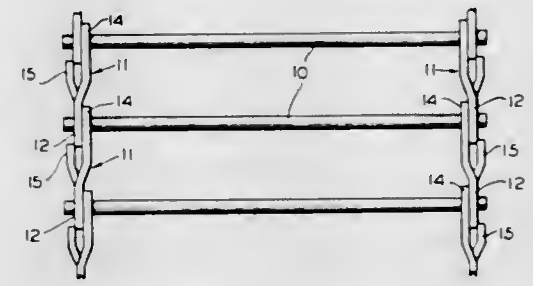
Robley W. Evans, New Albany, Ind., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 8, 1967, Ser. No. 621,546
U.S. Cl. 198—220 **7 Claims**
Int. Cl. B65g *27/00*



This invention relates to an arrangement of rubber springs in a vibratory apparatus to secure an improvement in the ratio of spring rate to damping losses. In this arrangement rubber springs that resiliently couple portions of the apparatus to form a vibratory system are compressed between sections of cylindrical surfaces, chords of which are parallel to the path of vibration of relative motion of the portions. In the direction of desired vibration the rubber is stressed principally in shear and partly in compression.

3,425,536
CONVEYOR CHAIN

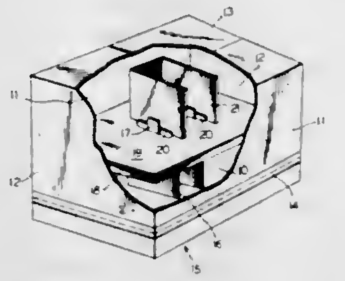
Benjamin A. Shader, Golden, Colo., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 570,057, Aug. 3, 1966. This application Feb. 15, 1968, Ser. No. 705,855
U.S. Cl. 198—189 **4 Claims**
Int. Cl. B65g *17/38*



A relatively wide conveyor chain consists of spaced transverse rods interconnected at their ends by links, each of which has a round opening at one end to receive a round part of a rod and a slot of the key-hole type at its other end. The end of one rod is axially projected into the round opening and the end of the next rod is slipped axially into the round part of the slot, the part of the rod disposed in the round part of a slot having a notched portion whereby the rod can be inserted into the restricted part of the slot.

3,425,537
COMBINATION SHIPPING AND DISPLAY CARTON

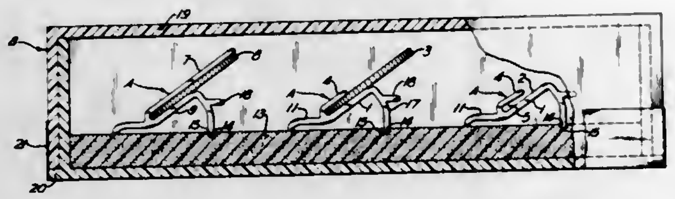
Philip J. Miller, Anchorage, Ky., assignor to Independent Boxmakers, Inc., Louisville, Ky.
Filed Nov. 13, 1967, Ser. No. 682,035
U.S. Cl. 206—44 **7 Claims**
Int. Cl. B65d *5/50, 5/52*



A combination shipping and display carton comprising an outer carton having a bottom, side walls, end walls and a top, a tear tape around the side walls and the end walls near the bottom of the said walls, a lower support member on the bottom of the carton and having vertically extending panels extending upwardly into the carton, at least one upper tray within said carton and supported on said lower support member, whereby when said tear tape is removed, the upper portions of said side and end walls and the top of the outer carton can be removed as a unit, to change the carton into a display carton and an upper support member can be placed on said upper tray, and like cartons can be supported on the display carton.

3,425,538
RARE COIN DISPLAY DEVICE

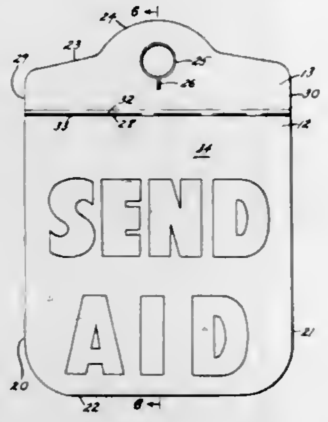
William J. Lott, Jr., 278 Mayfield St.,
Pittsburgh, Pa. 15214
Filed Mar. 29, 1968, Ser. No. 717,230
U.S. Cl. 206—.83 **10 Claims**
Int. Cl. A45c *11/00*



A molded plastic body has an inclined front surface and a tongue extending upwardly over that surface to form an inclined slot for a rare coin. The body may be provided with a bottom projection for insertion in an opening in a support to frictionally connect them.

3,425,539
DUAL PURPOSE BAG-TYPE CONTAINER

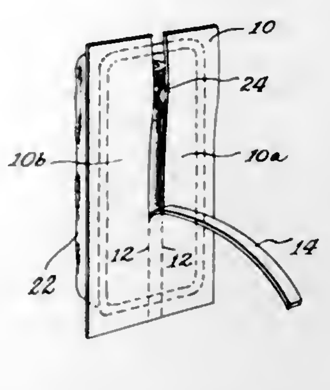
Otakar Mach, 236 E. 61st St., New York, N.Y. 10021
Filed Aug. 23, 1965, Ser. No. 481,691
U.S. Cl. 206—19.5 **1 Claim**
Int. Cl. B60n *3/08, 3/10, 3/12*



Briefly stated, the invention comprises the provision of a synthetic resinous bag having first and second side walls sealed at three peripheral edges. One of the walls extends above the upper edge of the other wall, and has attached thereto on an outer surface thereof a reinforcing member which is substantially coextensive with that portion of the wall which extends above the opposite wall. The reinforcing member is secured at the peripheral edges thereof, except that a lower edge thereof, where the sealing is performed a short distance above a transverse edge to form a lip capable of limited flexing to form stop means where the bag is sandwiched between a window or trunk lid of an automobile and surrounding structure, whereby the same may be used as an emergency signal, the lip formed thereby preventing slippage so that the signal remains in place.

3,425,540
DISPLAY PACKAGE

Theophile A. Stiffel, Chicago, Ill., assignor to The Stiffel Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 22, 1967, Ser. No. 685,091
U.S. Cl. 206—38 **8 Claims**
Int. Cl. B65d *73/02;* **A44b** *7/00;* **A45c** *15/00*



An improved display package comprising a backing member with a transparent plastic window covering secured thereto, with the packaged product positioned between the backing member and window, and means on the backing member to permit separation of the backing member so that the contents of the package may be removed through said opening and through the rear of the display package.

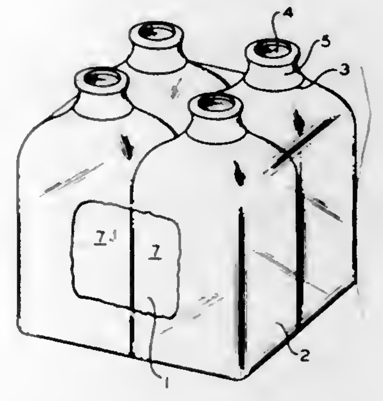
3,425,541
PACKAGE AND A METHOD FOR EXPOSING ITS CONTENTS

William A. Patterson, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
No Drawing. Continuation-in-part of application Ser. No. 359,506, Apr. 13, 1964. This application Dec. 3, 1964, Ser. No. 415,812
U.S. Cl. 206—46 **14 Claims**
Int. Cl. B65d *85/00;* **B65b** *43/00;* **C08f**

14. The method of claim 13 wherein said water is at substantially room temperature.

3,425,542
PACKAGING

Kenneth E. Bolen, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,835
U.S. Cl. 206—65 **11 Claims**
Int. Cl. B65d *85/62, 65/16;* **B65b** *63/02*

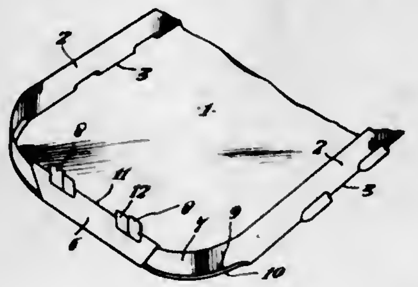


8. A package composed of at least two containers in contiguous relation, at least two of which have an elongate neck portion, and a single, individually apertured film of shrinkable material folded about the tops, bottoms, and non-contiguous sides of said containers in a shrunken state so that said film intimately contacts said containers and forces same together and so that said neck portions extend through said individual apertures, and said shrunken film forms a partially closed but open ended, intimate covering about said containers, said open ends of said covering of film at least partially covering in intimate and binding contact the non-contiguous sides of said containers which are adjacent said open ends.

3,425,543
PACKAGED TRAY OF ARTICLES

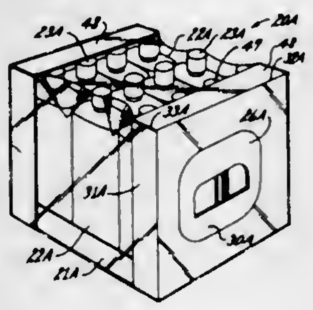
Albert John Harvey, Bristol, England, assignor to Allen Davies & Company Limited, Bristol, England, a company of Great Britain and Northern Ireland
Filed Oct. 4, 1965, Ser. No. 492,640
Claims priority, application Great Britain, Oct. 13, 1964, 41,780/64
U.S. Cl. 206—65 **11 Claims**
Int. Cl. B65d *85/62, 65/16, 5/46*

This application deals with a package made from a blank of cardboard or similar material stamped out to provide a base and walls with extensions which cooperate with adjacent walls to hold the tray in position. The entire tray and contents to be packaged are then completely enclosed in a flexible heat shrinkable thermoplastic film material.



3,425,544
PACKAGE CONSTRUCTION

Ronald M. Ayer, Chesterfield County, and Robert L. Waldrop, Bon Air, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,841
U.S. Cl. 206—45.33 **2 Claims**
Int. Cl. B65d *65/16, 85/62, 5/26*

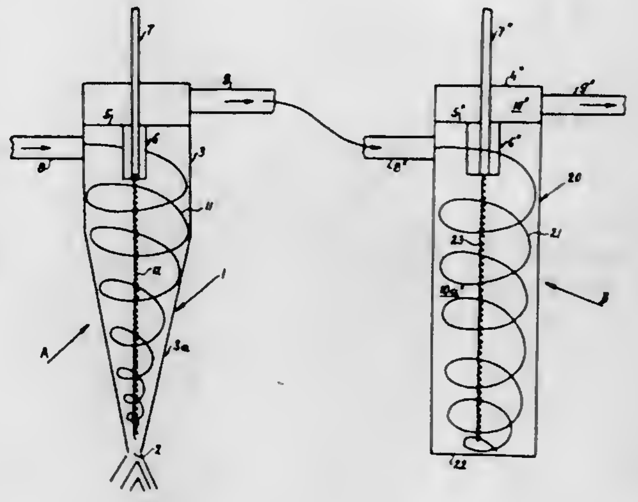


This disclosure relates to a package construction wherein a plurality of product-containing containers are disposed in the open end of a tray-like member with the tray-like member being subsequently disposed within a tubular film-like member that is subsequently heat shrunk about the same to compact the containers and receptacle together and complete the package construction, the receptacle having opposed end walls extending throughout the entire height of the resulting package construction to provide rigidity at the opposed ends of the heat shrunk tubular member and having opposed side wall means fully exposing the major portions of the containers within the receptacle means.

3,425,545
METHOD AND APPARATUS FOR SEPARATING FIBROUS SUSPENSIONS

Rudolf Zemanek, 39 Kosicka; Jan Fellegi, 9 Holubyho; and Jan Janci, 8 Smolnicka, all of Bratislava, Czechoslovakia
Continuation of application Ser. No. 461,265, June 4, 1965, which is a continuation-in-part of application Ser. No. 359,043, Apr. 13, 1964. This application Oct. 23, 1967, Ser. No. 678,154
Claims priority, application Czechoslovakia, Aug. 2, 1963, 4,428/63; Feb. 4, 1965, 780/65; Feb. 18, 1965, 1,115/65
U.S. Cl. 209—2 **4 Claims**
Int. Cl. B04c *3/00*

A fibrous suspension including heavy and substantially spherical particles, fibrous impurities and fibrous accepts is subjected to vortical forces in a 3-product hydrocyclone whose length is at least seven times its maximum diameter. The fibrous impurities and the fibrous accepts, which are of substantially the same density, are discharged from the inner part of the inner vortex and from the outer part of the inner vortex, respectively, through concentric vortex finders. The particles are discharged from the apex outlet.



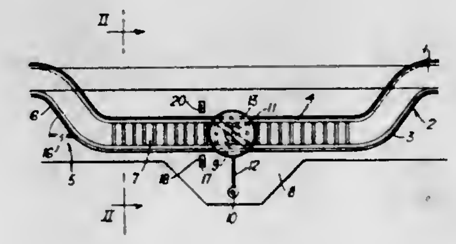
3,425,546
METHOD FOR RECOVERING AND REUSING FLOTATION PRODUCT FOR USE AS FROTH FLOTATION REAGENT

James B. Duke, Metuchen, N.J., assignor to Engelhard Minerals & Chemical Corporation, Edison, N.J., a corporation of Delaware
No Drawing. Filed July 27, 1966, Ser. No. 568,119
U.S. Cl. 209—10 **10 Claims**
Int. Cl. B03d *1/14*

In a flotation process for beneficiating a slimed ore pulp wherein added floatable particles such as particles of oiled calcite are employed to "carry" slimed mineral into the froth, the froth product is filtered and dried without removing or destroying flotation oils. The dried material is pulverized and then recycled along with fresh added floatable particles in subsequent carrier flotation operations.

3,425,547
APPARATUS FOR DETECTING THE PRESENCE OF FOREIGN BODIES IN TRANSPARENT CONTAINERS

Jack Robert Madley, 77 Booth Road, Colindale, London, NW. 9, England
Filed Dec. 12, 1966, Ser. No. 600,959
U.S. Cl. 209—111.7 **6 Claims**
Int. Cl. B07c *5/34,* **H01j** *39/12*



Logic circuitry associated with an array of light-sensitive cells to detect the presence of foreign bodies in individual containers of a moving line of transparent containers and to initiate a delayed signal for rejecting the offending containers when they reach the reject mechanism.

3,425,548
FLOTATION PROCESS

Douglas H. Fenske and Lynn L. McMurray, Houston, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

No Drawing. Filed Nov. 19, 1965, Ser. No. 508,841

U.S. Cl. 209—166 **4 Claims**
Int. Cl. B03d *1/00*

A glass sand containing kaolin and ferruginous material is pulped with water and a dispersant such as sodium tetrapyrophosphate and deslimed. The deslimed sand is then subjected to flotation treatment in an acid medium with an alkali petroleum sulfonate and an aryl dithiophosphoric acid type promoter to remove both ferruginous material and kaolin in the froth and produce a concentrate reduced in both Fe_2O_3 and Al_2O_3 content.

3,425,549
FLOTATION PROCESS

Woodrow J. Dickson, La Habra, and Fred W. Jenkins, Buena Park, Calif., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 115,882, June 9, 1961. This application Mar. 4, 1966, Ser. No. 531,791

U.S. Cl. 209—166 **24 Claims**
Int. Cl. B03d *1/00*

Froth flotation process for beneficiating ore material, such as phosphate rock, containing siliceous material, such as silica, wherein the ore material is subjected to froth flotation in the presence of a minor amount of a collector such as a linear polymer of 1,2-alkyleneimine, said polymer having a molecular weight of at least 800 and each alkylene unit having 2–20 carbon atoms, such as polyethyleneimine and polypropyleneimine, and derivatives thereof, such as oxyalkylated, alkylated, olefinated, Schiff base reaction product, etc., derivatives thereof.

3,425,550
FLOTATION SEPARATION OF METALLIC SULFIDE ORES

Robert E. Baarson, La Grange, Paul L. Du Brow, Chicago, and Charles L. Ray, Wheaton, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed July 22, 1966, Ser. No. 567,088

U.S. Cl. 209—166 **11 Claims**
Int. Cl. B03d *1/00*

Alkali metal salts of dithiocarbamates and di-dithiocarbamates are disclosed as collectors in froth flotation separation of sulfide minerals from metallic sulfide ores, particularly oxidized metallic sulfide ores.

3,425,551
FLOTATION SEPARATION OF METALLIC SULFIDE ORES

Robert E. Baarson, La Grange, and Paul L. Du Brow, Chicago, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,240

U.S. Cl. 209—166 **7 Claims**
Int. Cl. B03d *1/14*

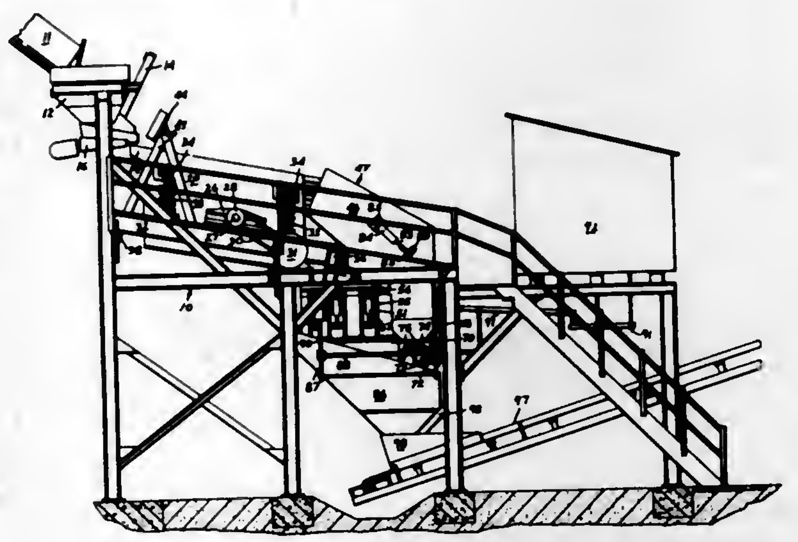
Dithiocarbonates and di-dithiocarbonates as collectors in froth flotation separation of sulfide minerals from metallic sulfide ores, particularly oxidized metallic sulfide ores.

3,425,552
SAMPLE SCREENING PLANT

Marland G. Curtis, % Curtis Construction Company, Box 106, Spokane, Wash. 99210

Filed Sept. 12, 1966, Ser. No. 578,532

U.S. Cl. 209—239 **6 Claims**
Int. Cl. B07d *13/00*



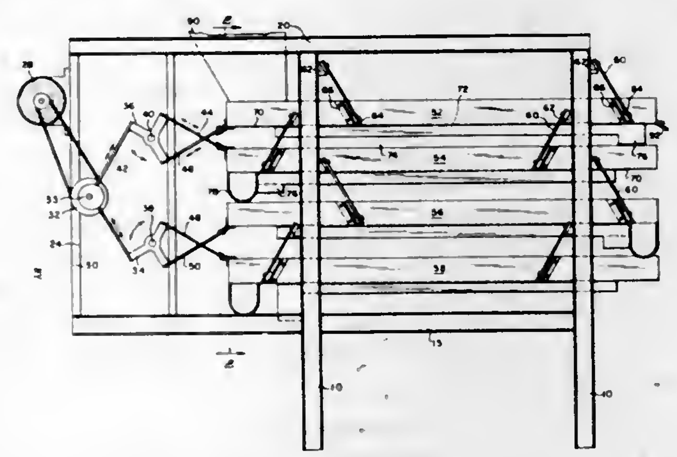
A sample screening plant is described to permit mechanical screening and analysis of the relative size distribution of rock aggregate with maximum accuracy and testing uniformity. The screening plant includes a plurality of stacked screens that are resiliently mounted on a pivot frame with a plurality of corresponding holding hoppers positioned rigidly on the frame for receiving the outfeed from the corresponding screen. Each of the holding hoppers have a hydraulically operated gate that may be selectively operated to dump the rock aggregate from the respective holding hopper into a weighing hopper that receives and weighs the material.

3,425,553
GRADING APPARATUS

Matthew John Slovic, 500 Chandler Circle, Richmond, Va. 23229

Filed Oct. 23, 1965, Ser. No. 503,695

U.S. Cl. 209—315 **2 Claims**
Int. Cl. B07b *1/28*



Apparatus is disclosed which is capable of very thoroughly screening and separating particulate materials of varying sizes. Several vertically stacked screening units containing screens of different mesh size are suspended by flexible spring-like reeds which are rigidly and nonpivotally connected at each of their ends, i.e., to the apparatus framework and to the screener units to provide a unique, whipping action when moved by a motor driven eccentric. The relationship of the spring-like reeds and the screener units is such that the particulate material is tumbled over and along the screener unit to assure that substantially all of the material is afforded an opportunity to pass through the mesh.

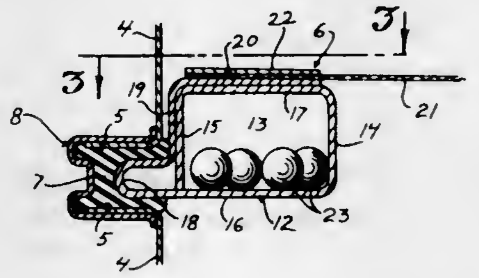
3,425,554
MEANS FOR IMPROVING PERFORMANCE OF SEPARATOR SCREENS

Douglas M. Swallow, Burlington, Ontario, Canada, assignor to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California

Continuation of application Ser. No. 304,833, Aug. 27, 1963. This application Dec. 12, 1966, Ser. No. 601,212

U.S. Cl. 209—323 **13 Claims**
Int. Cl. B07b *1/28*

A vibratory separator, including circular spacer shells, at least one circular separator screen with a connector pan underneath the screen, all secured together as a unit, springs supporting the unit, and mechanism for imparting high frequency vibrations to the unit, a structure incorporated in the unit defining a closed annular chamber concentric with the screen, and impact producing means consisting of a plurality of elements shaped to move freely in the chamber, the elements being energized by the vibration producing mechanism to engage the walls of the chamber.

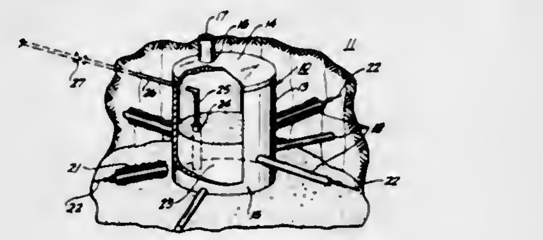


3,425,555
PROCESS FOR RECOVERY OF CONTAMINANTS FROM THE GROUND

William E. Ridgeway, Rolling Meadows, Ill., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Nov. 25, 1966, Ser. No. 597,013

U.S. Cl. 210—65 **2 Claims**
Int. Cl. B01d *57/00*



Petroleum products which have escaped into the ground are removed by applying water to the area to form a mixture of water and petroleum. This mixture is percolated through the ground to the water table and collected by a plurality of collecting fingers, forwarded to a collecting basin and then to a phase separation tank.

3,425,556
APPARATUS FOR SEPARATING DRIP OIL FROM BILGE WATER

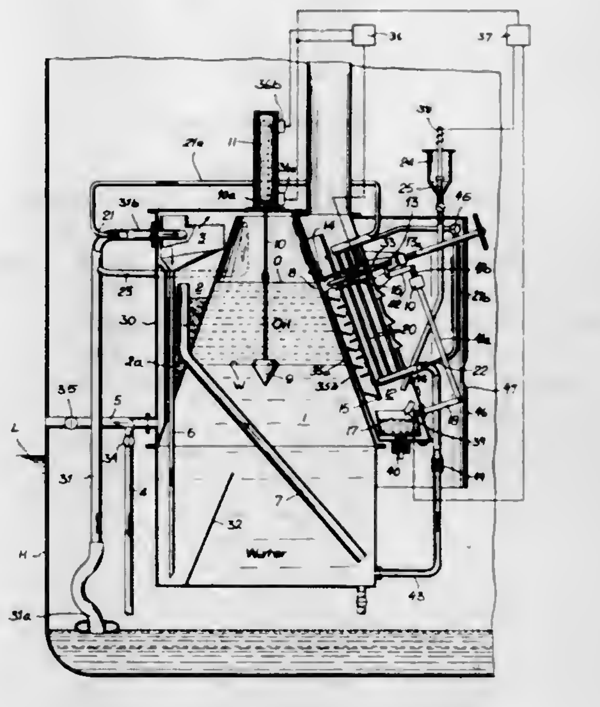
Helmut Völker, Modling, Austria, assignor to Simmering-Graz-Pauker Aktiengesellschaft fur Maschinen- Kessel- und Waggonbau, Vienna, Austria, a corporation of Austria

Filed July 19, 1966, Ser. No. 566,430

Claims priority, application Austria, July 22, 1965, A 6,769/65

U.S. Cl. 210—104 **7 Claims**
Int. Cl. B01d *57/00*

A system for separating oil from water and disposing of the oil by combustion wherein a level control supplies an oil/water mixture to a storage container and maintains the mixture at a predetermined height while a combustion chamber alongside the container is in heat-exchanging relationship with the liquid-level region thereof and oil floating close to the liquid level is transferred to a burner destroying the oil.

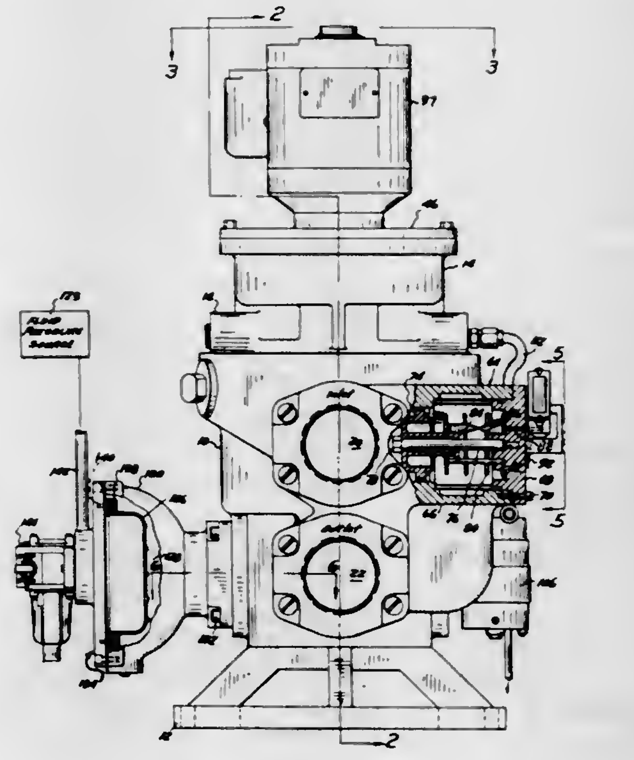


3,425,557
BACKWASH MEANS FOR DUAL FILTER ELEMENTS

Nils O. Rosaen, Bloomfield Hills, Mich., assignor, by mesne assignments, to Universal Filters, Inc., Hazel Park, Mich., a corporation of Michigan

Filed Apr. 4, 1966, Ser. No. 539,863

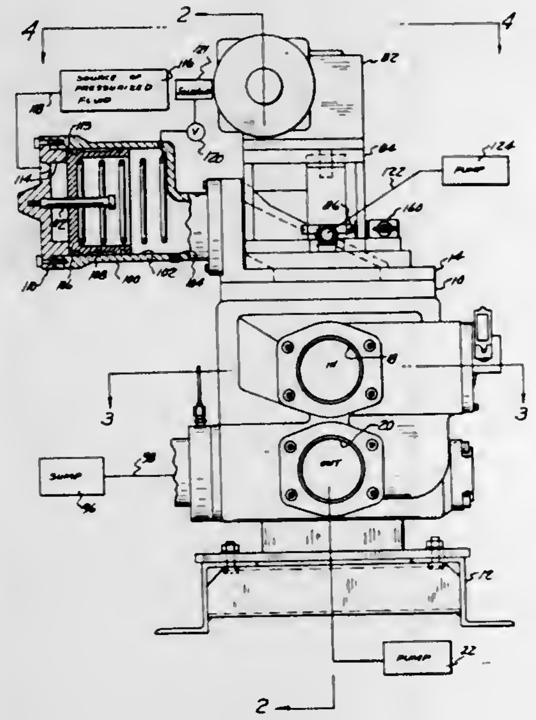
U.S. Cl. 210—108 **9 Claims**
Int. Cl. B01d *23/24*



A filter device suitable for substantially continuous operation including a cylindrical chamber, a filter element carrier and partition structure rotatably mounted in the chamber and carrying on its opposite sides vane members which, with the partition structure, divide the chamber into two fluidly separated sections, means connecting the first section with a fluid circuit directing fluid through the filter element to be filtered thereby and means for introducing a reverse flow of fluid through the filter element disposed within the other chamber section, and a system for automatically rotating the filter assembly to change the elements disposed in each of the sections upon the working filter element becoming clogged.

3,425,558
BACKWASH MEANS FOR DUAL FILTER ELEMENTS

Nils O. Rosaen, Bloomfield Hills, Mich., assignor, by mesne assignments, to Universal Filters, Inc., Hazel Park, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 539,863 Apr. 4, 1966. This application Aug. 21, 1967, Ser. No. 661,968
U.S. Cl. 210—108 **15 Claims**
Int. Cl. B01d *23/24*

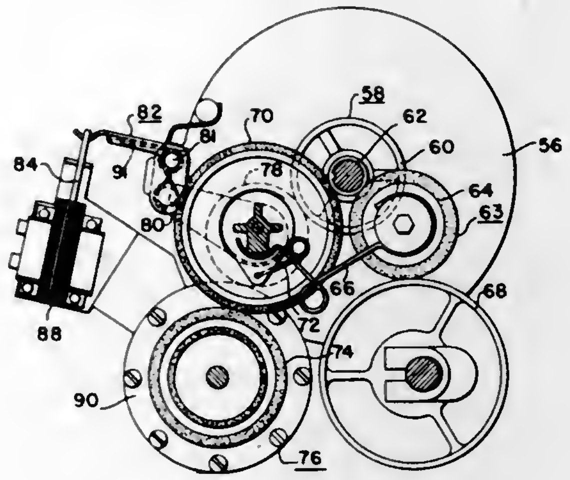


A filter housing partitioned by a rotatable filter carrier structure into a filtering chamber where foreign matter is separated from a fluid system by a first filter, and a cleaning chamber where a second filter is cleaned and back flushed. The back flushing is produced by a cylindrical pressure chamber in communication with the cleaning chamber and a piston in the pressure chamber which produces a pressure wave which assists in cleaning the foreign matter from the filter and discharging the foreign matter to a sump. The carrier structure rotates to alternate the position of the filter elements in the cleaning and filtering chambers when the clogged condition of the filter in the filtering chamber produces a predetermined pressure drop in the fluid system.

3,425,559
DOMESTIC CLOTHES WASHER HAVING IMPROVED SPEED CONTROL MEANS

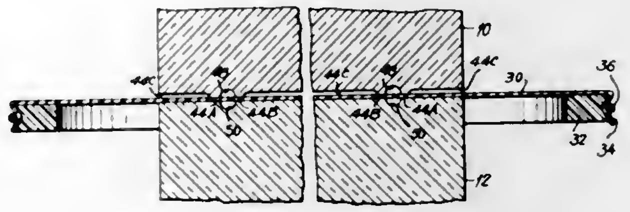
Kenneth O. Sisson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,603
U.S. Cl. 210—138 **4 Claims**
Int. Cl. B01d *43/00*

A domestic washer having a spin tub supported by an inverted hat on a support. A drive shaft housing supported on the hat carries a drive motor and a friction roller drive mechanism for operating the tub at high and low centrifuging speeds. A solenoid on the motor actuates a linkage to disengage a high spin roller in the drive mechanism to produce low spin speed tub operation. An electrical control system conditions the solenoid to produce low spin speed tub operation (1) during initial energization of the motor and (2) during periods where a bump switch on the shaft housing engages the hat because of excessive machine vibration.



3,425,560
DIALYZER ASSEMBLING MEANS

William J. Smythe, Rye, N.Y., assignor to Technicon Corporation, Ardsley, N.Y., a corporation of New York
Filed Oct. 2, 1967, Ser. No. 672,056
U.S. Cl. 210—232 **7 Claims**
Int. Cl. B01d *13/00*

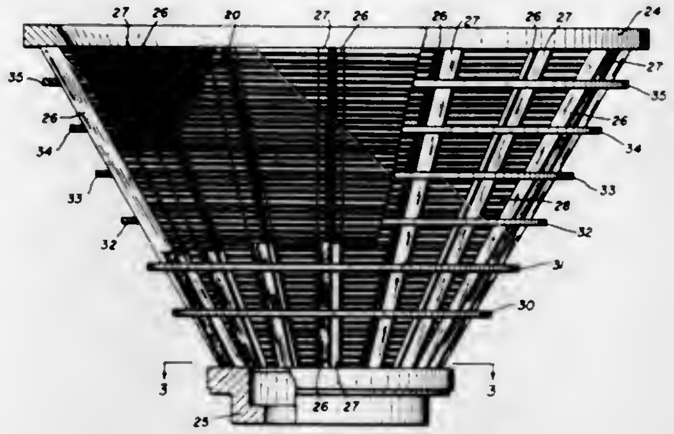


A dialyzer assembly comprises two blocks, each having a U-shaped channel formed into a confronting surface to receive a membrane therebetween. Clamping force is provided by a plurality of screws disposed along a longitudinal midline plane between the legs of the U's. The surface of one of the blocks is relieved in part to provide an upstanding lip disposed around and forming part of the channel. This lip abuts the membrane against the opposite confronting surface.

3,425,561
CENTRIFUGAL BASKET ASSEMBLY AND METHOD OF MAKING SAME

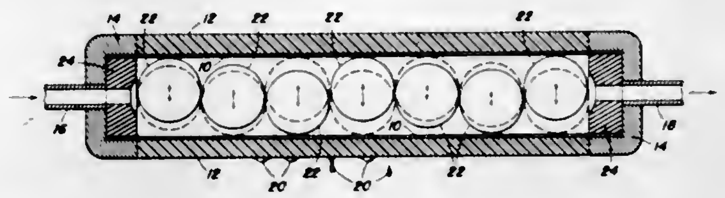
Clarence R. Steele, Denver, and Norval F. Allen, Wheat Ridge, Colo., assignors, by mesne assignments, to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware
Continuation of application Ser. No. 359,979, Apr. 15, 1964. This application Nov. 13, 1967, Ser. No. 682,682
U.S. Cl. 210—380 **10 Claims**
Int. Cl. B01d *33/06*

Basket assembly and method of forming same for centrifugal separators including spaced wider and narrower annular end members and ribs in circumferentially spaced intervals between end members fixedly connected thereto as by welding. Flat wire of oblong section wound in coil formed of series of helical loops progressing continuously from a narrower loop to wider loop. End portions of coil fixedly connected to annular end members and each loop being fixedly connected at each point of contact to each rib to hold each loop in equidistant spaced relationship with adjoining loops. Ratio of thickness of loop to spacing between loops substantially greater than one to one. Support rings in contacting relation on exterior of ribs at spaced intervals between end members. Screening media supported by and in covering relation to inner surface of wire coil.



3,425,562
SEMIPERMEABLE MEMBRANE CLEANING MEANS

Edward A. G. Hamer, Metuchen, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed July 22, 1966, Ser. No. 567,304
U.S. Cl. 210—321 **11 Claims**
Int. Cl. B01d *35/24, 13/00*

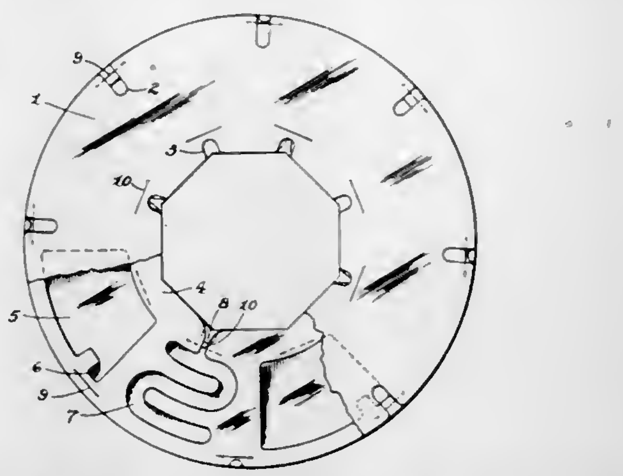


An apparatus for separating a solvent from a solute by dialysis, electro-dialysis, reverse osmosis and similar processes wherein the separation is effected by passing a greater proportion of the solvent through a semipermeable membrane than the solute. A movable element is associated with the semipermeable membrane in such manner that the flow velocity and turbulence of the solute-solvent combination are both increased adjacent the face of the membrane by the movable element, thereby helping to eliminate polarization concentration adjacent the face of the membrane and also helping to dislodge any particles that may become trapped on the face of the membrane.

3,425,563
FILTER CARTRIDGE

Harold Wilansky, Big Flats, N.Y., assignor to The Hilliard Corporation, Elmira, N.Y., a corporation of New York
Filed June 8, 1966, Ser. No. 561,656
U.S. Cl. 210—492 **3 Claims**
Int. Cl. B01d *25/16, 27/08*

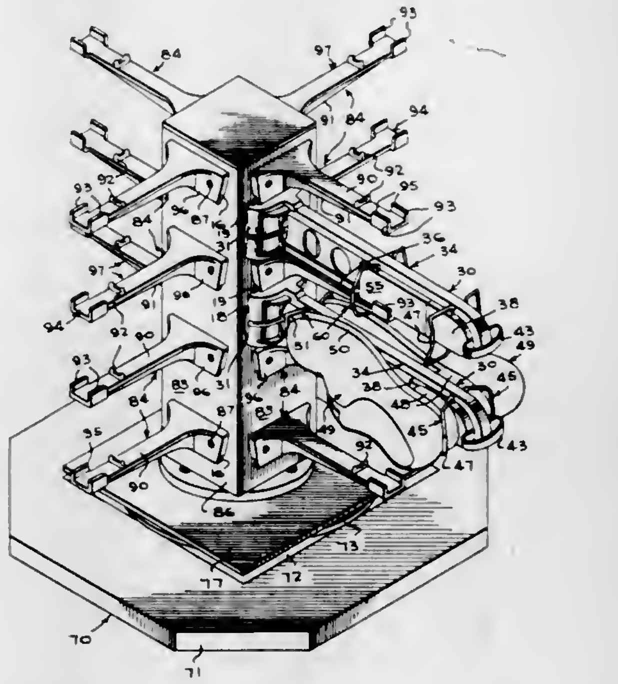
1. A cartridge for filtering oily liquids which are contaminated with entrained immicible material including water, comprising a plurality of filter discs and a plurality of interposed spacer discs of foraminous material,
said spacer discs having circumferentially arranged cutout portions forming, with the adjacent filter discs, alternately arranged inlet and outlet cells,
said inlet cells having inlet passages,
said filter discs having inlet ports registering with said inlet passages, and
means for preventing the material of the spacer discs adjacent said inlet ports from expanding into and clogging said ports,



said means for preventing clogging of the inlet ports comprising stiffening means bridging said inlet ports.

3,425,564
SUPPORT RACK AND BRACKET FOR SHOES AND BOOTS

Ivor J. Allsop, Bellingham, Wash., assignor to Allsop Automatic, Inc., Bellingham, Wash.
Filed Mar. 21, 1967, Ser. No. 624,750
U.S. Cl. 211—37 **4 Claims**
Int. Cl. A47f *7/08, 5/02;* **A43d** *95/12*

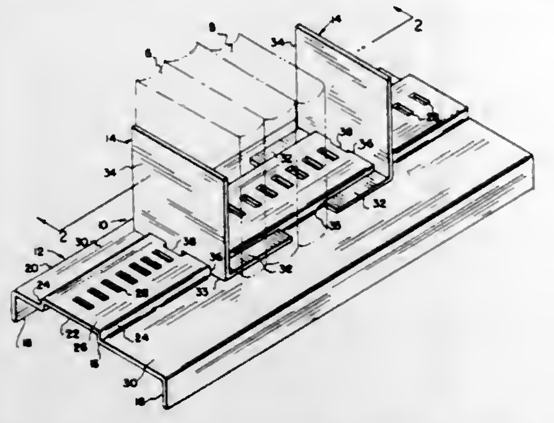


Shoe and boot rack for display purposes wherein the shoes and boots and shoe or boot trees can be conveniently arranged and supported for display purposes and for aiding the merchandising and sale as well as the storage of a plurality of such shoes, boots, trees and the like.

3,425,565
ADJUSTABLE STORAGE-SHELF-DIVIDING STRUCTURE

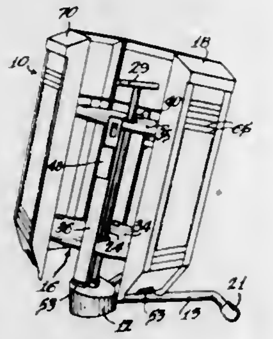
Kathleen E. Sprenger, 125 N. Wing St., Northville, Mich. 48167
Filed Feb. 23, 1967, Ser. No. 617,951
U.S. Cl. 211—43 **4 Claims**
Int. Cl. A47b *65/00, 63/00, 57/00*

An adjustable storage-shelf-dividing structure (FIGURES 1 and 2) has parallel longitudinal guideways with multiple longitudinally-spaced laterally-extending stop slots therebetween. Angle plate shelf dividers or book ends have longitudinal fingers engaging the longitudinal guideways to prevent twisting and also have downwardly-extending lugs or tongues entering a selected stop slot for preventing slippage. A modification attachable to existing shelves employs an elongated plate with multiple longitudinally-spaced laterally-extending slots holding the same shelf dividers or book ends (FIGURE 3) in the same manner except that the longitudinal fingers now engage the opposite side edge surfaces of the elongated slotted plate, which is bolted or otherwise secured to the existing shelf.



3,425,566
ROTARY BASE

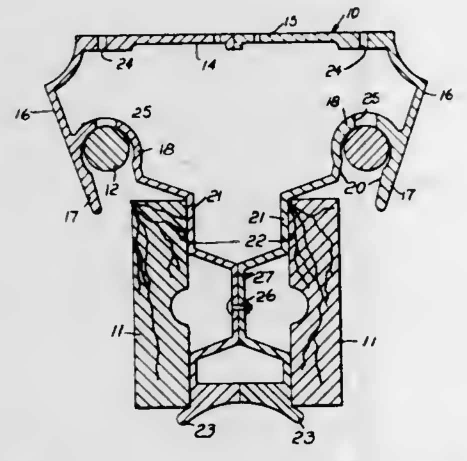
Robert J. Maziarka, Village of Niles, Ill., assignor to Alphamatic Corporation, a corporation of Illinois
Filed Oct. 6, 1966, Ser. No. 584,708
U.S. Cl. 211—56 **8 Claims**
Int. Cl. A47f *5/02;* **A47b** *49/00, 63/00*



A rotary base assembly for holding a plurality of articles including a rotatable holder tilted in a vertical plane and supported by a small weighted base having radial and horizontal extending legs which project beyond the periphery of the rotatable holder.

3,425,567
HOLDER FOR SKIS AND SKI POLES

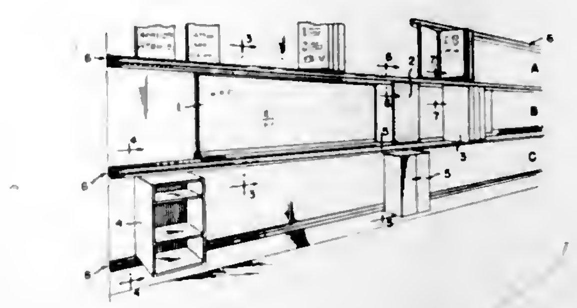
Donald H. Murray, S. 164 Division St., Spokane, Wash. 99204
Filed May 12, 1966, Ser. No. 549,593
U.S. Cl. 211—60 **2 Claims**
Int. Cl. A47f *7/00, 5/08*



A holder for mounting a pair of skis and poles on a wall comprising a bracket that mounts skis in back to back positions. The oppositely facing surfaces that engage the skis terminate in flanges defining areas for reception of poles such that the mounted skis and bindings block the ski pole recesses and prevent removal of the poles prior to removal of the skis. The bracket is formed as a unitary extruded member.

3,425,568
WALL MOUNTED EDUCATIONAL DEVICE

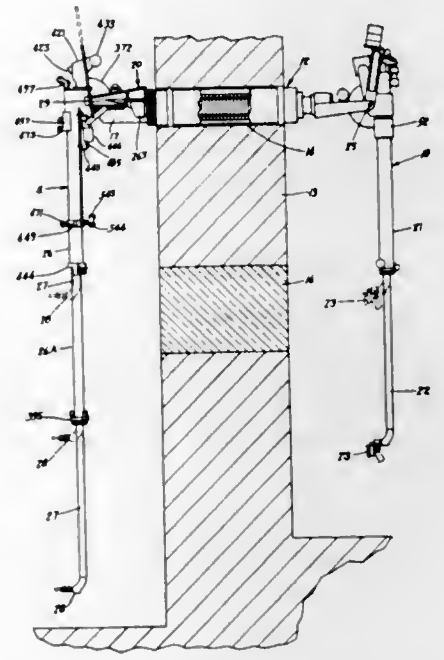
Alto O. Albright, 818 16th Ave. West, Kirkland, Wash. 98033
Filed Aug. 18, 1966, Ser. No. 573,371
U.S. Cl. 211—87 **15 Claims**
Int. Cl. A47f *5/08;* **B43l** *1/04;* **A47b** *97/02*



A structural arrangement and system for implementing visual presentation of information on the classroom or group basis. A wall surface or other vertical surface of a room is provided with a plurality of parallel vertically spaced mounting strips which cooperate with the wall surface to form upper and lower retention channels for demountably supporting such items as blackboards, apertured boards, storage cabinets, wardrobes or any other item normally used in classrooms or the like. The mounting strips also provide mounting means for swingably mounting vertically disposed display panels which are used in conjunction with the other items mounted on the walls for instructional purposes.

3,425,569
EXTENDED REACH SEALED MANIPULATOR

Lester W. Haaker, Red Wing, Minn., assignor to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
Filed Oct. 28, 1966, Ser. No. 590,274
U.S. Cl. 214—1 **13 Claims**
Int. Cl. B25j *3/00*

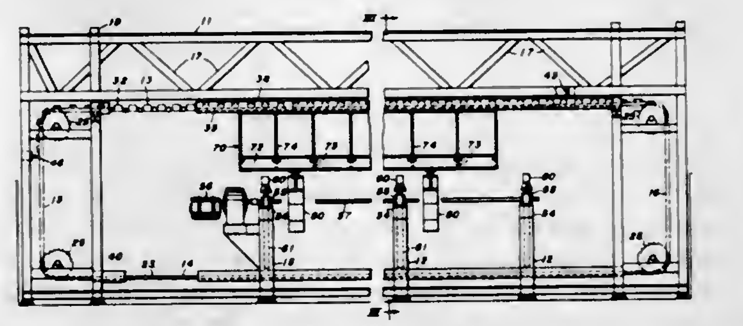


1. In a remote control master-slave manipulator adapted for operation through a barrier wall separating different environments comprising a pivoted master arm assembly adapted to be positioned on one side of a barrier wall, a pivoted slave arm assembly adapted to be positioned on the other side of the barrier wall, and a seal tube assembly adapted to extend through the barrier wall and be sealed therein, said seal tube assembly including a closed wall member separating the environments, a plurality of rotary mechanical seals extending through the closed wall of said seal tube assembly and interconnecting said master and slave arm assemblies, one end of each of said rotary mechanical seals being responsive to manipulator motions of the master arm, said rotary mechanical seals being adapted to transmit said motions to the opposite end of said rotary mechanical seals, manipulator movements in the slave arm being responsive to rotation of said rotary mechanical seals, the improvement which consists in said slave arm being extendable independently of said master arm and comprising:

(A) a trunk tube, an intermediate tube fitted telescopically within said trunk tube and a boom tube fitted telescopically within said intermediate tube;
(B) drive means mounted on said slave arm assembly and connected to drive said intermediate tube;
(C) said drive means including an actuator operative in response to power transmitted from the master arm side of said barrier wall through transmission means sealed therein; and
(D) control means for said actuator mounted on said master arm assembly, said drive means being operable from the master arm side of said barrier wall independently from operation of said master arm.

3,425,570
APPARATUS FOR HANDLING ELONGATED SHAPES

Harvey B. De Voe, Jr., and Jay M. Toms, Massena, N.Y., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 20, 1966, Ser. No. 580,643
U.S. Cl. 214—6 **1 Claim**
Int. Cl. B65g *57/14*

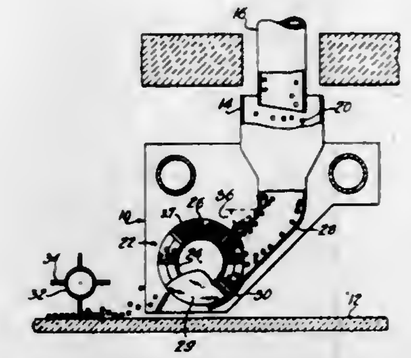


Elongated shapes such as extrusions can be transferred between operations by means of a conveyor which has supporting members over only a portion of its length so that when an elongated shape carried on this conveyor abuts against a stop, the supporting members will progressively slide from under the shape and it will descend from the conveyor to a receiving means positioned thereunder. This apparatus may also include means for raising and lowering the receiving means, and means for transferring the shapes laterally from under the conveyor.

3,425,571
MEANS FOR FEEDING COMPACTS ONTO A CONVEYING SURFACE

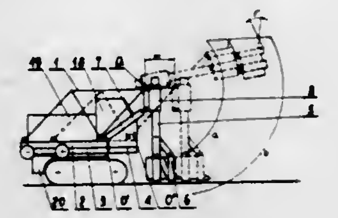
Paul W. Glaser, Islington, and Ira Dana Boynton, Lexington, Mass., assignors, by mesne assignments, to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Oct. 21, 1966, Ser. No. 588,593
U.S. Cl. 214—35 **4 Claims**
Int. Cl. F23k *3/00;* **F27b** *9/00;* **B65g** *47/12*

Apparatus is provided for uniformly feeding compacts onto the surface of an annular conveying plane. The apparatus comprises a metering drum whose capacity for conveying pellets increases in proportion to the radius of the annular surface. The metering drum and its associated feed hopper are constructed and arranged so that the pellets are not crushed as they are picked up by the metering drum.



3,425,572
GENERAL-PURPOSE HYDRAULIC SHOVEL

Ignacy Brach, Warsaw, Poland, assignor to Politechnicka Warszawska, Warsaw, Poland, a corporation of Poland
Filed Nov. 21, 1966, Ser. No. 595,890
Claims priority, application Poland, Nov. 25, 1965, P 111,765/65
U.S. Cl. 214—131 **7 Claims**
Int. Cl. E02f *3/00;* **B66c** *23/06*

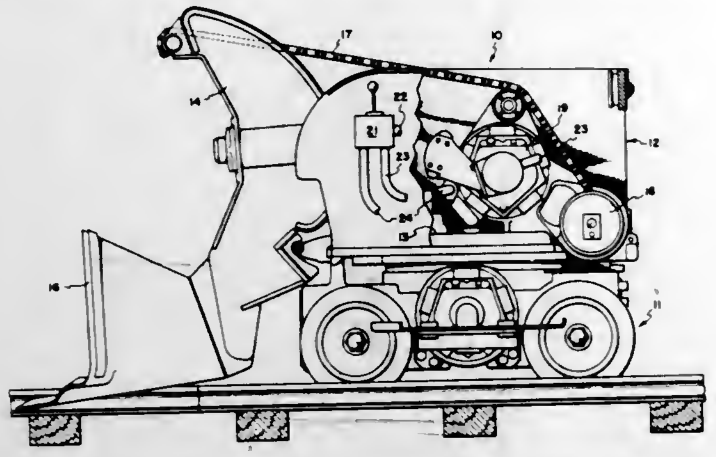


A hydraulic shovel comprising a rotary platform having a horizontally longitudinally extending truss structure in the form of a frame with two transversely spaced sets of bars extending upwardly from chords formed by the truss structure and interconnected crosswise by a stiffening frame. The shovel can be used for pusher operation by pivoting the beam of the shovel at an upper portion of the truss in a slide housing, for backhoe operation by pivoting the beam upon the lower chord of the truss and a hydraulic cylinder at the vertex thereof, for front-end loading by pivoting the beam upon the rear bar of the truss, and as a crane by pivoting the boom on the chord of the truss while a tie rod reaches from the vertex of the truss to an upper point along the boom.

3,425,573
BUCKET DRIVE FOR OVERHEAD MINING MACHINE

Frank V. McCay, Jr., Salt Lake City, Utah, assignor to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,119
U.S. Cl. 214—131 **3 Claims**
Int. Cl. E02f *3/00*

A mining machine of the type having a shovel bucket mounted on paired rocker arms connected to a bucket drive system having a non-reversing motor to raise the bucket from a lower digging position up through an overhead path for rearward discharge. A cam clutch on one shaft in the system allows the bucket to be raised by the motor but blocks reverse motion to provide a positive mechanical lock against reverse rotation to hold the bucket in an elevated position without putting a reverse load on the motor. A normally engaged releasable clutch connects the bucket to the one way shaft carrying the cam clutch and to the motor. Upon disengagement of the releasable clutch the bucket is free to fall from the elevated position.



3,425,574

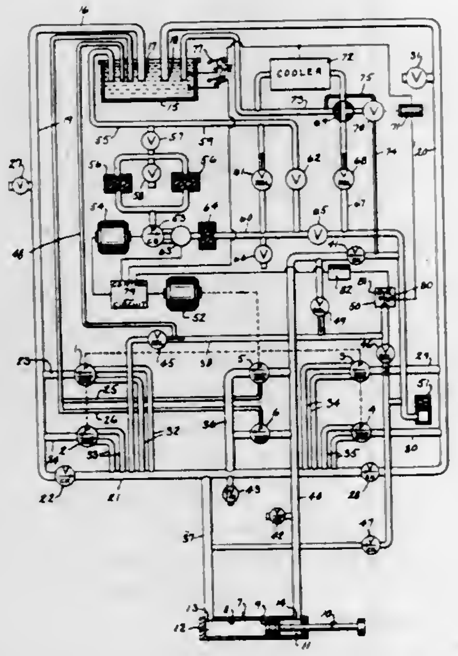
HYDRAULIC POWER UNIT FOR A DOUBLE-ACTING CYLINDER

Theodore M. Willgrubs, South Milwaukee, William H. Smith, Greendale, and Tom Learmont, Milwaukee, Wis., assignors to Bucyrus-Erie Company, Milwaukee, Wis., a corporation of Delaware

Filed Jan. 25, 1967, Ser. No. 611,663

U.S. Cl. 214—135 **12 Claims**

Int. Cl. E02f *3/30;* **F15b** *15/18*



An hydraulic power unit drives a double-acting cylinder that is mounted to crowd the dipper handle of a power shovel. In the power unit, an electric motor simultaneously drives six reversible pumps to pump fluid for the cylinder bore. Driven in one direction, all six pumps pump fluid to the blind end of the bore, while two of them meter fluid from the rod end of the bore. Driven in the opposite direction, the two pumps pump fluid to the rod end, while all six pumps meter fluid from the blind end. Auxiliary circuitry is also disclosed.

3,425,575

HAND TRUCK

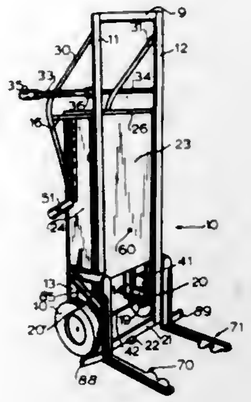
Burdette B. Crawford, P.O. Box 384, Chadbourn, N.C. 28431

Filed Sept. 13, 1967, Ser. No. 667,401

U.S. Cl. 214—379 **7 Claims**

Int. Cl. B62b *1/06, 1/00*

A two-wheel, tilt type hand truck is adapted to pick up directly from a floor position, transport and release a stack of automotive tires or the like without manual contact with the tires. A pair of opposed tong members which are actuated by a lever and linkage are mounted on the truck and are designed to make a forcible entry under, support and grip respective bottom and side surfaces of the bottommost tire of the stack.



3,425,576

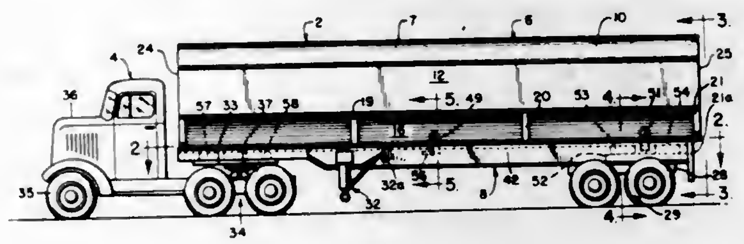
DETACHABLE CONTAINER-CHASSIS SYSTEM

John J. Martin, Warminster, Pa., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,886

U.S. Cl. 214—515 **6 Claims**

Int. Cl. B60p *1/64;* **B62d** *23/00*



A detachable container-chassis system and structure therefor including a container that is supported on a trailer chassis by inflatable air bag means which when inflated separate or raise the container above the chassis and whereby stilt means are connected to the container then and the chassis is pulled away from the stilt ground supported container, each container being provided with guide lugs for engaging guide ways on the trailer chassis to properly align the container with respect to the chassis.

3,425,577

CLOSED-CELL CERAMIC ARTICLE AND METHOD

John R. Copley, Canton, and William R. Cuming and Paul E. Rowe, Sharon, Mass., assignors to Emerson & Cuming, Inc., Canton, Mass., a corporation of Massachusetts

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,895

U.S. Cl. 215—1 **6 Claims**

Int. Cl. B65d *1/00;* **B29f** *5/00;* **C03c** *3/08*

A method of manufacturing a non-porous article particularly suitable for use as a container of food to be subjected to microwave radiation and the article made by that method. In practicing the method, hollow, spherical glass particles are mixed with water or other solvent, compacted into a relatively fragile mass, formed into a desired shape and then fired to a point above the softening point of the material at which the particles coalesce to form individual large closed cells bonded together to form a non-porous conglomerate.

3,425,578

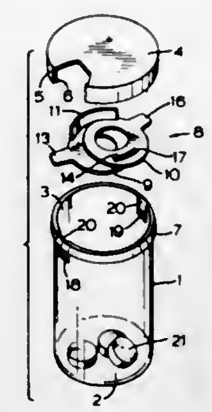
PILL CONTAINER

Nicoli Owens, Box 454, 16 Scene St., Acton, Ontario, Canada

Filed Sept. 5, 1967, Ser. No. 665,457

U.S. Cl. 215—9 **4 Claims**

Int. Cl. B65d *55/02, 83/04;* **A61j** *1/00*



In a pill container having a closure cap, an auxiliary safety closure is mounted within the container for preventing accidental removal of the contents of the container when the cap has been removed. The safety closure is a one-piece moulding of plastics material comprising a pair of relatively displaceable gate members having a normal position at which they obstruct the container opening and a non-obstructing position, the gate members being biased towards their normal position by a resilient web.

3,425,579

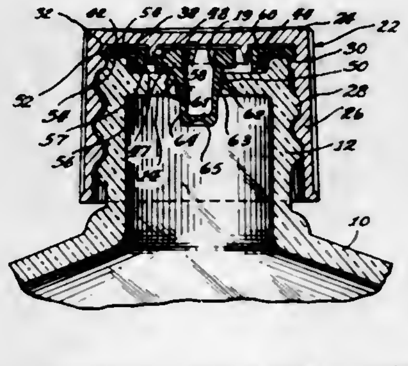
MEANS FOR EFFECTIVELY SEALING A BOTTLE OR CONTAINER

Morris Braun, Chicago, Ill., and George B. Spransy, Oconomowoc, Wis., assignors to W. Braun Company, Chicago, Ill., a corporation of Illinois

Filed June 15, 1967, Ser. No. 646,266

U.S. Cl. 215—40 **10 Claims**

Int. Cl. B65d *41/58*



Providing a closure cap with a liner positioned therein. The liner has a central plug which enters the bottle or container opening for closing same. It also has a severable portion engaged by cutting means on the cap when the cap is applied to the bottle, which severs the plug portion from the remainder of the liner so that when the cap is removed from the bottle or container it contains a portion of the sealing member which remains with the cap for repeated reclosing. The severed plug is removable from the bottle or container opening and may be discarded.

3,425,580

LIFT-TAB CROWN CAP

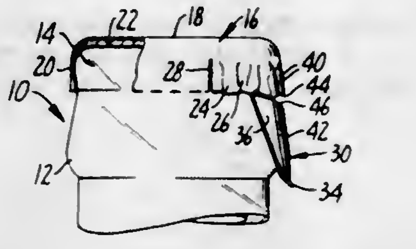
Donald J. Brockhage, El Cerrito, Calif., assignor of one-half to Orland J. Caselli, Pebble Beach, Calif.

Filed Jan. 6, 1967, Ser. No. 607,691

U.S. Cl. 215—46 **11 Claims**

Int. Cl. B65d *41/42*

A crown cap having a lift-tab secured to its peripheral flange for flexible movement relative thereto through a predetermined arc and abutments on said flange and tab to limit relative movement therebetween upon the application of continued lifting force to the tab after it has moved through the predetermined arc.



3,425,581

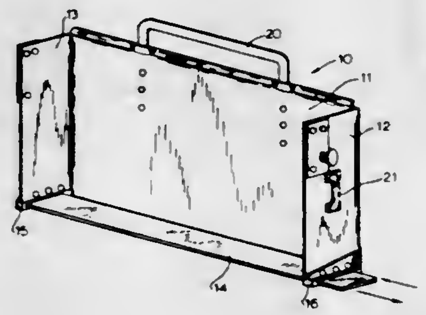
CIGARETTE TRAY

Lewis W. Pifer and Robert T. A. Pifer, Durham, N.C., assignors to Pifer Industries, Inc., Durham, N.C., a corporation of North Carolina

Filed Sept. 21, 1966, Ser. No. 580,947

U.S. Cl. 220—4 **3 Claims**

Int. Cl. B65d *7/08, 7/12;* **B65b** *19/02*



An open top tray for handling loose cigarettes in a cigarette factory and of the type having a removable front lid incorporates a pair of fasteners at the top corners of the lid which mate with the top front corners of the end walls of the tray to act as the sole means of supporting the lid and such that the end wall corners are reinforced and the end walls prevented from bending when thrown or dropped in the factory.

3,425,582

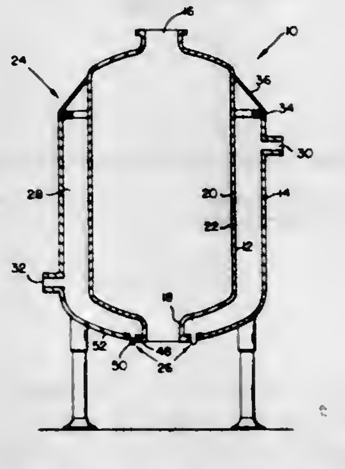
JACKETED VESSEL

Erwin J. Nunlist and Alex Primak, Penfield, N.Y., assignors to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York

Filed Nov. 7, 1966, Ser. No. 592,429

U.S. Cl. 220—14 **4 Claims**

Int. Cl. B65d *7/22, 7/40, 23/02*

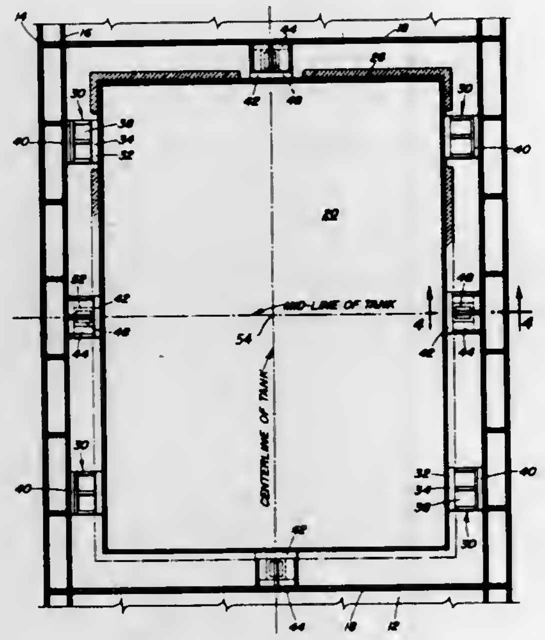


A jacketed vessel includes a stiffening ring which is fixed adjacent the connection of the jacket sealer and jacket to prevent inward and outward deflection of the jacket sealer, and a relatively flexible jacket diaphragm member connecting the jacket directly to the discharge nozzle.

3,425,583

ARRANGEMENT FOR KEYING LIQUEFIED GAS STORAGE TANKS WITHIN A TRANSPORT VESSEL

Thomas F. Bridges, Port Washington, N.Y., assignor to John J. McMullen, Montclair, N.J.
Filed Sept. 7, 1966, Ser. No. 577,741
U.S. Cl. 220—15 **9 Claims**
Int. Cl. B65d *25/24;* **B63b** *25/14, 25/16*

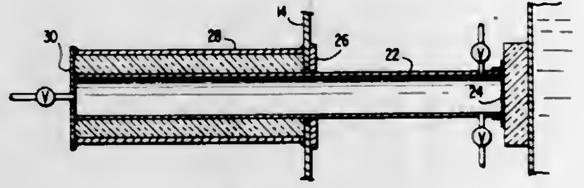


A keying arrangement for liquefied gas storage tanks within a transport ship wherein the keying arrangement maintains one point of the planar bottom of the tank fixed relative to the hull structure of the ship when the tank is expanding or contracting. The keying arrangement is composed of two members cooperating to define the key and keyway, with one of the members fixed to the upstanding tank wall, and the other fixed to the hull structure. The movement of the keying arrangement is confined to a plane substantially parallel to the plane of the bottom of the tank.

3,425,584

SHIPBOARD MOUNTING LIQUEFIED GAS TANKS

William F. Kirkpatrick, Tokyo, Japan, assignor to California Texas Oil Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,801
U.S. Cl. 220—15 **4 Claims**
Int. Cl. B65d *25/24;* **B63b** *25/14, 25/16*

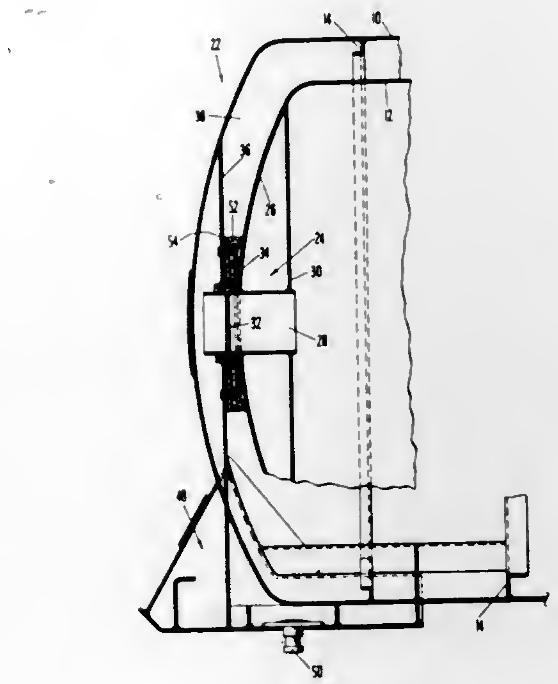


A method of mounting an independent LPG tank in the hold of a ship is disclosed in which a plurality of supports rigidly attached to structural portions of the ship are thermally longitudinally prestressed so that under operating conditions corresponding to shrinkage of the tank due to its being filled with LPG, the support members continue to exert a force against the side walls of the tank in order to securely support it within the hold of the ship.

3,425,585

SUPPORT SYSTEM FOR CRYOGENIC CONTAINERS

William Nichols Latham, Groveland, Mass., assignor to Process Engineering Inc., Plaistow Village, N.H., a corporation of New Hampshire
Filed May 24, 1967, Ser. No. 640,961
U.S. Cl. 220—15 **9 Claims**
Int. Cl. B65d *25/02, 7/22, 9/28*

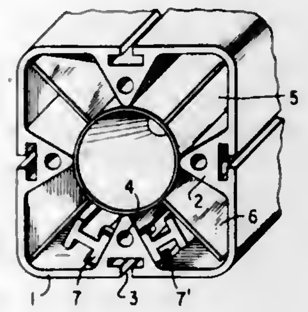


An end support for the inner vessel of a cryogenic container wherein a support secured to the end of the inner vessel is slidable within a bearing carried by a diaphragm secured to the outer vessel. The slippage accommodates the relative motion of the vessels during cool-down, and the diaphragm accommodates relative motion when the inner vessel is loaded.

3,425,586

PACKAGING CONTAINER PARTICULARLY FOR ROCKETS OR ROCKET-LIKE MISSILES

Willi J. Petters, Liebenau, and Claus Petters, Munich-Waldperlach, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Mar. 11, 1966, Ser. No. 533,502
Claims priority, application Germany, Mar. 24, 1965, D 46,881
U.S. Cl. 220—23.4 **31 Claims**
Int. Cl. B65d *21/02, 11/10*

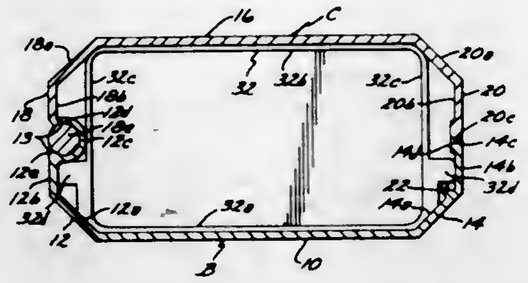


A container for packaging missiles and the like that is provided with an outside groove for connection with an identically formed container by means of an interengaging rail having opposite sides for extending within the grooves. The container may be of one-piece plastic construction or constructed of a plurality of circumferentially arranged parts connected together by a clamp forming therewith a groove.

3,425,587

ELONGATE HINGED CONTAINER AND METHOD OF FORMING SAME

Harry Robert Duross, Jr., Orange, Calif., assignor to John Moses Bishop and Emmett Francis Simon, both of Orange, Calif.
Filed Mar. 30, 1967, Ser. No. 627,013
U.S. Cl. 220—31 **11 Claims**
Int. Cl. B65d *43/16, 7/28;* **B21d** *51/52*

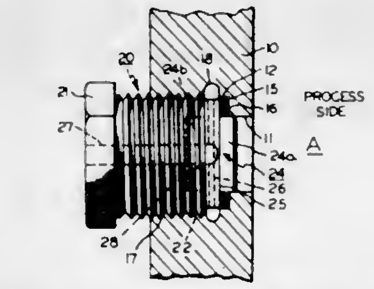


A hinged container that comprises two elongated sections with slidable and rotatably engaging portions. There are end portions attached to one of the elongated sections. And a method of forming the same.

3,425,588

CHEMICAL VESSEL ACCESS MEANS

Ralph T. Mathews, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,409
U.S. Cl. 220—39 **6 Claims**
Int. Cl. B65d *45/02, 51/00, 25/54*

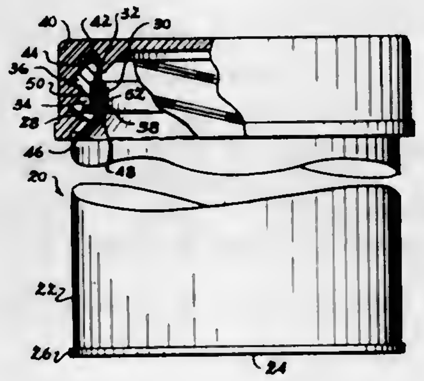


Access means incorporating a gasketed sealing plug for corrosive substances having a two-piece construction, of which only the forward end piece need be fabricated from corrosion-resistant material, the plug also having a leakage-warning passage between the rear side of the sealing gasket through to the outboard end of the plug.

3,425,589

COMPOSITE CONTAINER UNIT

Benjamin B. Lipske, Downers Grove, Frank W. Considine, Winnetka, and Richard D. Zenger, Downers Grove, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed May 31, 1967, Ser. No. 642,568
U.S. Cl. 220—39 **17 Claims**
Int. Cl. B65d *41/08, 7/04*

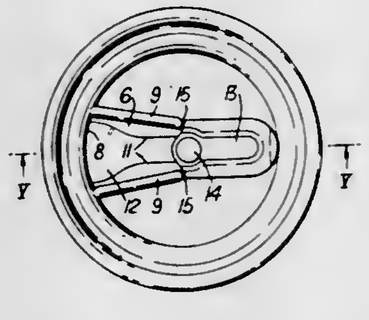


A composite container unit in which the body portion and one end wall thereof are of a metal material, and in which the other end unit is a metal or thermoplastic or thermosetting synthetic resinous material, which is removably attached, as by screw threads, to a plastic collar unit which is adhesively secured to the metal can body, and which has corresponding threads or other fastening means thereon.

3,425,590

CAN END HAVING REMOVABLE STRIP

John Edward Cook, Hadley Wood, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed Dec. 19, 1966, Ser. No. 602,925
Claims priority, application Great Britain, Mar. 2, 1966, 9,177/66
U.S. Cl. 220—54 **11 Claims**
Int. Cl. B65d *17/20, 7/38;* **B21d** *51/26*

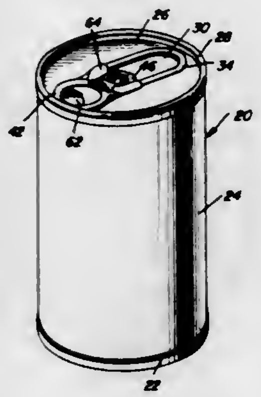


A bi-metallic can end including a can end member of tinplate having an opening formed in a panel portion and a closure member of aluminium or aluminium alloy closing the opening is disclosed herein. The closure member is affixed to the can end member solely by an adhesive compound and score lines are formed in the closure member subsequent to the adhesive joining of the two members to provide a removable portion of the closure member. A pull tab is affixed to the removable portion of the closure member by riveting.

3,425,591

CONTAINER WITH TEAR OUT CLOSURE

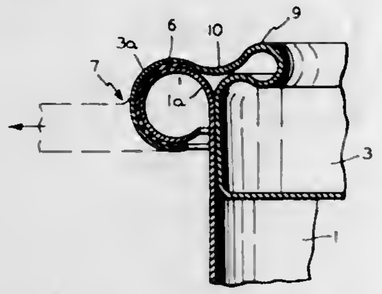
William A. Pugh, Sr., 5200 S. Harper Ave., Chicago, Ill. 60615
Filed Apr. 27, 1967, Ser. No. 634,146
U.S. Cl. 220—54 **14 Claims**
Int. Cl. B65d *17/20, 17/24, 7/04*



A container having a top or lid provided with a tear-out closure equipped with an attached ring-type pull handle for removing the closure. The tear-out closure being in the form of: a diametrically extending tab, a peripheral strip for removing the entire top or lid, or a complete top to be torn off. Each of the ring-type pull handles has an extension which acts as a fulcrum and initial puncture producing element to facilitate the opening of the container and removal of the closure.

3,425,592
CONTAINER HAVING A LID OPENING DEVICE

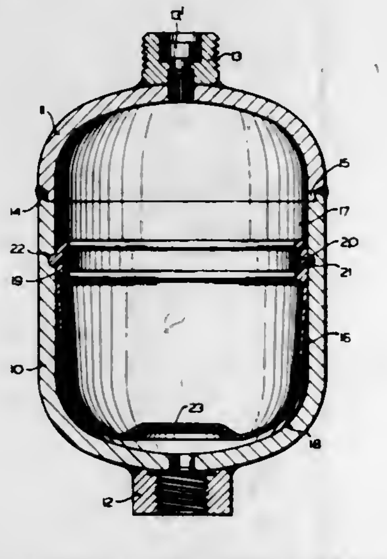
Bruno Vogel, Basel, Switzerland, assignor to Vogel A.G., Aesch, Switzerland, a Swiss company
Filed Feb. 13, 1968, Ser. No. 705,165
Claims priority, application Switzerland, Feb. 14, 1967, 2,128/67
U.S. Cl. 220—54 **5 Claims**
Int. Cl. B65d *41/40, 21/04, 7/04*



A container having a lid opening device with a beaded upper edge. The lid has a rim shaped to at least partly embrace the edge and a line of weakness around and spaced from its periphery permitting an edge strip of said rim to be torn off. The lid has a recessed center adapted to the internal space of the container and a flange extending from the periphery of the lid forms a finger hold whereby the rim may be torn along the line of weakness to permit removal to open the container. An indentation is formed in the lid between the flange and the rim adapted for cooperation with the bottom edge of the body of another similar container.

3,425,593
PRESSURE VESSEL WITH A RESILIENT SEPARATING MEMBRANE

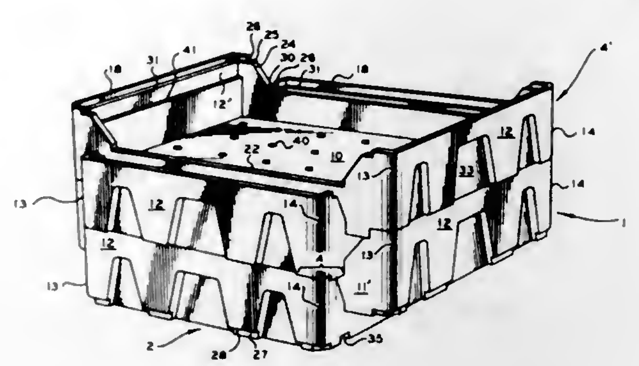
Manfred Krämer, Winterbach, Siegfried Mayer, Kleinglattbach, Rudolf Reichert, Giengen an der Brenz, Klaus Rose, Mundelsheim, and Wilhelm Zirps, Gerlingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany
Filed Apr. 19, 1966, Ser. No. 543,586
Claims priority, application Germany, May 22, 1965, B 82,062
U.S. Cl. 220—85 **2 Claims**
Int. Cl. B65d *25/04;* **F16l** *55/04*



A resilient membrane, separating the pressure vessel into two chambers, is held against the inner wall of the vessel by a rigid ring initially of smaller outer diameter than the inner diameter of the membrane and inserted between a reinforced edge region of the membrane, the ring being subsequently expanded after emplacement, the membrane having an outer annular welt fitting into a corresponding annular groove formed on the inner surface of the vessel in the holding region of the membrane.

3,425,594
CONTAINER

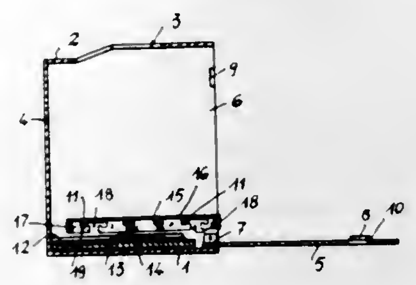
Orville J. Bridenstine, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,377
U.S. Cl. 220—97 **6 Claims**
Int. Cl. B65d *21/04, 1/22;* **A47f** *3/14*



A container wherein two opposed sides have cutout portions for receiving another container in an interlocking relationship, the container having lower corner recesses for receiving the upper corner of a similarly constructed container disposed below the recesses for interlocking at the corners.

3,425,595
CONTAINER FOR SMALL PAPER NAPKINS

Nathan Shapira, Los Angeles, Calif., assignor to Cartiera di Cairate S.p.A., Milan, Italy
Filed Sept. 11, 1967, Ser. No. 666,635
U.S. Cl. 221—52 **7 Claims**
Int. Cl. A47k *10/20;* **B65h** *1/04*

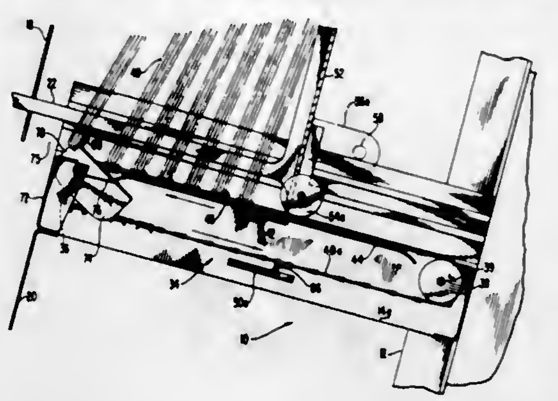


A container for small paper napkins which comprises a housing with a removable side wall and a top wall having an aperture, and a moving member accommodated within the housing and urged by a spring to the top wall. A number of teeth project internally of the housing and coact with slots in the moving member by restraining it adjacent the bottom wall of the container when the removable wall is at open position; the arrangement of the teeth and slots is such that on closing the removable wall the moving member is automatically disengaged from the teeth.

3,425,596
VENDING MACHINE FOR NEWSPAPERS AND PERIODICALS

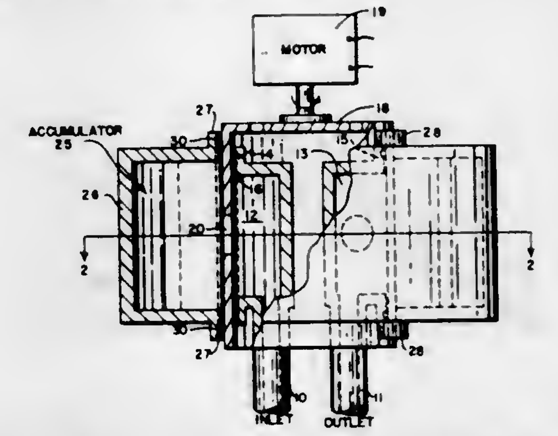
Thaddeus S. Marczak, 1227 N. Olsen 85719, and Frank A. Casanova, 6002 Wendrew Lane 85711, both of Tucson, Ariz.
Filed Sept. 27, 1967, Ser. No. 671,014
U.S. Cl. 221—77 **10 Claims**
Int. Cl. G07f *11/40;* **B65h** *1/02*

A vending machine for periodicals having a supporting conveyor enclosed by a housing with a conveyor actuating handle extending therefrom. A slot and feeding mechanism are disposed at the forward edge of the machine for dispensing individual periodicals on actuation of the conveyor. A coin-released locking mechanism normally blocks operation of the conveyor.



3,425,597
ROTARY SAFE LEAK VALVE

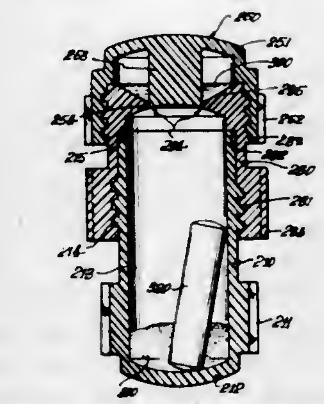
James C. Blackett, St. Louis Park, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,882
U.S. Cl. 222—3 **3 Claims**
Int. Cl. G01f *11/42;* **B67d** *5/20, 5/02*



A rotary safe leak valve having separate inlet and outlet housings disposed with a cylindrical valving member, with an accumulator housing separate from the inlet and outlet housings, the accumulator housing having two separated portions disposed outside of the cylindrical valving member and opposite the inlet housing and outlet housing respectively, and with means to continuously rotate the valving member to first cause flow from the inlet to the accumulator and then cause flow from the accumulator to the outlet.

3,425,598
DISPENSING CONTAINER HAVING A MEMBRANE PUNCTURING MEANS

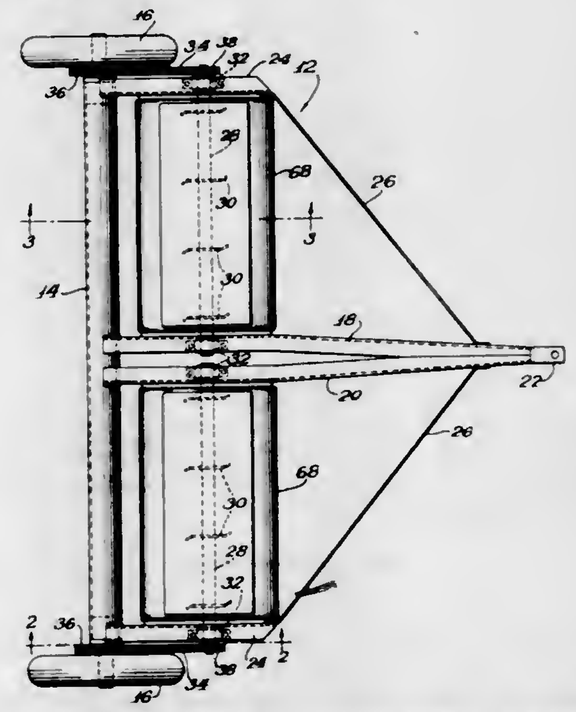
Gerald Kobernick, 5290 Prosperity Lane, San Diego, Calif. 92115
Filed June 14, 1967, Ser. No. 645,981
U.S. Cl. 222—83 **1 Claim**
Int. Cl. B67b *7/24;* **B65d** *81/32, 47/10*



An apparatus for prepackaging dental materials, particularly silicates and the like, in which a dry material is mixed in with a liquid material immediately prior to use, before use, however, a dry material and a liquid material are kept separated in a container having a plurality of parts designed to keep the different items apart from one another until ready to use.

3,425,599
GRAVITY TYPE FERTILIZER SPREADER

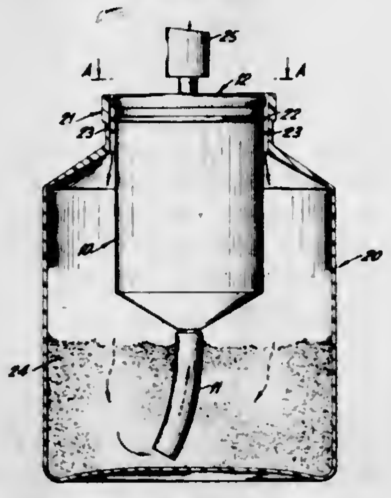
Peter Sammarco, Bellwood, and Charles V. Everett, Warrenville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 619,977
U.S. Cl. 222—177 **11 Claims**
Int. Cl. B65g *65/48;* **B60p** *1/56, 1/58*



A gravity type fertilizer spreader having a wheel driven rotor and a frame member. A hopper having an opening positionable on the frame member. A hopper bottom and a slide having dispensing openings, the slide being shiftable relative to the bottom to regulate the flow of fertilizer, are pivotally attached to the frame member. Clamps releasably secure the hopper, the slide and the bottom to the frame in operative position relative to the rotor.

3,425,600
PRESSURIZED POWDER DISPENSING DEVICE

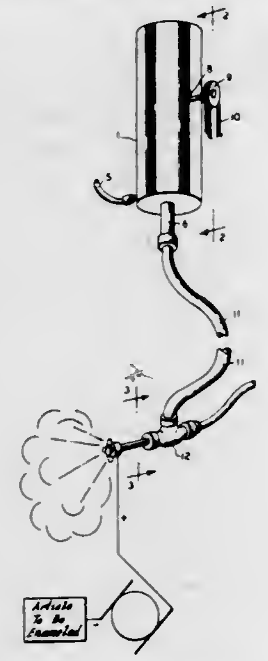
Robert Henry Abplanalp, 10 Hewitt Ave., Bronxville, N.Y. 10708
Filed Aug. 11, 1966, Ser. No. 571,824
U.S. Cl. 222—193 **11 Claims**
Int. Cl. B67d *5/54, 5/60;* **B05b** *7/00*



Gas flow passages for the product container of a pressurized dispenser of the isolation type are adapted to assist in urging product toward a discharge ejector by causing turbulent agitation of a powdered product and positive pressure assistance for a viscous product.

3,425,601
APPLICATOR FOR PARTICULATE MATERIAL

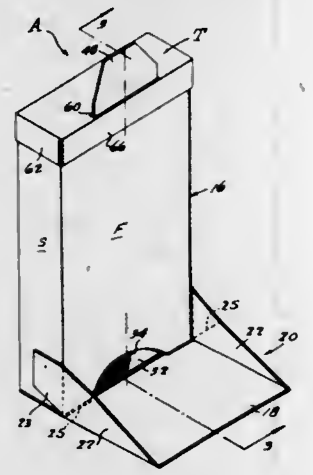
Ralph Fry, Warren, Pa., assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 6, 1966, Ser. No. 577,445
U.S. Cl. 222—193 **5 Claims**
Int. Cl. B67d *5/54;* **B05b** *5/00, 7/00*



Apparatus for the continuous, controlled deposition of powdered, dry process porcelain enamel to a heated cast metal substrate.

3,425,602
ONE-PIECE SEED DISPENSING CARTON

Julius C. Tucci, 181 W. 2nd St., Weston, W. Va. 26452
Continuation-in-part of application Ser. No. 545,192, Apr. 1, 1966. This application Feb. 21, 1967, Ser. No. 623,175
U.S. Cl. 222—457 **14 Claims**
Int. Cl. B65d *25/52, 47/08;* **G01f** *13/00*

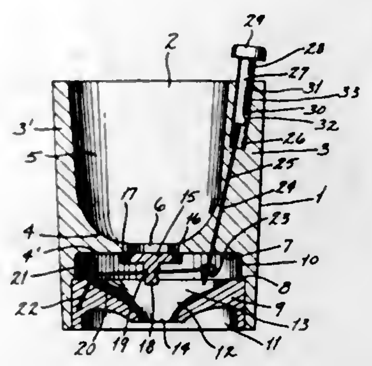


A one-piece seed dispensing carton comprising a single, flat sheet of relatively rigid but foldable material cut and scored to form a container having front and rear walls, top and bottom walls and side walls; a seed delivery opening in said front wall and means inside the carton for guiding said seed to said opening.

3,425,603
VALVE OPERATED LIQUID DISPENSER

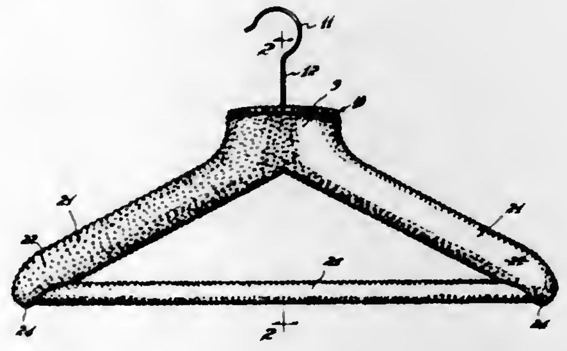
Theodore W. Medlin, 830 Mitchell, New Madrid, Mo. 63869
Filed Aug. 14, 1967, Ser. No. 660,426
U.S. Cl. 222—517 **5 Claims**
Int. Cl. B67d *3/00, 5/34;* **B65d** *47/24*

A dispenser for liquids having a bowl for receiving a predetermined quantity of liquid to be dispensed, said bowl being open to the top and having a discharge orifice in its lower portion which is normally closed by a spring-biased valve; said valve being adapted for manual operation so that upon movement into open position liquid will be dispensed through said discharge orifice.



3,425,604
GARMENT HANGER

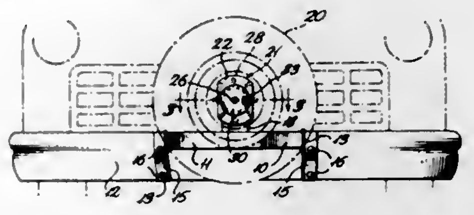
William E. Mauldin, 3596 Fieldcrest Drive, Cincinnati, Ohio 45211
Filed Oct. 6, 1967, Ser. No. 673,333
U.S. Cl. 223—88 **2 Claims**
Int. Cl. A47j *51/098*



A garment hanger for hanging men's suits and the like, from a closet rod including, for example, a collar support, a hook extending upwardly from the collar support for engaging the rod, and shoulder beams depending downwardly and outwardly from the collar support, the collar support and shoulder beams having a dimpled surface at least in those areas where garments are hung. Preferably, the garment hanger is molded from a thermoplastic by blow molding techniques so that the hanger is both light in weight and economical to manufacture.

3,425,605
TIRE CARRIER

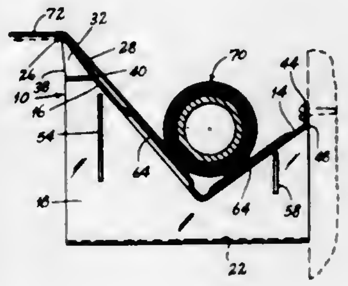
Raymond E. Triboulet, Yakima, Wash., assignor to Triboulet Bros., Yakima, Wash., a partnership
Filed Sept. 5, 1967, Ser. No. 665,617
U.S. Cl. 224—42.06 **5 Claims**
Int. Cl. B62d *43/02;* **B60r** *19/02*



A spare wheel and tire carrier particularly for pick-up trucks having camper bodies characterized by extreme simplicity of construction, sturdiness and easy access. The wheel and tire carrier is mounted on the front bumper of the vehicle resulting in improved weight distribution and steering, as well as saving of wear on tires.

3,425,606
INTEGRAL PLASTIC ROLL DISPENSER

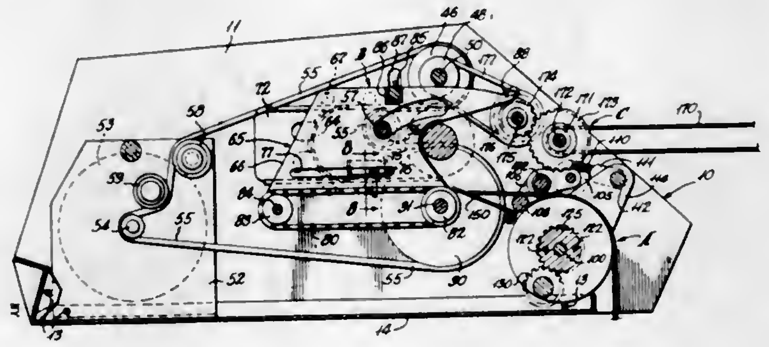
William J. Burke, Ladue, Mo., assignor to Roll-O-Sheets, Inc., St. Louis, Mo., a corporation of Missouri
Filed Sept. 21, 1966, Ser. No. 581,018
U.S. Cl. 225—77 **7 Claims**
Int. Cl. B26f *3/02*



An integral plastic dispenser for dispensing transversely scored rolls or film or foil in the form of sheets. The dispenser has a trough having converging front and rear walls receiving a roll of material in web form with an elevated point for piercing the web as it is pulled out of the trough away from the roll. Support means for the trough are provided comprising flat vertical end walls integrally connecting the front and rear walls of the trough to forwardly extending flanged extensions at the front wall of the trough. The front and rear walls of the trough are provided with longitudinally extending ribs projecting above the top surfaces of the trough walls to serve as a reinforcing means and to reduce friction on the roll. A plurality of inwardly extending ribs connect the bottom surfaces of the trough wall to the inside surfaces of the vertical support walls for reinforcement and support.

3,425,607
STRIP FEEDING AND SEVERING MACHINES

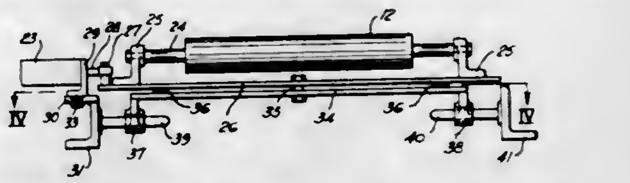
Albert A. Sargent, Grand Island, N.Y., assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,024
U.S. Cl. 225—100 **18 Claims**
Int. Cl. B65h *35/10*



A bursting apparatus is provided with a stack of three rolls comprising top and bottom rolls driven at different speeds and a third intermediate roll assembly disposed between the two driven rolls. The top and bottom rolls include a series of axially spaced rigidly connected discs which are mounted on the respective rolls such that the separated sleeves of the bottom roll are positioned in nonregistered alignment with those of the top roll. The paper web is fed between the bottom roll and intermediate roll, reversed by means of a deflector member, the successive lead ends fed back between the upper roll and the intermediate roll, and the web snapped against a breaker blade due to the faster rotation of the upper roll with respect to the lower roll.

3,425,608
WEB GUIDING ROLLER AND SUPPORT

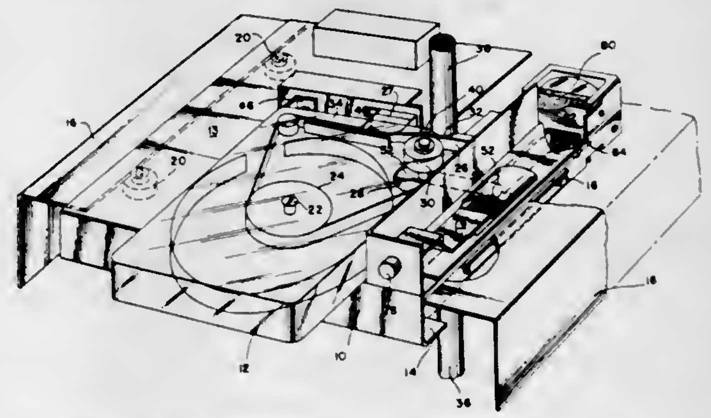
Frank Lembo, 235 McLean Blvd., Paterson, N.J. 07504
Filed May 17, 1967, Ser. No. 639,184
U.S. Cl. 226—19 **7 Claims**
Int. Cl. B65h *25/26*



Rollers guiding a web on its way to a processing equipment are subjected to a manually adjustable swivelling movement and simultaneously to a movement transverse to the direction of the web. The swivelling movement is effected by an upper plate carrying the rollers while the transverse movement is carried out jointly by the upper plate and by a suitably guided lower plate. The movements are produced by a hydraulic cylinder which is actuated by an error signal produced by a finger sensing the web by air pressure.

3,425,609
TAPE CARTRIDGE DECK

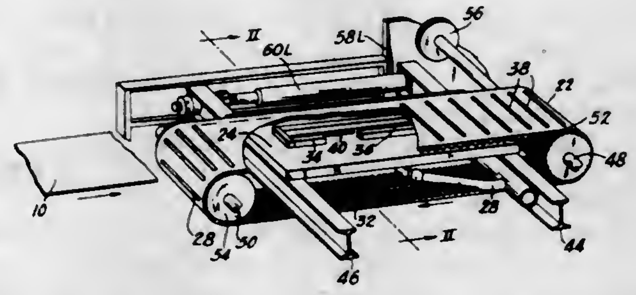
Ross H. Beville, Bethesda, Md., and Wayne E. Schober, Minneapolis, Minn., assignors to Broadcast Electronics, Inc., Silver Spring, Md., a corporation of Maryland
Filed Jan. 6, 1967, Ser. No. 608,481
U.S. Cl. 226—90 **7 Claims**
Int. Cl. G03b *1/56;* **B65h** *17/18*



This specification discloses a mechanism for moving a pinch roller into contact with a capstan on a tape deck. The pinch roller is first rotated through an arc to a position in parallel with the capstan axis, and then in a direction perpendicular to the capstan axis and into contact therewith.

3,425,610
VACUUM DEVICE FOR ADVANCING A CONTINUOUS WEB

Warren A. Stewart, Monkton, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,460
U.S. Cl. 226—95 **2 Claims**
Int. Cl. B65h *17/28, 17/34, 29/32*



A pressure-balanced vacuum belt assembly for advancing a continuous web, such as paperboard, comprising an endless toothed belt surrounding a pair of spaced, toothed and driven pulleys and a vacuum chamber supporting the upper run of the belt between the pulleys. The belt includes a narrow circumferential slot in the lateral center thereof whose depth extends to the root face of the teeth; a plurality of radial holes extending through the belt from the bottom of the slot to the outer face; and a network of grooves in the outer face of the belt extending laterally from the holes but terminating short of the edges of the belt. The vacuum chamber includes a pair of anti-friction slides positioned within the belt slot on either side of the radial holes. Atmospheric pressure fills the spaces between the teeth as far as the anti-friction slides and thereby counteracts the atmospheric pressure bearing against the top of the belt, through the web, to provide a pressure-balanced vacuum belt assembly.

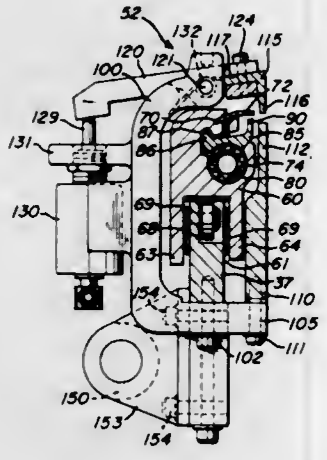
3,425,611
PLASTIC PACKAGING

David R. Zelnick, Dayton, Ohio, assignor to Koehler-Dayton, Inc., Montgomery County, Ohio, a corporation of Ohio

Filed Sept. 30, 1966, Ser. No. 583,292

U.S. Cl. 226—162 **10 Claims**

Int. Cl. B65h *17/20*



A plastic film packaging machine and conveyor in which the strip of plastic film material is conveyed from a roll through a succession of modifying or shaping stations for preheating, forming, loading and then sealing, and in which a step-by-step conveyor grips the film along its edges. The conveyor includes a pneumatically-operated pair of gripping members which operate to advance the film and to secure the film in its advanced position longitudinally along its length, and a second pair of gripping members which do not move longitudinally but which grip the film strip inwardly of the first pair of gripping members for assisting in restraining the film during the forming operation, and for retaining during retracting movement of the conveyor grippers and which are arranged in non-interfering relation to the conveyor grippers.

3,425,612
DUAL ROLL FEEDING APPARATUS

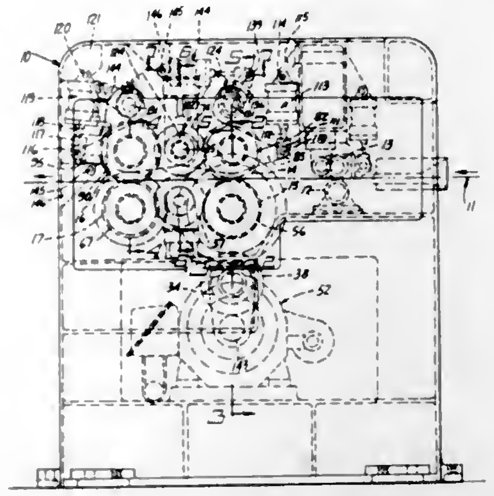
John A. Huber, Birmingham, and Berlyn E. Baringer, Southfield, Mich., assignors to U.S. Industries, Inc., Detroit, Mich., a corporation of Delaware

Filed May 25, 1967, Ser. No. 641,203

U.S. Cl. 226—177 **5 Claims**

Int. Cl. B65h *17/20*

A strip stock feeding machine having two sets of feed rolls that are positively driven by gears, with each set of feed rolls including one roll journalled on a pivotally mounted carrier that maintains the pivot point or pivot axis of the carrier at a constant distance from the center or rotational axis of the movable roll equal to the pitch diameter of the roll drive gears, so that the positive drive between the roll drive gears and the feed rolls is never lost as the movable feed roll in each set is pivoted to vary the opening between the rolls in each set to permit the feeding of various thicknesses of strip stock, and also to permit the use of only one of the sets of feed rolls alone or both sets together.



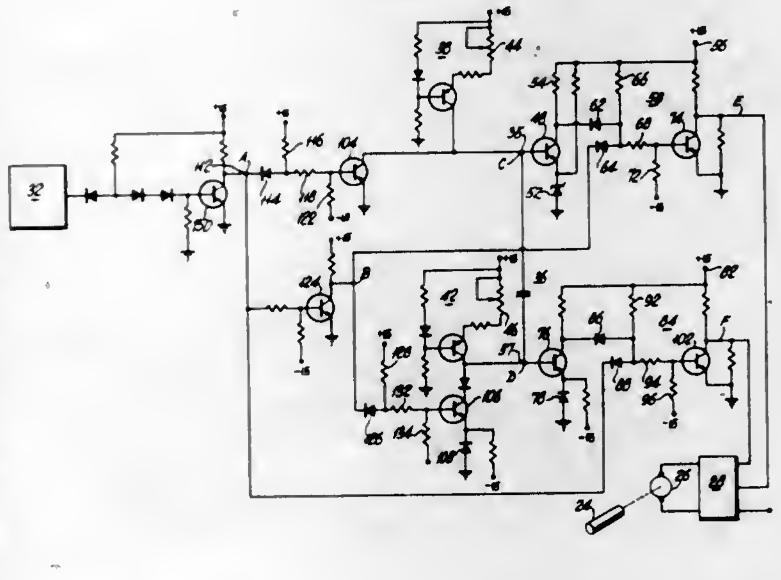
3,425,613
SYSTEM FOR CONTROLLING THE STARTING AND STOPPING OF A CAPSTAN

Frederick Reisfeld, Commack, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed July 10, 1967, Ser. No. 652,289

U.S. Cl. 226—178 **5 Claims**

Int. Cl. B65h *17/22, 17/28*



A timing pulse generator determines the starting and stopping intervals of a capstan motor in a single capstan magnetic tape transport as a function of the just previous interval.

3,425,614
APPARATUS FOR ALIGNING PIPE ENDS

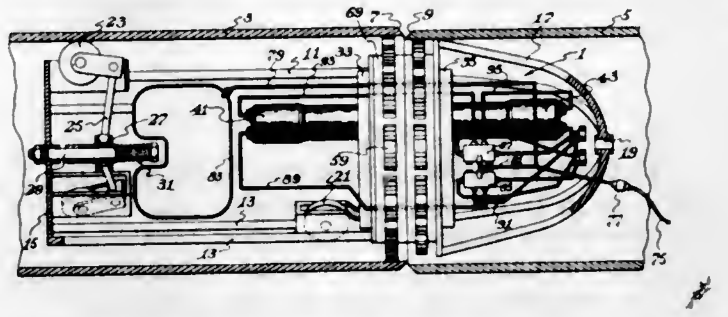
Julius Clark, 313 W. Boston Ave., Broken Arrow, Okla. 74012

Filed May 19, 1967, Ser. No. 639,875

U.S. Cl. 228—49 **12 Claims**

Int. Cl. B23k *37/04*

A lineup clamp for welding pipeline sections, in which an air motor drives gearing which simultaneously drives a plurality of radially arranged screws having nuts thereon that are the lineup shoes. There are plural easily replaceable rollers on the shoes. The air motors are selectively operable in forward or reverse by rotation of the same handle that pulls the lineup clamp through the pipeline.



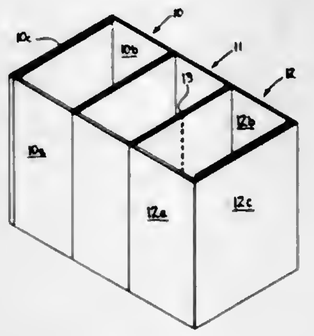
3,425,615
MULTI-CELL BULK CONTAINER

Robert N. Wood, Indianapolis, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed July 7, 1967, Ser. No. 651,840

U.S. Cl. 229—15 **2 Claims**

Int. Cl. B65d *5/48*



A container having one or both ends multi-ply which can be folded into relatively flat configuration, and in which the blank from which the container is erected may be coated continuously over the face of the blank forming the inner surface of the container without interfering with the surfaces of the container to be subsequently glued in assembling the container.

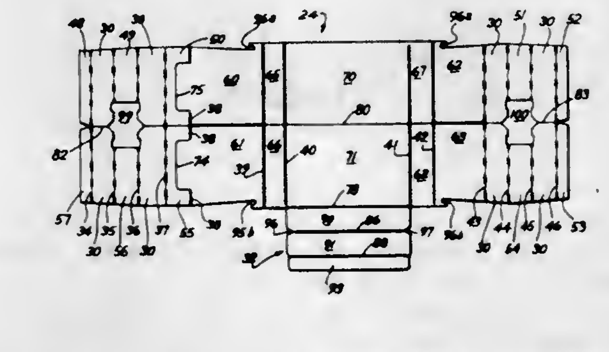
3,425,616
CELLULAR CARTON

Leonard Adams, Jr., Louisville, Ky., assignor to The Finn Industries, Inc., Chicago, Ill., a corporation of Delaware

Filed May 3, 1967, Ser. No. 635,832

U.S. Cl. 229—28 **6 Claims**

Int. Cl. B65d *5/36, 5/48, 5/66*



A cellular carton including, generally, a number of individual cells for receiving and retaining articles. The carton is formed from a single blank of sheet material which is cut, scored, folded and glued in a fashion such that it is in a "knock-down," ready-for-shipping condition upon being formed and is thereafter easily erected for filling. Separate covers are provided for the cartons and each of them has an offset locking flange which, upon being inserted into the carton, automatically lockingly engages with a locking notch of the carton to fixedly secure them to the cartons.

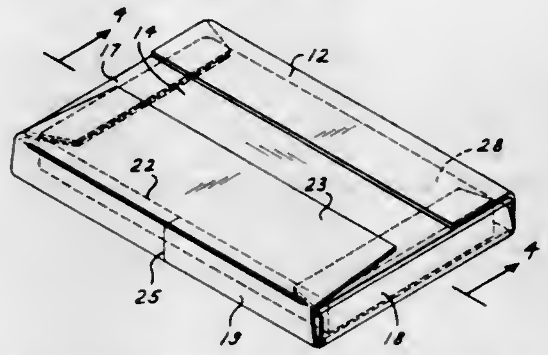
3,425,617
COMBINATION BOOK MAILING ENCLOSURE AND BOOK PROTECTOR

Elizabeth B. Gerald, 203 E. 60th St., New York, N.Y. 10022

Filed Jan. 16, 1968, Ser. No. 698,285

U.S. Cl. 229—40 **5 Claims**

Int. Cl. B65d *5/02, 85/00;* **B42d** *3/10*



A pair of book-cover-size panels are joined by a flexible web, so that when book is closed one panel overlies each book cover and web overlies book spine. Flexible flaps hinged to upper edges of both panels, and lower and side edge of one panel. Flaps carry pressure sensitive adhesive covered by removable protective strips. Flexible band may extend across inner surface of device, one end of band secured to each panel.

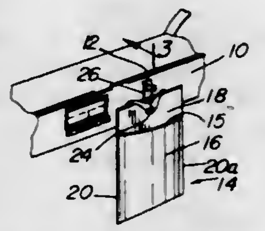
3,425,618
LITTER BAG

Robert Cohen, Bellmore, N.Y., assignor, by mesne assignments, to Comet Packaging Corporation, Bronx, N.Y., a corporation of Delaware

Filed Dec. 4, 1967, Ser. No. 687,710

U.S. Cl. 229—53 **2 Claims**

Int. Cl. B65d *33/14*



A disposable litter bag comprising a thin plastic open-ended envelope having front and rear panels, the rear panel extending upwardly of the front panel and having an opening therein and a separable strip which, upon separation from said rear panel and insertion through said opening, forms a sling for suspending the bag at a position well below a supporting object to preclude soiling of the supporting object during use of the litter bag.

3,425,619
PUSH-BUTTON CARD

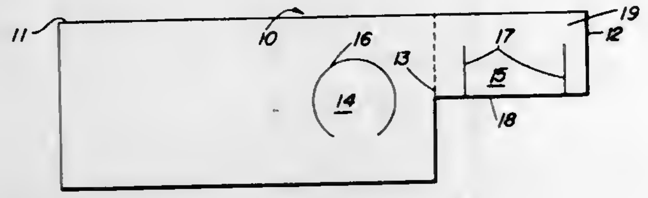
Louis C. Woyce, Jr., Phoenixville, Pa., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Mar. 1, 1967, Ser. No. 619,688

U.S. Cl. 229—92.8 **5 Claims**

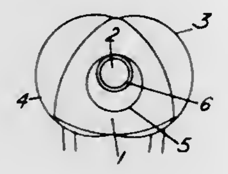
Int. Cl. B42d *15/04;* **B42f** *1/00*

A mailing card construction formed from a single blank having at least two portions each of which has a partially cut-out area arranged so that when the several portions are folded and secured adjacent one another, the cut out areas are superimposed. When the first cut-out area is depressed, the second cut-out area comes into view by partially covering the first cut-out area.



3,425,620
ROTARY PISTON ENGINE GEARING

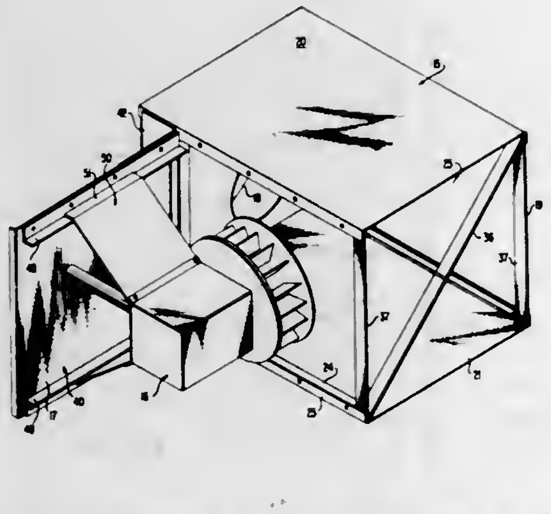
Kenneth Thornton, Nantwich, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 10, 1967, Ser. No. 622,333
Claims priority, application Great Britain, Mar. 28, 1966, 13,664/66
U.S. Cl. 230—145 **14 Claims**
Int. Cl. F04c *17/02;* **F16h** *1/28;* **F02b** *53/00*



Gearing suitable for a rotary piston engine and comprising an externally toothed gear meshing with and mounted within an internally toothed gear, the diameters of the addendum and dedendum circles of each gear being substantially greater than the pitch circle diameter thereof; the working profiles of the teeth of one of the gears being in the form of circular arcs and the working profiles of the teeth of the other gear being conjugate thereto. The gears are adapted for relative eccentric rotation.

3,425,621
INLINE CENTRIFUGAL FAN WITH DOOR

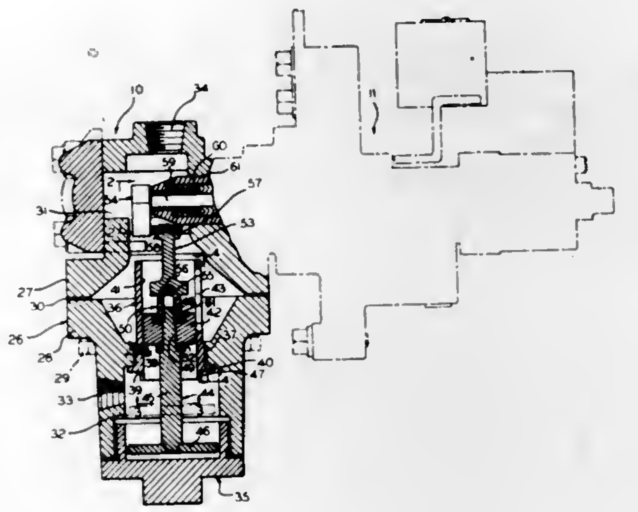
Robert C. Greenheck, Schofield, Wis., assignor to Greenheck Fan & Ventilator Corp., Schofield, Wis., a corporation of Wisconsin
Filed Aug. 23, 1967, Ser. No. 662,824
U.S. Cl. 230—235 **6 Claims**
Int. Cl. F04b *39/00;* **F04d** *25/06, 25/08*



An inline centrifugal fan module having a square housing and a swinging door assembly which carries a motor blower unit, the frusto-conical inlet curb of the housing and the swinging axis of the door assembly being coordinated to provide mating alignment of the centrifugal wheel with the curb, while also facilitating free outward swinging for access and service regardless of the space orientation thereof; the curb being adjustable for providing mating alignment.

3,425,622
CONTROL FOR A STEAM GENERATOR

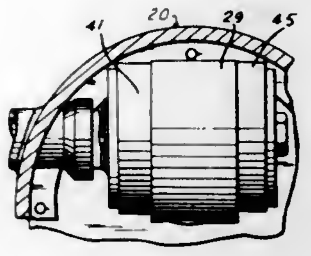
Thomas F. Cook, Arlington Heights, and Stanley E. Dybczak, Chicago, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,335
U.S. Cl. 236—25 **10 Claims**
Int. Cl. F22b *35/00*



This invention relates in general to a control for a steam generator, and more particularly to a control for metering air and fuel in response to feedwater requirements, and still more particularly to a diaphragm-less control that is relatively insensitive to water surges or pulses and which maintains the same calibration throughout its life.

3,425,623
STEAM SEPARATOR

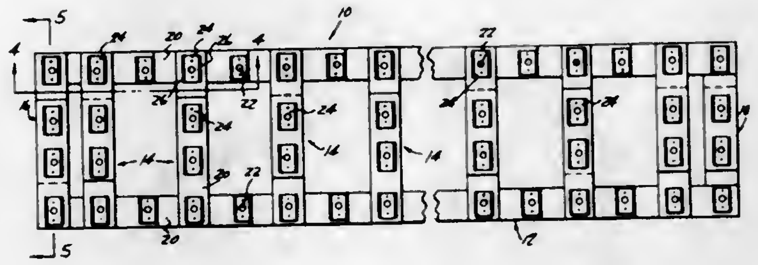
Louis J. Elliott, Encinitas, Calif., assignor to Autosearch, Inc., Encinitas, Calif., a corporation of Nevada
Filed Aug. 9, 1965, Ser. No. 478,231
U.S. Cl. 237—9 **5 Claims**
Int. Cl. F24d *1/00;* **G05d** *16/12;* **F16t** *1/04*



A method of, a system and an apparatus for returning condensate of vapor from the high pressure to the low pressure side of a closed steam circuit, employing a tank or trap in parallel with the work load, and preventing flow of condensate from the tank until a predetermined level of condensate is attained, and, thereafter releasing the condensate from the tank at a rate commensurate with the rate of ingress of condensate to the tank.

3,425,624
TRACTION DEVICE

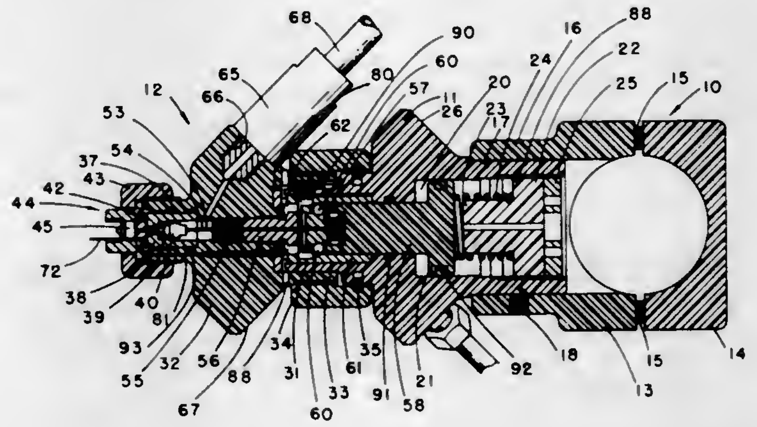
Gus D. Jacobs, 12750 Lincoln, Huntington Woods, Mich. 48070
Filed May 8, 1967, Ser. No. 636,902
U.S. Cl. 238—14 **8 Claims**
Int. Cl. E01b *23/00;* **B62d** *55/08*



A device for insertion between the wheel of a vehicle and the roadway, to provide traction, consists of a pair of flexible elongated strips joined in a parallel relationship by a plurality of shorter, regularly spaced, transversely extending strips, in a ladder-like arrangement. Both the parallel strips and the transverse connecting sections are formed of flat, shorter overlapping sections. A plurality of metal cleats are spaced along both surfaces of the parallel strips and the connecting sections, at points where the short elements overlap. The spacing between the parallel strips is approximately equal to the tread width of the tire the device is to be used with and the spacing between adjacent transverse strips is slightly less than that distance.

3,425,625
ELECTROSTATIC SPRAY DEVICE

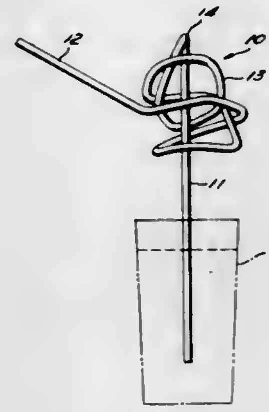
Richard O. Probst, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana
Filed Aug. 11, 1967, Ser. No. 659,931
U.S. Cl. 239—15 **12 Claims**
Int. Cl. B05b *5/00, 1/32*



A remotely controlled electrostatic spray gun comprising removably interconnected front and rear sections, each comprising a body of insulating material. The front section has (1) a liquid passage provided with a valve and terminating in a discharge orifice, (2) a spray charging electrode adjacent the orifice, and (3) a conductive element connected to said electrode and extending rearwardly therefrom. The rear section has a remotely controlled motor and a conductive element adapted for connection to a source of high voltage and for contact with the first mentioned conductive element when the two sections are assembled. Means for operatively interconnecting the motor and valve includes two members and a mechanism for automatically connecting them together when the two sections are assembled and automatically separating them when the two sections are separated.

3,425,626
DRINKING STRAW

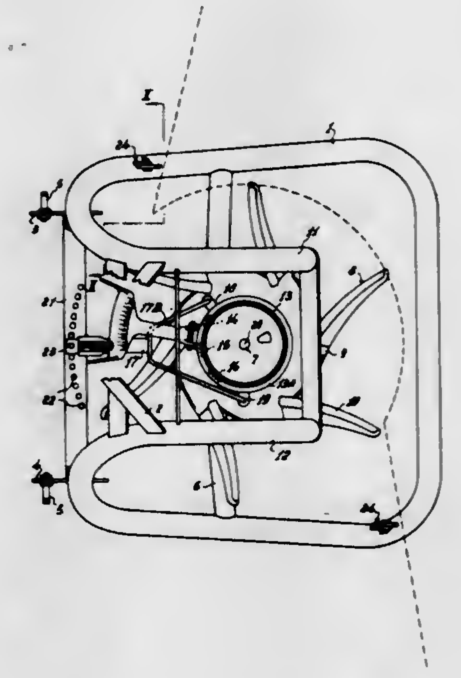
John F. Dietz, 9020 Ranch Drive, Chesterland, Ohio 44026, and Frederick E. Dietz, 37428 Park Ave., Willoughby, Ohio 44094
Filed Dec. 4, 1967, Ser. No. 687,755
U.S. Cl. 239—33 **6 Claims**
Int. Cl. F16l *9/12;* **A63h** *7/00, 33/00*



A tube for drinking liquids from a container. The straw has straight end portions which extend from a mid portion of the drinking straw. The mid portion comprises a plurality of tortuous bends, at least the majority of which encompass portions of one of the straight end portions of the straw. The straight end portions of the straw define an angle which is greater than 90 degrees but less than 180 degrees so that either end of the straw may be placed in a container and so that, in either case, the person using the straw may observe the liquid flowing through the tortuous midpoint thereof. The straw is transparent and is constructed from a stiffly flexible, non-toxic plastic which maintains its non-toxicity even when employed with heated liquids.

3,425,627
IMPLEMENTS FOR SPREADING POWDERED OR GRANULAR MATERIALS

Ary van der Lely, 10 Weverskade, Maasland, Netherlands, and Cornelis Johannes Gerardus Bom, 36 Esdoornlaan, Rozenburg, Netherlands
Filed Jan. 4, 1966, Ser. No. 518,593
Claims priority, application Netherlands, Jan. 7, 1965, 6500112; Jan. 28, 1965, 6501037; Nov. 24, 1965, 6515203
U.S. Cl. 239—73 **55 Claims**
Int. Cl. A01c *17/00, 19/00*

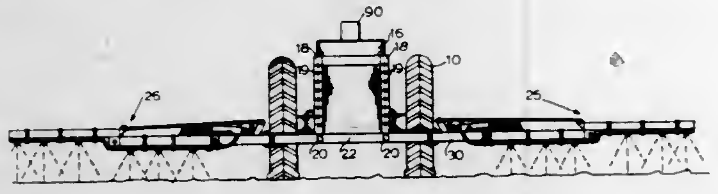


1. A spreader having a frame and a rotary spreading member supported by said frame, a regulating mechanism

associated with said spreading member for defining a sector throughout which material will be ejected during operation and indicator means responsive to contact by the ejected material mounted adjacent said spreading member for determining said sector.

3,425,628
FOLDING BOOM AGRICULTURAL SPRAYER

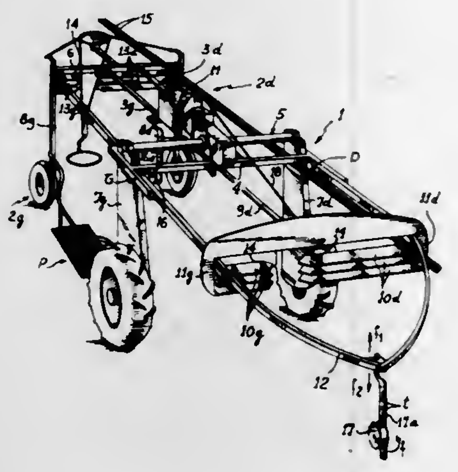
Robert M. Reams, Rte. 2, Apex, N.C. 27502
Filed Mar. 17, 1967, Ser. No. 624,047
U.S. Cl. 239—168 **7 Claims**
Int. Cl. B05b *1/20, 9/06;* **B67d** *5/08*



A tractor or prime mover is provided with a liquid tank-reservoir, a valve control system mounted adjacent the operator of the vehicle and a pair of outwardly extending articulated spray boom members. Each articulated boom member is provided with a pressure-operated cylinder which is adapted to swing the boom into a horizontal position upon the metering of the spray liquid to the cylinder by the valve control system; however, each boom is provided with a cut-off valve which prevents the spray liquid from exiting the spray nozzles until the boom is substantially in that horizontal position. Upon the closing of the valve control system, the pressure-operated cylinder is deactivated and a spring means returns the boom to a folded and vertically arranged position which simultaneously closes the cut-off valve.

3,425,629
OVERLAPPING TRACTOR FITTED WITH AN OVERHANGING MAGAZINE FOR LOADS, ALLOWING A BALANCED DISTRIBUTION OF THESE LOADS

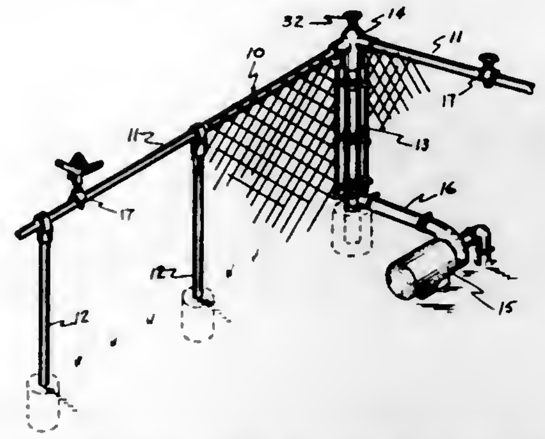
Emile Bobard, 17 Rue du Rion, Beaune,
Cote d'Or, France
Filed Feb. 25, 1966, Ser. No. 529,987
U.S. Cl. 239—178 **10 Claims**
Int. Cl B05b *3/00;* **B60p** *1/00, 3/30*



A mobile pipe handling tractor is described for a use in laying or picking up irrigation pipes in a field. The tractor is constructed to carry a load of pipes or flexible hose on a plurality of support bars so that pipes can be lowered to or picked up from the earth over which the tractor is operated. In addition, the tractor may be provided with a sprinkler device which can be coupled to irrigation pipes in a field so that water can be distributed at any desired location of the tractor.

3,425,630
SPRINKLER FENCE

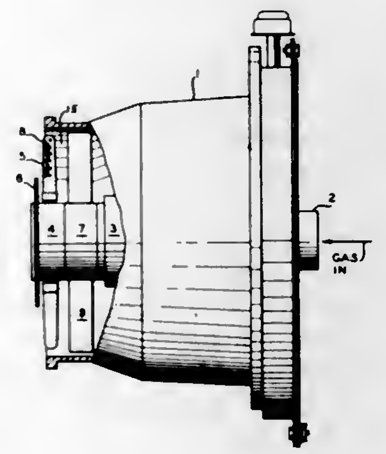
Keith C. Fessler, Sr., 1820 Sarazen Drive,
Orlando, Fla. 32808
Filed Jan. 17, 1966, Ser. No. 521,047
U.S. Cl. 239—208 **5 Claims**
Int. Cl. B05b *1/00, 9/00;* **E04b** *17/02*



1. A sprinkler fence for providing an irrigating spray in the general vicinity of the fence, said fence comprising at least one longitudinal tubular member disposed adjacent an upper portion of the fence and adapted to carry fluid, a plurality of fittings clamped at spaced locations along said longitudinal tubular member, through which fluid can flow, and means for providing a flow of fluid to said longitudinal tubular member whereby said fittings can supply a desirable pattern of fluid for vegetation maintenance, said fittings each involving a circular seal disposed in an upper inner portion thereof, which seal is adapted to locate the fitting with respect to a hole provided in said longitudinal tubular member and to provide a fluid-tight relation therewith, and an encircling strap adapted to secure the fitting about said tubular member so as to assure a tight connection at said seal at such time as said strap is properly tightened, a corner post and at least two longitudinal members also being used, and a manifold member being secured to the upper portion of said corner post, said manifold member having interconnected passages extending through its confines, said passages each being configured for receiving in sealed relation, one end of one of said longitudinal tubular members, said manifold member thereby providing an interconnection for the flow of irrigating fluid from one longitudinal tubular member through said corner post, and thence to the other longitudinal tubular member, and thereby along said fence.

3,425,631
ROTARY BURNERS

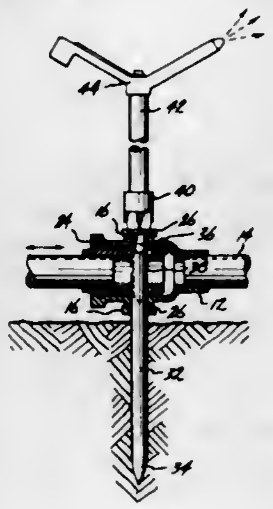
Max J. Hensley, Odessa, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 446,283, Apr. 7, 1965. This application July 7, 1967, Ser. No. 660,144
U.S. Cl. 239—214.15 **11 Claims**
Int. Cl. B05b *3/02, 7/00;* **F23d** *11/04*



Combustion efficiency of rotary fuel burners is increased by mounting a deflection plate around the axis of the burner to divert axially flowing air annularly outwardly, resulting in improving mixing of fuel and air.

3,425,632
HOLLOW PIN SLIP COUPLER HAVING SPRINKLER HEAD

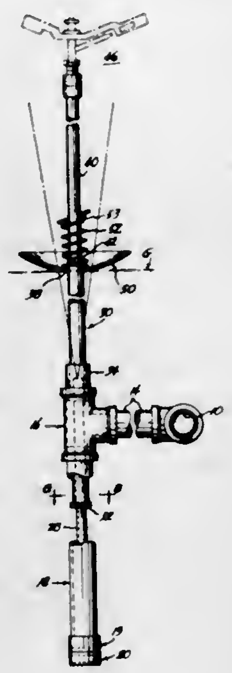
William H. Stout, 223 N. Jessup, Portland, Oreg. 97217
Filed Feb. 27, 1967, Ser. No. 618,903
U.S. Cl. 239—267 **4 Claims**
Int. Cl. A01g *25/02;* **B05b** *1/20;* **F16l** *41/00*



A bell and spigot coupling for irrigation pipe having a pin traversing the parts and precluding relative rotation but received in an elongated opening in the spigot to permit relative longitudinal movement. The pin may be hollow and ported to receive and laterally conduct fluid delivered to the coupling.

3,425,633
POP-UP STANDPIPE

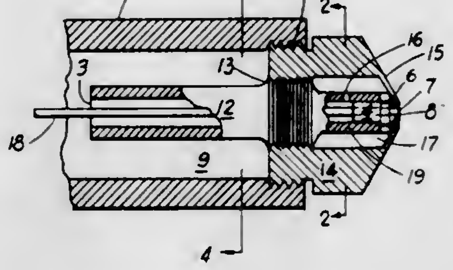
William H. Stout, 223 N. Jessup, Portland, Oreg. 97217
Filed June 23, 1967, Ser. No. 648,267
U.S. Cl. 239—281 **4 Claims**
Int. Cl. F16l *7/00;* **A01g** *25/00;* **B05b** *3/02*



A standpipe is telescoped into an upright tubular chamber in which fluid, supplied near the top, passes into the standpipe only after flowing through the chamber to its bottom. The standpipe is stabilized at the ground line to insure upright disposition.

3,425,634
MULTIFUEL BURNER NOZZLE

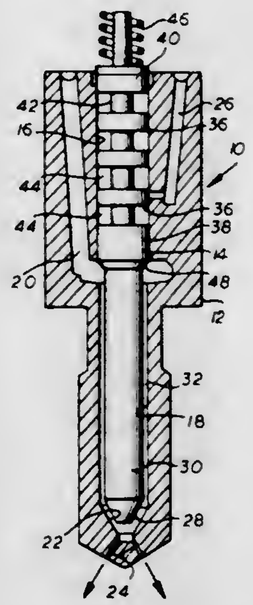
Paul A. Mutchler, St. Louis, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed July 20, 1966, Ser. No. 566,576
U.S. Cl. 239—405 **2 Claims**
Int. Cl. B05b *7/10*



A fuel nozzle assembly for a burner which provides a sleeve to receive a fuel feed tube so an annular area is defined between the tube and the sleeve and includes means to provide a stream of air through the annular area to control the temperature of the fuel feed tube and the fuel flowing through the tube where the cross-sectional area of the flow passage through the tube is uniform and is no greater than the cross-sectional area of the nozzle through which the fuel is emitted into the burner.

3,425,635
FUEL INJECTION NOZZLE

Rudolf W. Guertler, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,224
U.S. Cl. 239—453 **5 Claims**
Int. Cl. B05b *1/30, 1/32;* **F16k** *21/10*



A fuel injection nozzle wherein damping means are provided to reduce nozzle valve chattering. Means is provided for damping the valve closing motion of the needle valve by associating fluid chamber means with the needle valve so that a viscous fluid in the chamber means will dampen the motion of the needle valve during its closing movement and thereby reduce the bouncing of the needle valve and the attendant undesirable injection.

3,425,636

CENTRIFUGAL SPREADER APPARATUS

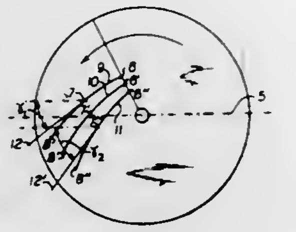
Heinz Dreyer, Gaste, Kreis Osnabruck, and Ernst Herbeck, Hage, Kreis Osnabruck, Germany, assignors to Amazonen-Werke H. Dreyer, Gaste, Kreis Osnabruck, Germany

Filed July 14, 1966, Ser. No. 565,182

Claims priority, application Germany, July 16, 1965, A 49,756

U.S. Cl. 239—665 **14 Claims**

Int. Cl. A01c *15/00, 17/00*



To reduce variation in the scattering of material, e.g. fertilizer, by a centrifugal disc spreader, as the rate of feed delivery to the spreader is varied, the area on the disc member on which the material is deposited is moved along a spiral path, as said rate of feed is varied. As the rate of feed increases, said area is moved over said path toward the outer periphery of the disc.

3,425,637

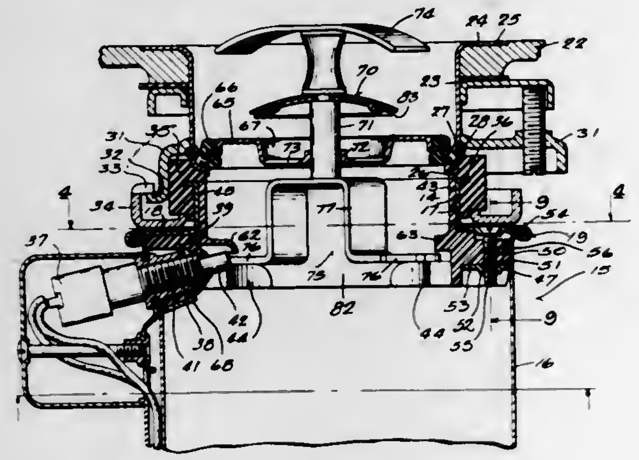
WASTE DISPOSER WITH STOPPER ACTUATED SWITCH

James H. Enright and Charles A. Wicke, Racine, Wis., assignors, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

Filed Dec. 16, 1966, Ser. No. 602,364

U.S. Cl. 241—32.5 **10 Claims**

Int. Cl. B02c *19/12, 23/00;* **B02b** *7/02*



The batch-type waste disposer disclosed herein has a cylindrical throat portion and a somewhat wider comminuting chamber body with a cylindrical wall radially offset from the throat. The body and throat are connected by a shoulder which forms right angle corners with the body wall and throat. A plastic cam track carrying sleeve is inserted in the throat. It has an upper portion directly supported by the throat wall and a downwardly projecting portion spaced radially from the body wall. A support ring is disposed in the gap between the chamber wall and the downwardly projecting portion of the sleeve insert to bridge the gap therebetween and brace the plastic sleeve insert to maintain its cylindrical shape. The switch of the batch-type disposer is actuated by a stopper having a two-stage closure or valve and cams which actuate the switch in both directions of stopper rotation.

3,425,638

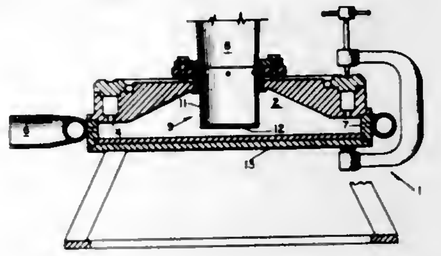
FLUID ENERGY MILL

Carroll F. Doyle, Ellicott City, and David L. Becker, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Oct. 4, 1965, Ser. No. 492,727

U.S. Cl. 241—39 **4 Claims**

Int. Cl. B02b *1/00, 5/02;* **B02c** *11/08*



An improved fluid energy mill which is provided with a cylindrical baffle which extends into the grinding chamber of the mill. The cylindrical baffle provides an efficient means for segregating fine particles from a product stream.

3,425,639

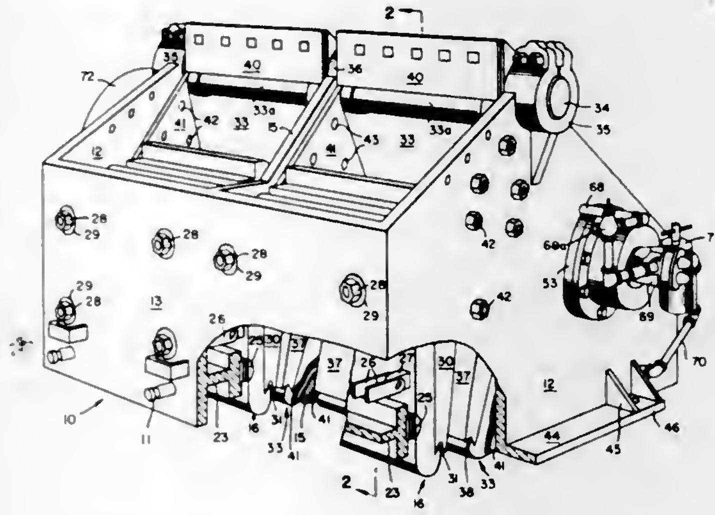
JAW CRUSHERS

Don Kueneman, 6224 Estates Drive, Oakland, Calif. 94611

Filed May 25, 1966, Ser. No. 552,865

U.S. Cl. 241—148 **4 Claims**

Int. Cl. B02c *1/00, 9/04, 15/00*



A jaw-type crusher having a plurality of individual reciprocating jaws, each operable in a crushing compartment. The individual jaws are driven by a common drive shaft and the jaws reciprocate in an out-of-phase relationship to balance the load on the shaft.

3,425,640

APPARATUS FOR THE CONTINUOUS TRANSPORTATION OF PULVERULENT OR FIBROUS MATERIAL

Hans Kletschke and Hans Macholdt, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

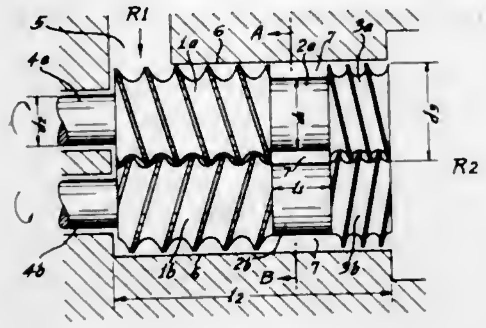
Filed Nov. 24, 1964, Ser. No. 413,476

Claims priority, application Germany, Nov. 27, 1963, K 51,471

U.S. Cl. 241—236 **7 Claims**

Int. Cl. B02c *1/08, 7/04, 13/20*

1. Apparatus for conveying a mass of material between two regions of different pressure which comprises a housing having a chamber therein, a pair of rotatable shafts with interfolded screw threads thereon, the threads of each shaft being interrupted to form adjacent smooth portions having diameters less than the peripheral diameters of the threaded portions and lengths in the range of about 0.5 to 5 times the said peripheral diameters, the wall of said chamber being solid and imperforate throughout the length thereof and disposed immediately radially outwardly of and adjacent the outer periphery of said threads and defining a space with said smooth portions, whereby highly compressed material disposed in said space forms a seal between the two regions of different pressure even when said shafts are not in motion.



3,425,641

CAPACITOR WINDING APPARATUS

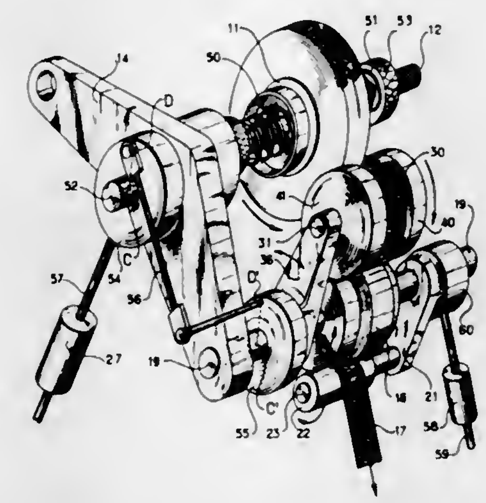
Georges Gallet, La Celle-Saint-Cloud, and Claude Guenel, Orsay, France, assignors to Compagnie Generale d'Electricite, Paris, France

Filed Oct. 25, 1966, Ser. No. 589,352

Claims priority, application France, Oct. 25, 1965, 36,130

U.S. Cl. 242—56.1 **25 Claims**

Int. Cl. B65h *17/08, 39/16*



An electric capacitor winding machine wherein band transfer means for supporting the thin band at all points between the contact line of the band and the winding spindle, and the contact line of the band with the band supply reel is provided which comprises a mandrel rotatably mounted about a fixed shaft with an arm pivotally mounted on the shaft of the transfer mandrel, and a roller mounted on the arm; the diameter of the roller and the length of the arm between the axis of the transfer mandrel and the roller being such that the roller is constantly tangent to the transfer mandrel and to the spindle through the layer of band wound upon the winding spindle.

3,425,642

INFLATABLE MANDREL

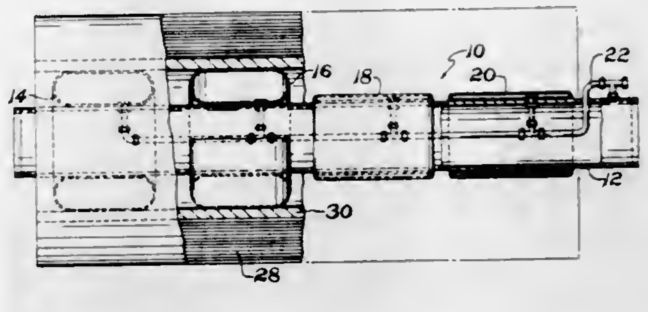
Gerald L. May, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Dec. 12, 1966, Ser. No. 601,012

U.S. Cl. 242—72 **1 Claim**

Int. Cl. B65h *75/18, 67/00*

An inflatable mandrel having a plurality of axially-spaced circumferentially extending tubes on a small diameter mandrel core and a means for inflating the tubes so that the tubes expand radially away from the mandrel core to provide a cylindrical load-bearing surface having an outside diameter substantially greater than the diameter of the mandrel core.



3,425,643

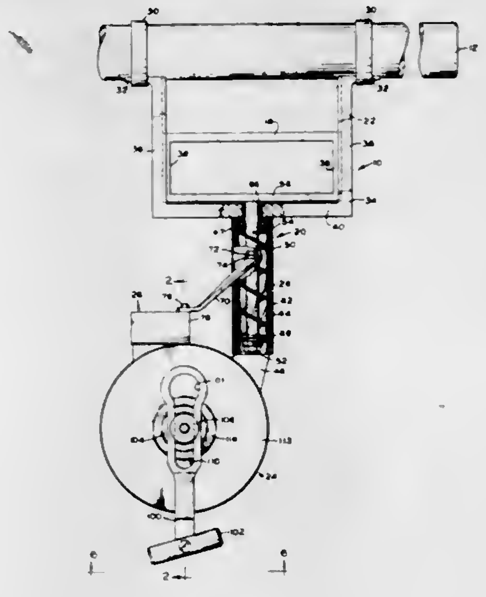
COMBINED SPINNING AND CASTING REEL

Frank H. Lemon, 6829 N. Pittsburgh, Portland, Oreg. 97203

Filed Nov. 21, 1966, Ser. No. 595,805

U.S. Cl. 242—84.2 **7 Claims**

Int. Cl. A01k *89/00, 89/04*



A fishing reel has a grip which is grasped by the fingers of the rod holding hand and swings a reel from a winding position transverse to the rod to a casting position extending along the rod, and a level wind mechanism is swung away from the reel as the latter is moved to its casting position. The level wind mechanism is driven by a variable speed drive so that it can be driven fast when the reel is used for spin casting and can be driven slowly when the reel is used for bait casting.

3,425,644

FISHING REEL WITH FRICTION DRAG

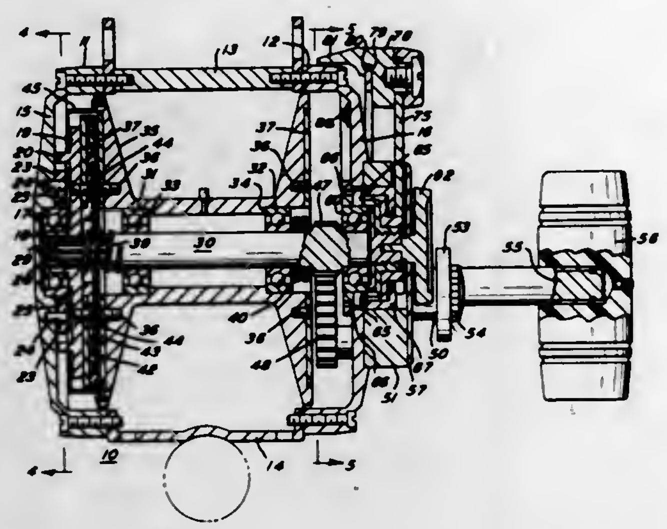
Fredric S. Griste, Drexel Hill, Pa., assignor to Penn Fishing Tackle Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 19, 1965, Ser. No. 481,022

U.S. Cl. 242—84.45 **7 Claims**

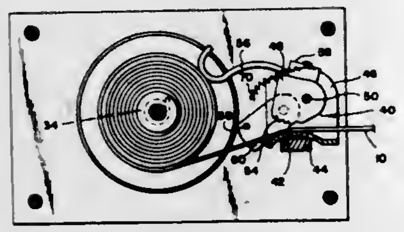
Int. Cl. A01k *89/04*

A fishing reel having a spool supported between spaced side housings on a shaft. The spool is axially shifted relative to a friction plate in the left side housing by cam means in the right side housing which cam means is regulated by a lever operating over a normal range between two stop pins. The stop pins are yieldably mounted to be overridden by a specially designed head on said lever to provide movement of the lever beyond said normal range for complete withdrawal of the spool from the plate for free spool casting or maximum force connection of the spool against the friction plate. A center knob axially retained on the lever is rotatable to change the normal range of spool shifting by the lever acting between the stops.



3,425,645
RETRACTABLE SAFETY BELT APPARATUS AND THE LIKE

Richard G. Board, Bethesda, Md. (3000 Connecticut Ave., Washington, D.C. 20008), and Nelson H. Shapiro, Rockville, Md. (640 Washington Bldg., Washington, D.C. 20005)
Original application Nov. 5, 1964, Ser. No. 409,266. Divided and this application Nov. 20, 1968, Ser. No. 770,686
U.S. Cl. 242—107.2 **21 Claims**
Int. Cl. B65h *75/48*



Retractable safety belt unit including a retraction reel, a strap wound upon the reel, and means which normally prevents appreciable extension of the strap from the reel. The extension-preventing means is rendered inoperative when the strap is substantially fully wound upon the reel, is held inoperative during desired extension of the strap, and is thereafter rendered operative in response to slight strap retraction. The extension-preventing means permits retraction of the strap at all times. Means frictionally driven by the reel through a limited angular range in opposite directions holds the extension-preventing means inoperative during desired extensions of the strap and modifies the condition of the extension-preventing means to enhance substantial retraction of the strap.

3,425,646
RETRACTION DEVICE FOR VEHICLE SAFETY BELTS

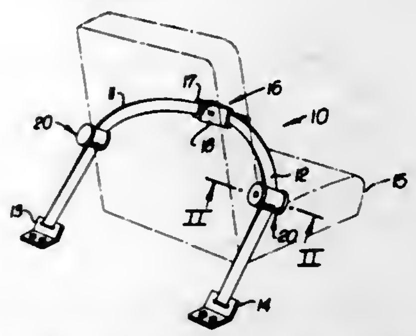
James Sherman Hollowell, Arcadia, Calif., assignor, by mesne assignments, to American Safety Equipment Corp. of California, a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,657
U.S. Cl. 242—107.11 **6 Claims**
Int. Cl. B65h *75/48;* **B60r** *21/10;* **A62b** *35/00*

1. A retraction device to be assembled to a safety belt intermediate the strap ends in a non-load carrying relationship to the strap for retracting such strap within the device upon the unlatching of the safety belt, said retraction device comprising:

a chambered housing including a strap receiving chamber with opposed strap receiving slots and a spring receiving chamber, said chambers being separated by a ported partition;

an elongated arbor rotatably mounted within said housing and passing through said ported partition; and

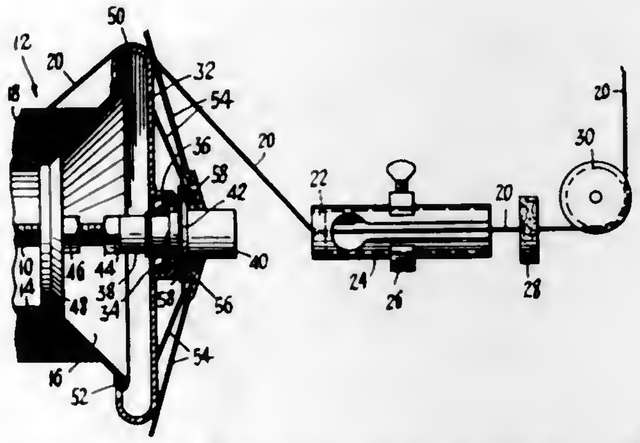
a coil spring within said spring chamber having one end engaging said arbor and one end engaging said housing;



said arbor having a longitudinal slot therethrough adapted to receive a safety belt strap passing directly through said housing between said opposed strap receiving slots.

3,425,647
WIRE TAKE-OFF DEVICE

Joseph J. Kovaleski, Trumbull, and Gordon L. Bauer, Shelton, Conn., assignors to The Advanced Wyrepak Company, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 24, 1966, Ser. No. 589,061
U.S. Cl. 242—128 **10 Claims**
Int. Cl. B65h *49/02, 57/18;* **D01h** *13/04*

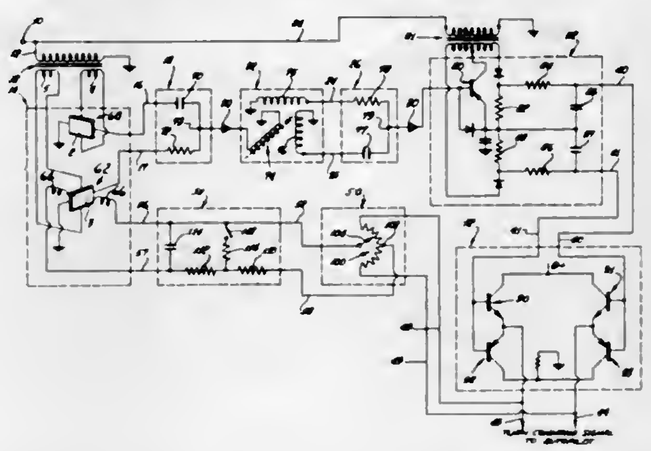


A rotary take-off device for use in unreeling wire past one end of a supply spool, said device being in the form of a turnable wheel rotatably mounted coaxial with and flat against the end of the spool. The wheel has a smooth, rounded periphery against which the wire presses. The wire, as it moves past the wheel, goes to a guide button which is coaxial with the spool and wheel and spaced from the latter. A plurality of flexible, radially extending slender tines have a mounting on the common axis of the guide button and wheel close to the latter. The tines extend past and lightly engage the wheel periphery but do not stop the wheel from turning. Instead they tend to control the unreeling movement of the wire which brushes past the tines one after another.

3,425,648
AUTOPILOT MAGNETIC HEADING ERROR CORRECTION SYSTEM

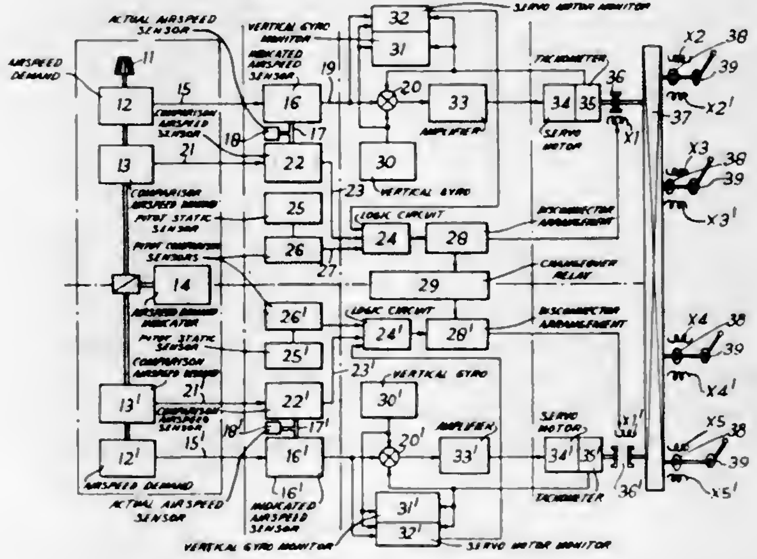
Frank Pershing Wipff and James A. Wilson, Prescott, Ariz., assignors to Airborne Navigation Corporation, Prescott, Ariz., a corporation of Arizona
Continuation of application Ser. No. 366,752, May 12, 1964. This application Sept. 20, 1966, Ser. No. 580,831
U.S. Cl. 244—77 **19 Claims**
Int. Cl. B64c *13/50*

An aircraft magnetic heading information generating system for correcting the error otherwise existing during banking caused by the inclination of the earth's magnetic field, comprising a sensing array for sensing the earth's magnetic field in two angularly related directions including the component parallel to the aircraft lateral axis, circuitry for deriving from the output of the sensing array a signal carrying intelligence as to magnetic heading, producing an error signal in commanding a selected turn, deriving therefrom a command signal having a limited maximum value corresponding to a preselected maximum permitted bank or rate of turn of the aircraft, using a portion of the command signal of selected magnitude and polarity of a raw compensating signal, effectively combining the compensating signal with the output of the sensing array, preferably by generating a compensating flux to be sensed by the sensor responsive to the component of the earth's field parallel to the aircraft lateral axis, and time delay circuitry for refining the raw compensating signal for simulating the effect of aircraft roll attitude during transition between bank and level flight.



3,425,649
AIRCRAFT AUTOMATIC PILOTS

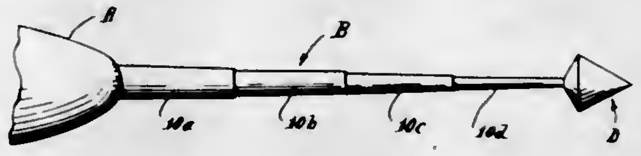
Arthur John Colwell, Ian Alexander Watson, and John Harper Malcolm Penney, London, England, assignors to Elliott Brothers (London) Limited, London, England
Filed June 9, 1966, Ser. No. 556,458
Claims priority, application Great Britain, June 12, 1965, 24,924/65
U.S. Cl. 244—77 **12 Claims**
Int. Cl. B64c *13/18*



An aircraft automatic pilot having two separate automatic throttle control arrangements each capable of controlling the throttle, both operating continuously to give an output but only one of which is connected to control the throttle at any one time. Throttle control is switched from one control arrangement to the other by monitoring means responsive to faults in said one control arrangement.

3,425,650
AIR DEFLECTOR FOR SUPERSONIC AIRCRAFT

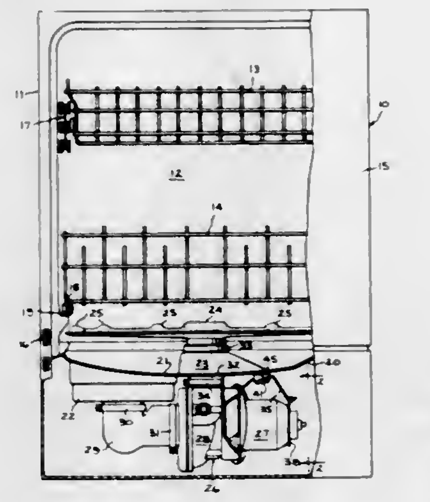
Joseph Silva, Beacon Hill Terrace, Huntington, Conn. 06484
Filed Oct. 2, 1967, Ser. No. 672,185
U.S. Cl. 244—130 **7 Claims**
Int. Cl. B64c *1/38*



A device for deflecting air outwardly from a supersonic aircraft. A tapered deflector is mounted on the end of a boom extending forwardly from the nose of the aircraft.

3,425,651
MOTOR-PUMP SUPPORT MEANS AND METHOD OF ASSEMBLY

Thomas E. Jenkins, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1967, Ser. No. 619,766
U.S. Cl. 248—18 **6 Claims**
Int. Cl. F16f *15/08;* **F16m** *13/02*

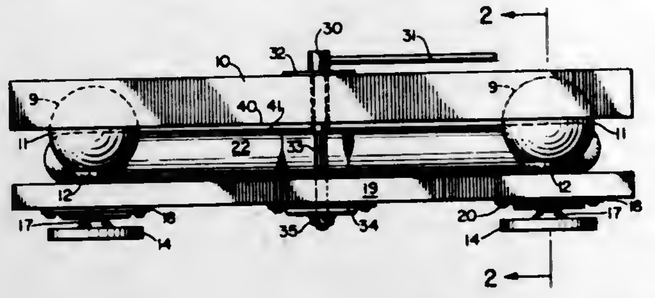


Means to support a motor and pump from the cabinet of an automatic dishwasher including a generally U-shaped bracket and a rod-like hanger. The bracket is secured at one end to the cabinet and has its other end spaced from the cabinet with the intermediate portion of the bracket spaced farther from the cabinet. The rod-like hanger is adapted to pass between the distal end of the bracket and the cabinet. An elastomeric bushing of greater diameter than the space between the cabinet and the other end of the bracket is adapted to fit into the space between the cabinet and the intermediate portion of the bracket. The two ends of the hanger are received within holes in the motor housing to support the housing.

3,425,652
VIBRATION CONTROLLING MOUNTING APPARATUS

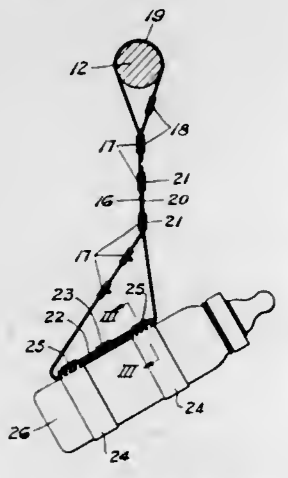
Gordon H. Leary, 3255 Fritchie Drive, Baton Rouge, La. 70809
Filed Apr. 12, 1967, Ser. No. 630,352
U.S. Cl. 248—22 **14 Claims**
Int. Cl. F16f *15/08*

This invention relates to a vibration damping apparatus for supporting instruments in a vibration free manner and more particularly this invention relates to a vibration damping apparatus for supporting instruments wherein external vibrations of one or more frequencies may be tuned out so that the supported instrument may be operated in a vibration free condition.



3,425,653
NURSING BOTTLE HOLDER

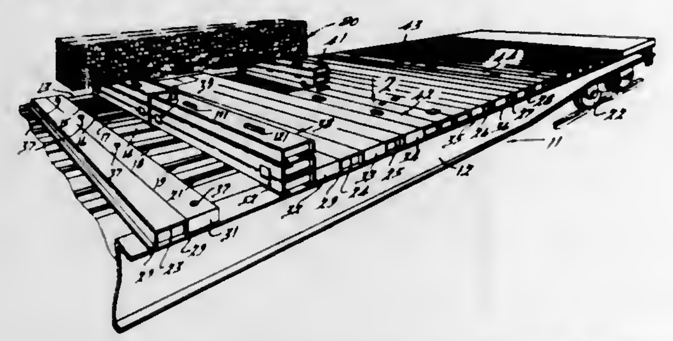
William Rauch, Deerfield Beach, Fla., assignor of one-half to James F. Murray, Lakeview, N.Y.
Filed Aug. 25, 1967, Ser. No. 663,311
U.S. Cl. 248—104 **5 Claims**
Int. Cl. A47d *15/00*



A nursing bottle holder attached to an overlying support and having two dependent straps which diverge and connect with opposite ends of a further strap portion which extends lengthwise along the side of a nursing bottle, the lengthwise strap portion having a pair of spaced elastic loops for engaging about a nursing bottle. The strap at the mouth end of the bottle has a shorter effective length than the other to support the bottle in an upwardly inclined non-leaking position. The shorter strap is elastic and the other dependent strap is non-elastic so that a downward pull inclines the bottle downwardly to nursing position. The straps are snap-fastened along their upper portions to adjust their relative lengths.

3,425,654
VEHICLE HAVING COVERTIBLE FLOOR STRUCTURE AND LATCH

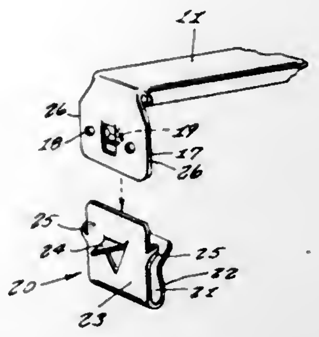
Edward S. Cisco, Livonia, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,203
U.S. Cl. 248—119 **2 Claims**
Int. Cl. B60p *7/08;* **B61d** *3/04*



A railway flat car embodying a convertible floor structure. The floor structure is made up of spaced units that are movable from a first position wherein they define a substantially planar floor surface along the length of the car to an elevated position wherein they provide spaced elevated supports.

3,425,655
UNIVERSAL BAR HANGER

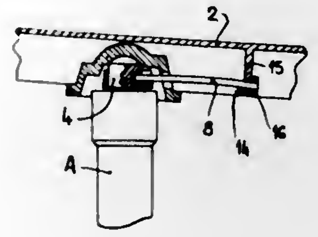
Cletus V. Cogdill, 224 Main St., Round Lake Park, Ill. 60073
Filed Apr. 14, 1967, Ser. No. 631,025
U.S. Cl. 248—343 **4 Claims**
Int. Cl. H02g *3/26;* **E04g** *17/18*



A bar hanger for supporting electric boxes or electrical fixtures within a ceiling, including a pair of interfitting slide members, each having at one end a pad receivable within a clip secured between ceiling rafters or beams.

3,425,656
PIT PROP WITH SELF-CENTERING CAP

Raymond Bore, Saint-Etienne, France, assignor to Bennes Marrel, Saint-Etienne, France, a French joint-stock company
Filed Apr. 11, 1967, Ser. No. 630,053
Claims priority, application France, Apr. 15, 1966, 47,173
U.S. Cl. 248—357 **4 Claims**
Int. Cl. E04g *25/00;* **E21d** *15/55*

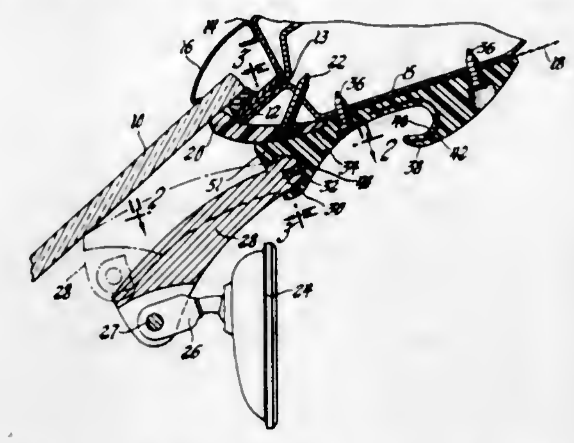


A pit prop with a self-centering cap which realigns itself perpendicular to the prop body when the prop is released from a load-bearing condition wherein the cap may be inclined relative to the prop. The realignment of the cap is provided by a torsion and flexion bar disposed between the cap and the prop. The bar may be prestressed by an adjustment means to compensate for an asymmetric load on the prop.

3,425,657
VEHICLE REAR VIEW MIRROR ASSEMBLY

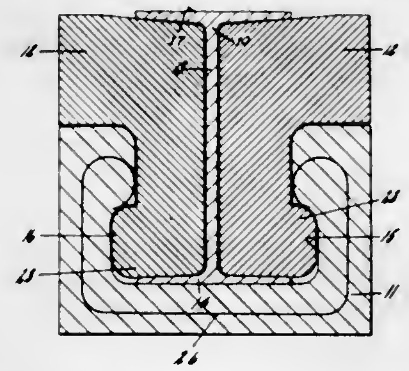
Edward G. Doyle, Grosse Pointe Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,759
U.S. Cl. 248—481 **7 Claims**
Int. Cl. B60r *1/04, 21/22;* **F16c** *11/06*

A rear view mirror is adjustably mounted on a support arm that has an end ball portion received within a molded plastic socket formed in a body mounting bracket. The bracket includes a frangible key received in a recess formed in the ball and a plurality of ribs received in a plurality of grooves formed in the ball to prevent movement of the ball within the socket. A predetermined force applied to the support arm twists the ball to fracture the key and deform the ribs to permit the arm to move universally, while the socket retains the ball to prevent separation of the arm from the bracket.



3,425,658
CLADDING OF STRUCTURAL STEELWORK WITH FIRE PROTECTIVE MATERIAL

Kenneth Ellison Simmons, Sheffield, England, assignor to Haddon Concrete Company Limited, Staveley, Chesterfield, Derbyshire, England, a company of Great Britain and Northern Ireland
Filed Oct. 20, 1965, Ser. No. 498,638
U.S. Cl. 249—23 **1 Claim**
Int. Cl. E04c *3/34;* **E04g** *13/02;* **B22d** *19/04*

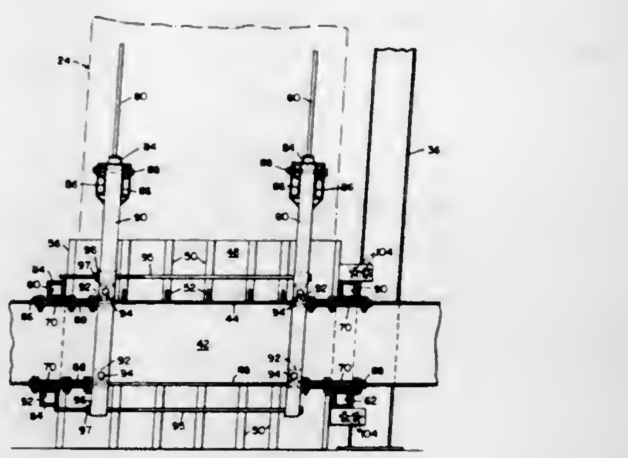


Cladding for metal sectional members such as I-beams which can be easily and quickly attached to such members is achieved by the use of rigid blocks capable of interengagement with one another and with the sectional member. First blocks have a sectional form which is U-shaped and has an intermediate portion to abut the flange of the sectional member and two arm portions projecting therefrom. Second blocks have a sectional form with an abutment portion to abut the web of the sectional member. Recessed parts in the sectional forms cooperate with projecting parts so as to inter-engage when said first blocks are set opposite said second blocks on a sectional member. The blocks are capable of relative lengthwise displacement relative to each other (at least during assembly) but prevented from transverse displacement. This cladding is especially useful for fire protection.

3,425,659
SLIP-FORM APPARATUS FOR TAPERED PIERS

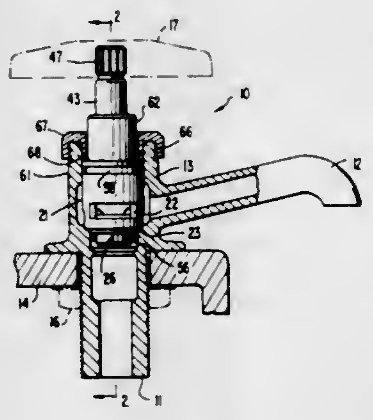
Carl A. Eriksson, Pacifica, Calif., assignor to Norse Development Corporation, Rye, N.Y., a corporation of New York
Filed Dec. 27, 1966, Ser. No. 604,687
U.S. Cl. 249—18 **7 Claims**
Int. Cl. E04g *11/22;* **E01g** *5/08*

A slip-form apparatus for making pairs of tapered concrete piers that lean towards each other comprising pairs of upwardly convergent guide rails, a horizontal carrier adjacent the guide rails and a slip form at each end of the carrier, each with side walls that are adjustable in length so that the cross-sectional dimensions of each form can be decreased as the carrier is raised.



3,425,660
FAUCET VALVE

Frank R. Holycross, Jr., Royal Oak, Mich, assignor to Wallace-Murray Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 573,031
U.S. Cl. 251—172 **14 Claims**
Int. Cl. F16k *25/02, 5/04, 31/50*

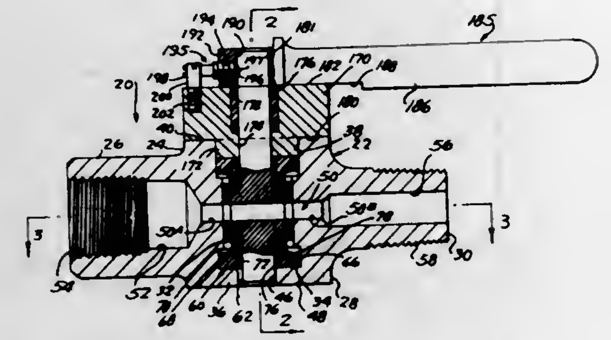


The invention relates to a valve particularly adapted for plumbing-ware faucet use, the faucet including a body having a pressure inlet and a liquid outlet. Mounted inside the body is a generally cylindrically shaped housing having at least one opening in the wall thereof through which fluid can flow to the outlet. A valve seat having a central passageway which communicates with the pressure inlet, is loosely mounted adjacent the bottom, inlet end of the housing. A valve closure member is rotatably mounted above the valve seat to be movable from a first position wherein the passageway is totally closed to a second position wherein the passageway has a maximum opening which communicates with the housing opening. The valve seat and the valve closure member have smoothly polished mating surfaces so that the fluid pressure acting on the inlet side of the valve seat is sufficient alone to provide a seal therebetween when the valve is in the closed position. A sealing device is also provided above the closure member for effecting a seal between the downstream side of the valve closure member and the housing. Facilities are also provided for connecting the valve closure member to an actuator which can be hand operated.

In a further embodiment of the invention the sealing device is an annular sealing ring which is permanently secured within the housing. The valve seat, the valve closure member and the sealing ring are preferably made of a high alumina ceramic which is highly resistant to wear and corrosion. The mating surfaces of those three members are smoothly polished and in the assembled faucet are pressed into sealing engagement with one another solely by the fluid pressure acting thereon.

3,425,661
PLUG VALVE

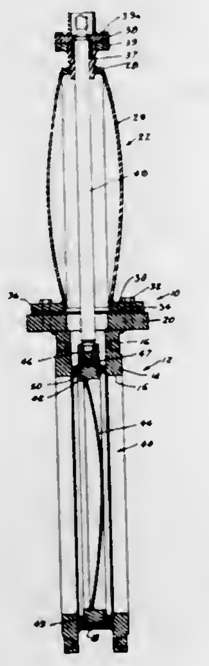
John H. Mayo, Houma, La., assignor to Mayo Valve Corporation, Houma, La., a corporation of Louisiana
Filed Jan. 24, 1967, Ser. No. 611,352
U.S. Cl. 251—175 **20 Claims**
Int. Cl. F16k *5/14, 39/06, 25/00*



A plug valve assembly having floating gates and fluid pressure sealing means to prevent introduction of foreign material into the valve body to prevent abrasive wear on valve elements having surface-to-surface contact.

3,425,662
VALVE CONSTRUCTION WITH RETRACTABLE SEAT RINGS

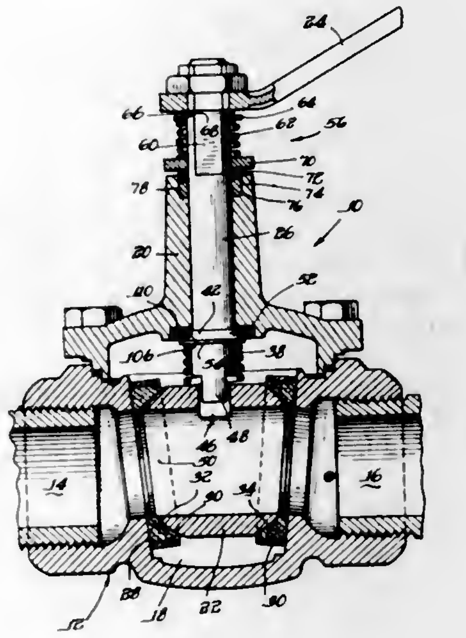
Austin U. Bryant, Walnut Creek, and Marvin G. Combes, Castro Valley, Calif., assignors to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Sept. 14, 1965, Ser. No. 487,266
U.S. Cl. 251—176 **11 Claims**
Int. Cl. F16k *3/14, 3/28, 1/26*



A gate valve with a closure disc comprising an annular member carrying seat rings and a dished disc sealed around its circumference to the annular member. In open position of the gate stop members limit outward movement of the seat rings so that they are free from engagement with the wall of the valve body. In the positions in which they are restrained the seat rings engage wedging surfaces on the body as the gate is moved toward closed position and are retracted thereby.

3,425,663
BALL VALVE ASSEMBLY

Werner K. Priese, Barrington, Ill., assignor to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois
Filed June 28, 1966, Ser. No. 561,297
U.S. Cl. 251—180 **4 Claims**
Int. Cl. F16k *25/04, 31/44, 5/06*

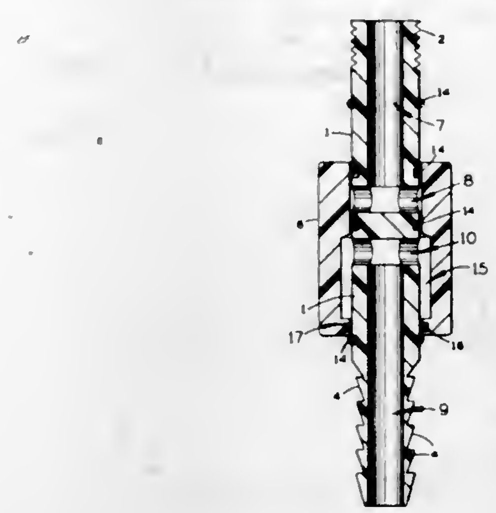


A valve assembly for conducting high temperature fluid comprising first and second passageways formed in a valve body having inner openings into a chamber therein, a pair of carbon graphite valve seats, each of which is mounted at a respective inner opening of a passageway, a valve stem extending into said body and having a valve ball mounted on the inner end thereof within the chamber, the valve ball being in engagement with the carbon graphite valve seats and a valve stem seal mounted within the chamber between a flange of the valve stem and a carbon graphite seal. A pair of spring assemblies is provided, one being mounted on the valve stem between the flange and the valve ball, and the other outside the valve body engaging the stem member. The spring assemblies serve two purposes, one being to seal the respective carbon graphite stem seal and valve seats and the other, to take up changes in compressive stresses on the seal and valve seats due to thermal expansion of the valve body caused by the flow therethrough of the high temperature fluid, thereby to maintain a relatively constant sealing force for the carbon graphite seal and seats.

3,425,664
SLIDE VALVE

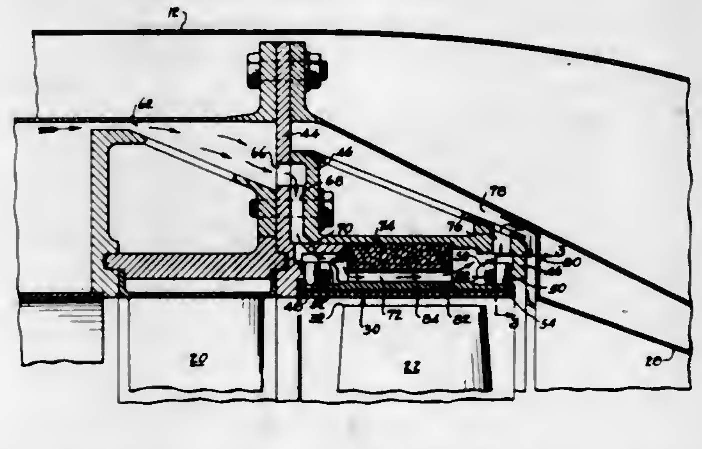
Shale J. Niskin, 9400 SW. 63rd Court, Miami, Fla. 33156
Filed Dec. 30, 1965, Ser. No. 518,767
U.S. Cl. 251—344 **1 Claim**
Int. Cl. F16k *3/26, 27/04;* **E03b** *7/07*

A variable slide valve in which a cylindrical conduit is provided with two cross orifices. A slidable sleeve is fitted on the conduit and the sleeve has an internal passageway which can be moved from closed to open position to bridge the two orifices and permit fluid to flow through the conduit. O-rings are provided to seal and provide stops for the sleeve.



3,425,665
GAS TURBINE ROTOR BLADE SHROUD

William Lingwood, Weehawken, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,762
U.S. Cl. 253—39 **2 Claims**
Int. Cl. F01d *5/08, 5/18, 25/12*



A segmented shroud for the blades of a gas turbine rotor, allowing circumferential expansion of the shroud but restraining radial expansion, and obviating seizure of the blade tips from radial expansion of the blades.

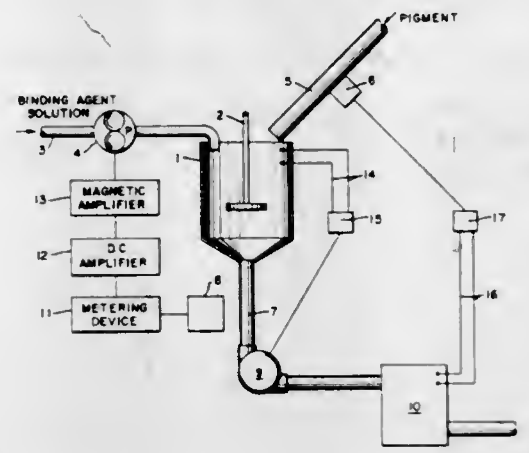
3,425,666
PROCESS FOR PRODUCING FERRIMAGNETIC MATERIALS

Robert H. Lindquist and Bernard F. Mulaskey, Berkeley, Calif., assignors to Chevron Research, Company, a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,964
U.S. Cl. 252—62.58 **45 Claims**
Int. Cl. C04b *35/26*

1. The process of manufacturing a material, a mass of finely divided particles of which an applied magnetic field can induce to change from a nonmagnetized condition, in the sense of exhibiting no net external field, to a magnetized condition, in the sense of exhibiting an external field, which comprises reacting starting materials comprising a salt of a first metal in the divalent state, a salt of iron in the trivalent state, and an epoxy compound to obtain a mixture comprising a metal hydroxide-containing gel, and heating said mixture to produce the desired composition.

3,425,667
METHOD AND APPARATUS FOR MAKING PAINTS

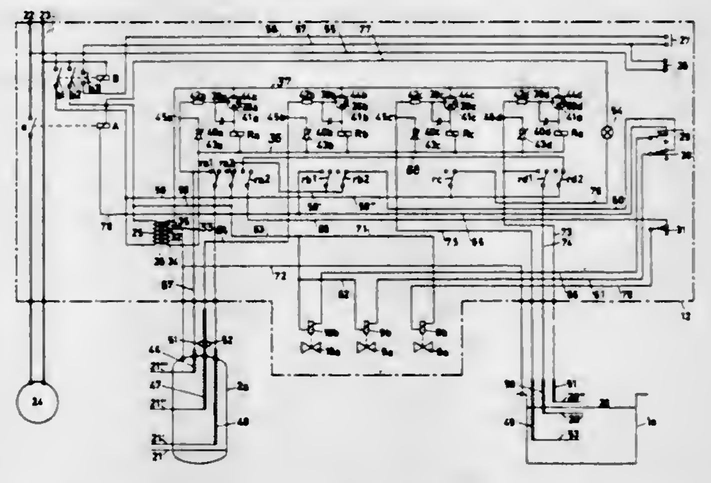
Helmut Schütte, Günter Taschen, and Karl Berger, Magdeburg, Germany, assignors to Institut fur Lacke und Farben, Magdeburg, Germany
Filed Mar. 31, 1967, Ser. No. 627,342
U.S. Cl. 259—7 **9 Claims**
Int. Cl. B01f *15/00, 3/12*



A method and apparatus for the continuous mixing of liquids and particulate solids, in which the liquids and solids are fed separately in controlled amounts into the mixer. The feed of the liquid is controlled from the discharge of the mixer into a test section by a system which senses the ratio of solid to liquid within the test section by absorption of radiant energy, compares the sensed ratio with a predetermined desired ratio, and makes the necessary correction in liquid flow into the mixer. The level of mixture is controlled by sensors in the mixer which electrically control a discharge pump connected to the mixer. The discharge pump empties into a holding vessel. The admission of particulate solids into the mixer is controlled by level sensors in the holding vessel which actuate a relay to control a vibratory feed pipe used to convey the solids into the mixer.

3,425,668
DEVICE FOR AUTOMATIC FEEDING OF SIZE TO AT LEAST ONE SIZING MACHINE

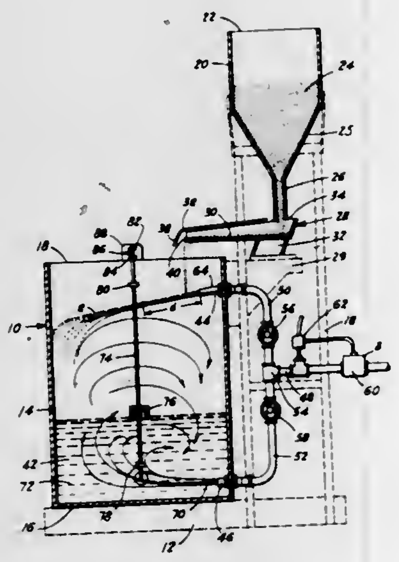
Peter Koenig and Anton Lucian, Arbon, Switzerland, assignors to Paul Koenig, Arbon, Switzerland
Filed Feb. 24, 1966, Ser. No. 529,753
Claims priority, application Switzerland, Feb. 25, 1965, 2,624/65
U.S. Cl. 259—8 **9 Claims**
Int. Cl. B01f *15/04;* **G05d** *11/02;* **F16k** *37/00*



A device for automatically feeding size to at least one sizing machine, in which a size boiler adapted to produce basic size of a constant concentration feeds the size to a size regulator which is adapted for thinning the basic size supplied to it from the boiler, thereby forming prepared size of a lower concentration. The size is fed from the regulator to a sizing machine, via a control device, which is operative to deliver a number of consecutive individual charges of prepared size from the regulator to the sizing machine, whereby the latter is continuously kept charged with size.

3,425,669
DRY CHEMICAL FEEDER METHOD AND APPARATUS

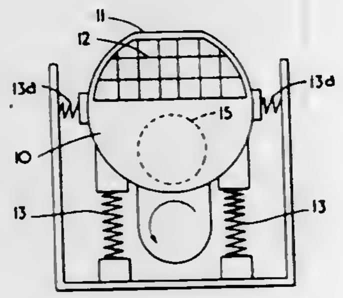
Preston G. Gaddis, 203 Osage, Bartlesville, Okla. 74003
Filed Nov. 13, 1967, Ser. No. 682,410
U.S. Cl. 259—18 **14 Claims**
Int. Cl. B01f *15/02*



A method and means for feeding and mixing a dry chemical of the free flowing type, such as agglomerative polymers with a liquid, to provide a smooth, clear solution which can be proportioned and added directly into a primary or secondary system with accuracy. The chemical is separated into small individual particles which are dropped into a gentle wetting plane whereby each particle is completely wetted. The wetted particle enters the mixing solution and is quickly dissolved into a smooth, clear mixture.

3,425,670
APPARATUS FOR MILLING FOUNDRY SAND

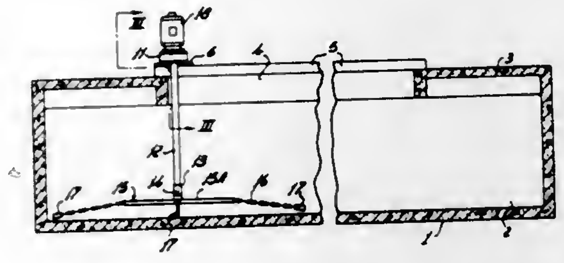
Francis M. Shaw, Redditch, England, assignor to The British Cast Iron Research Association, Birmingham, England, a British company
Filed Aug. 16, 1967, Ser. No. 660,993
Claims priority application Great Britain, Aug. 24, 1966, 37,859/66
U.S. Cl. 259—72 **5 Claims**
Int. Cl. B01f *9/08;* **B28c** *5/18*



A mill for foundry sand comprises an elongated trough which is resiliently supported and is oscillated laterally and vertically by an out-of-balance shaft, and the trough contains a single large roller extending the length of the trough and at least a quarter of its diameter.

3,425,671
COLLECTION AND STORAGE CONTAINERS FOR LIQUID AND SEMI-LIQUID MATERIALS

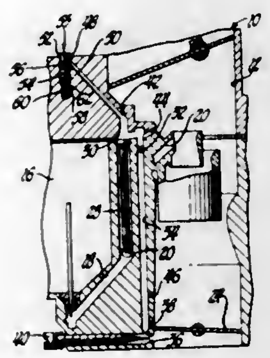
Cornelis van der Lely, Bruschenrain 7, Zug, Switzerland
Filed May 1, 1967, Ser. No. 635,110
Claims priority application Netherlands, May 13, 1966, 6606565
U.S. Cl. 259—122 **13 Claims**
Int. Cl. B01f *7/18, 7/20*



In this invention, there is provided a collection and storage container for liquid and semi-liquid materials. One wall of the container has a slot along which an agitator for such material can be displaced in a substantially horizontal direction. The agitator can be guided along the slot and locked on rail means which lies along the path of the slot.

3,425,672
ADJUSTING SCREW RETAINING MEANS

Seymour Seigel, Rochester, and Edwin S. Shaffer, Spencerport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,945
U.S. Cl. 261—23 **4 Claims**
Int. Cl. F02m *11/00*

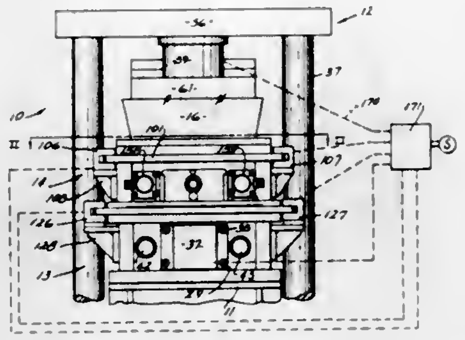


A four-barrel, two-stage carburetor has separate idling fuel passages for the pair of primary stage mixture conduits and a single air bleed into both idling fuel passages. An adjusting screw controlling air flow through the bleed has an extension gripped by a resilient tubing member to prevent vibrational movement of the adjusting screw.

3,425,673
MECHANICAL HEATING DEVICE

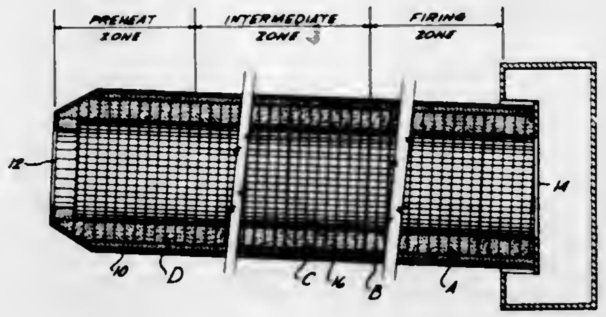
James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 14, 1965, Ser. No. 471,835
U.S. Cl. 263—29 **13 Claims**
Int. Cl. F27b *1/00;* **F26b** *17/12*

A machine for heating and feeding plastic material to a consuming device, which machine includes a heating chamber and means for filling the chamber with a charge of plastic granules. A pair of oppositely disposed perforate walls separate the chamber from inlet and outlet manifolds which inject heated fluid into the chamber and exhaust said fluid from the chamber whereby the fluid flows uniformly through the granular material for heating same. Means are provided for moving the perforate outlet wall of the chamber to disengage the softened charge therefrom and away from the inlet wall for opening the bottom of the chamber so that the heated charge will freely drop therefrom.



3,425,674
ROTARY KILN CONSTRUCTION

Richard R. Schneider, Pittsburgh, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,153
U.S. Cl. 263—33 **6 Claims**
Int. Cl. F27b *7/28;* **F27d** *1/00*

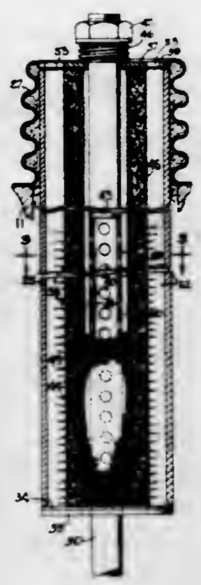


A rotary kiln construction having a refractory lining which is divided into three sequential zones composed of a preheat zone, an intermediate zone and a firing zone, the preheat zone being composed of fireclay brick, the intermediate zone being composed from either fireclay brick or high alumina brick and at least a portion of the firing zone being fabricated from burned refractory shapes containing at least 50% fused grain.

3,425,675
BURNER TUBE ASSEMBLY FOR HEAT TREATING FURNACE

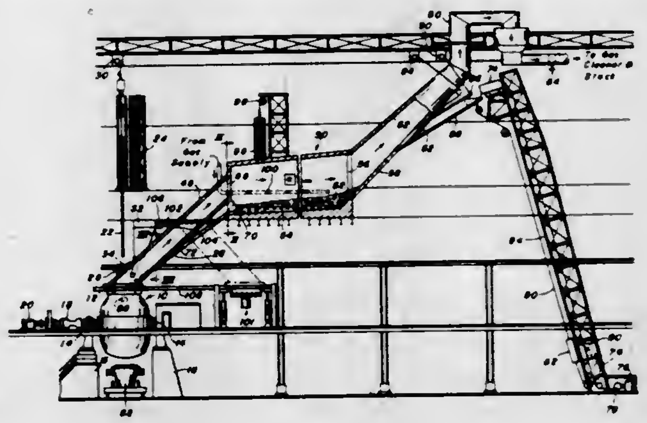
Charles J. Twine, Rockford, Ill., assignor, by mesne assignments, to Alco Standard Corporation, Philadelphia, Pa., a corporation of Ohio
Filed Dec. 14, 1966, Ser. No. 601,629
U.S. Cl. 263—41 **5 Claims**
Int. Cl. F23d *13/12;* **F27b** *5/00*

A radiant burner tube assembly for a heat treating furnace includes an outer, non-porous ceramic tube located within the furnace chamber, a series of rings made of porous ceramic fiber material and stacked end-to-end within the tube to form a sleeve, and a fuel delivery pipe telescoped into the sleeve to supply a combustible mixture of gas and air to the inner surface of the sleeve. The fuel mixture is passed uniformly through the interstices of the fiber material of the sleeve and is ignited on the outer surface of the sleeve with substantially flameless combustion to heat the outer surface to a bright radiant glow and thereby produce evenly distributed radiant waves of uniform intensity for heating the outer tube which, in turn, radiates energy uniformly along its length to heat the furnace chamber. A tubular screen is telescoped over the delivery pipe and into the sleeve to balance along the length of the latter the pressure of the fuel mixture supplied to the sleeve and to prevent combustion from occurring inside of the sleeve.



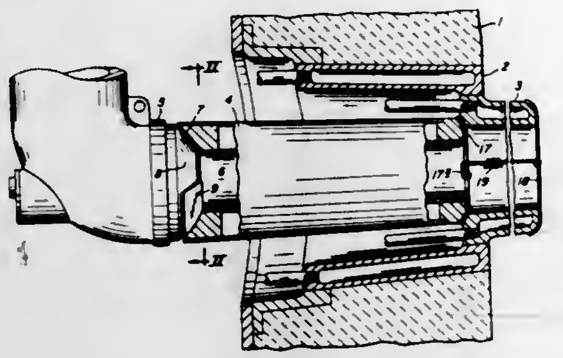
3,425,676
MOLTEN METAL PRODUCING FURNACE

Harold F. Shekels, Edgewood, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,544
U.S. Cl. 266—11 **13 Claims**
Int. Cl. C21b *13/14;* **C21c** *5/38, 7/06*



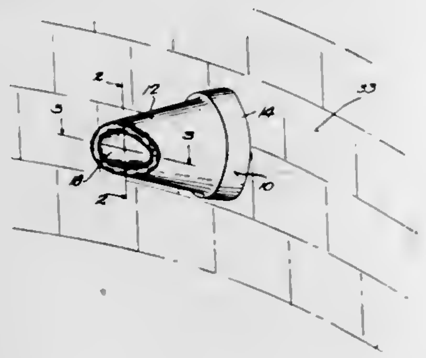
This invention relates generally to a molten metal producing furnace and more particularly to an improved furnace for producing molten iron for use in a basic oxygen furnace. A basic oxygen furnace is provided with exhaust outlet means for exhaust gases from the basic oxygen furnace. A molten metal producing furnace is disposed adjacent the basic oxygen furnace and adapted to receive a molten metal producing material, and a conduit means is connected to the exhaust outlet means and the molten metal producing furnace, the exhaust gases being operable to melt the molten metal producing material into molten metal. The conduit is operable to selectively engage either the exhaust outlet means or a fluid control means which can provide heated fluids to the conduit and thence to the molten metal producing furnace when the basic oxygen furnace is not producing exhaust gases.

3,425,677
THERMAL BARRIER
Herbert A. White, Jr., Churchill, Pa.
(2516 Collins Road, Pittsburgh, Pa. 15235)
Filed Sept. 23, 1965, Ser. No. 489,700
13 Claims
U.S. Cl. 266—34
Int. Cl. C21b *7/16;* **C21c** *5/48;* **F16j** *15/08*



Apparatus for conveying hot fluids including two aligned tubular members having matching end surfaces, and a deformable thermal barrier between the end surfaces, the thermal barrier having two outer layers of steel foil and an intermediate layer of steel foil with a layer of high temperature resistant insulating material between the intermediate layer and each outer layer.

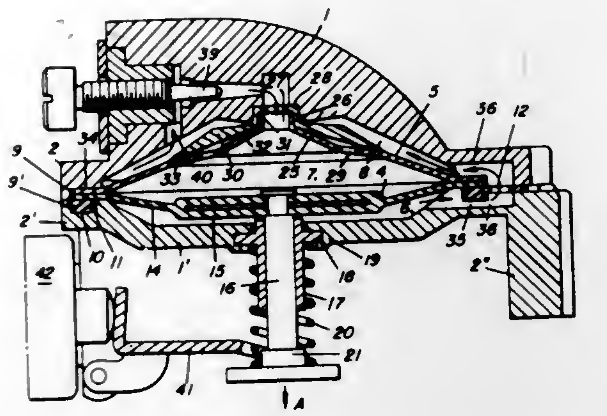
3,425,678
TUYERE WITH ELONGATED OUTLET PORT
Chiyoji Sakai, Nishinomiya-shi, Japan, assignor of twenty percent to Eizaburo Tsutsumi, Tokyo, Japan
Filed Apr. 5, 1966, Ser. No. 540,403
Claims priority, application Japan, Apr. 15, 1965, 40/22,277
9 Claims
U.S. Cl. 266—41
Int. Cl. C21b *7/16*



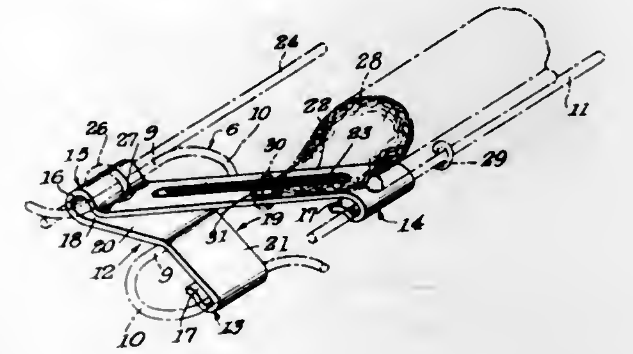
A tuyere comprising a continuous tubular wall forming an oval outlet port. A portion of the wall lying at one end of the major axis of the outlet port is longer than the portion of the wall lying at the opposite end of that axis. The inner surface of the wall portions diverge from each other in the direction of the port. The inner surface of the opposite wall portion diverges from the centerline of the tuyere at a geater angle than does the inner surface of the long wall. The inner surfaces of the wall portions at opposite ends of the minor axis may converge toward the outlet port.

3,425,679
PNEUMATIC TIME DELAY DEVICE
Giovanni Risso, Turin, Italy, assignor to La Telemeccanica Elettrica, Ing. Amati & Gregorini, Milan, Italy
Filed Mar. 13, 1967, Ser. No. 622,772
Claims priority, application Italy, Mar. 18, 1966, 6,134/66
18 Claims
U.S. Cl. 267—1
Int. Cl. F16f; F16d *57/00;* **H01h** *7/03*

A device for obtaining a time delay of movement of a diaphragm in a closed cavity in response to an external force acting in one direction on a spring biased control shaft connected to the diaphragm. The diaphragm divides the cavity into two chambers normally containing fluid at equal pressures so that, upon movement of the diaphragm in response to the external force, or the force exerted by the spring, the volumes of the chambers increase and decrease accordingly, causing fluid to flow in passages connecting the chambers. The passages are partially coextensive and means are provided to regulate the flow through one of the passages thus regulating the time required to complete a given cycle of movement.



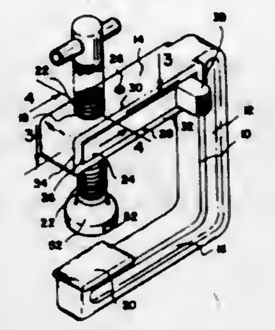
3,425,680
EDGE-WIRE SUPPORT UNIT
John Garrison, Norwalk, Calif.
(1840 S. San Antonio Ave., Ontario, Calif. 91762)
Filed Oct. 10, 1966, Ser. No. 585,612
6 Claims
U.S. Cl. 267—102
Int. Cl. F16f *3/00*



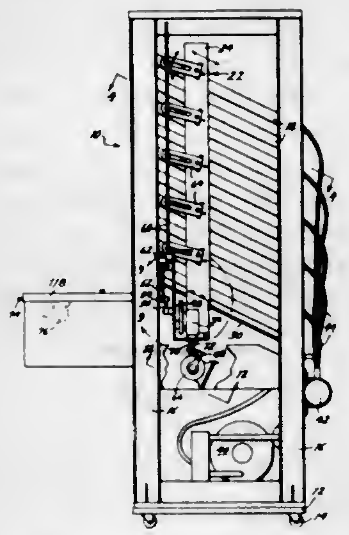
This invention is characterized by the provision, on the opposite ends of a flat steel supporting spring, of snap-in portions that have non-displaceable connection by one end with one of the cross bars of a sinuous or corrugated spring, and similar connection by the other end with an edge wire that is resiliently supported in spaced relation to a frame across which a plurality of such sinuous springs spans. The snap-in engagement of one end of the support spring with the sinuous spring holds the former in steady operative position, making it a simple matter to apply the edge-wire by snap-in engagement with the opposite end of the support spring, thereby reducing the assembly time of these items of upholstered furniture.

3,425,681
FIXTURE DEVICE
Albert L. Wing, 1220 McKemy St., Tempe, Ariz. 85281
Filed Oct. 21, 1965, Ser. No. 499,322
2 Claims
U.S. Cl. 269—182
Int. Cl. B25b *1/12, 5/10*

A fixture device specifically including a C-shaped clamp frame member having a pair of substantially parallel arms between which articles may be clamped together; a smooth bore extending through one of said arms with a helically threaded clamp screw slidably movable through said bore; one of said arms having a channel-shaped recess therein, wherein a latch member is pivotally mounted, the latch member being mounted between two walls of the recess and closely fitted therein and having a threaded segment engagable with screw threads of the clamp screw, such that when pressure is applied axially of the clamp screw, the arm having the recess is deflected thereby binding the segment nut member between said walls as they are deflected and holding the segment nut member in meshed relation with the clamp screw.



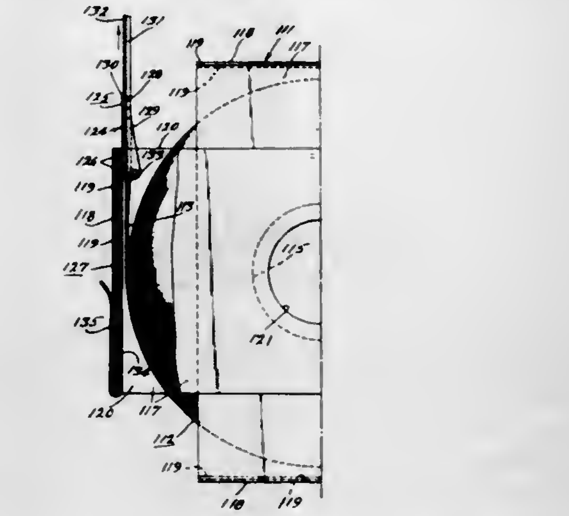
3,425,682
COLLATING MACHINE
Herman Morris Pekovsky, 8109 Summerdale Ave., Philadelphia, Pa. 19152
Filed May 16, 1966, Ser. No. 550,532
9 Claims
U.S. Cl. 270—58
Int. Cl. B65h *39/04*



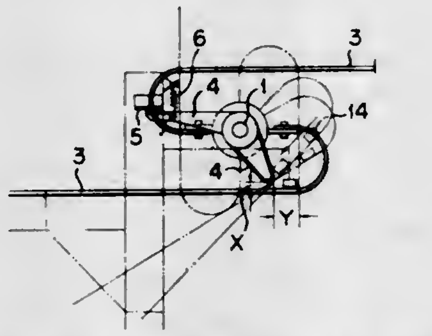
A collating machine comprising a fixed frame and movable carriage, and having pneumatic sheet engaging and lifting means on the carriage, wherein the carriage and pneumatic means are sequentially and automatically operated in timed relation so that the pneumatic means lift individual sheets from respective stacks. A primary motor provides movement of the carriage, and a secondary motor, on the carriage, provides positive movement of the pneumatic means into engagement with the sheets. An actuator means for the carriage comprises a timer means, a drive motor coupled to the carriage for moving the same, and responsive to the timer means for activating the drive motor.

3,425,683
DISPENSING UNIT
William F. Weirich, 134 Henley Road, Philadelphia, Pa. 19151, and Henry Weirich, Lenni Road, Lenni, Pa. 19052
Filed July 1, 1966, Ser. No. 562,370
7 Claims
U.S. Cl. 270—93
Int. Cl. B65h *45/22, 75/00;* **B65d** *13/04*

A dispening unit for slot insulation in roll form comprising a container formed by a pair of internesting sleeves disposed at right angles to one another. Each sleeve has a width greater than the diameter of the roll and a length less than the diameter of the roll so that the container is open at all four corners. Each sleeve is formed by two separate side panels having flaps at the opposite side edges. The flaps of the two panels are interconnected to space the side panels apart a selected distance equal to the width of the roll, the interconnection of the flaps providing a double wall thickness about the four side edges at the outer periphery of the container. A folding horn is adapted to be clipped onto the container along the double wall thickness.



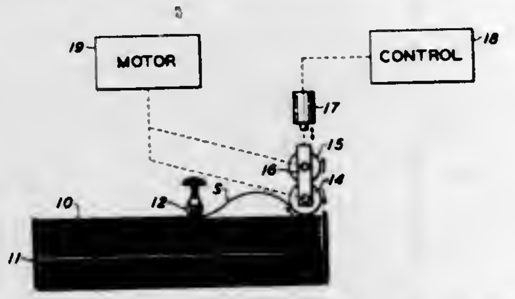
3,425,684
INDUCTION HANGING MECHANISM FOR STARTING SHEETS IN AN ELECTROLYTE REFINERY FOR METALS
Kuniya Sasaki, Niihama, Japan, assignor to Sumitomo Metal Mining Company Limited, Tokyo, Japan
Filed Oct. 5, 1967, Ser. No. 673,057
2 Claims
U.S. Cl. 271—1
Int. Cl. B65h *5/18;* **B65g** *47/04*



A mechanism for transposing starting sheets from a horizontal state to a hung state comprises a rotatably supported shaft, a substantially S-shaped supporting member with a part extended in the diametral direction of said shaft and another part extended in the reverse direction, a slip stopping arm extended at one end toward the reversely extended part forming a curved portion of said supporting member, pressed at the other end against a fixed part with a spring and pivoted to the supporting member between both ends and means for rotating said rotatably supported shaft by 90 degree. The mechanism transposes the starting sheet without distortion thereof.

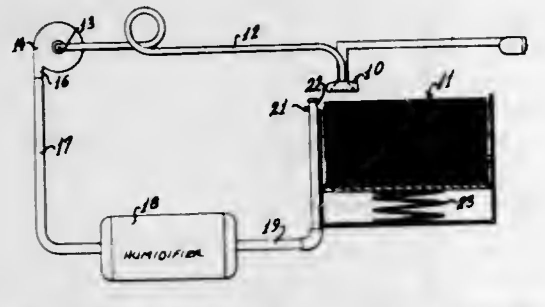
3,425,685
PAPER FEED MECHANISM
Robert H. Liva, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 27, 1966, Ser. No. 605,045
1 Claim
U.S. Cl. 271—21
Int. Cl. B65h *3/06*

A paper feeding apparatus adapted for top or bottom feeding of sheets from a stack. A restraining roller is applied to the stack and resists movement of each top sheet in one direction, rearwardly. A feed roller rotatable in a direction to move each sheet rearwardly is periodically placed in engagement with the forward edge of each sheet, transverse thereto to produce a bend in the sheet by pulling the forward end thereof rearwardly against the holding force effective on the sheet. The forward edge is pulled around the feed roller and moved upwardly thereby to the nip between the feed roller and a second one associated therewith. Both feed rollers are moved reciprocally in union relative to the stack to accomplish periodic engagement of the first feed roller and the stack.



3,425,686
AIR TREATING APPARATUS FOR SHEET MATERIAL SEPARATOR

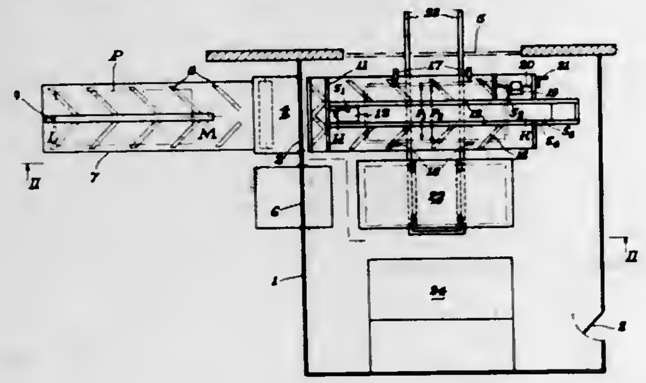
Eldon L. Leibold, Pinedale Road, Clanton, Ala. 35045
Filed Aug. 21, 1967, Ser. No. 661,953
U.S. Cl. 271—26 **3 Claims**
Int. Cl. B65h *3/08*



Apparatus for cooling and humidifying air for a sheet material separator having vacuum type feed means connected to a vacuum pump. A humidifier is interposed between the exhaust of the vacuum pump and an air blower which supplies the treated air to the sheet material at the point of separation.

3,425,687
HANDLING APPARATUS FOR RIGID SHEET MATERIAL

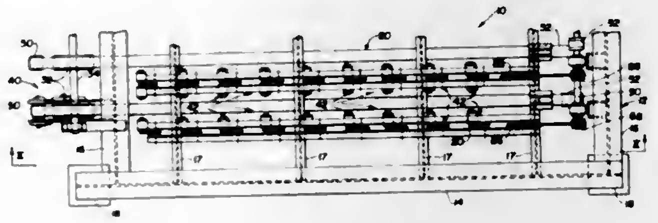
Gordon Williams, Whitley Bay, England, assignor to Formica International Limited, London, England, a British company
Filed Mar. 27, 1967, Ser. No. 626,139
Claims priority, application Great Britain, Apr. 7, 1966, 15,519/66
U.S. Cl. 271—55 **10 Claims**
Int. Cl. B65h *5/10, 9/10*



Conveyor apparatus for transporting polished metal plates wherein the leading edges of the plates are in turn gripped by a gripper unit carried by a carriage which is movable in the direction of conveying to draw the plate along a non-scratch support. A probe may be provided on the carriage to sense the correct positioning of a plate to actuate the gripper unit.

3,425,688
MAGNETIC CONVEYOR

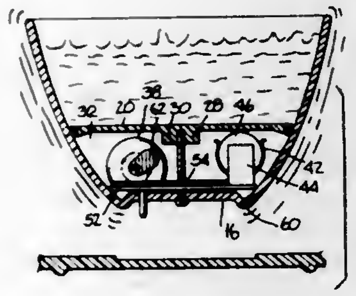
Hugh Ross and Franklin E. Parke, Pittsburgh, Pa., assignors to Ropak Manufacturing Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1966, Ser. No. 604,443
U.S. Cl. 271—75 **8 Claims**
Int. Cl. B65h *29/16, 3/16*



This invention relates to a conveyor of the type employing magnet means and one or more movable belts each having a lower reach positioned below the magnet means for conveying single sheets of paramagnetic material, such as, steel sheets. The belts are magnetically susceptible and are attracted by the magnets whereby the lower reaches are prevented from sagging below the magnets in the absence of material being conveyed. The present conveyor also provides transfer means including magnetic rollers for transferring a single sheet from a position spaced below the conveyor into engagement with the movable belts. The magnetic rollers are carried on adjustable arms which are arranged to accelerate each single sheet from a dead stop to a speed which prevents the sheet from being marked when it engages the moving belt.

3,425,689
VIBRATING CUP

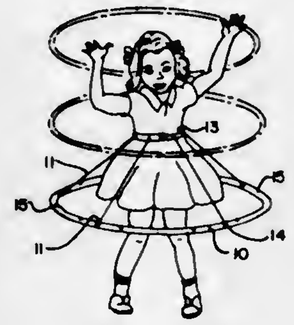
Frank Convertine, Massapequa, N.Y., assignor to A. Freed Novelty, Inc., New York, N.Y., a domestic corporation
Filed Mar. 21, 1968, Ser. No. 715,017
U.S. Cl. 272—27 **3 Claims**
Int. Cl. A63j *23/00;* **A63h** *33/26*



A beverage cup having a water-tight false bottom defining a hollow chamber thereunder, the chamber containing a battery-driven motor having a shaft provided with an eccentrically disposed weight on its free end, a spring contact plate to open an close the circuit and an activating pin secured to the undersurface of the contact plate and extending freely out of the true bottom of the cup, the pin being of sufficient length to lift the contact plate to open the circuit when the cup stands upon a flat surface.

3,425,690
JUMPING HOOP TOY

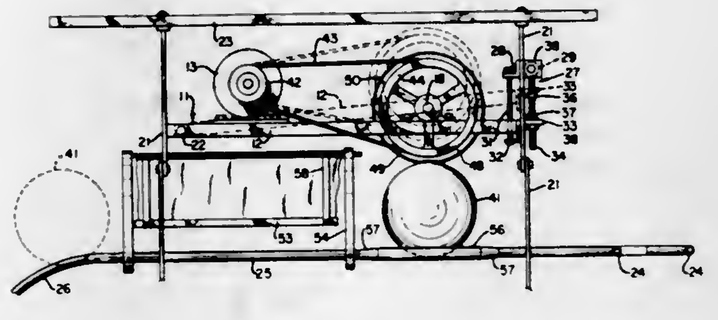
Killian L. Charbonnet, 1700 Valmont St., New Orleans, La. 70115
Filed July 16, 1965, Ser. No. 472,538
U.S. Cl. 272—57 **5 Claims**
Int. Cl. A63b *19/00;* **A63h** *33/00*



A toy device providing an adjustable belt to encircle the body of a user, a self supporting hoop surrounding and spaced from the belt and connected to the belt by radial elastic members at spaced intervals.

3,425,691
BOWLING BALL ACCELERATOR MECHANISM

Ronald A. Lenhart, 6965 Lakewood Place, Lakewood, Colo. 80215
Filed July 19, 1965, Ser. No. 472,947
U.S. Cl. 273—49 **5 Claims**
Int. Cl. A63d *5/02*

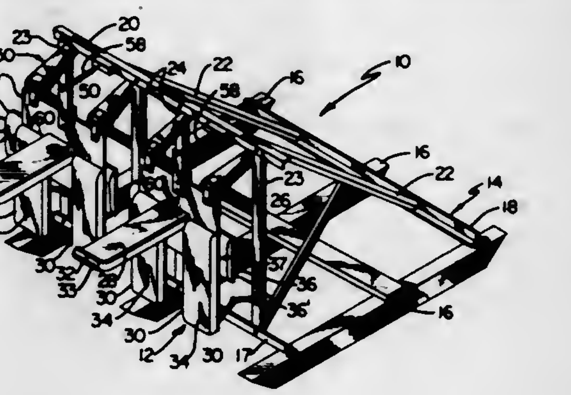


A bowling ball accelerator for use on automatic pin setting machines which have a ball return track. The accelerator mechanism includes a movable mounting frame rotatably supporting an accelerator wheel which has a resilient frictional ball engaging surface. The wheel is disposed for contact with bowling balls moving along the ball return track, and the track itself is provided with resilient covers or sleeves at the zone for accelerator wheel contact to obtain improved ball rotational speeds. An adjusting means for changing the wheel to ball contact pressure provides elements for holding the mounting frame and wheel in inoperative position.

3,425,692
FOOTBALL BLOCKING SLED

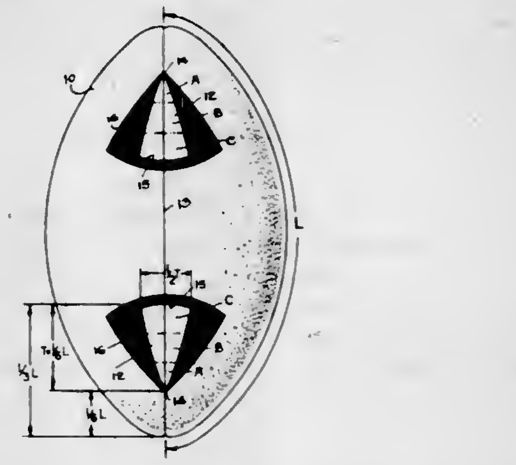
James A. Leach, 4212C, Douglass, Air Force Academy, Colorado Springs, Colo. 80840
Filed June 6, 1966, Ser. No. 555,528
U.S. Cl. 273—55 **7 Claims**
Int. Cl. A63b *69/34*

A football blocking sled is adapted for practicing individual or synchronized blocking drills and is characterized by including an impact member to simulate the lower body and legs of an opposing player together with forwardly extending restraining means to encourage the blocker to remain in a low substantially horizontal position in making and completing the block.



3,425,693
FOOTBALL

Francis T. Murray, Gladwynne, Pa. (2445 Fairmount Ave., Philadelphia, Pa. 19130)
Filed Aug. 2, 1965, Ser. No. 476,371
U.S. Cl. 273—65 **3 Claims**
Int. Cl. A63b *41/00, 43/00*

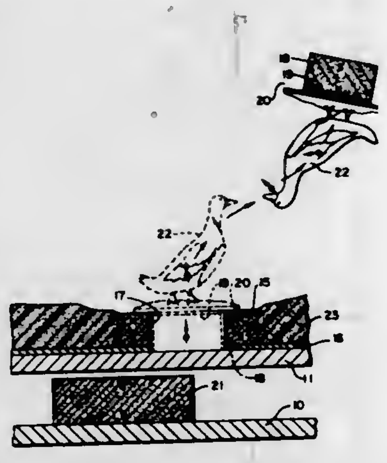


A football having delineated thereon adjacent the pointed end thereof which presents toward the ground when the ball is positioned for a placement kick a target zone to be struck by the toe of the kicker. This target zone is of generally triangular shape disposed symmetrically with reference to a longitudinally extending median plane of the ball. The base of the triangle extends substantially orthogonally with respect to said median plane of the ball and is spaced from the pointed end of the ball a distance approximately equal to one-third the end-to-end length of the ball as measured along its longitudinally curved surface, while the vertex opposite said base is spaced from said pointed end a distance approximately equal to one-sixth said curved length of the ball. The said base of the triangular target zone is approximately one-half that altitude of the triangle which lies in the said longitudinally extending median plane of the ball. Desirably, the target zone is marginally defined by an area of color contrasting with that of the zone itself. The football may be provided with a target zone as described at either one or both ends thereof.

3,425,694
MAGNETIC GAME APPARATUS OR THE LIKE

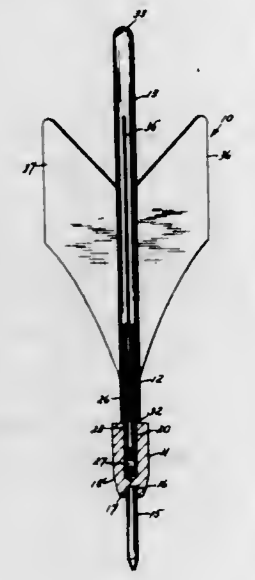
Edward O. Norris, 9 Ledgemoor Lane, Westport, Conn. 06880
Filed Jan. 24, 1966, Ser. No. 522,451
U.S. Cl. 273—101 **22 Claims**
Int. Cl. A63f *9/14;* **A63h** *33/26*

The invention is directed to a game apparatus employing a novel magnetic principle. A first magnetic element is held in a semi-stable position by a force applied thereto in one direction. When a second magnetic element subsequently influences the first, in a direction opposite to the force which maintains the semi-stable relationship, the first magnetic element becomes unstable and is catapulted out of its semi-stable position. In a most advantageous form, the movable magnetic element is received within a magnetic ring and retained by repelling magnetic forces. When a third magnetic member is brought into influencing position, slightly separating the first two magnetic elements, the movable magnetic element is sharply ejected from its semi-stable seat, and can be projected through a substantial distance. A wide variety of unusual effects may be achieved.



3,425,695
DART CONSTRUCTION

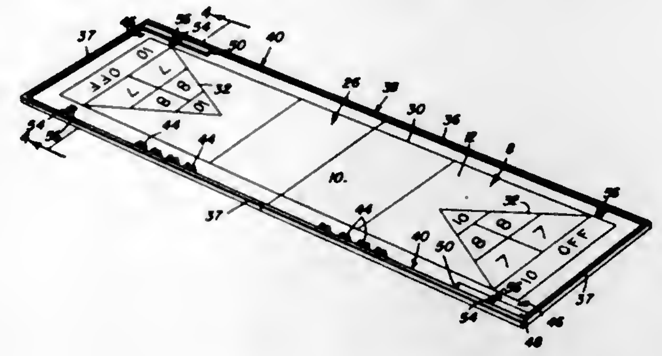
Ronald Kestenbaum, 650 Ocean Ave.,
Brooklyn, N.Y. 11226
Filed June 23, 1966, Ser. No. 559,881
U.S. Cl. 273—106.5 **1 Claim**
Int. Cl. A63b *65/02*



An improved hand propelled dart projectile including a hollow longitudinal shaft, a synthetic resinous flight element including a second hollow shaft formed on the outer surface of said first shaft as a result of insert molding, a weighted nose element including a rearwardly facing socket including a threaded portion and an unthreaded portion, a solid metallic rod serving as a reinforcement and having a flattened end inserted within said first shaft at a forward end thereof, said shaft and nose element being threadedly engageable, in which position the flattened end is maintained within the unthreaded portion of the socket, whereby the rigidity of the first shaft at with improved durability.

3,425,696
CONVERTIBLE TABLE MODEL SHUFFLEBOARD WITH CROQUET GAME ATTACHMENTS

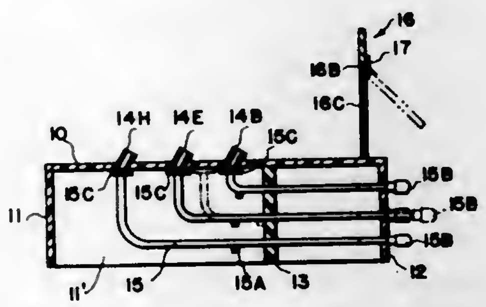
Arthur L. Dockum, Beckley, W. Va. (628 N. Circle Drive,
Colorado Springs, Colo. 80909)
Filed Oct. 8, 1965, Ser. No. 493,977
U.S. Cl. 273—126 **5 Claims**
Int. Cl. A63f *3/00, 7/06;* **A63b** *67/14*



A table-size game board is made up of half sections joined by special hinge means. It is light in weight and foldable for convenient handling and storage. The top of the panel means enables participants to play (1) shuffleboard and (2) croquet. Built-in holddown clips are used to store miniaturized playing disks (pucks) and proportional cue sticks. It is within the purview of the overall concept to provide distributively arranged holes constituting sockets for removable retention of the legs of miniaturized wickets. Specially covered and cushioned croquet balls are adapted to be struck by a properly proportioned mallet. Regularly established rules govern the manner of play by the participants.

3,425,697
GAME APPARATUS FOR PLAYING "TIC-TAC-TOE" OR THE LIKE

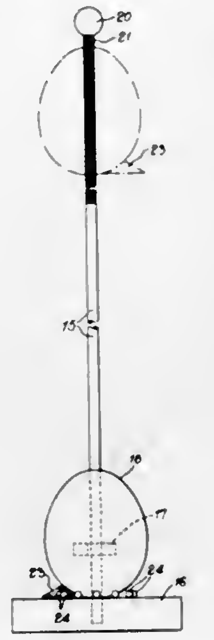
Cyril M. Svagerko, 286 Park Drive,
Campbell, Ohio 44405
Filed Sept. 16, 1966, Ser. No. 579,948
U.S. Cl. 273—130 **5 Claims**
Int. Cl. A63f *3/00*



An amusement device for playing the game of tic-tac-toe. A three-by-three matrix of rectangular tubes is provided on the top surface of a box-like enclosure. The tubes are mounted so that a player positioned adjacent one end of the enclosure cannot see the lower ends of the tubes. Each of the tubes is closed at its lower end by a movable gate controlled by a second player, the control means being disposed at the other end of the enclosure. A shield is provided intermediate the ends of the enclosure so that the first player is unable to see the gate controls. The shield may be provided with a mirror which may be pivoted from its normal position to one allowing the first player to view the gate controls, or the device may be provided with an ammeter visible to the first player and connected in circuit with a resistance which varies in accordance with the number of gates which have been opened. The object of the game is to arrange three tokens in closed tubes in a straight line.

3,425,698
MAGNETIC AND GRAVITY ACTUATED INDEXABLE CHANCE SPINNER

Alois F. Steiert, 427 W. Bristol St., Philadelphia, Pa.
19140, and Earle Steiert, 271 Linden Lane, Merion
Station, Pa. 19066
Filed Aug. 31, 1966, Ser. No. 581,132
U.S. Cl. 273—141 **12 Claims**
Int. Cl. A63h *33/26, 1/00, 15/00*



1. A magnetic spinning game device or game comprising the combination of a magnetic couple made up of a rod and an annular spinner about the same and free to pursue a gyratory course of downward flight about the rod,

one element of said magnetic couple being magnetically energized and the companion element being magnetizable whereby to effect said gyratory travel of the spinner in respect to the rod,

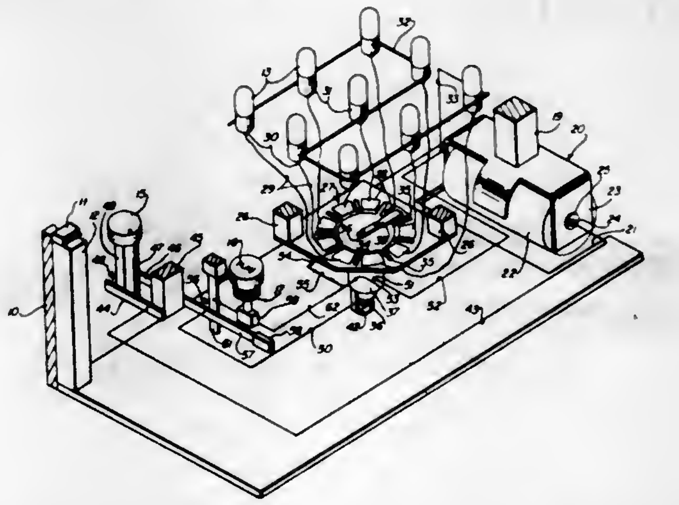
a base having a game control scoring dial on at least one end of said rod having scoring indicia thereon,

separating stop projections on said dial between the individual indices, and

said spinner having an encasement from which an indexing pointer projects for disposition between with two of said separating stop projections on said dial at completion of the spinner's descent about the rod.

3,425,699
ELECTRICAL GAME OF CHANCE

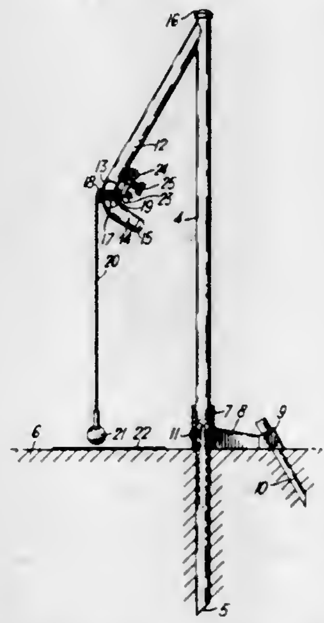
Anthony D'Onofrio, 10 Overhill Road,
West Hartford, Conn. 06117
Filed Jan. 3, 1967, Ser. No. 606,624
U.S. Cl. 273—141 **7 Claims**
Int. Cl. A63f *9/00;* **H01b** *51/34*



An electrical game of chance having a flashing light display in which only one lamp in the display is lit after each play and having a motor and circuitry therefor to effect its intermittent energization over random and decreasing intervals of time upon each play to drive a rotary contact for serially lighting the lamps in the display. The intermittent energization is effected by a vibrating reed contact which is stressed and then allowed to vibrate at its natural frequency upon depression and release of a play button.

3,425,700
GOLF PRACTICE DEVICE

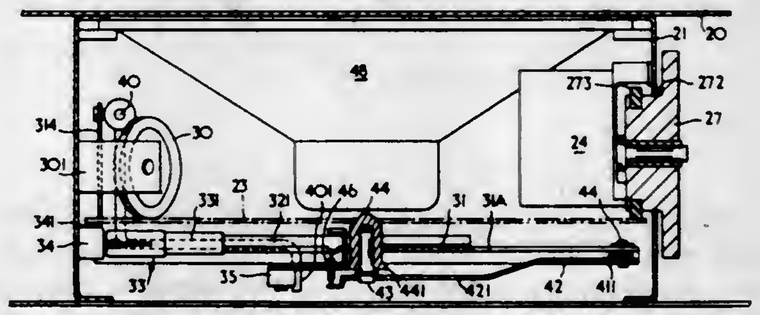
Arthur Edwards, Torrington Villa, Vale Road,
Tunbridge Wells, Kent, England
Filed Nov. 21, 1966, Ser. No. 595,680
U.S. Cl. 273—185 **7 Claims**
Int. Cl. A63b *69/36, 57/00, 69/40*



A golf ball suspended by a flexible cord from an arm extending outward and downward from the upper end of a vertically adjustable support secured in a fixed position by stakes passing through a base portion thereof. The lower end of the arm curves inward toward the support and defines a nose portion having an outwardly facing convex surface. One end of the ball suspension cord passes through the outward surface of the nose portion to an adjustment mechanism on the inward side of the arm. This adjustment mechanism permits the cord to be let in or out through the nose portion. The other end of the cord passes through a diametrical hole in the ball and is knotted to fit into a recess at one end of the diametrical hole.

3,425,701
SOUND REPRODUCING APPARATUS

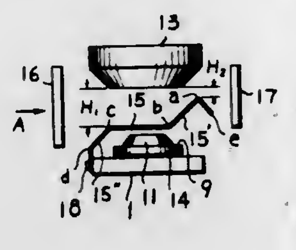
Paul Baron Henn Robinson, 26 Four Ashes Road, Bentley
Heath, Knowle, and Anthony Alfred James Homer,
116 Dorridge Road, Dorridge, both of Solihull, England
Filed Sept. 7, 1965, Ser. No. 485,350
U.S. Cl. 274—9 **17 Claims**
Int. Cl. G11b *3/12*



A record player arranged to operate in any position and incorporating a casing provided with a slot for the edgewise passage therethrough of a record disc, a pick-up and stylus constrained to move linearly along a radius of a record disc during playing, means for moving the stylus and the pick-up into and out of contact with a record disc, a spigot for centralizing a record disc in playing position, positively driven friction means for effecting a rotation of a record disc, and means for initiating a starting and stopping of the playing of the record.

3,425,702
DEVICE FOR GUIDING A DISK IN A JUKEBOX

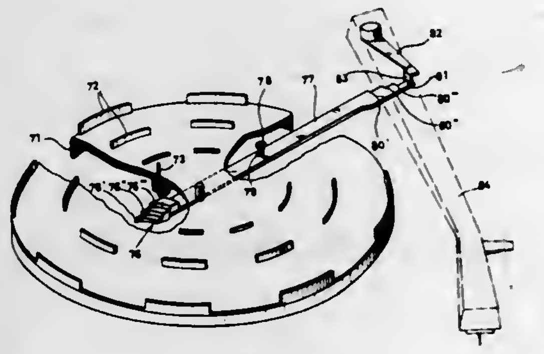
Katsuhiro Kawasaki, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan
Filed July 3, 1967, Ser. No. 650,830
Claims priority, application Japan, July 7, 1966, 41/63,601
U.S. Cl. 274—10 **7 Claims**
Int. Cl. G11b *17/04, 17/22*



An element for guiding a phonograph disk which is to be positioned vertically against a turntable, the guide element including a stationary element which extends transversely to the turntable axis and includes respective first and second extents which are inclined towards the plane of the turntable face, the first and second extents being arranged to successively engage a disk which is advanced in a direction transverse to the turntable axis, said extents guiding the disk to successively closer axial positions relative to said turntable face.

3,425,703
AUTOMATIC PHONOGRAPH TURNTABLE

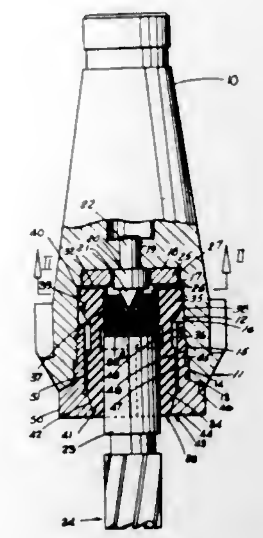
Ernst Nanz, 9 Martin-Luther-Str., Hans-Gerhard Hagenah, 20 Hansjakobweg, and Walter Knöpfle, 5 Martin-Luther-Str., all of St. Georgen, Black Forest, Germany
Filed Oct. 28, 1965, Ser. No. 505,572
Claims priority, application Germany, Oct. 29, 1964, 35,390; June 10, 1965, 37,010
U.S. Cl. 274—15 **8 Claims**
Int. Cl. G11b *17/06*



Mechanism for selecting the starting position for the tone arm of an automatic record player in accordance with the diameter of the record on the turntable wherein a series of stops are provided to limit the inward pivoting movement of the arm, the appropriate stop being selected by depressable pins on the turntable actuated by the placing of a record thereon.

3,425,704
COLLET CHUCKS

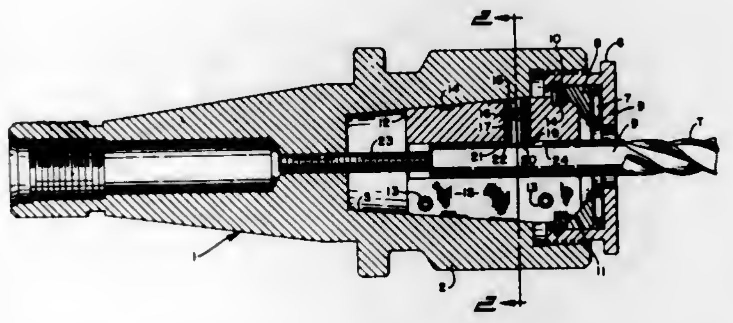
Donald John Dickson, Albury, Surrey, England, assignor to Qualcut Tools Limited, Sheffield, England, a British company
Filed Jan. 5, 1965, Ser. No. 423,530
Claims priority, application Great Britain, Jan. 10, 1964, 1,293/64
U.S. Cl. 279—51 **1 Claim**
Int. Cl. B23b *31/12*



A collet chuck having a sleeve radially interposed between a sidewall of an axial recess in the chuck body and the chuck collet, the collet being tightened by engagement of its conical outer end with a conical surface of the sleeve when the latter is moved threadedly in the recess, the sleeve having two axially spaced cylindrical external bearing surfaces which engage corresponding internal surface of the chuck body coaxially to center the sleeve, while a cylindrical guide surface on the axially inner end of the collet is centered by engagement with a corresponding cylindrical surface of the chuck body.

3,425,705
COLLET CHUCK AND THE LIKE

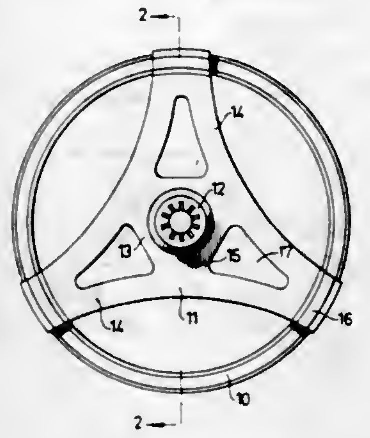
Milton L. Benjamin and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 552,956, May 25, 1966. This application Mar. 22, 1967, Ser. No. 633,337
U.S. Cl. 279—56 **9 Claims**
Int. Cl. B23b *31/12*



A collet chuck having a radially inwardly movable pin therein for locking a tool against axial withdrawal from and turning in the collet.

3,425,706
SKI POLE WHEEL

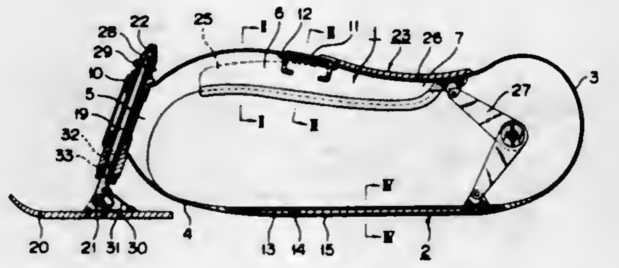
Torsten Erland Folke Lindberg, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Sept. 6, 1966, Ser. No. 577,460
Claims priority, application Sweden, Sept. 6, 1965, 11,552/65
U.S. Cl. 280—11.37 **3 Claims**
Int. Cl. A63c *11/24*



A ski pole wheel consists essentially of a ring and a holder, within the ring, by which the ring is flexibly secured to a ski pole. The holder, in turn, comprises a central holder portion (comprising a hub, which accommodates a ski pole in an axial opening therein, and inner holder sections contiguous with the hub), outer holder sections adjacent to the ring of the ski pole ring and having outwardly directed holder arms, and portions interconnecting said inner and outer holder sections, said holder arms terminating in sleeves or fastening portions embracing the ring of the ski pole ring. The ring is formed, in one piece, of plastic material having relatively restricted flexibility while the holder is formed, in one piece, of a relatively soft and yielding plastic material. By situating the connections between the wheel and the ring and the outer holding sections in different radial directions than the connections between the outer holding sections and the inner holding sections the ring is easily inclined (under influence of a load) from the normal position perpendicular to the axis of the hub whilst rapidly returning to normal position upon removal of the load.

3,425,707
SKI SLED

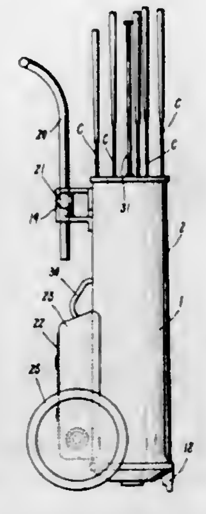
Kotaro Horiuchi, Hamamatsu-shi, and Akira Takeshige, Hamana-gun, Shizuoka-ken, Japan, assignors to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan
Filed Feb. 14, 1967, Ser. No. 616,076
U.S. Cl. 280—16 **14 Claims**
Int. Cl. B62b *13/04*



A ski sled is provided wherein a main body is formed with an inverted U-shaped cross-section and includes a front portion, a middle portion and a rear portion. The front portion supports a steering shaft at the bottom of which is located a front ski. Between the front portion and the rear portion of the main body is located a runner which is below and generally parallel to the middle portion. The runner is connected to the front portion by a flexible plate and is connected to the rear portion by a leaf spring. This provides for a substantially constant attitude of the rider to the steering mechanism, while at the same time provides for substantially cushioning against shock, thus contributing materially to the comfort and control of the rider.

3,425,708
GOLF TROLLEYS

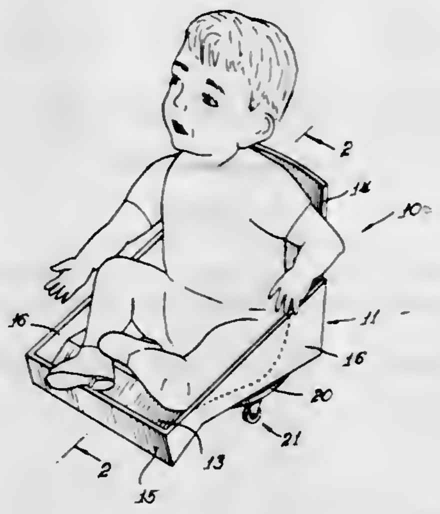
Fusamatsu Sato, 1060 Kami Ikegami-cho, Ota-ku, Tokyo, Japan
Filed July 25, 1966, Ser. No. 567,482
U.S. Cl. 280—47.19 **1 Claim**
Int. Cl. B62b *1/22*



A golf club carrier, where each club is secured into an individual holder, which prevents damage resulting from the clubs abrading against each other.

3,425,709
CHILD'S RIDING TOY

William F. Fields, 418 S. Monroe St., Lincoln, Ill. 62656
Filed Apr. 18, 1967, Ser. No. 631,699
U.S. Cl. 280—79.2 **2 Claims**
Int. Cl. B62b *7/00, 9/00*

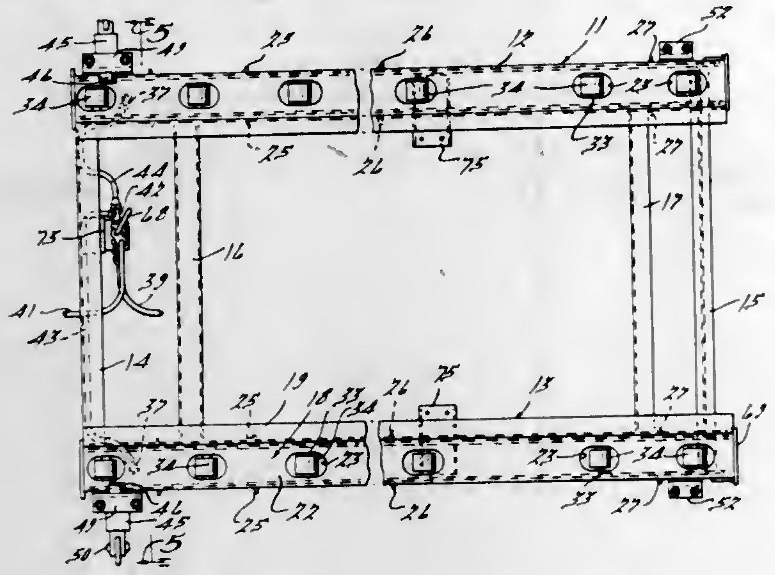


A flat bottom seat is mounted by a lazy susan antifriction device on a base from which casters depend.

3,425,710
TRAILER CONSTRUCTION

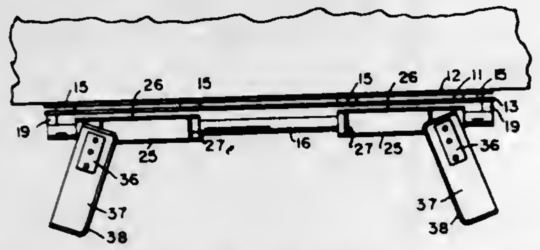
Adrian F. Hulverson, Grosse Pointe Woods, Mich., assignor to Fruehauf Corporation, a corporation of Michigan
Filed July 7, 1967, Ser. No. 651,907
U.S. Cl. 280—81 **6 Claims**
Int. Cl. B62d *21/16;* **A63g** *21/00*

The body or container is supported on a frame which has upwardly facing channels in the side rails in which the downwardly projecting side rails on the body or container are supported and locked in adjusted position. A plurality of rollers are mounted in spaced relation on longitudinal carriers which rest upon an inflatable tube in the bottom of the channels and which, when inflated, raises the rollers through apertures in a plate at the top of the channel into engagement with the bottom rails of the body or container. The body or container is raised above the plates or the rollers so that it can be readily moved longitudinally of the supporting frame thereonto or therefrom.



3,425,711
LEG RESTS FOR AUTOMOBILES

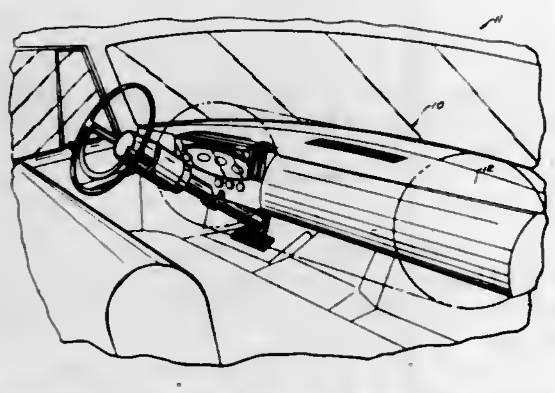
Andrew J. Rapier, Cincinnati, Ohio
(Rte. 1, Box 364, Fayetteville, Ohio 45118)
Filed June 24, 1966, Ser. No. 560,318
U.S. Cl. 280—150 **3 Claims**
Int. Cl. B60n *3/06*



Adjustable leg rests for the driver of an automobile.

3,425,712
SAFETY DEVICE

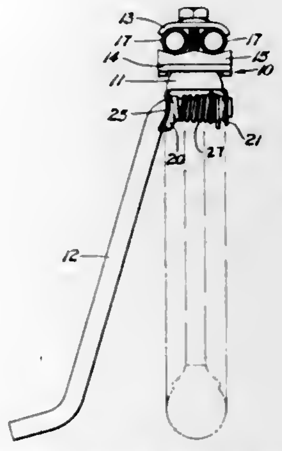
Charles O. Berryman, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 23, 1967, Ser. No. 662,679
U.S. Cl. 280—150 **20 Claims**
Int. Cl. B60r *21/02, 21/06*



A safety device for protecting the occupant of a vehicle during a crash comprises a hollow confinement supported on the vehicle. The confinement is supported in an inoperative or contracted condition and is expanded to an operative or expanded condition by the flow of a fluid into the confinement. The fluid is released to flow to the confinement and expand the confinement upon the vehicle encountering a collision condition. During the collision, the occupant may be thrown against the confinement which acts to cushion or restrain the occupant. The confinement is made of a metal material which deforms beyond its elastic limit to absorb the force or part of the force of impact of the occupant thereagainst. The confinement is deformed as a result of the impact force and remains in its deformed condition to again function as a restraint on further movement of the occupant thereagainst, as would occur in an accident involving multiple collisions.

3,425,713
BICYCLE KICKSTAND

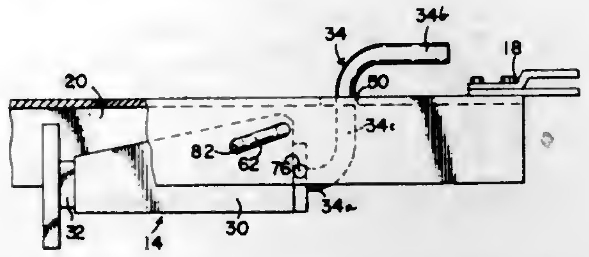
Herbert J. McCauley, 86 Dana Road,
Buffalo, N.Y. 14216
Filed Oct. 12, 1966, Ser. No. 586,169
U.S. Cl. 280—301 **11 Claims**
Int. Cl. B62h *1/02*



A bicycle kickstand having clamp members for attachment to the rear fork of a bicycle frame and a bearing for rotatably receiving the upper end of a support arm for rotation on a generally horizontal axis to and from supporting position. A ball and socket joint between the lower clamp member and the bearing permits the lower bearing to be rotatably adjusted on any desired horizontal axis and also about a vertical axis. The attaching clamp screw also fixes the adjustment of the bearing with respect to the clamp means.

3,425,714
LIFTING JACK FOR HAY BALERS

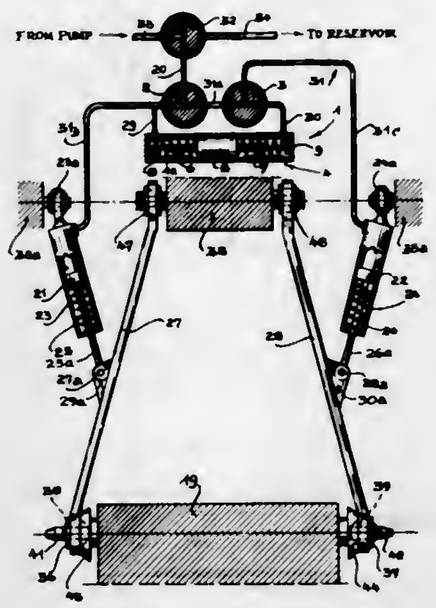
Hugh W. Morris, Corinth, Miss., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,055
U.S. Cl. 280—475 **8 Claims**
Int. Cl. B60d *1/14;* **B60s** *9/00, 9/02*



A trailer hitch for use with towed farm implements and having a jack assembly mounted on one end thereof. The jack assembly is swingable between a vertical supporting position and a horizontal transport position, and includes a pair of relatively extensible members and an adjustable crank. The crank includes a lever portion operable in a plane above the hitch for changing the extension of the extensible members and hence the elevation of the hitch.

3,425,715
HYDRAULICALLY CONTROLLED HITCH

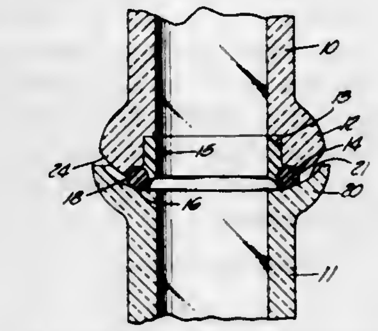
Otto Weitz, Butzbach, Hesse, Germany, assignor to A. J. Troster, Butzbach, Hesse, Germany, a company of Germany
Filed Apr. 14, 1967, Ser. No. 630,893
Claims priority, application Germany, Apr. 14, 1966, T 30,909; Aug. 9, 1966, T 31,793
U.S. Cl. 280—479 **16 Claims**
Int. Cl. B60d *1/16, 1/00;* **A01b** *51/00*



A hydraulic control system associated with the draft links of hitches, preferably of the three-point type, wherein the coupling parts are of such a structure that coupling and uncoupling is achieved by a substantially horizontal swinging motion of the draft links. The said system includes two hydraulic cylinders one of each connected to each draft link, a valve assembly adapted to be set into a plurality of switching positions to achieve independently at least some of the following operational features: (a) swinging the links simultaneously or selectively inwardly (towards one another) for coupling; (b) swinging the links outwardly (away from one another) for uncoupling; (c) permitting the links to swing freely or to a limited extent in unison when coupled to an implement and when submitted to random external forces; and (d) locking the links (preventing any swinging) in any position they may assume after being coupled to an implement.

3,425,716
GLASS UNION

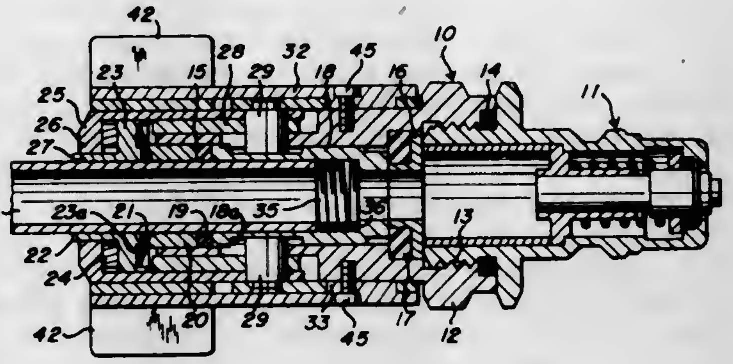
Fritz R. Blau, South El Monte, Calif.
(15664 La Subida Drive, Hacienda Heights, Calif. 91745)
Filed Mar. 16, 1967, Ser. No. 623,708
U.S. Cl. 285—110 **7 Claims**
Int. Cl. F16l *17/06, 19/02*



A union for tubes, at least one of which is formed of glass, adapted to form a hermetical seal capable of withstanding high vacuum pressures comprising a first tube having an enlarged collar having a convexly shaped end; an enlarged bore in said first tube forming a seat; a substantially inert bushing seated on said seat and having an enlarged end portion and an annular U-shaped groove in said end portion; a rubber-like O-ring seated in said annular groove with the free edge of said O-ring sheltered within said groove; a second tube having an enlarged collar having a concavely shaped end and clamping means for engaging said collars to force said tubes together in seating relation.

3,425,717
TUBE COUPLING ASSEMBLY

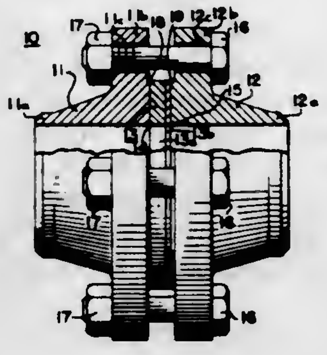
Ralph E. Bruce, Dayton, Ohio, assignor to Production Control Units, Inc., Dayton, Ohio, a corporation of Ohio
Filed Feb. 14, 1966, Ser. No. 527,115
U.S. Cl. 285—153 **5 Claims**
Int. Cl. F16l *19/06, 37/18*



A tube coupling device for quickly joining and disconnecting bare tube ends comprising a hollow coupler body with axially slidable components therein providing a socket in which the bare or plain tube end may be inserted and then mechanically locked and sealed upon the forcing together of the slidable components and single means such as an eccentric bail and toggle linkage exteriorly of the coupler body for forcing the slidable components therewithin together.

3,425,718
FLANGED TRANSITION JOINT FOR DISSIMILAR METALS

Robert W. Shaw, Jr., Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 536,446
U.S. Cl. 285—173 **4 Claims**
Int. Cl. F16l *19/02, 25/00*

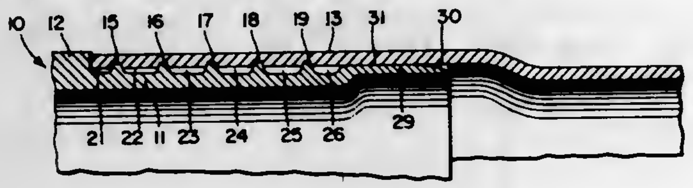


1. A transition joint for connecting components of dissimilar metals in systems for handling of fluids at low and ultra-low temperatures comprising two axially aligned tubular elements, each having an axially extending tubular portion provided at one end with a flange portion extending radially outward therefrom substantially normal to the common axis of said tubular elements, said flange portions being positioned in face-to-face relation, one of

said tubular portions being comprised of a metal dissimilar from the other said tubular portion and said dissimilar metals of said tubular portions corresponding respectively to the dissimilar metals of two system components which it is desired to interconnect, an annular composite bimetal plate comprising two parallel extending layers respectively of dissimilar metals corresponding respectively to those of said two tubular portions, said layers being joined together by a mechanical-metallurgical solid phase bond to provide a high degree of mechanical strength and soundness and a high integrity of leak-tightness against the passage of fluids between said layers, said annular plate being positioned between the opposed faces of said flange portions, said annular plate having an inside diameter corresponding to the inside diameter of said tubular elements and disposed in alignment with the bores of said tubular elements so as to insure a smooth flow passage through the transition joint, clamping means interconnecting said flange portions of said tubular elements to clamp said annular plate between the opposed faces of said flange portions, and a pair of continuous seal welds between the respective layers of said annular plate and the respective corresponding dissimilar metal tubular portions, each of said seal welds respectively extending around the entire inner periphery of each of said tubular portions between it and the adjacent corresponding metal layer of said annular plate, said seal welds being so constructed and arranged as to eliminate any crevices at the junctions between said tubular portions and said annular plate, the junction between the inner edges of said layers of said annular plate being smooth and leak-tight thereby providing a smooth bore through the transition joint so that no fluid may become entrapped at any point in the walls of the bore.

3,425,719
TUBE COUPLING

Samuel D. Burton, Pacific Palisades, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 24, 1967, Ser. No. 633,281
U.S. Cl. 285—382.2 **5 Claims**
Int. Cl. F16l *13/14*

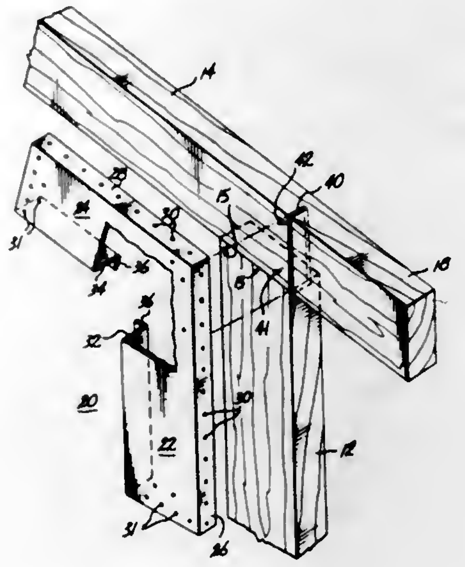


Tube coupling formed by contracting a tube beyond its yield stress to cause contraction of a coupling member disposed in an end thereof. Coupling member has a higher yield stress than tube, whereby when contacting force is released, the higher hoop compressive stress in coupling member is counterbalanced by hoop tensile stress in tube. Shear forces between tube and coupling member are distributed over a plurality of ribs on coupling member.

3,425,720
RAFTER AND POST STRUCTURE CONNECTION

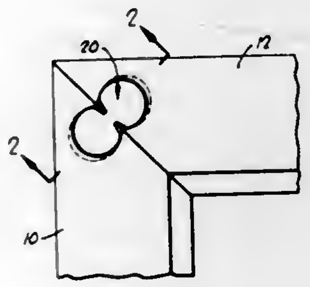
Victor L. Spane, Rte. 2, Box 79A,
Stanwood, Wash. 98292
Filed July 25, 1966, Ser. No. 567,574
U.S. Cl. 287—20.92 **2 Claims**
Int. Cl. F16b *7/00, 21/10;* **E04c** *3/292*

A structural metallic connection is secured at the junction of a rafter and a supporting post therefor and comprises a U-shaped channel including web portions that are juxtaposed to the side faces of the rafter and the post and continuous flanges along the edges of the web portions. There is incorporated the feature of a portion of the outer flange being introduced into an upright slot in the rafter aligned with the longitudinal axis of the post to resist transverse shifting of the rafter relative to the supporting post.



3,425,721
APPARATUS FOR CONNECTING ADJACENT MITERED MEMBERS

Robert L. Agee, P.O. Box 75248,
Oklahoma City, Okla. 73107
Continuation-in-part of application Ser. No. 506,427, Oct. 20, 1965. This application Mar. 30, 1967, Ser. No. 627,020
U.S. Cl. 287—20.92 **2 Claims**
Int. Cl. F16b *7/00*

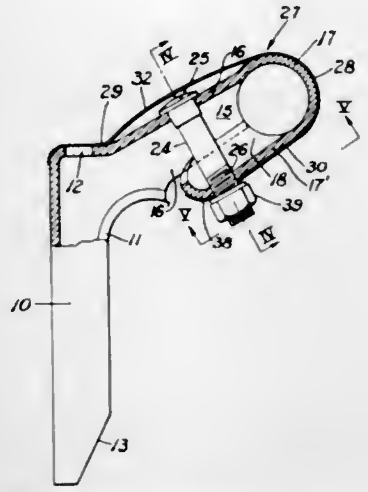


A pair of wooden or other rigid members are cut along lines such that a mitered junction is formed when the members are abutted along the cut edges. Holes are drilled into the members adjacent the cut edges so that the hole in each of the members opens at the cut edge, as well as at a face of the member. Each hole is angled with respect to the plane of the end face of the member developed by cutting, with the axis of the hole diverging from this end face. When the members are abutted in miter joint fashion, the holes in adjacent members communicate, and their axes diverge from each other. A figure 8-shaped holding member is pressed down in the two holes, and in being placed in tension, retains the two members in abutting contact.

3,425,722
HANDLEBAR SUPPORT

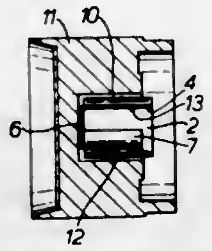
Herbert J. McCauley, 86 Dana Road,
Buffalo, N.Y. 14216
Filed Feb. 1, 1967, Ser. No. 613,179
U.S. Cl. 287—52.02 **2 Claims**
Int. Cl. F16b *7/18, 39/24*

A handlebar support having an offset upper handlebar engaging portion and a generally U-shaped shroud member adapted to fit over upper and lower surfaces of the offset portion and retained in assembly with such offset portion at its opposite ends by means of the bicycle stem securing bolt and the handlebar clamp bolt.



3,425,723
FASTENER FOR SECURING A KNOB TO THE END OF A ROD

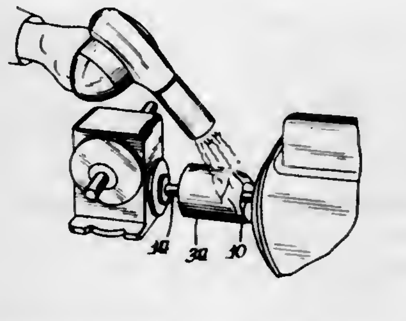
Leslie Parkin, Bobbers Mill, and Brian Rigley, Stapleford, England, assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,908
Claims priority, application Great Britain, May 27, 1966, 23,954/66
U.S. Cl. 287—53 **5 Claims**
Int. Cl. F16d *1/08*



A fastener for securing a knob to the D-shaped end of a rod comprises a resilient sleeve insertible into the recess in the knob and having a concavely curved arm extending axially of the sleeve so as to support the end of the rod.

3,425,724
PROTECTIVE COVERING

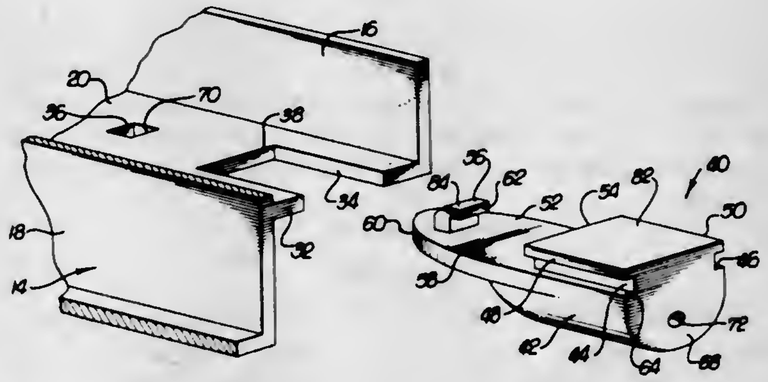
Baird E. Resener, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Aug. 24, 1966, Ser. No. 574,768
U.S. Cl. 287—130 **9 Claims**
Int. Cl. F16b *4/00, 7/00;* **B23p** *11/00*



A shrinkable sleeve made out of a substance such as polyolefin is placed over a sprocket wheel of a chain type coupling. The sprocket wheel is then interconnected with a second sprocket wheel by means of a chain and the sleeve is shrunk over the two sprocket wheels and the interconnecting chain to form a protective coupling cover.

3,425,725
CORNER CONSTRUCTION

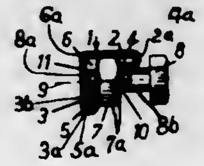
Martin D. Givot, West Covina, and Marshall J. Stuart, Newport Beach, Calif., assignors to Marshall Aluminum Products, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 11, 1967, Ser. No. 689,567
U.S. Cl. 287—189.35 **13 Claims**
Int. Cl. F16b *1/00*



A corner construction such as is employed for a metal window or door frame, in which a plastic retainer insert is fixedly positioned in suitably located openings in one of the frame members at the corner. A fastener element passing through the other frame member threads into the insert and, when tightened, draws the two frame members into secure engagement with each other.

3,425,726
PROFILE RAIL PROVIDED WITH ATTACHMENT ELEMENT

Hermann Müller, Zugerstrasse 43,
Cham, Switzerland
Filed Feb. 1, 1967, Ser. No. 613,279
Claims priority, application Switzerland, Feb. 2, 1966, 1,478/66; June 24, 1966, 9,159/66
U.S. Cl. 287—189.36 **15 Claims**
Int. Cl. F16b *7/18, 1/00*

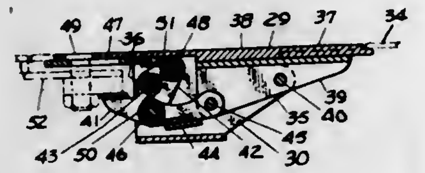


A profile rail equipped with an attachment element by means of which it is possible to quickly, easily and reliably connect to such profile rail other components or further profile rails, in order to be able to form a desired structural unit. The profile rail advantageously has a pair of shoulders in the region of a longitudinal groove, and the attachment element includes a member, such as a suitable nut member having a threaded opening in which a screw or the like is piercingly threadably received. One of the shoulders of the profile rail retains the screw against lateral displacement and the other shoulders serves as an impact surface for the nut member when the screw is tightened and bears against a surface or inner wall of the profile rail. Simple tightening of the screw brings about a rapid and positive releasable connection of the attachment element with the profile rail.

3,425,727

LATCH-COMBINED TENSION HOOK AND CLAMP JAW MECHANISM

Oscar Alfred Swanson, 550 Almar Ave., Pacific Palisades, Calif. 90272
Filed July 22, 1966, Ser. No. 572,637
U.S. Cl. 292—110 **7 Claims**
Int. Cl. E05c *19/12, 5/02*

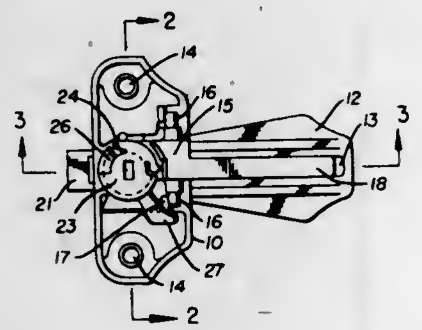


This invention relates to a latch mechanism comprising a jaw member pivoted on a support, tension hook pivoted on the jaw member and a release member associated with the jaw member. The jaw member and hook member are disposed so as to clamp a door edge or keeper therebetween.

3,425,728

STORM DOOR LATCH WITH INTEGRAL LOCK

Walter S. Turner, North Jackson, Ohio, assignor to Lake Park Tool & Die, Inc., Youngstown, Ohio
Filed Feb. 15, 1967, Ser. No. 616,331
U.S. Cl. 292—153 **4 Claims**
Int. Cl. E05c *1/04, 1/12*



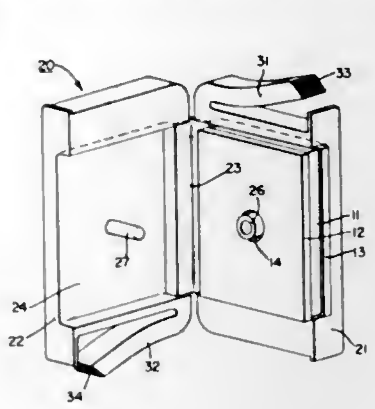
A storm door latch having a slidable bolt and a pivoted handle member for moving said bolt, with a rotatable locking rotor having a configuration registering with a portion of said handle permitting the handle to move when said rotor is in one position and blocking said handle from movement when said rotor is in a second position, and integral spring means on said rotor for holding it in said first or second positions.

3,425,729

MAGNETIC LATCH FASTENER

Robert H. Bisbing, Springfield, Pa., assignor to Southco, Inc., Lester, Pa., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,927
U.S. Cl. 292—251.5 **4 Claims**
Int. Cl. E05c *19/16, 17/56*

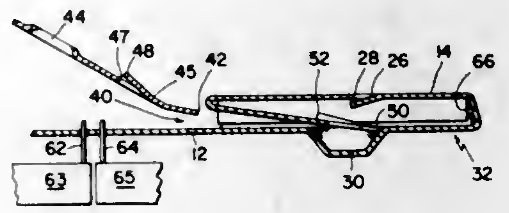
A magnetic latch fastener is disclosed having its magnet and pole piece assembly enclosed within the pocket of a foldable book-like molded housing of resilient plastic material. Described in folded closed condition, the housing has a flanged forward surface for abutting against the door frame or panel, a hinged-like rear wall, side walls, and at each end wall a resiliently compressible finger which, when in non-compressed condition, projects forwardly from the rear wall along an outwardly inclined path in the principal plane of the housing. The free forward ends of the projecting fingers are stepped (inclined and ribbed) for engaging the edge of the door-frame aperture into which the magnetic latch fastener is inserted.



3,425,730

TAMPER-PROOF SEAL

George Canter, Great Neck, N.Y., assignor to Security Fur Seal Co., Inc., Hempstead, N.Y., a corporation of New York
Filed June 24, 1966, Ser. No. 560,160
U.S. Cl. 292—317 **4 Claims**
Int. Cl. B65d *55/06*



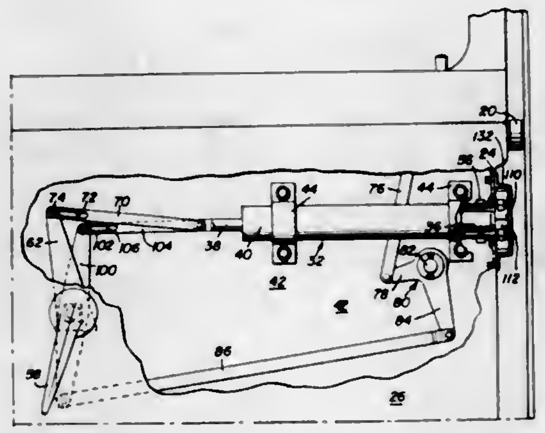
This invention relates to tamper-proof seals of the type used to seal containers, trucks, freight cars and other means for transporting, storing or handling goods in which a positive indication is desired as to whether or not the container or the like has been opened by an unauthorized person. Such seals can only be opened after their initial sealing by destroying the seal, thereby giving positive evidence that the closure for the container or car has been tampered with. The main locking feature of the device is a bowed wedge-shaped barbed hook position within a narrow box-like enclosure with a slit type entrance with the sealing means comprising the said hook and an opening on an end of a link or strap adapted to engage the hook, said hook, when flat, being greater than the width of said opening, and when bowed, being able to pass through said opening with close tolerance so that any attempt to tamper with the seal within the narrow confines of the box will cause the barbs to flatten out and prevent the hook from passing back through the opening.

3,425,731

SAFETY BOLT FOR MOTOR VEHICLE DOORS

John E. Elmore, Tarpon Springs, Fla.
(130 E. Virginia Lane, Clearwater, Fla. 33515)
Filed Feb. 16, 1966, Ser. No. 527,808
U.S. Cl. 292—335 **8 Claims**
Int. Cl. E05b *63/20*

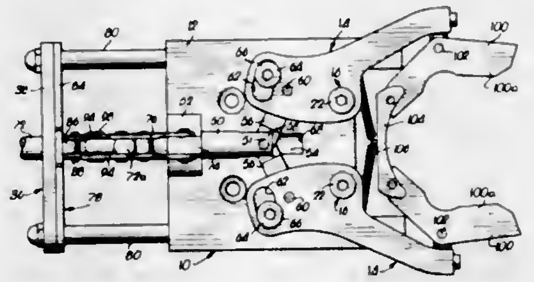
A locking mechanism for motor vehicle doors mounted within the door of a vehicle and activated by the inside and outside handles. To release the mechanism thereby allowing the opening of a vehicle door, one of the door handles is operated thereby displacing a linkage mechanism connected to the handle. The linkage mechanism is connected to a bolt which normally extends outwardly through the door and engages a keeper or receptacle within the car frame. The linkage displacement mechanically causes a similar displacement of the bolt from the keeper and withdraws the bolt into the door thereby allowing the door to be opened. As the external end of the bolt is withdrawn into the door, a latching mechanism located adjacent to the bolt end is closed thereby preventing the bolt from moving outwardly. When the door is being closed, the latching mechanism comes into contact with a striker plate located on the end panel of the car frame. As the engagement becomes complete, the latching mechanism is opened and the spring biased bolt is forced outwardly and the end of the bolt is received within the keeper thereby allowing the bolt to rest in its initial position and causing the vehicle door to be locked.



3,425,732

GRIPPING HEAD WITH ADJUSTABLE PIVOTS FOR SWINGING JAWS

Walter A. Reich, Independence, Mo., assignor to A. Reich & Sons, Inc., Kansas City, Mo., a corporation of Missouri
Filed Dec. 22, 1966, Ser. No. 603,883
U.S. Cl. 294—16 **9 Claims**
Int. Cl. B65g *7/12;* **A47j** *45/00;* **B66c** *1/42*

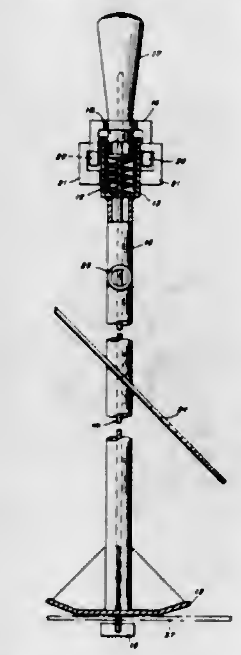


A gripping head having particular utility for handling meat carcasses including a pair of swingable jaws and overcenter locking means for locking the jaws in place when the same are in clamping relationship with respect to the carcass. Also included is slide structure mounting the pintles of the jaws for movement toward and away from each other to alter the capacity of the jaws to coincide with the outer dimensions of the carcass or other object clamped thereby. Wedge means are provided for wedging the slide structures and thereby the pintles toward one another, and a spring is provided to bias the structures apart. A single handle is provided for initially shifting the wedge means to properly adjust the spacing between the pintles, to thereafter swing the jaws into clamping relationship with respect to the object held thereby, and then operate the lock means to lock the jaws in their closed condition.

3,425,733

DEVICE FOR PLUGGING A PASSAGEWAY

Winfred O. Hollingsworth, Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,997
U.S. Cl. 294—19 **5 Claims**
Int. Cl. B25j *13/02;* **C10b** *27/00, 45/00*

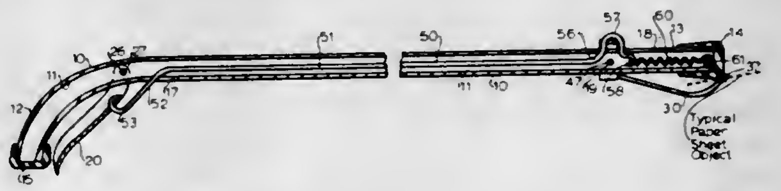


A device for inserting a plate into a conduit consisting of an elongated tubular body having a ram fixed to the lower end of said body. A rod is mounted within said body which rotates and moves axially of the body. A tab is located at the lower end of that rod which projects below the ram. Movement of the tab engages the plate against the ram.

3,425,734

RETRIEVAL AND WALKING AID

Alton R. Hollis, Rte. 1, Hillsborough, N.C. 27278
Filed Mar. 1, 1967, Ser. No. 619,705
U.S. Cl. 294—19 **7 Claims**
Int. Cl. A47f *13/06;* **A45b** *3/00*



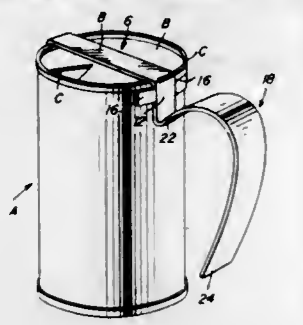
An elongated tubular structure which has one end adapted to engage the ground upon being held by an operator is provided with a handle and trigger portion at the upper end and a pivotally mounted grasping element at the ground-engaging end which is connected by means to the trigger such that upon the actuation of the trigger, the grasping element closes toward the adjacent portion of the tubular body to trap a subject work object. A tension spring is mounted within the hollow portions of the tubular member and is in communication with the trigger and grasping element to return the trigger and grasping element to a normally static position after the actuation of the same.

3,425,735

BEVERAGE CAN HANDLING AND HOLDING ATTACHMENT

Hubert S. Ratliff, Colorado City, Tex.
(P.O. Box 22487, Houston, Tex. 77027)
Filed Jan. 5, 1967, Ser. No. 607,495
U.S. Cl. 294—33 **2 Claims**
Int. Cl. A47j *45/00;* **A47g** *19/22*

An attachment for applicable and removable use (FIG. 1) when one desires to hold and drink from a punctured beer or soft drink can. It comprises a length of metal or plastic strap, one end having a U-shaped clamp with bead-held snap-on lugs, the other end having an oriented hand-grip.



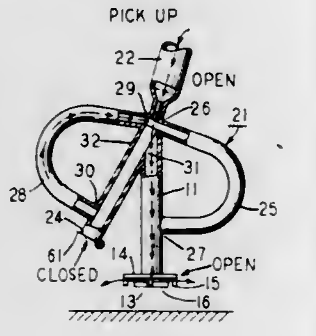
3,425,736
PNEUMATIC PROBE FOR HANDLING FLAT OBJECTS

James M. Benjamin, Brick Town, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 25, 1966, Ser. No. 537,467

U.S. Cl. 294—64 **11 Claims**

Int. Cl. B66f *19/00;* **B66c** *1/02*



1. A pneumatically powered probe for handling and positioning flat objects comprising, in combination, a probe duct having an input and an output end, a flange member surrounding said output end, means for directing an air-flow through said duct thereby to form an area reduced in pressure with respect to ambient pressure between said flange and any flat object placed in parallel relation and in relatively close proximity to said flange, whereby said object may be lifted by said ambient pressure, and means responsive to increased pressure on the underside of an object being lifted for terminating said air-flow in said duct, whereupon said object is automatically released by said probe.

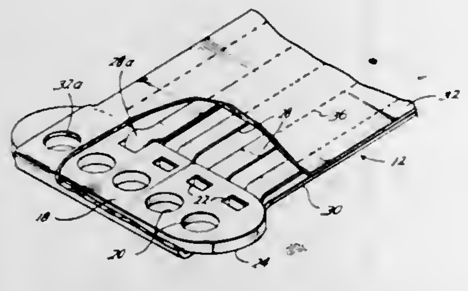
3,425,737
PIPE SLING

Jimmy E. Sutton, 5612 Mitchelldale, Houston, Tex. 77018

Filed Aug. 28, 1967, Ser. No. 663,775

U.S. Cl. 294—74 **6 Claims**

Int. Cl. B66c *1/18*



For use in lifting pipes and other elongate objects, pipe sling apparatus preferably engaged by an overhead apparatus providing a lifting force to a connector means, an elongate means of generally flexible and planar construction adapted to extend around a pipe and having two ends, at least one of which is releasably connected to the overhead lifting apparatus wherein said elongate means is fabricated of a plurality of preferably woven straps adapted to sustain a substantial load, a cloth wrapping about the plurality of straps and stitched thereto, and impregnated to form an abrasion-resistant surface to protect the elongate means from damage.

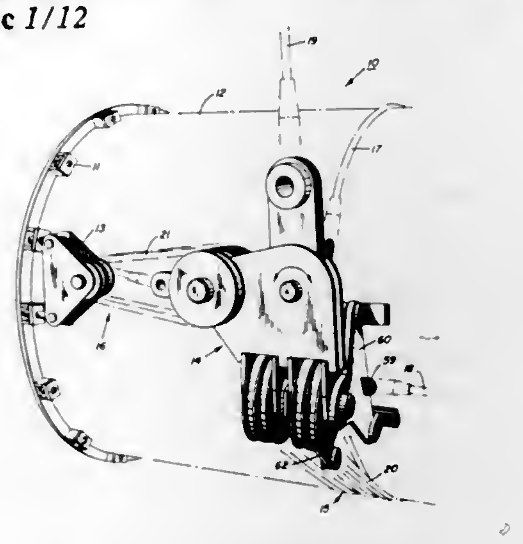
3,425,738
RIGGING APPARATUS

Samuel I. Feldman, Fairlawn, N.J., and Talford S. DeCuir, Beaumont, Tex., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed May 12, 1967, Ser. No. 638,067

U.S. Cl. 294—74 **11 Claims**

Int. Cl. B66c *1/12*



This invention relates generally to rigging apparatus. More particularly, the invention disclosed in this application concerns a bridle assembly for lifting heavy loads and a rotating arm device for use therewith, which device allows rotation of the load during or after lifting. The rotating arm device, which is to be used in pairs, comprises generally a set of sheaves for receiving a girth support purchase and a set of sheaves for receiving an end support purchase, both sets of sheaves being mounted on a rotatable support member.

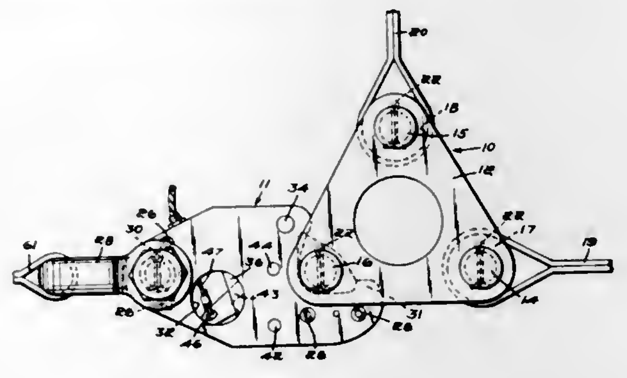
3,425,739
RELEASABLE COUPLING

Richard H. Frost, Littleton, and Ronald L. Criley, Conifer, Colo., and George A. Laliberte, Hudson, and Angelo P. Maschi, Framingham, Mass., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 25, 1966, Ser. No. 597,146

U.S. Cl. 294—83 **10 Claims**

Int. Cl. B64d *17/38;* **B66c** *1/38*



A coupling device for releasably connecting elements of a system under tension load comprising a link assembly and a latch assembly, the link assembly having means for connecting it to one or more of the elements of the system and cam means mounted therein and spaced from the connecting means and freely rotatable within the link assembly, the latch assembly having means for connecting the latch assembly to another of the elements of the system, a hook portion, and latch means to engage the rotatable cam means until it is released, whereupon the cam means rotates out of engagement with the latch assembly separating the element connected to the latch assembly from the element (or elements) connected to the link assembly and continues to rotate freely within the link assembly until the kinetic energy imparted to the cam means during release has been expended.

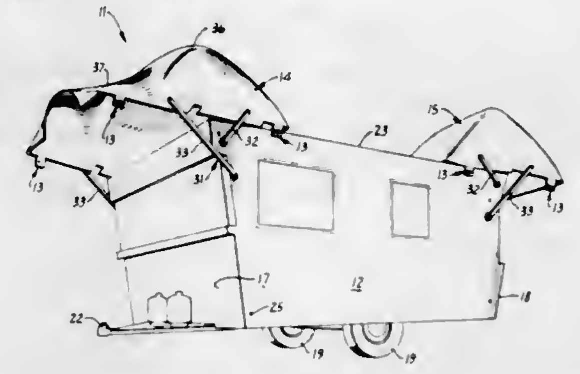
3,425,740
STREAMLINING APPARATUS

Marshall S. De Vaughn, 2200 Crocker Way, Santa Clara, Calif. 95051

Filed Aug. 15, 1966, Ser. No. 572,604

U.S. Cl. 296—1 **5 Claims**

Int. Cl. B60j *7/12;* **B60r** *27/00*



An attachment for protecting and streamlining the ends of a house trailer having a rigid fairing member movable between a first station superimposed over and covering an end of the house trailer and a second station with a portion of the fairing member resting on top of the house trailer and another portion extending outwardly over the end of the trailer. Lift means for transporting the fairing member between the first and second stations is provided in the form of pairs of arms pivoted to the fairing member and the house trailer and formed to support the fairing member during its movement between the first and second stations.

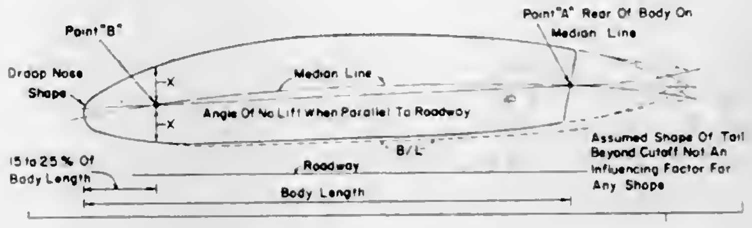
3,425,741
LAND VEHICLE HAVING MINIMUM AIR DRAG

Walter H. Korff, 449 N. Lamer, Burbank, Calif. 91506

Filed Nov. 4, 1966, Ser. No. 592,011

U.S. Cl. 296—1 **16 Claims**

Int. Cl. B64c *1/38, 21/00*


Point "B"
Point "A" Rear Of Body On Median Line
Droop Nose Shape
Median Line
X
X
Angle Of No Lift When Parallel To Roadway
B/L
15 to 25 % Of Body Length
Roadway
Body Length
Assumed Shape Of Tail Beyond Cutoff Not An Influencing Factor For Any Shape

A streamlined vehicle body having a no-lift line tilted at a slight negative angle for maintaining small download and having a continuous bottom as well as top and side surfaces, the bottom surface having an upward taper to reduce boundary layer buildup, the nose and aft portions of the body being shaped to maintain strong evenly distributed air flow along all the body surfaces, specially to maintain strong air flow along the bottom surface of the vehicle.

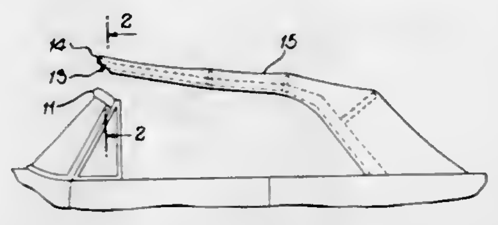
3,425,742
LOCKING MEANS FOR LOCKING THE TOP OF A CONVERTIBLE AUTOMOBILE

Benjamin Thomas Rauber, Jr., 16 W. 16th St., New York, N.Y. 10011

Filed Aug. 8, 1967, Ser. No. 659,213

U.S. Cl. 296—121 **7 Claims**

Int. Cl. B60j *7/12*



Locking means for locking the top of a convertible automobile having a transversely slotted pin in the header of the top and a socket in the windshield header having slots to align with the slots of the pin when the pin is down in the slot and a bolt slidable to extend through said slots to lock the pin in the socket. A reversible electric motor is provided to move the bolt and branch circuits controlled by the position of the bolt to move the bolt into and out of locking position.

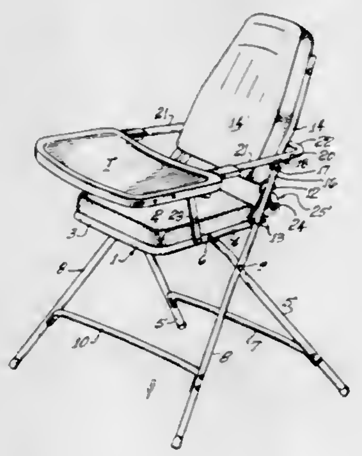
3,425,743
FOLDING HIGH CHAIR WITH ADJUSTABLE BACK

Arnold E. Peterson, Glendale, Calif., assignor to A. E. Peterson Mfg. Co., Glendale, Calif., a corporation of California

Filed Oct. 9, 1967, Ser. No. 673,848

U.S. Cl. 297—19 **8 Claims**

Int. Cl. A47c *4/24;* **A47d** *1/02*



A folding type of child's high chair characterized by a back portion hingedly mounted on the seat portion and by the inclusion of stop means adjustable to a selected position determining the extent of rearward inclination of the chair back.

3,425,744
FOLDING HIGH CHAIR WITH RECLINING BACK

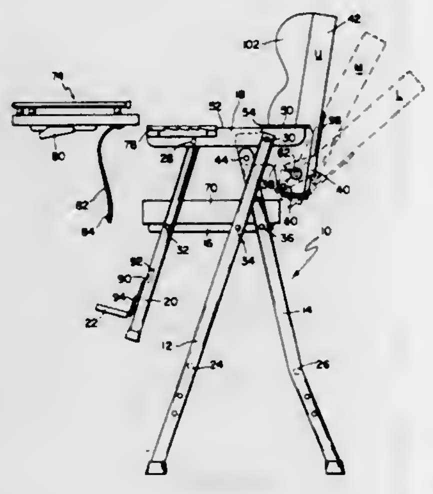
Sanford Spector, Hewlett Harbor, and David Epstein, Queens Village, N.Y., assignors to Bilt-Rite Baby Carriage Co., Inc., Brooklyn, N.Y., a corporation of New York

Filed Oct. 30, 1967, Ser. No. 678,821

U.S. Cl. 297—19 **6 Claims**

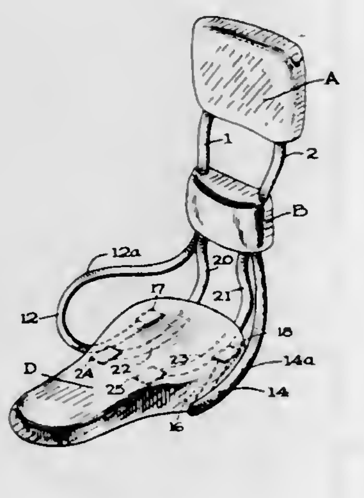
Int. Cl. A47d *1/02;* **A47c** *5/10*

The invention concerns a folding high chair having a frame and legs which collapse from a set up position to a position where the seat, back and legs are substantially parallel in a folded condition comprising a reclining back which may be adjusted to different angular positions with relation to the seat, regardless of whether the chair is set up or folded. The said reclining back does not interfere with the folding of the chair because of a bracket construction which permits it to be adjusted angularly independently of the folding of the chair.



3,425,745
MOTORCYCLE ARMCHAIR SAFETY SEAT

Gerald W. Michels, East Troy, Wis.
(1544 N. 37th St., Milwaukee, Wis. 53208)
Filed June 9, 1967, Ser. No. 644,943
U.S. Cl. 297—195 **3 Claims**
Int. Cl. B62j *1/28;* **A47c** *3/20*

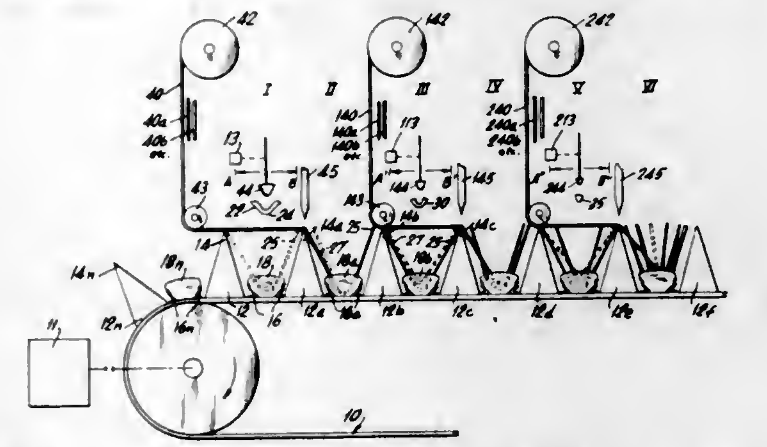


An armchair back structure for a motorcycle seat comprising inner and outer frames shaped to provide arm rests and seat back connections. The inner and outer frames include cross members forming braces to retain the inner and outer frames in their proper position.

3,425,746
PROCESS OF MANUFACTURING A SYNTHETIC BRISTLE BRUSH

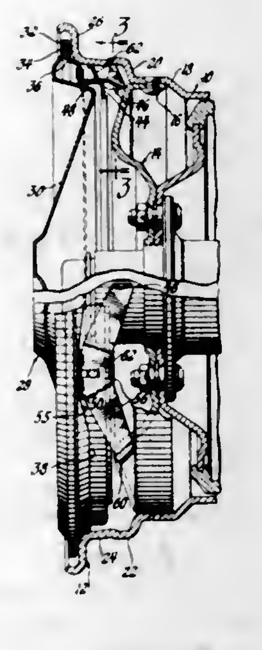
Robert A. Cohn, 38—54 13th St., Long Island City, N.Y. 11101, and Sanford Ellis, 123 Drisler Ave., White Plains, N.Y. 10607
Filed Oct. 16, 1967, Ser. No. 680,289
U.S. Cl. 300—21 **11 Claims**
Int. Cl. A46b *3/00;* **B25b** *11/00*

A process for manufacturing a low cost bristle brush in mass production which has intermediate portions of monofilaments, as supplied from a continuous source, embedded in the body of the brush, both distal ends of such monofilaments extending in rows. The process includes the steps of inserting continuous monofilaments between pluralities of synthetic members of a brush handle, cutting the continuous monofilaments to form spaced layers of U-shaped bristles, and welding together the member and the bristles.



3,425,747
WHEEL COVER

John A. Alfes, Drayton Plains, Harry L. Redding, Pontiac, and Albert E. Roller, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,221
U.S. Cl. 301—37 **5 Claims**
Int. Cl. B60b *7/06*

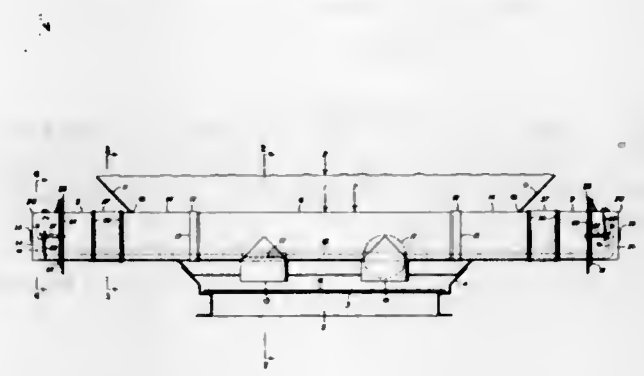


A wheel cover includes an annular flange fitting within the wheel rim and mounting a number of retaining members. Each member has a body portion secured to the cover flange and a pair of arms which diverge axially and radially inwardly of the retaining member and engage within a groove within the wheel rim. The arms function only as low rate springs and hold the cover against axially outwardly directed forces. Radially disposed forces are transferred from the wheel rim to the cover by stiff fingers on the retaining members which engage the wheel rim.

3,425,748
PNEUMATIC LADING DISCHARGE DEVICE

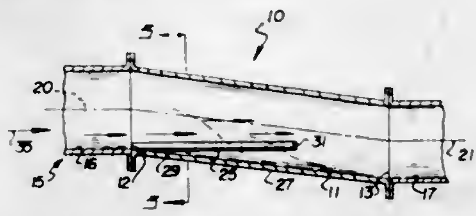
Walter L. Floehr, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 28, 1967, Ser. No. 649,604
U.S. Cl. 302—52 **11 Claims**
Int. Cl. B65g *65/40, 53/14*

A device for adapting for pneumatically discharging comminuted lading a railway car hopper equipped with a slide gate for gravity discharge through a bottom opening. The device has a multi-section tube extending through the hopper above the gate and requires for installation only cutting of holes in opposite sides of the hopper for passing the tube's end sections. Suction passes a stream of air through the tube and at least partly feeds lading from below into the tube and adjustable valving enables the rate of feed of the lading and flow of the air to be regulated.



3,425,749
CONVEYOR PIPE RE-ENTRAINMENT APPARATUS

William C. Smith, West Vancouver, British Columbia, Canada, assignor to Rader Pneumatics & Engineering Co. Ltd., Burnaby, British Columbia, Canada
Filed June 29, 1966, Ser. No. 561,509
U.S. Cl. 302—64 **12 Claims**
Int. Cl. B65g *53/04, 53/52*

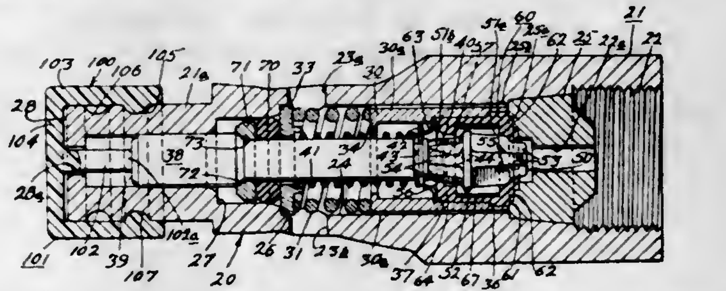


Conveyor pipe apparatus including an entraining pipe section, and a guide vane mounted in and extending longitudinally of this section towards the axial centre of the downstream end of the section, said vane when conveying fluid moves particulate material through the entraining section directing particulate material from the confining wall of the section away therefrom and towards said axial centre while said confining wall directs conveying fluid around the material travelling over the vane.

3,425,750
BLEED APPARATUS FOR BLEEDING THE BRAKES OF A HYBRID HYDRAULIC BRAKE SYSTEM

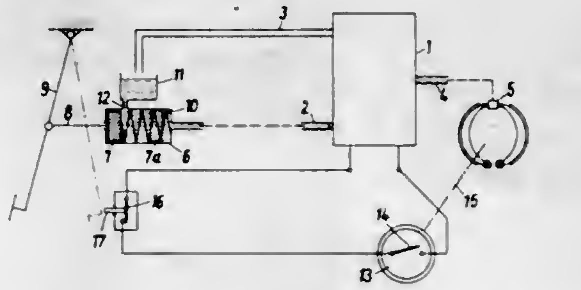
Martin A. Deane, Annapolis, Md., assignor to Hydrasearch Co., Inc., Annapolis, Md., a corporation of Maryland
Filed Feb. 21, 1968, Ser. No. 707,046
U.S. Cl. 303—6 **4 Claims**
Int. Cl. B60t *17/00;* **F16k** *31/14;* **F15b** *7/00*

Apparatus for bleeding the front disc brake lines of a motor vehicle having a hybrid brake system, and a metering valve intermediate the master cylinder and the disc brakes. As is disclosed herein, the metering valve permits free hydraulic flow of hydraulic fluid to the front disc brakes up to a certain predetermined pressure level thus compensating for pressure and volume changes caused by temperature changes. Thereafter, upon brake application, the valve is closed off until a second pressure level is attained at which time the disc brakes are actuated. In order to bleed the front brakes of entrapped air within the brake lines, it is necessary to hold the metering valve open. Thus the valve includes a body having a bore connected between the inlet and outlet thereof, and a spool and coaxially mounted plunger, both being urged toward the inlet of the valve by separate springs. The plunger is exposed to atmospheric pressure at one end thereof, and at the other end is exposed to hydraulic pressure. Interiorly of the spool is a poppet and a poppet retainer composed of a resilient material which urges the poppet towards the plunger, while the plunger spring tends to urge the plunger and thus the poppet towards the inlet allowing free flow of hydraulic fluid, or fluid communication between the master cylinder and the outlet of the valve. At a predetermined preset pressure level, the plunger moves away from its contact with the poppet permitting the poppet to close off free hydraulic communication and at a second pressure level at the inlet, the entire spool moves away from the inlet against its spring pressure permitting hydraulic communication once again between the inlet and outlet. To bleed the disc brakes, a cap is positioned over one end of the valve, and includes a central pin which is engageable with the plunger so that upon movement of the cap onto the body the pin registers with the plunger preventing movement of the plunger upon application of pressure from the master cylinder.



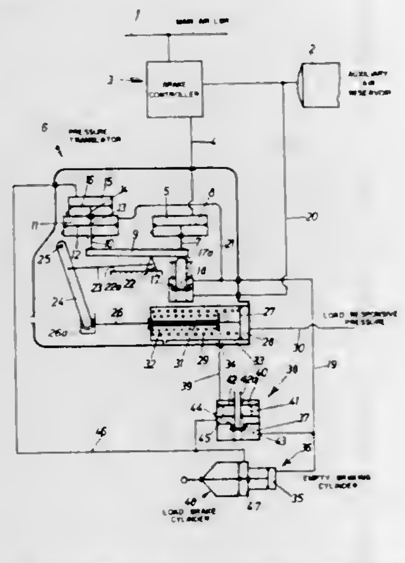
3,425,751
HYDRAULIC BRAKE-OPERATION DEVICE FOR VEHICLES OF ALL TYPES WITH SKIDDING PREVENTION MEANS

Heinz Wehde, 215 Romerstrasse, 69 Heidelberg, Germany, and Heinz Leiber, 2 Im Enklert, 6906 Leimen, Germany
Filed May 11, 1966, Ser. No. 549,407
Claims priority, application Germany, May 14, 1965, G 43,599
U.S. Cl. 303—21 **3 Claims**
Int. Cl. B60t *13/18, 8/12*



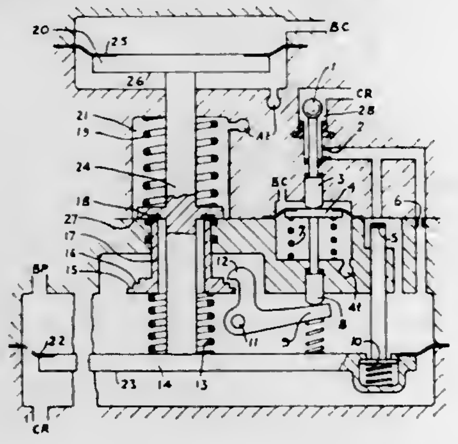
A hydraulic brake-operation device including a skidding protection device. In such devices the content of hydraulic brake fluid is limited by the measurements of the master brake cylinder and the pedal brake force of the driver. In case of a strong braking action by means of the pressure control unit comparatively a large quantity is used up. It can occur thus, in particular with emergency braking, that the piston of the master brake cylinder reaches nearly its end position, so that only a brake fluid reserve remains. At this point it must be assured that no brake fluid is fed any more to a storage chamber. This remainder of the brake fluid must remain in the conduit to the brake cylinders for the remaining braking action. The present invention provides that the skidding protection device is rendered noneffective, if a certain remaining volume is reached in the master cylinder and a certain position of the piston is obtained. In the following braking actions the driver has to rely on the sense of his foot force. In any case it is possible to stop the vehicle to a standstill with the remaining quantity of the brake fluid.

3,425,752
AIR BRAKING SYSTEM FOR RAILWAY VEHICLES
Hans Pöllinger and Bernd Wosegien, Munich, Germany, assignors to Knorr-Bremse G.m.b.H., a limited-liability corporation of Germany
Filed Sept. 18, 1967, Ser. No. 668,572
Claims priority, application Germany, Sept. 16, 1966, K 60,266
U.S. Cl. 303—23 **9 Claims**
Int. Cl. B60t *8/22*



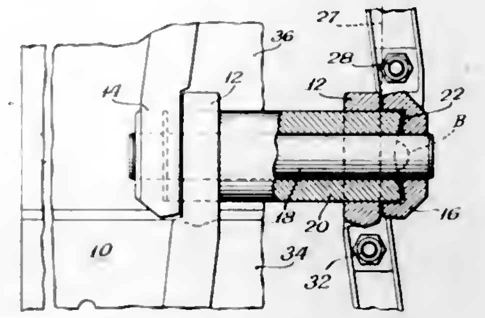
An air braking system for railway vehicles having an air brake controller and a translator for modifying the braking effect of the pressure regulated by the brake controller in response to the load on the vehicle to deliver a controlled pressure to empty and load braking cylinders. The translator is provided with a return piston for regulating the controlled pressure and an auxiliary piston for regulating the controlled pressure in response to the pressure in the load braking cylinder. There is, further, a switching device for connecting the load braking cylinder to the translator controlled pressure when the load on the vehicle exceeds a predetermined amount.

3,425,753
BRAKE DISTRIBUTOR APPARATUS
Arthur W. Simmons and Jack Washbourn, London, England, assignors to Westinghouse Brake and Signal Company, Limited, London, England
Filed Nov. 2, 1965, Ser. No. 506,076
U.S. Cl. 303—36 **4 Claims**
Int. Cl. B60t *15/52*



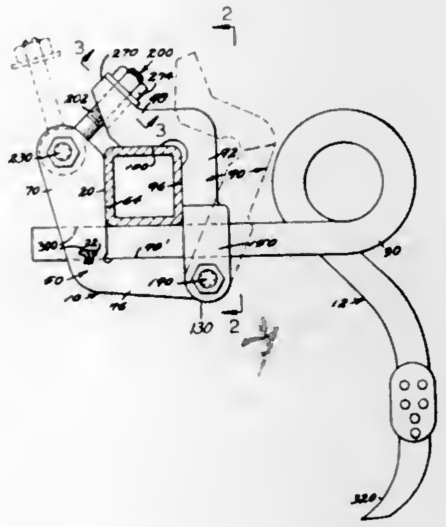
A distributor for a fluid operated braking apparatus including a quick service valve and a mechanism for controlling the availability thereof, and a control reservoir charging valve arranged to be closed upon a brake application and reopened at some late stage of brake release. An actuating device controls the said mechanism to control the availability of the quick service valve substantially simultaneously with the opening and closing of the control reservoir charging valve.

3,425,754
TRACK PIN AND BUSHING SEAL ASSEMBLY
Noel G. Artman, Geneva, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,096
U.S. Cl. 305—11 **11 Claims**
Int. Cl. B62d *55/20;* **F16g** *13/07;* **F16j** *15/54*



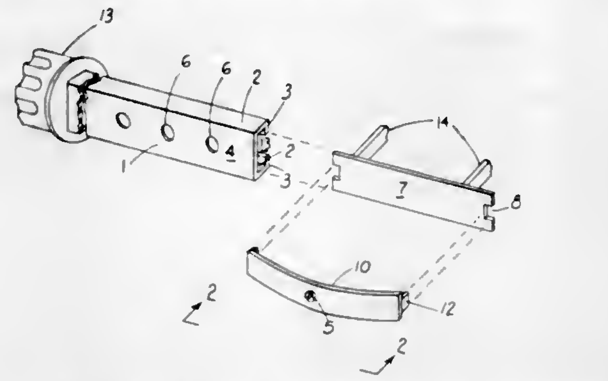
Track pin and bushing seal assembly having a self-reverting frusto-conical thrust washer therein which, during assembly, inverts elastically from having frusto-conicity as viewed in one axial direction, to a state of inversion having the frusto-conicity in the opposite direction. A reversal of those steps occurs as the assembled joint wears in service, with the effective spring height of the washer being especially pronounced for wear take-up purposes. Specifically, the thrust washer undergoes two-stage expansion, evolving from the slope of one frusto-conicity, thence through a flattened state, to the opposite slope of frusto-conicity.

3,425,755
SPRING SHANK CLAMP
Robert L. Harris, 1602 N. 6th St., Beatrice, Nebr. 68310
Filed Mar. 22, 1966, Ser. No. 536,386
U.S. Cl. 306—1.5 **2 Claims**
Int. Cl. A01b *15/02, 23/02;* **F16b** *7/04*



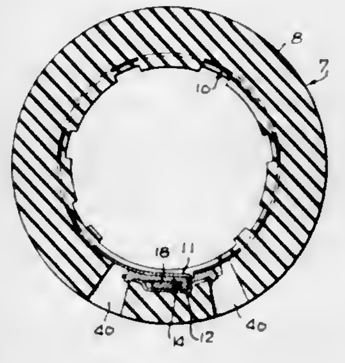
A tool bar clamp having two pivotally connected sections, means for drawing the free ends of said sections together for clamping about a tool bar, one portion of each of the sections having an opening therethrough for receiving the spring shank of a tool bar.

3,425,756
EXTENSIBLE-RETRACTABLE HANDLES
Arthur F. Hubbard, Moline, Ill., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Oct. 12, 1966, Ser. No. 586,176
U.S. Cl. 306—28 **2 Claims**
Int. Cl. B25g *3/18;* **A01b** *1/22;* **F16b** *7/14*



A handle assembly to be attached to an apparatus including a channel member with tranversely extending parallel leg means and channel guide means to be received in sliding relation by the channel member where a bowed spring means is carried by the channel guide means to be interposed between the channel guide means and the base of the channel and bracket means extend laterally from the guide means through the opening defined by the legs of the channel member to be attached to the selected apparatus.

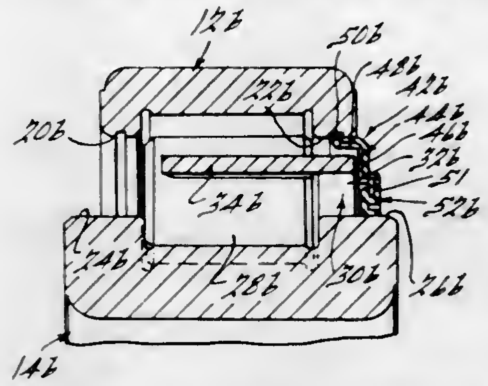
3,425,757
SPLIT DRILL PIPE PROTECTOR
Burt Stanley Minor, 1811 E. Kanola Road, La Habra, Calif. 90631
Continuation-in-part of application Ser. No. 490,878, Sept. 28, 1965. This application Jan. 17, 1968, Ser. No. 698,472
U.S. Cl. 308—4 **3 Claims**
Int. Cl. F16c *1/26, 17/00, 21/00*



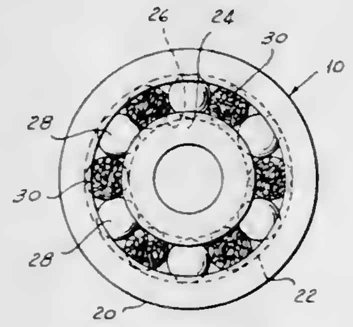
My invention is a split drill pipe protector comprising an elastomeric sleeve-like pipe encircling body having embedded therein and bonded thereto adjacent its inner surface a metallic reinforcing band incorporating means for constricting the band and body about a pipe; and is characterized by making the portion of said body inwardly of said band to present a plurality of laterally spaced pipe engaging boss portions and by providing corresponding openings through said band in register with and directly behind said respective boss portions.

3,425,758
SEAL FOR BEARING ASSEMBLY
Hudson B. Scheifele, Franklin, Mich., assignor to Federal-Mogul Corporation, a corporation of Michigan
Filed June 28, 1966, Ser. No. 561,273
U.S. Cl. 308—187.2 **8 Claims**
Int. Cl. F16c *1/24, 33/78;* **F16j** *15/34*

A bearing assembly having a plurality of rollers assembled in a pair of race members. A seal including a cup-shaped resilient support member having an axially extending rim portion with a lip portion extending radially from the rim portion and a flexible sealing member secured to the support member and engageable with both race members. The bearing has a cage for the rollers and means for limiting axial movement of the cage.

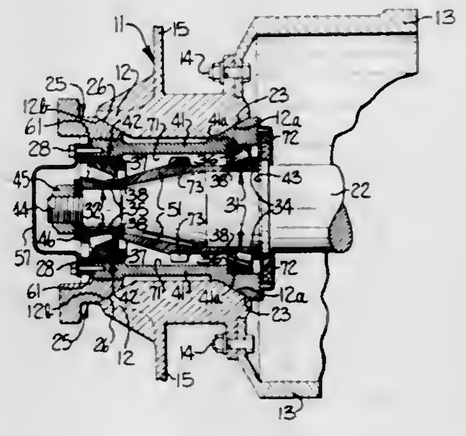


3,425,759
GYROMOTOR BEARING
Jack Schwarzschild, Stamford, Conn., assignor to United Aircraft Corporation, Hartford, Conn., a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,872
U.S. Cl. 308—188 **2 Claims**
Int. Cl. F16c *19/00, 21/00, 33/30*



A bearing for a gyromotor in which a plurality of sintered polyamide resin, lubricant-impregnated balls are intercalated between the solid steel balls of a bearing with all of the balls assembled between inner and outer bearing rings.

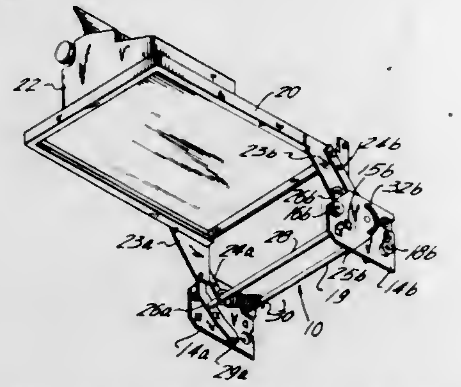
3,425,760
WHEEL ASSEMBLY
Thomas J. Gordon, Decatur, Ga., assignor to Transport Engineering, Inc., Charlotte, N.C., a corporation of North Carolina
Filed July 20, 1966, Ser. No. 566,598
U.S. Cl. 308—207 **11 Claims**
Int. Cl. F16c *13/00, 33/00, 35/00*



A wheel assembly mounted for rotation on an end portion of an axle comprising inboard and outboard antifrictional radial and axial thrust bearings engaging the axle and surrounded by a housing, means carried by the housing for varying the preload on the bearings, and a wheel mounted on the housing for rotation therewith and being removable therefrom without disturbing the bearings and the preload existing thereon.

3,425,761
TYPEWRITER DESK MECHANISM

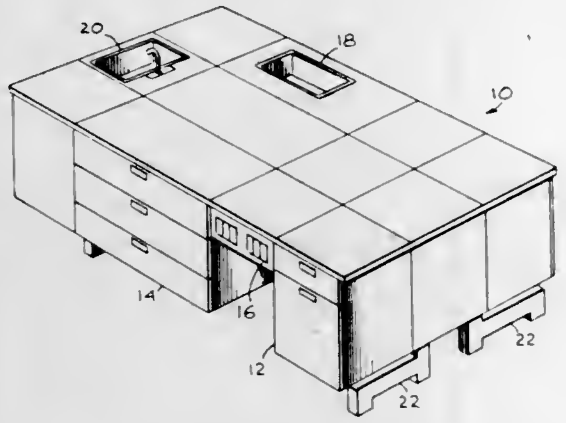
Kenneth D. Schreyer, Doylestown, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed May 29, 1967, Ser. No. 642,043
U.S. Cl. 312—28 **3 Claims**
Int. Cl. A47b *21/03*



A typewriter desk mechanism in which a platform upon which a typewriter may be placed is movable between a lower position and an upper position against the action of a stiff spring. The spring is so arranged that sufficient force must be applied to the platform to swing the longitudinal axis of the spring through a balance or equilibrium point after which the spring aids in moving the platform in the particular direction of motion.

3,425,762
CABINET ASSEMBLY

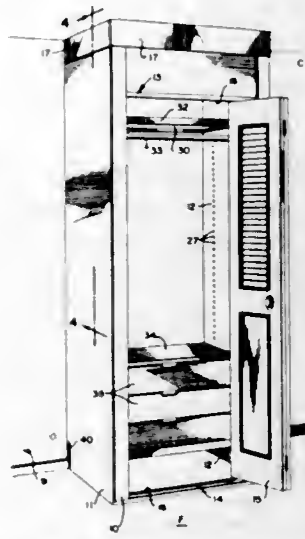
Earl L. Walls, La Jolla, Calif., assignor to Wyle Laboratories, El Segundo, Calif., a corporation of California
Filed July 18, 1966, Ser. No. 566,152
U.S. Cl. 312—111 **5 Claims**
Int. Cl. A47b *91/06*



1. A cabinet assembly comprising:
at least two legs for placement a predetermined distance apart to support cabinet components;
stringer means for extending in a generally horizontal direction between, and for fastening to said legs, said stringer means having a ledge face lying in a generally horizontal plane and a lip portion extending in a generally vertical direction;
a cabinet component having a rearward portion for attachment to said stringer means;
support means attached to the rearward portion of said cabinet component, said support means including a projection having a horizontal face for resting on said ledge face to vertically support said cabinet component on said stringer means;
finger means attached to the rearward portion of said cabinet component for grasping said lip portion of said stringer means to hold said cabinet component and said stringer means together; and
finger manipulating means for moving said finger means into engagement with said lip portion.

3,425,763
COLLAPSIBLE CLOSET-FORMING STRUCTURE

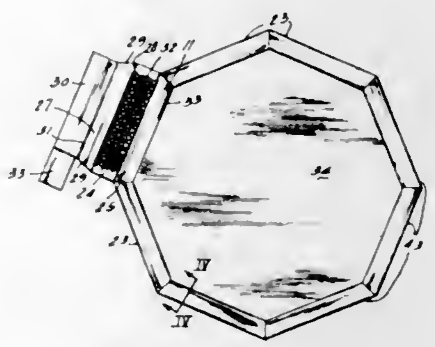
Victor De Lynn, Pound Ridge, N.Y.
(498 Nepperhan Ave., Yonkers, N.Y. 10701)
Filed Aug. 10, 1967, Ser. No. 659,622
U.S. Cl. 312—258 **9 Claims**
Int. Cl. A47b *43/00*



The present disclosure is directed to a closet-forming structure which may be flat-folded for storage, shipping, and easy handling, and which may be simply erected in minimized time by an unskilled layman without any tools whatever, and placed flush against a floor, wall, and a ceiling to form a finished, six-sided closet of floor-to-ceiling height. The new structure is essentially three-layered, when collapsed, and includes a front wall panel and side wall panels permanently articulated thereto. A self-contained door is included in the front wall panel, while shelf and/or drawer supports are included in the side walls. Slidable, auxiliary wall members are included at the upper portions of all three walls and may be manually adjusted to effectively project the closet walls up to and against a ceiling to provide the finished closet with a full, floor-to-ceiling configuration.

3,425,764
KNOCKDOWN FURNITURE

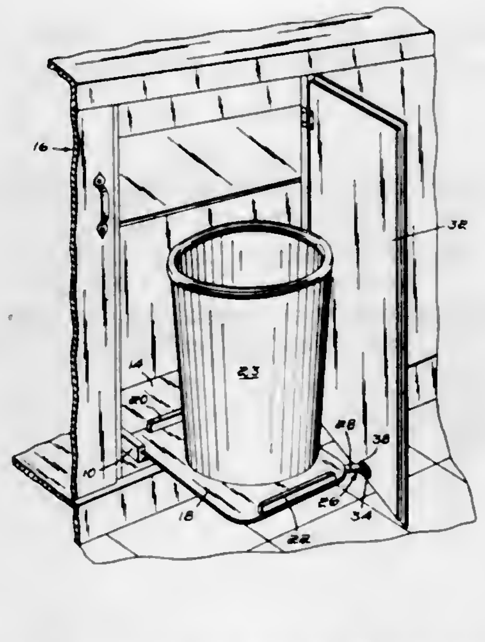
Frances M. Budd, 250 Claremont, Elmhurst, Ill. 60126
Filed June 6, 1967, Ser. No. 643,962
U.S. Cl. 312—259 **5 Claims**
Int. Cl. A47b *3/06, 43/02;* **B65d** *5/12*



Knockdown night stands, occasional tables, footstools, receptacles, and the like, are formed by assembling a multisided setup tubular body with a complementary end member providing a socket receptive of one end of the body to serve as a tabletop or a base and adapted to be used, separated from the body and independently, as a tray.

3,425,765
SLIDABLE APPARATUS TO CARRY A WASTE CONTAINER

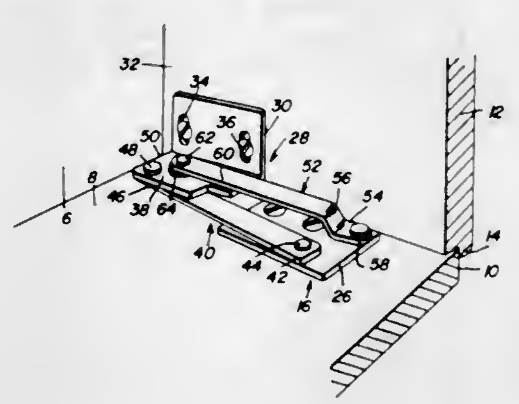
William Levy, Glen, N.H. (Rte. 16 and 302 Junction, North Conway, N.H. 03860)
Filed Apr. 21, 1967, Ser. No. 632,675
U.S. Cl. 312—274 **2 Claims**
Int. Cl. A47b *77/10, 96/16*



Apparatus in combination with a cabinet having a door, a slide movably retained in said cabinet and adapted to carry a waste container. Connecting means between said door and slide assures, upon opening or closing the door, that the slide with container will respectively move outwardly to position of use, or inwardly.

3,425,766
CONCEALED DOOR HINGE

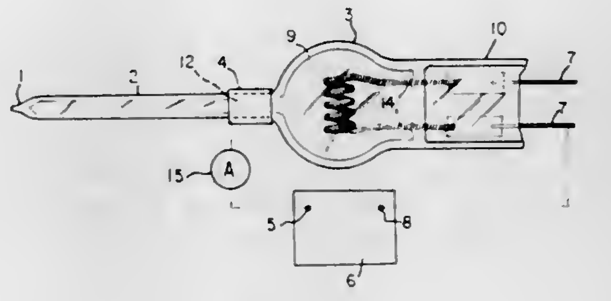
Joseph E. Crisera, 7902 16th Ave., Brooklyn, N.Y. 11214
Filed Feb. 8, 1966, Ser. No. 525,904
U.S. Cl. 312—294 **5 Claims**
Int. Cl. E05d *3/06*



This invention has to do with a concealed kitchen cabinet door hinge means for use in conjunction with a marginal lip door, an overlay door, flush door or the like. It is characterized by a pair of companion brackets, one for attachment to a horizontal stationary wall and the other one for attachment to an interior surface of the horizontally swingable door. It functions to fully open the door to a 90° angle. The brackets accommodate the respective inner and outer ends of companion links or arms which equalize stress and strain. The primary bottom link travels in a path below that of the secondary link and allows these links to cross each other in X-shaped relationship without colliding or binding.

3,425,767
PROCESS FOR REMOVING ALKALI CONTAMINATION FROM ELECTRIC LAMPS

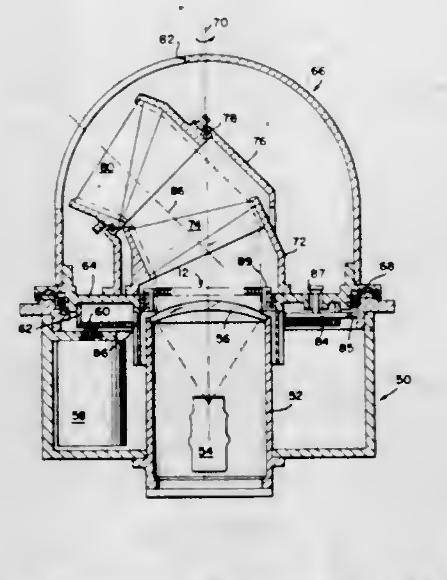
John F. Waymouth, Marblehead, Mass., assignor to Sylvania Electric Products Inc., Danvers, Mass., a corporation of Delaware
Filed Apr. 20, 1967, Ser. No. 632,345
U.S. Cl. 316—22 **8 Claims**
Int. Cl. H01j *9/38, 7/14, 7/12*



A lamp is exhausted, filled and sealed with an extra length of exhaust tube attached to the lamp envelope. The lamp is then heated and a D.C. potential applied between the exhaust tube and a lead-in wire, whereby the contaminating alkali metals are attracted to the exhaust tube and deposited therein. The lamp is then tipped off adjacent to the envelope and the exhaust tube, containing the contaminating metal deposit, is discarded.

3,425,768
SCANNING DEVICE HAVING OPTICAL DEROTATION MEANS THEREIN

Jackson G. Kuhn and Robert M. Talley, Santa Barbara, Calif., assignors to Santa Barbara Research Center, Goleta, Calif., a corporation of California
Filed Aug. 1, 1966, Ser. No. 569,169
U.S. Cl. 350—7 **3 Claims**
Int. Cl. G02b *17/08*



A scanning mechanism wherein an optical derotator therein comprises a plurality of stacked identically configured wave transmitting strips.

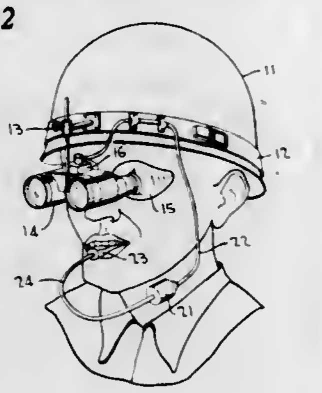
3,425,769
ORALLY OPERATED BINOCULAR CONTROL MEANS

Robert L. Stone, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed June 9, 1966, Ser. No. 556,844

U.S. Cl. 350—72 **2 Claims**

Int. Cl. G02b *7/02*



This invention is a head gear binocular means especially useful in conjunction with vehicle operation and in conjunction with other applications which require full time utilization of both hands and feet of the operator. The binocular means embodies an adjustment means and a control means therefor which is disposed within the mouth of the operator and is responsive to bite action.

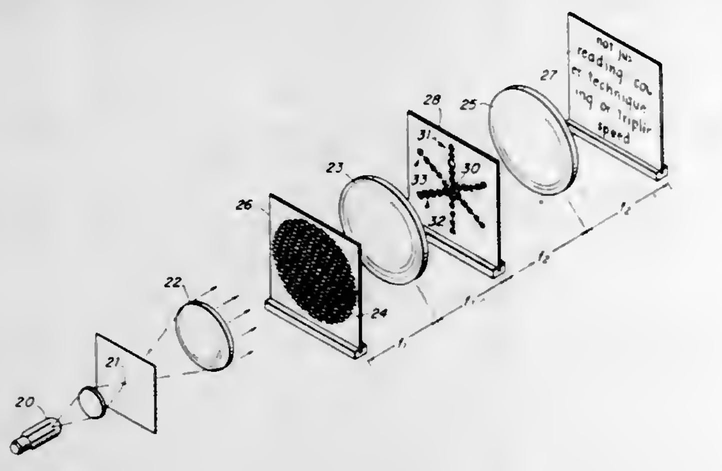
3,425,770
SUPERIMPOSED PHOTOSTORAGE AND SEPARATION

Peter F. Mueller, Concord, and George B. Parrent, Jr., Carlisle, Mass.; said Mueller assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware

Filed Dec. 1, 1965, Ser. No. 510,807

U.S. Cl. 350—162 **8 Claims**

Int. Cl. G02b *5/18*



Photostorage method and system for additively recording a plurality of images in superposition upon a recording medium. Each of the images is multiplied with a periodic carrier function having a unique azimuthal orientation. Selective retrieval of the images is accomplished by optical Fourier transformation and spatial filtering techniques.

3,425,771
LASER DEFLECTION SYSTEM FOR DISPLAY APPLICATIONS

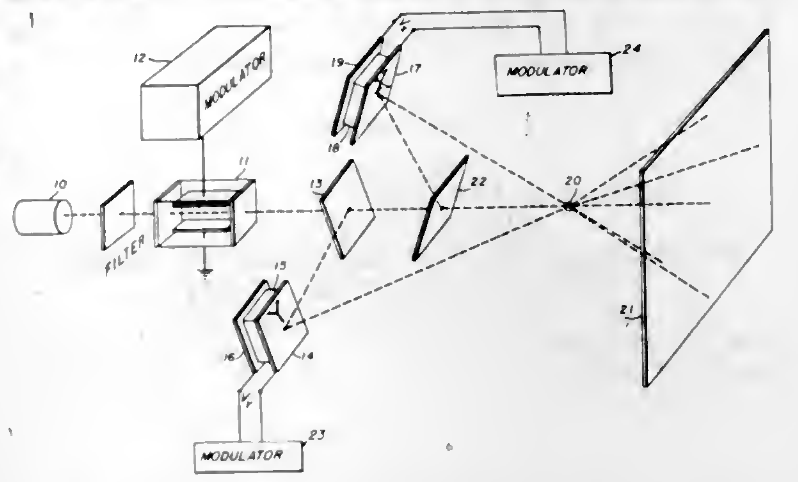
Everett E. McCown, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 4, 1964, Ser. No. 416,172

U.S. Cl. 350—285 **5 Claims**

Int. Cl. G02f *1/34*

A laser deflection system for use in a large screen display system. Three beams of laser radiation from the same laser are made to intersect before reaching the display screen. Provision is made to alter the phase of two of the beams so that the composite beam of radiation striking the display screen may be deviated.



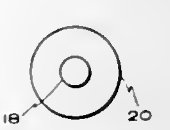
3,425,772
METHOD FOR TESTING THE SENSITIVITY OF EYES TO LIGHT

Harold Y. Minas, 2201 23rd Ave., Sacramento, Calif. 95822

Continuation-in-part of application Ser. No. 488,177, Sept. 17, 1965. This application Oct. 7, 1966, Ser. No. 585,011

U.S. Cl. 351—39 **3 Claims**

Int. Cl. A61b *3/06*



A method for testing the sensitivity of eyes to light which includes the steps of exposing the eyes of an individual to a light source and varying the intensity of the source until the observed periphery of the retinal irradiation of the source has moved to a predetermined position at which point the observed retinal irradiation is a measurement of the sensitivity of the individual's eyes to light. A plurality of spaced light sources can be observed by the individual and the intensity of said sources increased until the retinal irradiation from the sources merge. Darkened lenses can be prescribed for the individual based on the intensity of the sources at the time of merger.

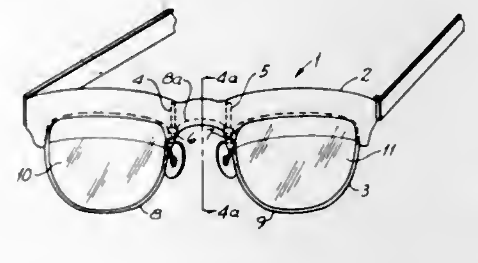
3,425,773
ADJUSTABLE BI-FOCAL SPECTACLES

Albino Masucci, 1230 Leland Ave., Bronx, N.Y. 10472

Filed June 30, 1964, Ser. No. 379,291

U.S. Cl. 351—55 **1 Claim**

Int. Cl. G02c *7/06*



Adjustable bi-focal spectacles which include a single frame having trolley-pins attached thereto to receive a lens carrying chassis so that the chassis and frame are movable with respect to each other. The frame further has recessed portions to permit a portion of the lens to recede therein to permit adjustment of the field of view according to bi-focal adjustment.

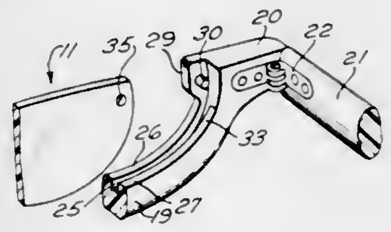
3,425,774
SPECTACLES WITH HALF MOON LENSES SECURED BY INTERENGAGING PROJECTIONS AND HOLES

Frank W. Lindblom, Warwick, R.I., assignor to Welsh Manufacturing Company, a corporation of Rhode Island

Filed Aug. 30, 1965, Ser. No. 483,536

U.S. Cl. 351—61 **2 Claims**

Int. Cl. G02c *7/02*



A pair of spectacles has half moon lenses seated in grooved half rims with pins carried by ears on the lens rims projecting into holes in the upper corners of the lenses to secure the lenses in the rims. The lenses can be readily inserted or removed by forcing the pins out of position by bending the ears which carry them.

3,425,775
STEREO PROJECTOR

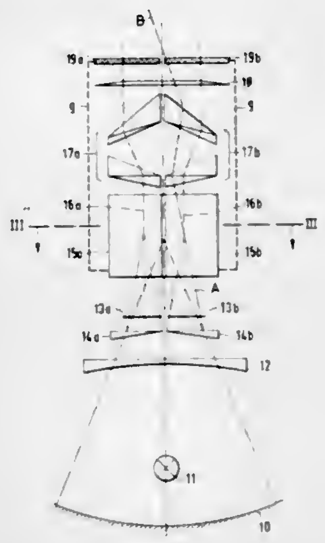
Jan Louis Wulff Jacobsen, Copenhagen, Denmark, assignor to CCT Cinema Camera Technik AG, Zurich, Switzerland

Filed Oct. 11, 1966, Ser. No. 585,868

Claims priority, application Germany, Oct. 21, 1965, J 29,224

U.S. Cl. 352—57 **6 Claims**

Int. Cl. G03b *35/22*



1. Stereo projector for double image film bearing laterally anamorphotically compressed images with the compression at the lateral image borders greater than in the center, said projector having objective means including reproducing lenses arranged with their optical axes at a distance from one another corresponding to the distance between the centers of the two images on the film and means for virtually increasing the distance between the image centers and for anamorphotically restoring the images comprising Brewster prisms disposed ahead of said lenses.

3,425,776
MOVIE CAMERA WITH FADING MEANS

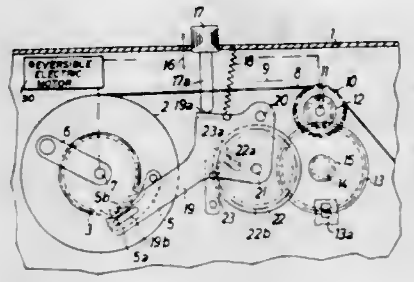
Helmut Mayr and Richard Pelte, Munich, and August Auracher, Unterhaching, near Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Nov. 30, 1965, Ser. No. 510,630

Claims priority, application Germany, Dec. 3, 1964, A 47,766

U.S. Cl. 352—175 **12 Claims**

Int. Cl. G03b *1/62*



A motion picture camera with fading means wherein a button is depressed to start the fading operation and to couple a measuring wheel to the film transporting mechanism. The wheel rotates during withdrawal and during rewinding of film onto the supply reel during fading and initiates automatic stoppage of the supply reel when the length of film which is rewound equals the length of film which was previously withdrawn during fading.

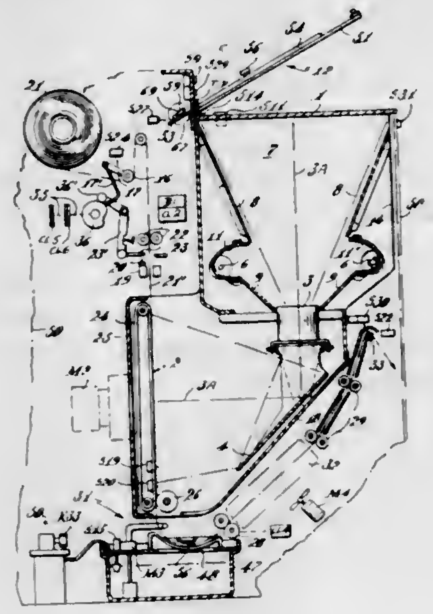
3,425,777
PHOTOCOPIER CYCLING APPARATUS

Kenneth J. White, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed Oct. 17, 1966, Ser. No. 587,017

U.S. Cl. 355—28 **7 Claims**

Int. Cl. G03b *29/00*



5. Copier apparatus for reproducing original documents of different lengths comprising:
  means for illuminating the original subject,
  means for projecting an image of the original on an image plane,
  means to feed a strip of photosensitive paper from a supply roll along a path to said image plane at a predetermined speed,
  cutter means on said path for severing sheets from the strip,
  means for exposing a sheet to said image in said image plane,
  cycling means for actuating said strip feed and cutter means at successive points of its cycle,

means for driving said cycling means at different rates inversely dependent on the length desired to be severed, and

means for selecting the rate of said driving means thereby to select a sheet length corresponding to the length of the original document,

whereby shorter sheets may be fed and severed at more frequent intervals than long sheets.

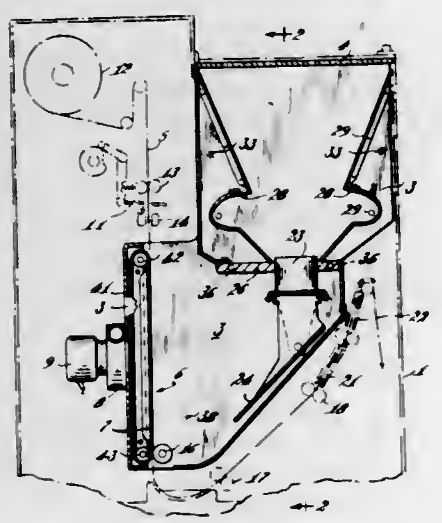
3,425,778
PHOTOCOPY APPARATUS

Walter A. Raczynski, Wayland, and Kenneth J. White, Framingham, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed Oct. 17, 1966, Ser. No. 587,258

U.S. Cl. 355—65 **7 Claims**

Int. Cl. G03b *27/70*



1. For copying records on sheet material, an inner housing comprising sides and ends, one of said sides comprising a record window for the record to be copied and another side comprising a copy window for the sheet material, optical means including a lens for projecting, along an optical axis, an image of a record in the record window to the material in the copy window, an outer housing enclosing said inner housing, and detachable means for mounting the inner housing on the outer housing, whereby said windows and lens may be mounted in accurate relationship in the inner housing after which the inner housing may be mounted in said outer housing with said detachable means.

ERRATUM

For Class 355—68 see:
Patent No. 3,426,357

3,425,779
PRESSURIZED MARKING INSTRUMENT

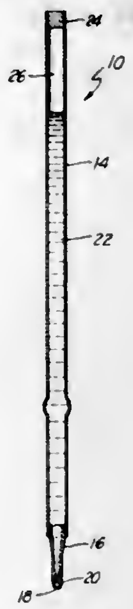
Paul C. Fisher, 14226 W. Greenleaf St., Sherman Oaks, Calif. 91403, and Herman Schub, Chicago, and Roger A. Kennedy, Addison, Ill.; said Schub and said Kennedy assignors to said Fisher

Continuation-in-part of application Ser. No. 576,721, Sept. 1, 1966. This application July 24, 1967, Ser. No. 660,155

U.S. Cl. 401—190 **9 Claims**

Int. Cl. B43k *7/00, 7/10;* **C09d** *11/18*

A ball point writing and/or marking instrument is disclosed. This instrument has a sealed marking fluid reservoir, a ball socket located in an extremity of the reservoir so as to extend between the interior and the exterior of the reservoir, a ball rotatably mounted in the socket so as to extend between the interior and exterior of the reservoir, a marking fluid in the reservoir in contact with the ball, and a pressurized gas within the reservoir forcing the marking fluid into contact with the ball. The marking fluid comprising a mixture of at least one solvent, at least one coloring agent and at least one polymer which is "soluble" with the solvent and which, in conjunction with the other ingredients within the fluid, causes the marking fluid to be viscoelastic and to have strong adhesive and strong cohesive characteristics and to flow resistant in character. The marking fluid has a high viscosity; it is capable of wetting the surface of the ball and forming on the ball a film which is sufficiently flow resistant so that when the ball is at rest the marking fluid does not ooze out of the reservoir. However, this film is capable of being transferred from the ball to a receiving surface when the ball is located by contact with such a surface without being visibly disrupted by contact with the entrance to the ball socket.



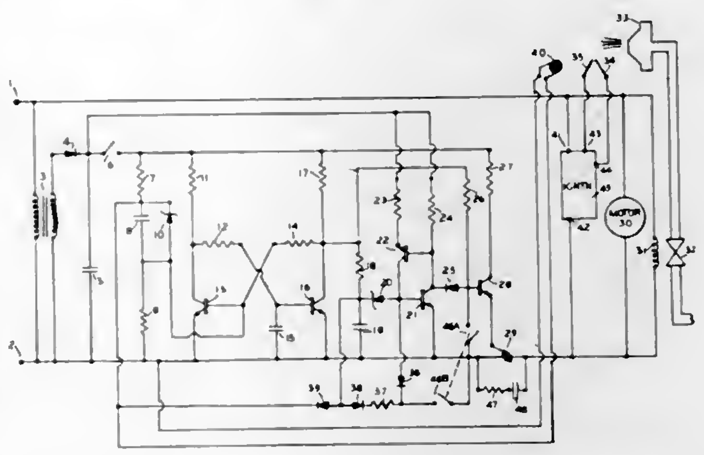
3,425,780
FLUID FUEL IGNITER CONTROL SYSTEM

William F. Potts, Liverpool, N.Y., assignor to Liberty Combustion Corporation, Syracuse, N.Y., a corporation of New York

Filed Sept. 26, 1966, Ser. No. 586,593

U.S. Cl. 431—68 **9 Claims**

Int. Cl. F23n *5/00, 5/20, 5/24*



Ignition and control system for an oil burner having a cone spray of oil and a blower, and electrodes just outside the spray cone but in the blower air stream, the system includes a unitary apparatus having repetitive capacitance oscillatory spark discharge each of a size and duration capable of being diverted by the air stream into the cone spray for ignition and control apparatus, and time delay circuitry providing a specific period for burner ignition, and a lock out with manual reset, and protection against ignition attempt when red hot refractory heat conditions exist in the combustion chamber.

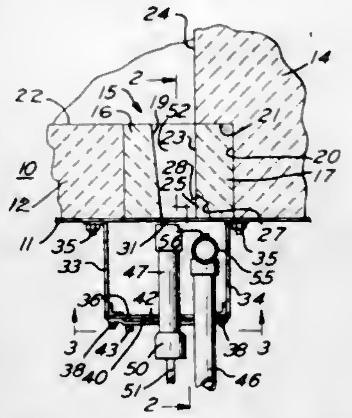
3,425,781
BURNERS

Gordon M. Bitterlich, Tredyffrin Township, Chester County, Pa., assignor to National Airoil Burner Company, Incorporated, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 18, 1967, Ser. No. 668,609

U.S. Cl. 431—178 **10 Claims**

Int. Cl. F23c *5/08*



Heating apparatus for furnace walls comprising a gas burner in a well outside a burner block in a furnace wall and along a wall to be heated, the gas burner having a plurality of spaced gas delivery ports, and the burner block having an inclined slot for each gas delivery port. The well has a register in one wall thereof for regulating the induction of air for combustion. The burner block may optionally have an oil burner removably mounted with respect to a common passageway in the burner block with which the slots are also in communication.

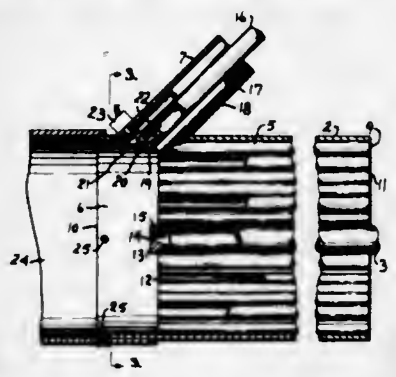
3,425,782
GAS BURNER

Joseph J. Moylan, 5737 Indiana, Kansas City, Mo. 64130

Filed May 1, 1967, Ser. No. 635,257

U.S. Cl. 431—187 **7 Claims**

Int. Cl. F23c *7/00;* **F24c** *3/10;* **B05b** *7/06*



A gas burner for industrial and domestic uses producing a flame involving substantially complete combustion of a fuel and air mixture. The burner comprises a jacket or tubular shell, a valve controlled fuel supply pipe, a plurality of air tubes bundled around a fuel supply pipe, a combustion chamber, and a pilot flame. The fuel supply pipe has a discharge end with an orifice therein producing a fuel jet. The plurality of air tubes and the fuel supply pipe are installed within the jacket or shell completely filling the interior thereof. The combustion chamber may be formed in one end of the jacket by the ends of the air tubes being in a common plane and in longitudinal spaced relation to the adjacent end of the jacket. The pilot flame is suitably produced as by a burner of similar construction to the gas burner but of smaller construction.

3,425,783
ELECTRIC GAS LIGHTER HAVING A PIEZOELECTRIC STACK

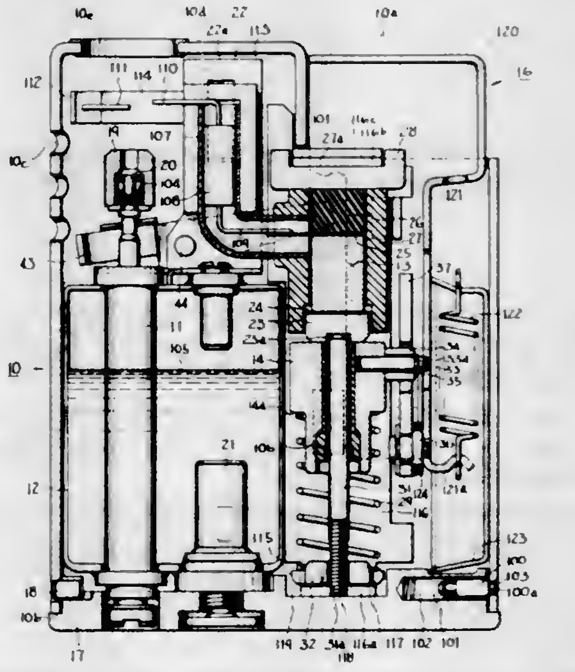
Kenjiro Goto, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kamiaokicho, Kawaguchi shi, Sauama-ken, Japan

Filed Nov. 8, 1966, Ser. No. 592,780

Claims priority, application Japan, Nov. 11, 1965, 40/91,596; Mar. 12, 1966, 41/15,094, 41/15,095, 41/22,027; May 26, 1966, 41/49,270

U.S. Cl. 431—255 **4 Claims**

Int. Cl. F23g *2/16, 2/28, 7/18*



An electric gas lighter having a piezoelectric stack and a pair of discharge electrodes electrically connected to the poles of said stack. A movable hammer spring-biased to the stack, an actuator including a spring loaded cam plate for moving the hammer away from the stack and releasing it for rapid movement towards the stack and a pressure bar for constantly applying an adjustable, permanent pressure to the stack.

CHEMICAL

3,425,784
DYEING POROUS STONE WITH LEUCO ESTER OF VAT DYE

Clemens Streck, Loudonville, N.Y., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,856

U.S. Cl. 8—8 **9 Claims**

Int. Cl. B44d *1/20*

1. A process for artifically coloring naturally occurring porous stone which comprises applying thereto a dyeing solution comprising from about 0.1% to about 25% by weight of a water-soluble leuco ester of a vat dye and an oxidizing agent in an amount sufficient to regenerate said dye in a solvent selected from the group consisting of water, volatile water soluble organic solvents, and mixtures thereof.

3,425,785
STABLE AQUEOUS DISPERSIONS OF o-DIANISIDINE FAST TO STORING, FOR THE PREPARATION OF WATER-INSOLUBLE AZO-DYESTUFFS ON FIBROUS MATERIALS

Hasso Hertel, Offenbach am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 1, 1966, Ser. No. 539,296

Claim priority, application Germany, Apr. 8, 1965, F 45,763

U.S. Cl. 8—46 **4 Claims**

Int. Cl. D06p *1/18*

1. A stable aqueous dispersion of o-dianisidine for the preparation of water-insoluble azo-dyestuffs on fibrous

materials, which dispersion contains as dispersing agent a non-ionic compound of the formula

$RO—Ar—CH_2—Ar—O—(CH_2CH_2O)_n—CH_2CH_2OR$

in which Ar represents phenylene or naphthylene radicals or such radicals which are substituted by alkyl groups containing up to 4 carbon atoms, R represents an alkyl radical having 1 to 3 carbon atoms, and *n* is an integer of 7 to 50.

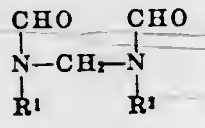
3,425,786
INORGANIC PEROXIDIC BLEACHES ACTIVATED WITH N,N'-DIACYL-METHYLENE-DIFORMAMIDE

Karl Dithmar and Peter Koblischek, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed June 6, 1966, Ser. No. 555,224
Claims priority, application Germany, June 9, 1965, D 47,464

U.S. Cl. 8—111 **5 Claims**
Int. Cl. D06l *3/00*

Bleaching of textile fibers with an aqueous peroxidic bath activated with an N,N'-diacyl-methylene-diformamide of the formula



$$\begin{array}{ccc} CHO & & CHO \\ | & & | \\ N & —CH_2— & N \\ | & & | \\ R^1 & & R^2 \end{array}$$

wherein R¹ and R² are carboxylic acid acyl groups having 1–12 carbon atoms.

3,425,787
PROCESS FOR IMPROVING THE CREEP RESISTANCE IN RAYON INDUSTRIAL YARNS, CORDS AND THE LIKE

Johannes J. Van Heuvelen, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,632
Claims priority, application Netherlands, Sept. 18, 1964, 6410884

U.S. Cl. 8—116 **2 Claims**
Int. Cl. D06m *11/04, 1/02*

Method of improving the creep resistant properties of regenerated cellulosic industrial reinforcing yarns, cords and the like without adversely affecting tensile strength thereof comprising the step of treating such yarns and cords with an aqueous solution containing 0.3 to 3% by weight borax and having a pH within the range of 6.5 to 7.7; the pH of the solution is maintained within the range specified by use of a buffer compound selected from the group consisting of primary and secondary sodium phosphates, trihydroxymethyl aminomethane, triethanolamine, maleic acid and boric acid.

3,425,788
ALKALI-SOLUBLE CELLULOSE ACETATE TEXTILE MATERIAL AND PROCESS FOR PRODUCING SAME

Victor B. Holland, Merton C. Propst, Jr., and Harold W. Wyatt, Kannapolis, N.C., assignors to Cannon Mills Company, a corporation of North Carolina

No Drawing. Filed Oct. 8, 1964, Ser. No. 402,642

U.S. Cl. 8—129 **4 Claims**
Int. Cl. D06m *11/02*

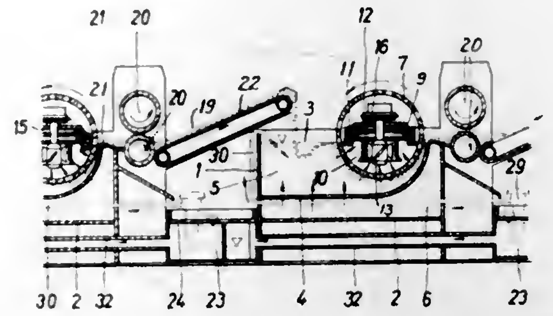
Alkali-soluble cellulose acetate textile is produced by treatment of said textile with an aqueous solution containing chromic acid, or a dichromate such as sodium dichromate, and an acid such as nitric, sulfuric or oxalic acid.

3,425,789
APPARATUS AND METHOD FOR THE WET-TREATMENT OF MATERIALS WHICH ARE PERMEABLE TO LIQUIDS

Gerold Fleissner and Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignors to Vepa AG, Basel, Switzerland

Filed Jan. 27, 1967, Ser. No. 612,146
Claims priority, application Germany, Jan. 29, 1966, A 51,461

U.S. Cl. 8—151 **28 Claims**
Int. Cl. D06c *1/00;* **D06f** *37/02*



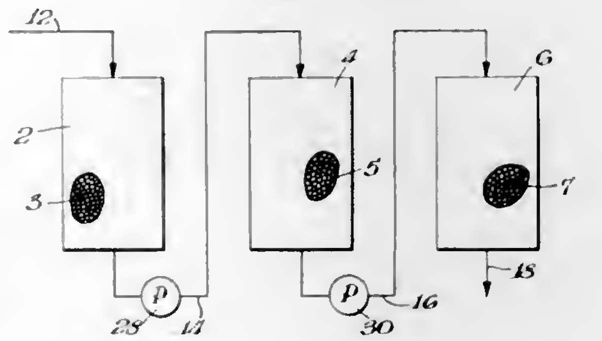
The present disclosure relates to a method and apparatus for the wet-treatment of materials which are permeable to liquids, such as lengths of textile materials, for example, fabrics, knit goods, nonwovens, and the like. The treating apparatus comprises a sieve drum as the conveying element, said sieve drum being at least partially immersed in a treatment liquid and subjected to a uniform suction draft over its entire working width, said suction draft provided by suction pumps disposed within the sieve drum.

3,425,790
PROCESS FOR OBTAINING EQUILIBRIUM CONTROLLED AMOUNTS OF HALOGEN AND/OR INTERHALOGEN IN A FLUID MEDIUM

Walter John Sloan, 516 Wyndham Road, North Hills Wilmington, Del. 19809

Filed Jan. 31, 1967, Ser. No. 612,975

U.S. Cl. 21—2 **6 Claims**
Int. Cl. A61l *1/00*



A process for obtaining controlled amounts of halogen and/or interhalogen in a fluid medium by contacting a fluid medium and an anion exchange medium.

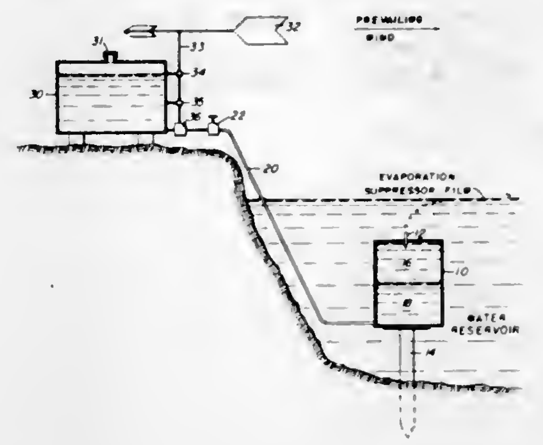
3,425,791
UNDERWATER GRAVITY-TYPE MONOMOLECULAR FILM DISPENSER AND METHOD OF USE

Gordon E. Koberg, Lakewood, Colo., assignor to the United States of America as represented by the Secretary of the Interior

Filed June 9, 1965, Ser. No. 462,764

U.S. Cl. 21—60.5 **9 Claims**
Int. Cl. E03b *3/40*

Evaporation loss from reservoirs and the like is reduced by the subsurface release of a film-forming material from a storage container located below the water surface. Film-forming material is forced from the container by hydrostatic pressure from a vessel containing a displacement fluid.



3,425,792
OXIDATION CATALYSTS

Ruth E. Stephens, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,443

U.S. Cl. 23—2 **13 Claims**
Int. Cl. C01b *13/14*

Exhaust gas is oxidized by a supported platinum catalyst promoted with a lead compound.

3,425,793
PROCESS FOR FRACTIONATING LANTHANIDE MIXTURES CONTAINING CERIUM

Donald J. Bauer and Roald E. Lindstrom, Reno, Nev., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed June 8, 1966, Ser. No. 556,821

U.S. Cl. 23—20 **9 Claims**
Int. Cl. C22b *59/00*

A cerium- and lanthanum-containing lanthanide solution is contacted with ozone, while the solution is maintained at a pH of 1.0 to 7.0, and a temperature of 20–100° C., to precipitate out the cerium and to leave the lanthanum in solution. At a pH of 1.0 to 5.5 and a temperature of 20–50° C., cerium can be separated from heavier lanthanides in the same manner.

3,425,794
METHOD OF PREPARING HETEROPOLY COMPOUNDS

Vincent Chiola and Clarence D. Vanderpool, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Dec. 22, 1966, Ser. No. 603,793

U.S. Cl. 23—23 **21 Claims**
Int. Cl. C22b *59/00, 51/00, 57/00*

1. The method of preparing heteropolytungstic and heteropolymolybdic acids and ammonium salts of the said acids, the heteroatom in the said acids and salts being selected from group (A) consisting of silicon, aluminum, vanadium, titanium, iron, nickel, cobalt, antimony, niobium, germanium, tin and cerium when the heteropoly compound is heteropolytungstic acid or heteropolymolybdic acid, and being selected from the group consisting of (B) the aforementioned heretoatoms of group (A) and, in addition, arsenic, boron, and phosphorus when the heteropoly compound is an ammonium salt of the aforesaid heteropoly acids, said method comprising directly introducing the heteroatom into the condensed oxide structure of a nonheteropolytungstic or a nonheteropolymolybdic acid or an ammonium salt thereof by contacting, in aqueous medium and at a temperature within the range of from about 20° C. to about 100° C.,

(a) a compound of the group consisting of a polytungstic acid, a polymolybdic acid, and the ammonium salts of the said acids, said acids and salts being water-soluble and having a condensed oxide polyhedral structure, with

(b) a substance of the group consisting of elemental metals, oxides and acids of elemental metals, and hydrolyzable organometallic compounds, the said substance having a heteroatom of the aforesaid group (A) when the heteropoly compound to be produced is heteropolytungstic acid or heteropolymolybdic acid, and having a heteroatom of group (B) when the heteropoly compound to be produced is an ammonium salt of the aforesaid heteropoly acids,

the amount of the substance of (b) in the said aqueous medium being sufficient to provide at least 0.5 gram atom of the aforesaid heteroatom for each 12 gram atoms of tungsten or molybdenum in the tungsten or molybdenum compounds of (a).

3,425,795
METHOD FOR PREPARING SUPERDENSE SODIUM CARBONATE FROM WYOMING TRONA AND THE PRODUCT THEREOF

Carlton J. Howard, Salina, and Eugene B. Port, Solvay, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Original application Mar. 8, 1965, Ser. No. 437,809, now abandoned. Divided and this application Aug. 9, 1966, Ser. No. 571,362

U.S. Cl. 23—63 **7 Claims**
Int. Cl. C01d *7/36*

A method is provided for preparing high density, superdense anhydrous sodium carbonate from Wyoming trona by a process which comprises calcining the trona; reducing the calcined trona to a particle size of less than about 80 mesh; forming sodium carbonate monohydrate crystals larger than 80 mesh, but less than 10 mesh; separating the water-insoluble particles of a size less than 80 mesh and converting the sodium carbonate monohydrate crystals, preferably in the presence of 20% to 30% of potassium carbonate, to anhydrous sodium carbonate by holding the sodium carbonate monohydrate solution at a temperature from 1–6° C. above the transition temperature of the solution and then separating the anhydrous sodium carbonate crystals characterized as having a pseudohexagonal shape from the solution.

3,425,796
PREPARATION OF METAL OXYCHLORIDES

David L. Bauer, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 15, 1967, Ser. No. 638,652

U.S. Cl. 23—86 **5 Claims**
Int. Cl. C01b *11/06*

A process for preparing metal oxyhalides and particularly concentrated solutions of titanium oxychloride having low Cl/Ti molar proportions. The process comprises contacting a metal halide capable of forming an oxyhalide with ice while maintaining the reaction conditions such that substantially no liquid water is present in the reaction mixture.

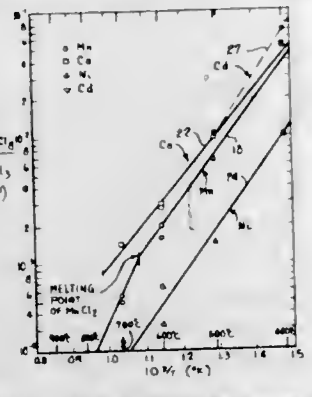
3,425,797
RECOVERY OF PURIFIED DIVALENT METAL CHLORIDES

Ernest William Dewing, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Feb. 25, 1966, Ser. No. 530,193

U.S. Cl. 23—87 **18 Claims**

Int. Cl. C01f *11/24, 5/30, 7/58*



In a method of recovering divalent metal chlorides, the steps of exposing a divalent metal chloride to gaseous aluminum or ferric chloride at a temperature of at least about 400° C. for converting the divalent chloride to gaseous material including at least one gaseous complex chloride formed by reaction of the divalent chloride with the trivalent chloride, and condensing the gaseous material for recovering the divalent chloride as a purified condensate, the condensing step effecting thermal decomposition of the gaseous complex chloride into the trivalent chloride and pure anhydrous divalent chloride. The gaseous complexes, which constitute intermediates in this method, have the formula

$$M_xQ_yCl_{(2x+3y)}$$

wherein M is a divalent metal, Q is aluminum or iron, x is an integer at least equal to 1, and y is an integer at least equal to 2.

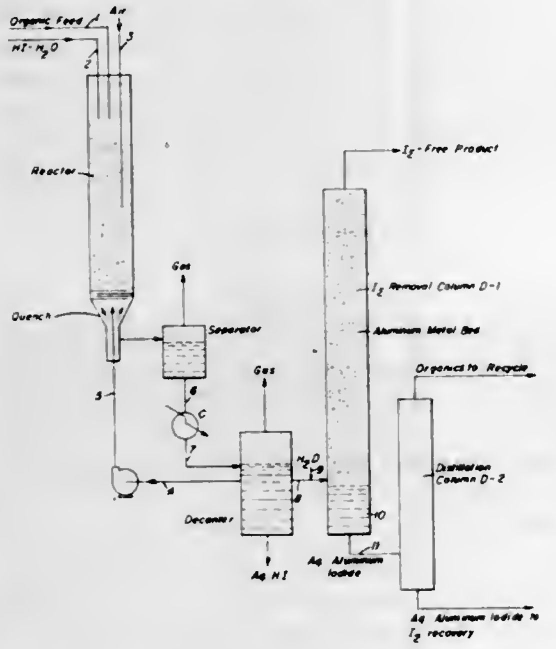
3,425,798
PROCESS FOR THE REMOVAL OF IODINE FROM ORGANIC COMPOUNDS

Max Statman, Alden E. Blood, and Herschel Thomas Vinyard, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 10, 1966, Ser. No. 519,635

U.S. Cl. 23—91 **15 Claims**

Int. Cl. C01f *7/48, 5/26;* **C01g** *9/04*



Aluminum, magnesium or zinc metal can be used to remove small amounts of dissolved iodine from organic compounds or their mixtures.

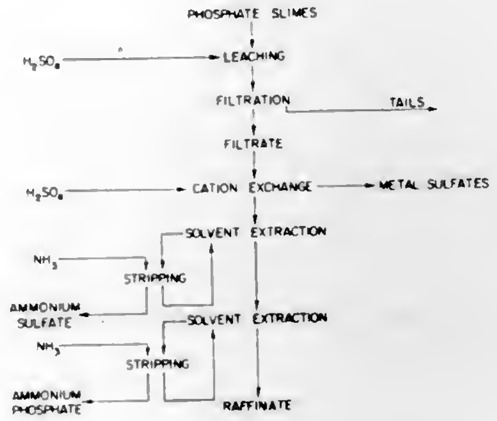
3,425,799
RECOVERY OF PHOSPHATE VALUES FROM PHOSPHATIC SLIMES

Wayne C. Hazen, Denver, Angus V. Henrickson, Golden, and Pablo Hadzeriga, Arvada, Colo., assignors, by mesne assignments, to Hazen Research, Inc., a corporation of Colorado

Filed Aug. 14, 1964, Ser. No. 389,750

U.S. Cl. 23—107 **7 Claims**

Int. Cl. C01b *25/26*



The process is peculiarly adapted to the recovery of phosphate values from colloidal slimes and comprises leaching the phosphate containing slimes with sulfuric acid under conditions which form crystals of calcium sulfate large enough to function as a filtering aid in filtering out colloidal clay, silica and other solid foreign material when the leach slurry is filtered after the addition of sulfuric acid. Large crystals of calcium sulfate are formed by the combined steps of adjusting the solids content of the slimes to about 6–14 percent and adding the sulfuric acid over a period at least one hour at a slurry temperature of about 50° C. to 80° C.

3,425,800
PRODUCTION OF CRYSTALLINE ZEOLITES

William Hirsh, Waukegan, Ill., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 5, 1967, Ser. No. 673,046

U.S. Cl. 23—113 **8 Claims**

Int. Cl. C01b *33/28*

A synthetic crystalline zeolite, for example sodium zeolite A, is continuously produced by combining suitable reactants and supplying such as a homogeneous gel suspension to the central stratum of a stratified crystallization zone. The crystalline zeolites form in this stratum and settle downwardly into a lower stratum from which they are continuously removed. Clear or depleted liquor separates from the central stratum and is continuously removed from an upper stratum. Crystalline zeolites so formed are substantially free of any gel contamination.

3,425,801
METHOD OF PREPARING PALLADIUM SULFATE SOLUTION

Stephen C. Stowe, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,697

U.S. Cl. 23—117 **2 Claims**

Int. Cl. C01g *55/00*

Stable aqueous solutions of palladium sulfate are prepared by contacting metallic palladium with aqueous sulfuric acid of 9–60 weight percent concentration at 80–150° C. and in the presence of molecular oxygen.

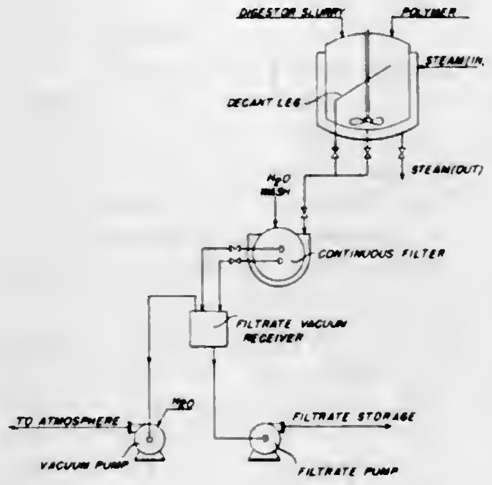
3,425,802
FLOCCULATION OF IMPURITIES IN ALUM SOLUTIONS

Robert Ben Booth, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Continuation-in-part of application Ser. No. 464,242, Oct. 25, 1954. This application Sept. 26, 1962, Ser. No. 226,348

U.S. Cl. 23—123 **7 Claims**

Int. Cl. C01f *7/74;* **B01d** *21/00*



1. In the process of manufacturing alum wherein the impure hot concentrated acidic alum solution resulting from the digestion of an ore of alumina with sulfuric acid is clarified by settling so as to remove the insolubles therefrom, the improvement which comprises clarifying the alum solution by adding thereto from about 0.5 lb. to about 3.0 lbs. per ton of dry solids of a water-soluble acrylic acid-acrylamide copolymer having at least 60% of the monomer units attached to amide groups, said copolymer having an average molecular weight of at least 10,000.

3,425,803
NITRIC ACID TAIL GAS PURIFICATION

Philip L. Romeo, Sr., Englishtown, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Sept. 1, 1967, Ser. No. 664,975

U.S. Cl. 23—162 **6 Claims**

Int. Cl. C01b *2/30, 21/26;* **B01d** *47/00*

Off gases from nitric acid plants are purified by admixture with natural gas which has first been converted to H_2 and CO. The natural gas is admixed with steam and is passed into a reformer which derives its heat energy from the converter synthesizing oxides of nitrogen from ammonia. The process requires less preheating of tail gas and lengthens catalyst life.

3,425,804
PRODUCTION OF MAGNESIUM HYDROXIDE FROM AQUEOUS SOLUTIONS CONTAINING MAGNESIUM AND BORON VALUES

Joel E. Rastrelli, Cape May, N.J., assignor to Dresser Industries, Inc., a corporation of Delaware

Filed Mar. 1, 1966, Ser. No. 530,935

U.S. Cl. 23—201 **2 Claims**

Int. Cl. C01f *5/22*

A method of recovering two classes of magnesium hydroxide from an aqueous solution of magnesium values in which boron values appear as a minor contaminant. The aqueous solution is divided into two streams, the first of such streams being treated to precipitate magnesium hydroxide while simultaneously adsorbing boron values thereon. The second stream is passed in an intimate association with the precipitated magnesium hydroxide of the first stream, removing boron values therefrom. The second stream is thereafter treated to precipitate the magnesium values therein, which precipitate is very low in boron values.

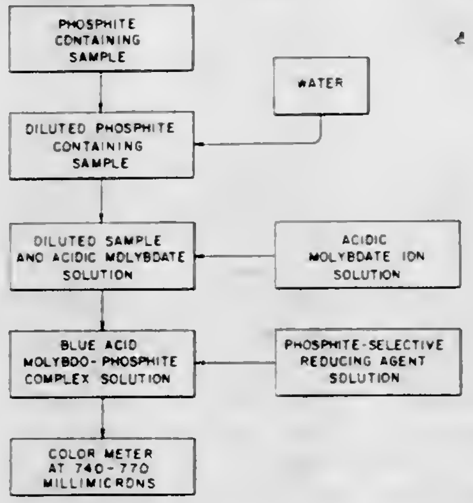
3,425,805
PHOSPHITE TESTING METHOD

Allen W. Grobin, Jr., La Grange, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 2, 1964, Ser. No. 408,151

U.S. Cl. 23—230 **19 Claims**

Int. Cl. G01n *31/04*


PHOSPHITE CONTAINING SAMPLE
WATER
DILUTED PHOSPHITE CONTAINING SAMPLE
DILUTED SAMPLE AND ACIDIC MOLYBDATE SOLUTION
ACIDIC MOLYBDATE ION SOLUTION
BLUE ACID MOLYBDO-PHOSPHITE COMPLEX SOLUTION
PHOSPHITE-SELECTIVE REDUCING AGENT SOLUTION
COLOR METER AT 740-770 MILLIMICRONS

A testing method for determining the phosphite ion content of a sample in which hypophosphite ion is also present by adding to the to-be-tested sample an acid buffered metal anion solution capable of forming colored heteropoly acids with phosphorous-containing compounds and then adding a phosphite ion selective reducing agent. The intensity of the resulting colored heteropoly phosphite complex is then measured by colorimetry and the measured intensity compared with a standard to determine phosphite content of the sample.

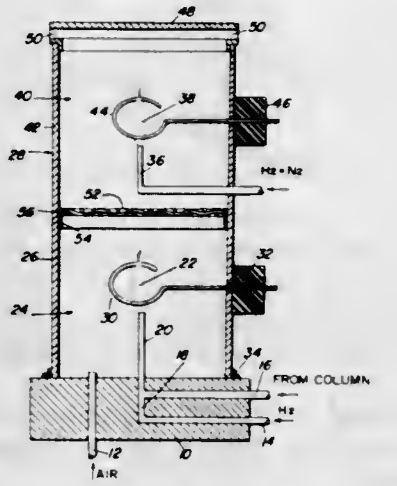
3,425,806
METHOD AND MEANS FOR DETECTING A HALOGEN OR PHOSPHORUS IN A GASEOUS MATERIAL

Arthur Karmen, Baltimore, Md., assignor to the United States of America as represented by the Secretary of Health, Education, and Welfare

Filed Mar. 22, 1965, Ser. No. 441,486

U.S. Cl. 23—232 **30 Claims**

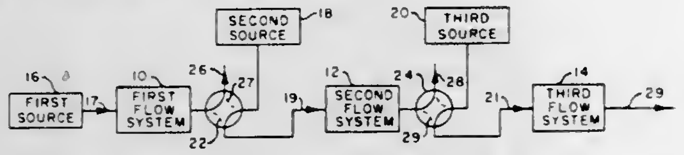
Int. Cl. G01n *27/62*



A method and means for detecting the presence of a halogen or phosphorus in a gaseous material is disclosed. The halogen or phosphorus is detected by monitoring the rate of vaporization of a metallic material, which rate increases when a probe containing such metallic material is heated in the presence of a sample containing one of those elements. The rate of vaporization of the metallic material is measured by a flame ionization detector or flame photometry device. The metal could be an alkali metal, barium, strontium, calcium and mixtures of the same, and could be in the form of a pure metallic material, a metallic amalgam, a metallic salt and mixtures of the same.

3,425,807
PYROLYSIS SYSTEM

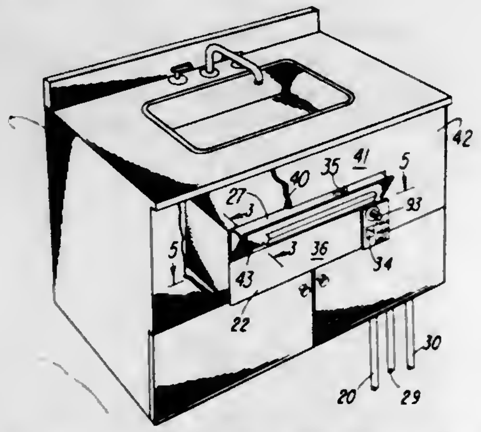
Eugene J. Levy, Oxford, Pa., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 15, 1965, Ser. No. 448,448
U.S. Cl. 23—232 **22 Claims**
Int. Cl. G01n *21/02*



A method for identifying the components of a sample mixture utilizing two gas chromatographic columns and a pyrolysis chamber. The sample is separated in a first chromatographic column. One of the separated components is introduced into a second flow system containing an open pyrolysis tube. This separated sample component is pyrolized and the resulting pyrolysis products introduced into a third flow system which includes the second chromatographic column. The second column separates the pyrolysis products, which, when individually detected, are indicative of the identity of the sample component pyrolyzed.

3,425,808
SOLID REGENERATING MINERAL DISSOLVER

James E. Hiers, St. Paul, Minn., assignor to Union Tank Car Company, a corporation of New Jersey
Original application June 4, 1962, Ser. No. 199,764, now Patent No. 3,253,891. Divided and this application Sept. 20, 1965, Ser. No. 488,708
U.S. Cl. 23—267 **11 Claims**
Int. Cl. B01d *15/06;* **B01j** *1/06*

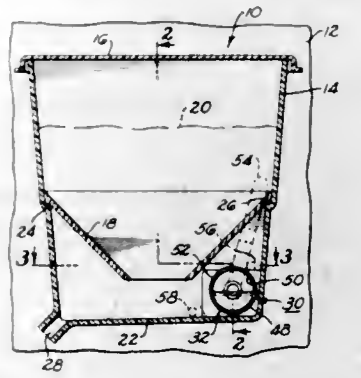


1. In a water conditioning system of the type in which water flows over solid regenerating mineral and dissolves same to provide an expendable concentrated regenerating liquor solution, thereby consuming said mineral and necessitating replenishment thereof, the combination comprising:

- (I) an integral container assembly comprising:
  - (A) movable means for supporting said solid mineral,
    - (1) said movable means dividing said container into an upper solid mineral compartment and a lower concentrated liquor compartment,
  - (B) partition means defining a mixing compartment,
    - (1) a raw liquid inlet and a regenerating liquid outlet in said mixing compartment,
  - (C) means for regulating the quantity of concentrated regenerating liquor flowing from said concentrated liquor compartment into said mixing compartment comprising:
    - (1) a pair of hollow tubular members, one of which is telescopically recieved in the other,
    - (2) conduit means providing a liquid flow path from said concentrated liquor compartment into the interior of one of said tubular members which has a closed bottom end,
    - (3) one of said members having a substantially vertical slot therein,
    - (4) the other of said members having an opening spiralling along its side wall,
    - (5) said slot and said opening being aligned to define an outlet passage into said mixing component for concentrated regenerating liquor flowing into said member having a closed bottom end,
    - (6) one of said members being rotatable,
    - (7) rotation of said rotatable member causing different portions of said slot and opening to be aligned so that the vertical location of said outlet passage is adjustable, and the quantity of concentrated liquor flowing into said mixing compartment is thereby controllable,
  - (D) means for indicating externally of said container when said solid mineral has been consumed,
  - (E) motion transmitting means passing through an opening in said partition means and operatively connecting said movable means to said indicating means,
  - (F) said opening in said partition means being located above the highest vertical location of said outlet passage, and
- (II) panel means having an opening therein receiving a portion of said container so as to expose a front wall of said container assembly, and
  - (A) a portion of said front wall being pivotable away from said panel means so as to expose said solid mineral compartment for loading.

3,425,809
METERING DEVICE FOR SOLUBLE MATERIALS

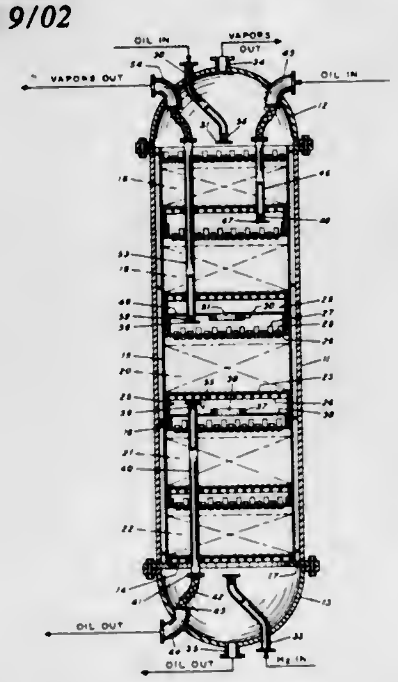
Theodore L. Harbaugh, Downey, Calif., assignor to Omco Chemical Corporation, South Gate, Calif., a corporation of California
Filed Oct. 16, 1967, Ser. No. 675,576
U.S. Cl. 23—272.7 **6 Claims**
Int. Cl. B01d *11/02, 59/24*



A metering device for a soluble material. The soluble material is placed in a receptacle having an outlet for a solution of the material. A horizontal conduit for the desired solvent extends through the receptacle and is provided with a solvent inlet and an excess-solvent outlet externally of the receptacle, the conduit being rotatable about its axis. The conduit is provided within the receptacle with a radially-enlarged chamber having a discharge port for discharging solvent into the receptacle to dissolve the soluble material therein for discharge through the outlet of the receptacle. The conduit may be rotated to vary the elevation of the discharge port and thereby vary the rate at which the solvent in the conduit is discharged through the discharge port into the receptacle.

3,425,810
HYDROTREATING APPARATUS

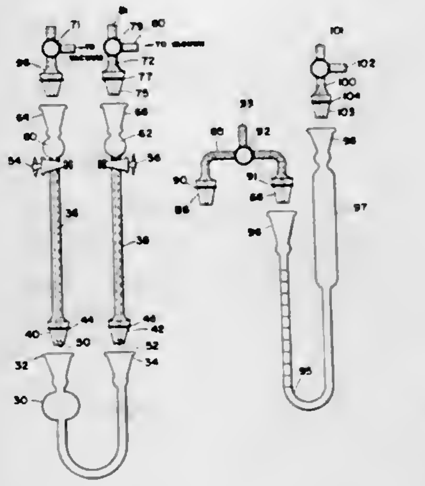
John W. Scott, Jr., Ross, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,569
U.S. Cl. 23—289 **5 Claims**
Int. Cl. B01j *9/02*



A multibed reactor for hydrotreating heavy oils is provided with an inlet for upflow hydrogen and with multiple oil inlets and outlets to better control temperature in the reactor. An outlet for vapors formed in the reactor is preferably located below the top two beds. Preferably the reactor is provided with a liner to support the catalyst and provide an annular space separating the catalyst beds from the reactor shell.

3,425,811
GASOMETER-DILATOMETER

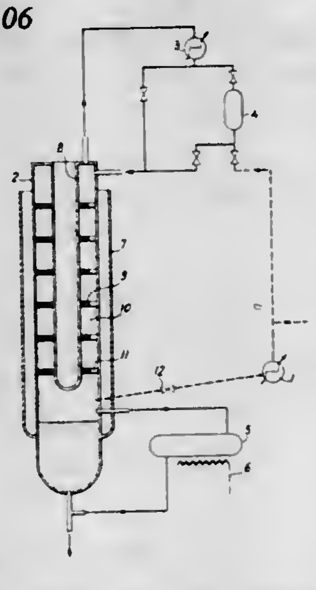
Yvon P. Carignan, Lebonan Township, Hunterdon County, N.J. (Point Mountain, R.D. 2, Washington, N.J. 07882)
Filed Apr. 12, 1965, Ser. No. 447,585
U.S. Cl. 23—292 **3 Claims**
Int. Cl. B01l *3/00*



A combination gasometric and dilatometric device capable of measuring rates of reaction under constant and non-constant pressures and even when large amounts of gas are evolved. The device is also capable of permitting aliquots of the sample to be removed therefrom and for measuring volume changes due to reactions, the device comprising a plurality of: reservoirs, tapered greaseless joints and stopcocks, capillary bores and venting and vacuum outlets.

3,425,812
METHOD AND APPARATUS FOR THE PHYSICAL SEPARATION OF THE COMPONENTS OF A BINARY MIXTURE

Philippe Cousin, Le Havre, and René Roche, Meudon-Bellevue, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed June 8, 1965, Ser. No. 462,453
Claims priority, application France, June 18, 1964, 978,784
U.S. Cl. 23—326 **2 Claims**
Int. Cl. C01g *43/06*



The present invention relates to a method for carrying out the physical separation of the two components of a binary mixture when said components are capable of forming an azeotrope. This method is suitable in particular for treating mixtures of uranium hexafluoride and hydrofluoric acid. The method entails crystallizinng the major portion of UF_6 directly from the gaseous state under conditions such that the remaining gas mixture be a first azeotropic mixture of low UF_6 content, condensing the remaining mixture and distilling the condensed mixture to isolate HF from a second azeotropic mixture of UF_6 and HF under conditions such that the UF_6 content of said second azeotropic mixture is greater than that of said first azeotropic mixture.

3,425,813
METAL COATED STAINLESS STEEL POWDER

Justus K. Orlemann, Easton, Pa., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 18, 1964, Ser. No. 390,462
U.S. Cl. 29—183.5 **4 Claims**
Int. Cl. B22f *9/00*

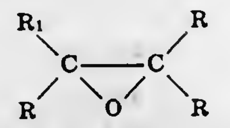
Stainless steel powder is coated with tin or a tin alloy of copper or nickel. The amount of coating is a definite percent of the stainless steel powder. The purpose is to enhance corrosion resistance.

3,425,814
STABILIZED OIL

William Judson Mattox, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 3, 1963, Ser. No. 277,724
U.S. Cl. 44—63 **5 Claims**
Int. Cl. C01l *1/18*

1. A stabilized distillate fuel oil consisting essentially of a major proportion of a petroleum distillate oil boil-

ing at from 300° F. to 900° F. and a minor amount sufficient to inhibit color degradation of said oil of an epoxide selected from the class of compounds represented by the structural formula



wherein R_1 is selected from the group consisting of alkyl groups containing from 1 to 5 carbon atoms, cycloalkyl groups, aryl groups and hydroxy groups, and R is selected from the group consisting of R_1 and hydrogen.

3,425,815
SYNERGISTIC ADDITIVE MIXTURE

Robert H. Rosenwald, Western Springs, and Russell F. Stedman and James C. Hughes, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 7, 1965, Ser. No. 454,167

U.S. Cl. 44—72 **8 Claims**
Int. Cl. C10l *1/26, 1/22*

1. A synergistic mixture of from about 5% to about 95% by weight of an alkyl phosphate salt of an N-alkyldiaminoalkane and from about 5% to about 95% by weight of an alkyl phosphate salt of an alkyl-monoamine.

3,425,816
METHOD OF TREATING GLASS

Harmon M. Garfinkel and James R. Lindenthal, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Apr. 21, 1965, Ser. No. 449,876

U.S. Cl. 65—30 **3 Claims**
Int. Cl. C03c *17/22*

This invention is concerned with the chemical strengthening of alkali metal silicate glass articles through an ion exchange reaction employing a bath of molten alkali metal salt. In particular, this invention involves a method for eliminating the discoloration imparted to a glass article being chemically strengthened caused by the contamination of the molten salt with silver ions. The method contemplates the addition of chloride, bromide, iodide, cyanide, chromate, or phosphate ions to the molten salt to complex the silver and thereby suppress the silver ion as an exchangeable ion with the glass.

3,425,817
LOW MELTING POINT DEVITRIFIED GLASS AND METHOD

Koichi Ikeda and Katsuji Minagawa, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Sept. 13, 1965, Ser. No. 486,643
Claims priority, application Japan, Sept. 16, 1964, 39/52,906

U.S. Cl. 65—33 **2 Claims**
Int. Cl. C03b *31/00;* **C03c** *3/22*

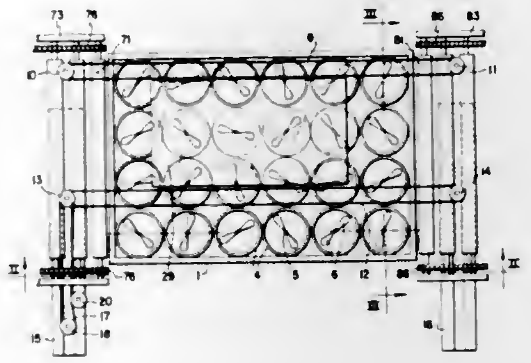
1. A low melting point devitrified glass comprising:
a glass component and a nuclei forming agent,
said glass component consisting essentially of a low melting point glass of PbO, B_2O_3, and Tl_2O_3, in respective weight ratios of about 4:1:2, and a high melting point glass of Al_2O_3, SiO_2 and Li_2O, in weight ratios yielding beta-spodumene, beta-eucryptite, lithium metasilicate crystalline phases and mixtures thereof upon thermal devitrification,
said nuclei forming agent being selected from the group consisting of Au, Ag and ZrO_2,
and the composition of said low melting point glass component, said high melting point glass component and said nuclei forming agent being 55–95%, 3–40% and 0.005–7% by weight, respectively.

3,425,818
APPARATUS FOR SUPPORTING AND CONVEYING GLASS SHEETS ON A GAS SUPPORT BED

Emile Plumat, Gilly, Belgium, assignor to Glaverbel, S.A., Brussels, Belgium

Filed Jan. 11, 1965, Ser. No. 424,579
Claims priority, application Luxembourg, Mar. 6, 1964, 45,597

U.S. Cl. 65—182 **7 Claims**
Int. Cl. C03b *27/00*



In the heat treatment of glass sheets, a method and means for supporting the glass sheets and heating them by means of an upward flow of turbulent gases, the turbulence of which assures that the glass sheets will be subjected to a uniform upward pressure, and uniform heating, over their entire surface area.

3,425,819
METHOD OF PREPARING A COMPLEX FERTILIZER COMPRISING UREA COATED WITH AMMONIUM PHOSPHATE

Lewis Arthur Barry, Wilmette, Ill., and Elmer J. Arveson, San Carlos, Calif., said Barry assignor to International Minerals & Chemical Corporation, a corporation of New York, said Arveson assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,423

U.S. Cl. 71—29 **4 Claims**
Int. Cl. C05c *9/00*

High nitrogen content fertilizers are prepared by coating urea prills with an ammonium phosphate composition in the presence of ammonia and then drying the resulting granules.

3,425,820
HERBICIDAL COMPOSITION

Kaiji Kawai and Tadashi Hisada, Tokyo, and Nobuo Ishimoto, Kanagawa, Japan, assignors to Hodogaya Chemical Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,701

U.S. Cl. 71—106 **2 Claims**
Int. Cl. A01n *9/20, 9/34*

The present disclosure provides the novel composition for inhibiting or eradicating undesired brush, other woody plants and weeds growing in field, which composition contains as active ingredient 3,4-dichloropropionanilide

in combination with a specified organic carbamate compound and methods of using such compositions.

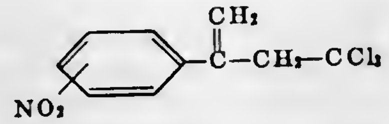
3,425,821
COMPOSITION AND METHOD FOR CONTROLLING UNDESIRABLE PLANT GROWTH

Leo R. Morris, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application June 27, 1966, Ser. No. 560,908, now Patent No. 3,336,401, dated Aug. 15, 1967. Divided and this application Mar. 3, 1967, Ser. No. 641,394

U.S. Cl. 71—125 **7 Claims**
Int. Cl. A01n *5/00*

The present invention is concerned with ar-nitro-α-(2,2,2-trichloroethyl)styrene compounds of the formula



and is directed, in particular, to methods employing and compositions comprising these compounds for plant growth alteration.

3,425,822
PROCESS FOR PRODUCING DISPERSION-MODIFIED ALLOYS OF CHROMIUM AND IRON-GROUP METALS

John B. Lambert, Mill Creek Hundred, and John T. Looby, Christiana Hundred, Del., assignors, by mesne assignments, to Fansteel Metallurgical Corporation, a corporation of New York

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,519

U.S. Cl. 75—.5 **8 Claims**
Int. Cl. C22c *1/04, 1/06, 19/00*

1. In a process for making a metal composition containing 0.5 to 40% by weight of chromium, in which process (1) a mixture comprising (a) an oxide of a metal selected from the group consisting of iron, cobalt and nickel, (b) a particulate refractory oxide having a free energy of formation at 1000° C. greater than 103 kilocalories per gram atom of oxygen and a particle size below 35 millimicrons, and (c) a chromium oxide, is prepared and (2) the oxides (a) and (c) are deoxidized by heating the mixture with a carbonaceous reducing agent until the oxygen content of the product in excess of that combined in oxide (b) is below about 2000 p.p.m., the improvement which comprises (3) decarburizing the deoxidized mixture by heating it at a temperature of 700 to 1000° C. in a flowing gas stream containing hydrogen, the pressure of hydrogen being at least two atmospheres, said decarburizing being continued at least until substantially all elemental carbon has been removed.

3,425,823
METHOD OF IMPROVING SHOCK TEMPERATURE OF METALLIC PELLETS

William J. Ward, Naperville, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,950
The portion of the term of the patent subsequent to Sept. 22, 1981, has been disclaimed

U.S. Cl. 75—5 **2 Claims**
Int. Cl. C22b *1/16*

The shock temperature of self-agglomerating green hematite ore pellets is improved by treating the ore prior to pelletizing with an ammonium or alkali metal humate salt.

3,425,824
PROCESS OF REDUCING METAL ORES

Guenter Heitmann, Frankfurt-Niederrad, Germany, assignor to Metallgesellschaft A.G., Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 1, 1966, Ser. No. 554,335
Claims priority, application Germany, June 23, 1965, M 65,692

U.S. Cl. 75—33 **5 Claims**
Int. Cl. C21b *13/08*

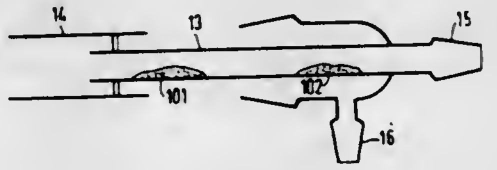
Improved method of reducing iron ore by using a liquid carbonaceous reducing agent, in a rotary kiln by impregnating the liquid carbonaceous reducing agent in a porous carrier of coke, coal or pelletized ore and feeding the impregnated carrier to a point in the kiln where the temperature is at least 600° C.

3,425,825
METHOD OF PRODUCING INTERMETALLIC SUPERCONDUCTING COMPOUNDS OF NIOBIUM AND GALLIUM

Günther Wilhelm, Erlangen-Buckenhof, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany

Filed Dec. 17, 1964, Ser. No. 419,026
Claims priority, application Germany, Dec. 21, 1963, S 88,845

U.S. Cl. 75—62 **1 Claim**
Int. Cl. C22c *1/00, 31/00;* **H01v** *11/12*



1. The method of producing superconducting niobium-gallium compound, which comprises passing gaseous halogen from the group consisting of bromine and iodine mixed with an inert transporting gas over heated quantities of niobium and gallium respectively and reducing the resulting gaseous halogen compounds of niobium and gallium to precipitate the evolving superconducting compound from the gaseous mixture.

3,425,826
PURIFICATION OF VANADIUM AND COLUMBIUM (NIOBIUM)

Frederick A. Schmidt and Oscar N. Carlson, Ames, Iowa, William E. Krupp, Simi, Calif., and Harley A. Wilhelm, Ames, Iowa, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 21, 1966, Ser. No. 537,619

U.S. Cl. 75—84 **6 Claims**
Int. Cl. C22d *7/04;* **C22b** *51/00, 55/00*

Vanadium or columbian (niobium) which has been prepared by the aluminothermic reduction of the oxide is purified by heating at a temperature close to but below its melting point at a pressure of not more than 10^{-4} torr. The purified metal is then melted and cast in the absence of reactive gases. Carrying out the melting by an electron beam under high vacuum produces a further purification.

3,425,827
CORROSION-RESISTING COBALT-CHROMIUM-TUNGSTEN ALLOY

Anton Baumel, Lank (Lower Rhine), Germany, assignor to Gebr. Bohler & Co., Aktiengesellschaft, Vienna, Austria

No Drawing. Continuation-in-part of application Ser. No. 404,951, Oct. 19, 1964. This application June 8, 1967, Ser. No. 644,484

Claims priority, application Austria, Oct. 29, 1963, A 8,618/63; Nov. 18, 1963, A 9,180/63

U.S. Cl. 75—171 **8 Claims**

Int. Cl. C22c *19/02*

In a cobalt-chromium-tungsten alloy, a portion of the cobalt is substituted with from 2.5–20% nickei to markedly increase the corrosion resistance of the alloy.

3,425,828
PRODUCTION OF COBALT STRIP AND THE LIKE

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed Mar. 11, 1966, Ser. No. 533,423

U.S. Cl. 75—214 **4 Claims**

Int. Cl. B22f *1/00*

The addition of between 2 percent to 4 percent by weight of iron powder to cobalt powder whereby the resulting mechanical mixture of powders is more readily cold formable than a similar cobalt powder without the added iron.

3,425,829
ELECTROPHOTOGRAPHIC RECORDING PROCESS

Paul Maria Cassiers, Mortsel, Jozef Leonard Van Engeland, St. Katelijne-Waver, and Robert Joseph Noe, Mortsel, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

Original application Nov. 26, 1962, Ser. No. 240,108, now Patent No. 3,383,209, dated May 14, 1968. Divided and this application May 23, 1967, Ser. No. 640,603

Claims priority, application Netherlands, Nov. 27, 1961, 271,851

U.S. Cl. 96—1 **10 Claims**

Int. Cl. G03g *13/10*

A process of reproduction in which a latent photoconductive image is produced by means of a light pattern in a normally hydrophobic photoconductive layer of an electrophotographic material also having an electrically conductive backing, and is developed with an aqueous conductive developing liquid normally repelled by layer surface, the developing liquid being in at least one capillary channel in a dispensing member brought into close proximity with the layer surface, which channel has walls normally wet by the developing liquid and thus holds the liquid substantially out of contact with the layer surface by capillary forces, the capillary forces and the normal repellency of the layer surface being overcome in the unexposed areas of the layer by passing through the layer while proximate to the dispensing member an electric field of sufficient intensity and duration extending between the conductive backing and the conductive developing liquid at least simultaneously with the formation of the latent image and before the latent image decays.

3,425,830
ELECTROPHOTOGRAPHIC RECORDING ELEMENT

Frederick W. Sanders, Chillicothe, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 459,923, May 28, 1965. This application Oct. 22, 1965, Ser. No. 502,499

U.S. Cl. 96—1.5 **6 Claims**

Int. Cl. G03g *5/08*

The present invention relates to electrophotographic recording elements comprising photoconductive pigments and a binder therefor comprising inorganic ammonia-soluble metal salts such as zinc, copper, cobalt or silver phosphate, chromates or carbonates. For most desirable results, the photoconductive pigment should be present in substantially larger proportions than the binder. The said inorganic ammonia-soluble salts should not be used in amounts substantially larger than required for binder purposes. The above specified binder may have mixed with it smaller amounts of conventional organic copolymer binders.

3,425,831
STENCIL SCREEN

Dan A. Poole, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

No Drawing. Filed Jan. 12, 1965, Ser. No. 425,073

U.S. Cl. 96—36.4 **7 Claims**

Int. Cl. G03c *5/40*

A method of forming a design on a stencil screen for decorating molded ceramic or glass articles at elevated temperatures comprising the application of a single coating of a soluble, light hardenable material including an aqueous dispersion of polytetrafluoroethylene. The coating is applied to the screen and exposed to light in the desired stencil pattern thereby hardening the exposed portion. The unhardened and unexposed portions of the coating are then removed by washing or the like, and the remaining light hardened portion is heated to further harden and cure the polytetrafluoroethylene.

3,425,832
PURIFIED AGAR SILVER HALIDE PHOTOGRAPHIC PROCESSING WEB

Elmer S. Bornemisza, San Gabriel, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,676

U.S. Cl. 96—61 **9 Claims**

Int. Cl. G03c *5/30, 5/38*

Agar is purified by contacting a solution thereof with a cation exchange resin in sufficient quantity and for a time sufficient to remove substantial amount of alkaline earth and heavy metal atoms. The resultant agar is used in combination with photographic processing chemicals to provide a processing web for photographic emulsions.

3,425,833
MORDANTS FOR BLEACHABLE FILTER LAYERS

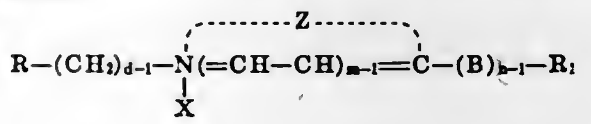
Robert C. Taber and Dugald A. Brooks, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 16, 1965, Ser. No. 479,720

U.S. Cl. 96—84 **12 Claims**

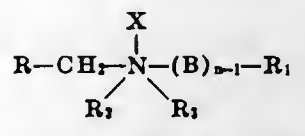
Int. Cl. G03c *1/84*

1. A photographic element comprising a support material having thereon a hydrophilic colloid layer containing at least one compound selected from those represented by the formula:



$$R-(CH_2)_{d-1}-\underset{X}{\underset{|}{N}}(=CH-CH)_{m-1}=C-(B)_{n-1}-R_1 \quad (\text{N} \cdots Z \cdots \text{C})$$

and



$$R-CH_2-\overset{X}{\overset{|}{N}}(R_2)(R_3)-(B)_{n-1}-R_1$$

wherein *m* and *n* each represent an integer of from 1 to 2, R represents a member selected from the class consisting of the hydrogen atom, an alkyl group, and an aryl group, R_1 represents a member selected from the class consisting of an alkyl group, and an aryl group, R_2 and R_3 each represents a member selected from the class consisting of an alkyl group, and an aryl group, R_2 and R_3 together represent a divalent alkylene group of from 4 to 5 carbon atoms in the chain, X represents an acid anion, B represents a member selected from the class consisting of the group CH=CH, the group $(CH=CH)_2$, the group $(CH=CH)_3$, and the p-phenylene group, and Z represents the nonmetallic atoms necessary to complete a 5 to 6 membered heterocyclic nucleus selected from the class consisting of a thiazole nucleus, a benzothiazole nucleus, a naphthothiazole nucleus, a thionaphtheno-7′,6′,4,5-thiazole nucleus, an oxazole nucleus, a benzoxazole nucleus, a naphthoxazole nucleus, a selenazole nucleus, a benzoselenazole nucleus, a naphthoselenazole nucleus, a thiazoline nucleus, a quinoline nucleus, an isoquinoline nucleus, a 3,3-dialkylindolenine nucleus, a pyridine nucleus, an imidazole nucleus, a benzimidazole nucleus, a naphthimidazole nucleus, a thiadiazole nucleus, an oxadiazole nucleus, a triazole nucleus and a tetrazole nucleus, provided that at least one of said R, said R_1 and Z contains a phenolic group, and wherein said compound has a molecular weight of at least 300, said element containing light-sensitive silver halide.

3,425,834
MORDANTS FOR BLEACHABLE FILTER LAYERS

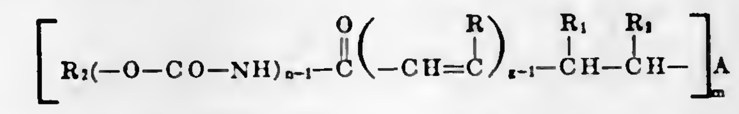
Dugald A. Brooks, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 16, 1965, Ser. No. 479,719

U.S. Cl. 96—84 **15 Claims**

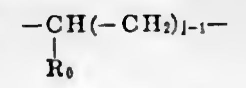
Int. Cl. G03c *1/84*

1. A photographic element comprising a support material having thereon a hydrophilic colloid layer containing at least one mordant represented by the formula:



$$\left[R_2(-O-CO-NH)_{n-1}-\overset{O}{\overset{\|}{C}}\left(-CH=\overset{R}{\overset{|}{C}}\right)_{g-1}-\overset{R_1}{\overset{|}{C}}H-\overset{R_1}{\overset{|}{C}}H-\right]_{m}A$$

wherein *n* represents an integer of from 1 to 2; *g* represents an integer of from 1 to 2; *m* represents an integer of from 1 to 2; R represents a member selected from the class consisting of a lower alkyl group, a lower alkoxy group, an aryl group, an aryloxy group and an aralkyl group; R_1 represents a member selected from the class consisting of hydrogen, an alkyl group, an aryl group, and when taken together with the R_2 group represents a divalent alkylene group having the formula:



$$-\underset{R_0}{\underset{|}{C}}H(-CH_2)_{j-1}-$$

wherein *j* represents an integer of from 3 to 4; R_2 represents a member selected from the class consisting of an alkyl group, an aryl group and when taken together with the R_1 group represents the said divalent alkylene group, such that when R_1 and R_2 are taken together to form said divalent alkylene group, *n* and *g* each represent the integer 1; R_0 represents a member selected from the class consisting of hydrogen, an alkyl group and an aryl group; R_3 represents a member selected from the class consisting of hydrogen, an alkyl group and an aryl group; when *m* represents the integer 2, A represents a bifunctional group having a molecular weight less than 150 in which each of the said functional groups is a substituted nitrogen atom having a valence with an odd number of from 3 to 5 with none of the said substituents attached to nitrogen being hydrogen, and when the nitrogen atoms have a valence of 5, one of said substituents on each of said nitrogen atoms is an acid anion, and when *m* represents the integer 1, A represents a substituted nitrogen having a valence having an odd number of from 3 to 5 with none of said substituents attached to nitrogen being hydrogen, and when the nitrogen atom has a valence of 5, one of said substituents on the said nitrogen is an acid anion, said A group having a molecular weight of less than 300, said element containing silver halide.

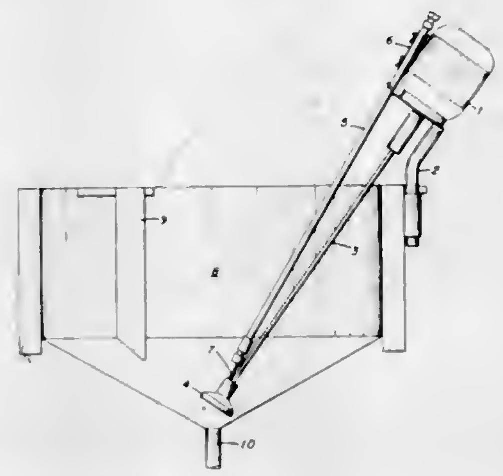
3,425,835
METHOD FOR DISPERSING NON-AQUEOUS SOLUTION IN AQUEOUS GELATIN SOLUTIONS USING AN ASPIRATING AGITATOR

Benjamin A. Johnson and Donald M. Forster, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 30, 1964, Ser. No. 355,703

U.S. Cl. 96—94 **5 Claims**

Int. Cl. B01f *7/02;* **G03c** *11/00*



For dispersing liquid addenda in aqueous gelatin emulsions, e.g. in photographic emulsions, local dehydration of gelatin by the addenda is avoided by introducing such addenda below liquid surface as the emulsion is rapidly agitated. Aspirator mixing device draws addenda into emulsion with suction induced by a mixing propeller.

3,425,836
PHOTOGRAPHIC EMULSIONS

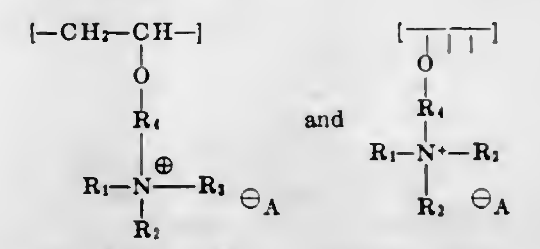
Ernest J. Perry and Delbert D. Reynolds, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 15, 1965, Ser. No. 448,266

U.S. Cl. 96—113 **20 Claims**

Int. Cl. G03c *1/06*

Peptizers for silver halide dispersions in preparation of photographic emulsions are hydrophilic polymers with quaternary nitrogen atoms bonded to the polymer through ether linkages. Specific polymers of the useful class include units having formulae



$$[-CH_2-CH-] \text{ with } -O-R_4-\overset{\oplus}{N}(R_1)(R_2)(R_3)\ \ominus A \quad \text{and} \quad [\;\overline{|\;|\;|}\;] \text{ with } -O-R_4-N^{+}(R_1)(R_2)(R_3)\ \ominus A$$

wherein R_1 and R_2 are alkyl or aryl or together complete a 5 or 6 member heterocyclic ring, R_3 is allkyl, R_4 is alkylene, ⊖A is acid anion, and $\overline{|\;\;|\;\;|}$ is the repeating unit of a polysaccharide.

3,425,837
PREPARATION OF ANIMAL FEED PHOSPHATE

Joseph G. Conte, Oakhurst, Paul S. Spitaleri, Colonia, Milton Stern, Metuchen, and Theodore B. Simpson, Plainfield, N.J., assignors, by mesne assignments, to Continental Oil Company, a corporation of Delaware
No Drawing. Filed Sept. 2, 1964, Ser. No. 394,056
U.S. Cl. 99—2 **13 Claims**
Int. Cl. A23k *1/00;* **C01b** *25/32*

Calcium phosphate of a grade suitable for animal feed use is produced directly from phosphate rock by reacting it with phosphoric acid in an amount equivalent to 150–250% of the theoretical amount to produce monocalcium phosphate, at a temperature of about 140–300° C., steam stripping the resulting slurry, and neutralizing excess acid.

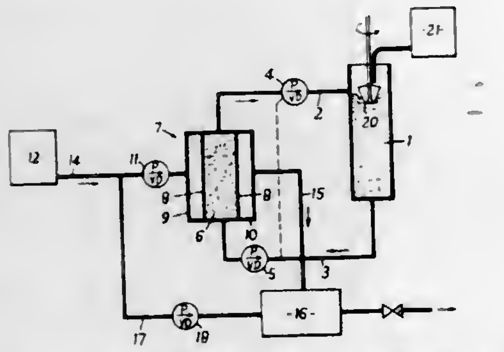
3,425,838
ARTIFICIAL FEEDSTUFF FOR SILKWORM LARVAE CONTAINING A HYDROXYBENZALDEHYDE COMPOUND

Masaki Kamada, Osaka, and Tetsuo Okauchi, Hirakata, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Feb. 17, 1966, Ser. No. 528,091
Claims priority, application Japan, Feb. 18, 1965, 40/9,501
U.S. Cl. 99—2 **10 Claims**
Int. Cl. A23k *1/18*

Promoting the intake of an artificial feedstuff and growth of silkworm larvae by incorporating hydroxybenzaldehyde having at least one hydroxy group at the 3- or 4-position of the benzene ring in the feedstuff.

3,425,839
CONTINUOUS BEER MAKING PROCESS WHEREIN THE WORT AND YEAST ARE SEPARATED BY A POROUS PARTITION

Michael Alan Pinnegar, Reigate, Surrey, England, assignor to Brewing Patents Limited, London, England, a British company
Filed June 17, 1966, Ser. No. 558,387
Claims priority, application Great Britain, Sept. 7, 1965, 38,251/65
U.S. Cl. 99—31 **5 Claims**
Int. Cl. C12c *9/02*



A potable beer is produced by circulating a body of yeast-containing liquor on one side of a partition and maintaining a moving body of wort on the opposite side of the partition. The partition is porous and has a pore size small enough to effectively bar the passage of yeast cells, but allows the passage of the soluble constituents of the wort and the soluble products resulting from the fermentation of the wort by the yeast.

3,425,840
BREAD-FLAVORING ADDITIVE AND USE THEREOF

Irving Robert Hunter, Berkeley, and Mayo K. Walden, El Cerrito, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Dec. 9, 1965, Ser. No. 512,807
U.S. Cl. 99—91 **10 Claims**
Int. Cl. A23l *1/26*

Proline and an alkane polyol such as glycerine or sorbitol are reacted at 100–150° C. to produce a reaction product which exhibits fresh-bread aroma and which is useful for enhancing the flavor of bakery products.

3,425,841
PINEAPPLE-GRAPEFRUIT FRUIT JUICE BLEND

Reginald L. Handwerk, San Jose, and Lyle Allen, Los Gatos, Calif., assignors to Castle & Cooke, Inc., Honolulu, Hawaii, a corporation of Hawaii
No Drawing. Filed Jan. 7, 1966, Ser. No. 519,010
U.S. Cl. 99—105 **8 Claims**
Int. Cl. A23l *1/02*

A colored pineapple-grapefruit juice blend having a pH of between 3.1 and 4.2 containing F.D. & C. #3 (erythrosine) as colorant.

3,425,842
FOOD SPREADS CONTAINING OLEAGINOUS GELS

Cornelis Japikse, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,694
U.S. Cl. 99—122 **13 Claims**
Int. Cl. A23d *3/00*

A food spread is made from about 1% to about 10% by weight milk solids, about 5% to about 50% by weight water, and from about 45% to about 90% by weight of an oleaginous gel. This gel has a stable beta crystalline phase comprising from 92% to about 98% by weight of liquid glyceride oil having an iodine value of about 100 to about 120 and about 2% to 8% by weight of solid triglyceride having an iodine value not exceeding about 12. The solid triglyceride consists essentially of a blend of (a) beta-phase-tending hardstock and (b) non-beta-phase-tending hardstock having a substantial portion of fatty acid groups having 20 to 24 carbon atoms. The weight proportion of (a) to (b) in the solid triglyceride blend ranges from about 1:4 to about 4:1. The solid triglycerides have stable individual crystals up to about 10 microns, at least 70% being in the beta phase.

3,425,843
EDIBLE EMULSIONS CONTAINING OLEAGINOUS GELS

Cornelis H. Japikse, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,696
U.S. Cl. 99—144 **15 Claims**
Int. Cl. A23l *1/24*

An edible emulsion is made from about 10 to 70% by weight aqueous acidic solution having a pH ranging from about 2 to 6.5 and from about 30 to 90% by weight oleaginous gel having a stable beta-crystalline phase comprising from about 92 to 98% by weight of liquid glyceride oil having an iodine value of about 100 to 120 and about 2 to 8% by weight of solid tri-glyceride having an iodine value not exceeding about 12. The solid triglyceride consists essentially of a blend of (a) beta-phase-tending hardstock and (b) non-beta-phase-tending hardstock having a substantial portion of fatty acid groups having 20 to 24 carbon atoms. The proportion of (a) to (b) ranges from about 1:4 to about 4:1. The solid triglyceride has stable individual crystals up to about 10 microns and comprises at least about 1.2% by weight of the emulsion composition. At least 70% of the crystals are in the beta-phase.

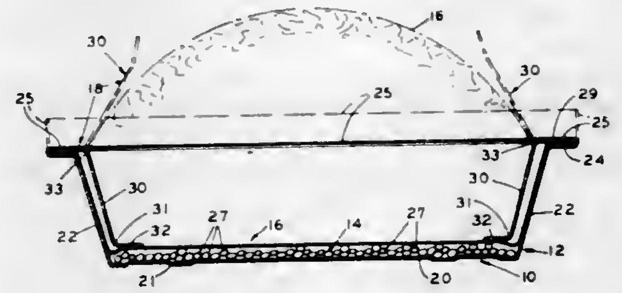
3,425,844
ULTRAVIOLET ABSORBING COMPOSITION COMPRISING A FORMAZAN

Richard A. Flinn, Emmaus, Pa., Richard S. Sobell, Silver Spring, Md., and Andrew A. Swigar, Nesquehoning, and Robert A. Walde, Emmaus, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,774
U.S. Cl. 99—150 **8 Claims**
Int. Cl. A21l *3/34;* **C09k** *3/00*

Certain formazan derivatives and metal chelates of bicyclononane dione esters, each used alone, is effective as an ultraviolet absorbing agent when incorporated into ultraviolet-sensitive polymer resins or plastic materials. The disclosed formazans are strongly absorptive in the wavelength range of about 325 to 400 mμ, while the metal chelates of the bicyclononane dione esters are strongly absorptive in about the 250–320 mμ range. Mixtures of the two, however are operative over the broader range of from below 200 to above 420 mμ. A composition comprising a lead chelate of bicyclononane dione tetracarboxylic ester and a formazan is an especially effective ultraviolet-protective agent for alkyd, vinyl, and urethane resin finishes.

3,425,845
POPCORN PACKAGE

Richard P. Dunn, Mount Clemens, Mich., assignor to Dun-Hot, Inc., Mount Clemens, Mich., a corporation of Michigan
Filed July 19, 1965, Ser. No. 472,828
U.S. Cl. 99—171 **2 Claims**
Int. Cl. A23b *9/00*

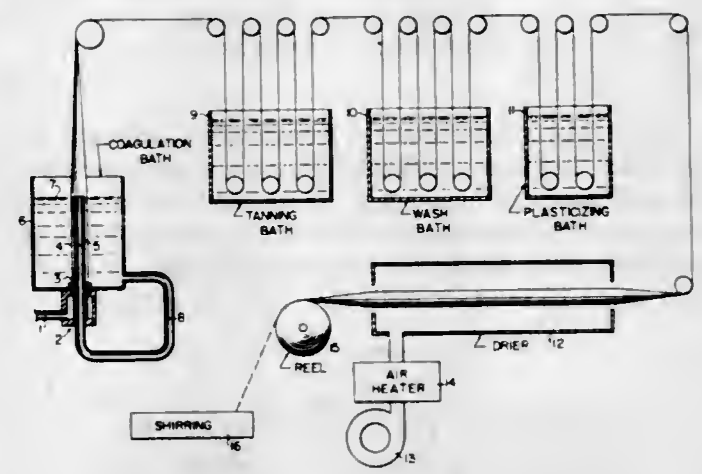


A cookable popcorn kernel package having an open topped pan shaped in a relatively shallow outline, a flexible cover extending across and downwardly into the pan and having substantially the same relatively shallow outline as the pan, and a charge of popcorn kernels confined between the pan and cover. The package is nestable with another package of identical construction, and the cover is upwardly flexible upon the cooking and expansion of the kernels. A combined sealing and lifting ring may be employed provided with one or more tabs for lifting the package.

3,425,846
METHOD OF PREPARING AN EDIBLE TUBULAR COLLAGEN CASING

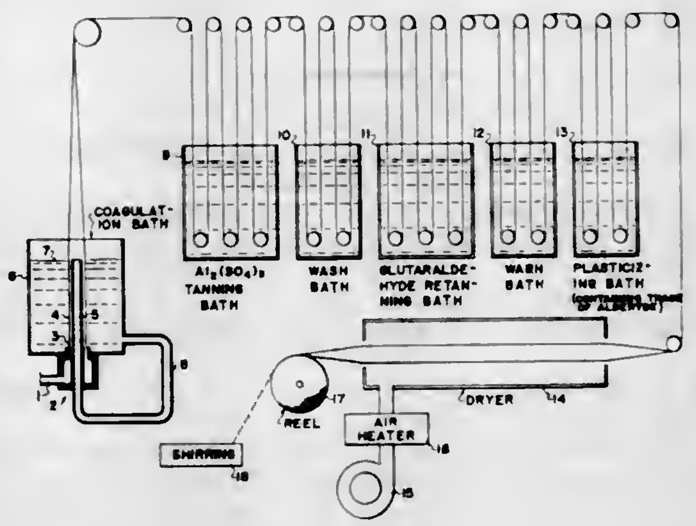
Robert D. Talty, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Filed July 13, 1965, Ser. No. 471,645
U.S. Cl. 99—176 **2 Claims**
Int. Cl. A22c *13/00*

Edible sausage casings are prepared from fresh or frozen or salt-cured animal hides treated with a lime-containing solution for a period of 3–12 hours to at least partially dehair the hide, then washing the hide, removing the epidermal layer and remaining hair, grinding the hide at a temperature less than 20° C. to produce a collagen containing slurry, acidifying the slurry to swell the collagen, said washing, grinding and acidification being carried out in less than 12 hours, and then extruding the slurry in tubular form, tanning the collagen tube, and washing, plasticizing, and drying the tube to produce an edible casing.



3,425,847
METHOD OF PREPARING AN EDIBLE TUBULAR COLLAGEN CASING

Robert D. Talty, Danville, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois
Continuation-in-part of application Ser. No. 471,645, July 13, 1965. This application Sept. 25, 1967, Ser. No. 670,353
U.S. Cl. 99—176 **3 Claims**
Int. Cl. A22c *13/00*



An edible sausage casing having improved strength, bite, stuffing, linking, and cooking characteristics is prepared from hide collagen. Animal hides are limed to swell and dehair the hide, split to produce a collagen containing corium layer and then neutralized in dilute acid. The neutralized hide is ground into fine particles, formed into a slurry and swollen with weak acid to produce an extrudable collagen paste or slurry having a solids content of about 2–6%. Alternatively, the collagen slurry may be prepared by acid or mechanical depilation of the hide, followed by grinding and acid swelling. The slurry is extruded through an annular die, coagulated with ammonium sulfate or sodium sulfate and tanned or hardened in an aluminum sulfate tanning bath. The tanned casing, containing about 1.5–5.0% aluminum is washed, retanned with a dilute solution of glutaraldehyde, rewashed, and plasticized with an aqueous solution of glycerin containing a small amount of a volatile aldehyde. The casing is then dried and reeled and eventually shirred on a commercial shirring machine for delivery to the meat packer in shirred form.

3,425,848

OSMOTIC DEHYDRATION OF COATED FOODS

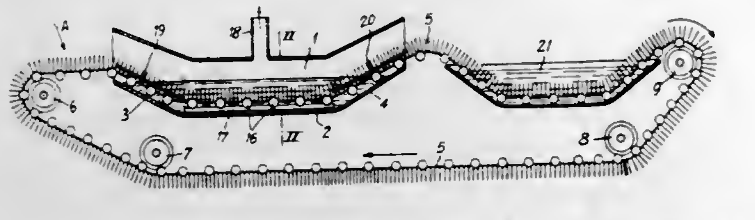
Wayne M. Camirand, Albany, and Ralph R. Forrey, San Francisco, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed June 8, 1966, Ser. No. 555,958
U.S. Cl. 99—199 **9 Claims**
Int. Cl. A23b *7/08*

1. In the process of osmotic dehydration wherein pieces of food are held in contact with an osmotic medium to cause diffusion of moisture from the food into the medium, the improvement which comprises providing the food pieces with an edible, water-permeable, membrane coating prior to contact with the osmotic medium.

3,425,849

DEHYDRATION OF POTATOES

Henri Griffon, 2 Place Mazas, Paris, France
Filed July 29, 1963, Ser. No. 298,350
Claims priority, application France, July 30, 1962, 905,494; Jan. 28, 1963, 922,814
U.S. Cl. 99—207 **11 Claims**
Int. Cl. A23l *1/12*



Dehydration of potatoes in which potatoes are cut into a stream of uniform pieces while in water, then cooked in boiling water, immediately cooled in water, mixed with liquid into a puree and then dehydrated preferably while below 37° C.

3,425,850

METHOD FOR PREPARING A DEHYDRATED MEAT PRODUCT

Jack Palmer Savage, Biddenham, and Raymond Chenneour, Durham, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Apr. 16, 1965, Ser. No. 448,844
Claims priority, application Great Britain, Apr. 22, 1964, 16,717/64
U.S. Cl. 99—208 **2 Claims**
Int. Cl. A23b *1/04, 3/04*

Meat products are dehydrated by distributing amylose starch throughout the product, hydrating the starch by heating in the presence of moisture to a temperature of at least 70° C., retrograding the starch by cooling to a temperature below −1° C., and air-drying the product at a temperature not exceeding 50° C.

3,425,851

REFRACTORY COMPOSITION AND PROCESS FOR PRODUCING SAME

Emile Plumat, Gilly, and Maurice Jaupain, Jumet, Belgium, assignors to Glaverbel S.A., Brussels, Belgium
Filed June 20, 1966, Ser. No. 558,846
Claims priority, application Luxembourg, June 29, 1965, 48,938
U.S. Cl. 106—55 **11 Claims**
Int. Cl. C04b *35/00*

A refractory composition comprising stannic oxide, and in addition, at least one compound selected from compounds of chromium, tellurium and mixtures thereof. Preferably, the amount of chromium and tellurium or mixtures thereof present in such refractory composition is a maximum of about 20% by weight based on the tin content. A refractory body is prepared by shaping such a composition in wet condition under pressure and subsequently subjecting the same to sintering conditions.

3,425,852

BASIC REFRACTORY LINING BRICK AND PROCESS

Grant M. Farrington, Jr., Marlton, and Joseph L. Stein, Cherry Hill, N.J., and Walter S. Treffner, Linthicum Heights, Md., assignors to General Refractories Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1966, Ser. No. 537,396
U.S. Cl. 106—58 **24 Claims**
Int. Cl. C04b *35/04;* **C21b** *7/04*

The present invention relates to methods of making improved basic refractory brick for linings of steel making furnaces such as oxygen steel making furnaces in which the lining brick is in contact with the molten charge. The invention is concerned with improving the resistance of pitch (including tar) bonded basic refractory brick to erosion by molten materials, by suppression or elimination of fine particles and combining coarse and intermediate sized particles in particular ranges and proportions. The invention increases the strength of the brick, reduces the cost, and facilitates tempering. The invention also makes it easier to protect against moisture degradation.

ERRATUM

For Class 106—89 see:
Patent No. 3,425,892

3,425,853

METHOD OF MANUFACTURE OF SUPER-WHITE CEMENT

Jean Joseph Rives, Le Chesnay, France, assignor to Ciments Lafarge, Paris, France, a corporation of France
Continuation-in-part of application Ser. No. 115,727, June 8, 1961. This application Nov. 2, 1964, Ser. No. 408,244
Claims priority, application France, Apr. 7, 1961, 858,105
U.S. Cl. 106—101 **9 Claims**
Int. Cl. C04b *7/36*

An improved method for the production of super-white cements is disclosed. To achieve this result, the invention provides for the cooling of the hot freshly calcined cement clinker from a temperature of 1000°–1400° C. to below about 600° C. in a period of 5 to 25 minutes in a reducing atmosphere substantially free of contaminating impurities.

3,425,854

METAL CONDITIONING BATH COMPRISING SODIUM HYDROXIDE, NITRIC ACID, AND GUM ARABIC

Kern C. Borden, 4368 71st St., La Mesa, Calif. 92041
No Drawing. Filed May 2, 1966, Ser. No. 546,579
U.S. Cl. 106—208 **9 Claims**
Int. Cl. C09k *3/00;* **C23f** *1/08*

A method of and a bath for conditioning a photographic metal plate prior to the application of a presensitizer to the plate, the bath including a solution of sodium hydroxide, nitric acid, water soluble gum arabic and water.

3,425,855

COATED TITANIUM DIOXIDE PIGMENT

Jelks Barksdale, Auburn, Ala., and William P. Coker, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 17, 1966, Ser. No. 535,003
U. S. Cl. 106—300 **4 Claims**
Int. Cl. C09c *1/36*

1. A coated rutile titanium dioxide pigment composition comprising a rutile titanium dioxide pigment having a surface coating of from about 0.1 to about 2 weight percent as based on the weight of said titanium dioxide of a polyethylenimine based material selected from the group consisting of polyethylenimine and a reaction product of a polyethylenimine with from about 10 to about 150 percent by weight based on the weight of polyethylenimine of a member selected from the group consisting of acrylonitrile, ethylene oxide, propylene oxide and acrylamide.

3,425,856

PROCESS FOR PRODUCING PERMANENT CREASES AND OTHER DESIRABLE PROPERTIES IN TEXTILE FABRICS

Linton C. Reynolds and Alfred T. Clifford, Ware Shoals, Wesley K. Fooshe, Jr., Greenwood, and Stewart M. Thomson, Ware Shoals, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,714
U.S. Cl. 117—11 **4 Claims**
Int. Cl. D06m *15/36, 15/46*

Process for producing a permanent crease in garments made from wrinkle-resistant fabric and the product thereof comprising impregnating the fabric, prior to cutting and sewing of the garment, with a composition comprising a predominant amount of a reactive thermoplastic polymer having a reactive group and a minor amount of a thermosetting reactant, drying the resin-impregnated fabric and heating the fabric sufficiently to cure the resin and effect cross-linking between the reactive thermoplastic polymer and the thermosetting reactant, thereby rendering the impregnated textile fabric receptive to permanent creasing by pressing at elevated temperatures, cutting and sewing the fabric to produce the desired garment, and pressing a permanent crease in the garment without further curing of the resin.

3,425,857

METHOD OF MAKING MULTILAYER COATINGS CONTAINING A WATER RESISTANT LAYER

Robert E. Bacon and David B. Fogg, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 218,145, Aug. 20, 1962. This application May 22, 1967, Ser. No. 640,361
U.S. Cl. 117—34 **10 Claims**
Int. Cl. G03c *1/74*

An aqueous organic colloid layer and a water resistant layer are applied simultaneously in liquid form to a web support while maintaining a distinct relationship between the layers. The top or upper layer has a lower surface tension than the under or bottom layer.

3,425,858

HEAT SENSITIVE RECORDING MATERIAL

Ignacio P. Echeagaray, 4349 W. 132nd St., Cleveland, Ohio 44135
No Drawing. Filed June 7, 1965, Ser. No. 462,040
U.S. Cl. 117—36.8 **7 Claims**
Int. Cl. B41m *5/18*

A heat-sensitive recording material comprises a base material having a surface with a smooth uniform coating thereon in intimate adhered contact therewith. The coating is white in color and is made upon drying of a mixture including alkaline magnesium hydroxide, phenolphthalein, a suitable solvent, a binder and sufficient acid to produce an adequate pH to provide a white color to the mixture. The phenolphthalein and magnesium oxide cooperate to effect a change in the color of the coating to red in the area of the coating engaged by a heated marking member effective to heat the coating in said area to a predetermined temperature. The proportion by weight of magnesium oxide to phenolphthalein is with the range of 1:15 to 15:.001.

3,425,859

GLASS SURFACES HAVING DUAL PROTECTIVE, LABEL ACCEPTING COATINGS AND METHOD

Herman A. Steigelman, Lambertville, Mich., assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,123
U.S. Cl. 117—72 **17 Claims**
Int. Cl. B32b *17/06*

A glass surface having a label-accepting, protective coating and the method of producing such an article, the coating including a first layer of tin or titanium oxide and a second layer consisting essentially of the reaction product of polyvinyl alcohol and polyoxyethylene monostearate.

3,425,860

PROCESS FOR COATING TIRE CORD AND THE RESULTING PRODUCTS

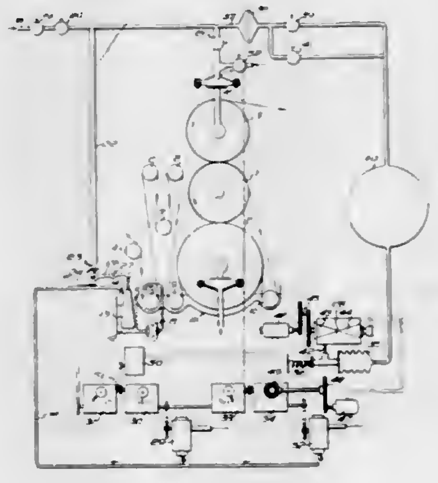
Norman C. MacArthur, Avondale, Pa., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 475,232, July 27, 1965. This application Jan. 5, 1967, Ser. No. 607,401
U.S. Cl. 117—76 **12 Claims**
Int. Cl. B44d *1/14*

Tire cord is produced from polyester, polyolefin, nylon or rayon cords by coating the surface of the cord with ethylenically unsaturated azidoformate monomers or polymers and particularly with the monoazidoformate of the triallyl ether of pentaerythritol, the monoazidoformate of 2-hydroxeythyl methacrylate and oleyl azidoformate. The azidoformate coated cords can be incorporated directly into rubber to be vulcanized or can be top coated with conventional tire cord adhesives and incorporated into the rubber.

3,425,861

CONTINUOUS APPLICATION OF SUBSTANCES TO TRAVELLING MATERIALS

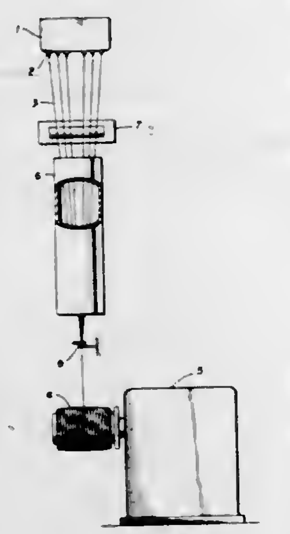
Eric Harding Jones, 30 Moss Lane, Bramhall, England
Filed July 26, 1965, Ser. No. 474,734
Claims priority, application Great Britain, July 27, 1964, 29,852/64
U.S. Cl. 117—102 **13 Claims**
Int. Cl. B05c *11/02*



Liquid substance is applied to material by advancing the latter through an applicator system, which may include a reservoir containing the liquid, liquid being fed to the system at a prescribed rate. Changes in the amount of liquid in the system are detected, such as by a float, and the changes are used to vary effect of means, such as nip rollers, acting directly on the travelling material to correct for said changes. Long term variations in effect of direct-acting means, from a datum, e.g., departure of nip pressure from datum, are detected and used to alter the concentration of the liquid to correct for variations.

3,425,862
METHOD OF MAKING POLYMER COATED INORGANIC FILAMENTARY MATERIALS

William J. Eakins, Wilbraham, Mass., assignor, by mesne assignments, to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 521,940
U.S. Cl. 117—126 **7 Claims**
Int. Cl. C03c *25/02*

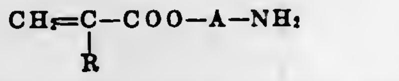


Strands formed from continuous glass filaments each of which is individually coated over its entire surface with a thermoplastic resin are characterized in having freedom of movement among the individual filaments thereof along substantially their entire length, thereby reducing the tendency of the strand filaments to fracture easily when the strand is subjected to repeated flexing. Strands of this character are particularly useful in the formation of fabrics and laminates.

3,425,863
PROCESS FOR IMPARTING ANTISTATIC AND HYDROPHOBIC PROPERTIES TO A SYNTHETIC TEXTILE MATERIAL

Hans-Ludwig Honig, Leverkusen, Günter Kolb, Cologne-Stammheim, and Walter Wunder, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Oct. 20, 1964, Ser. No. 405,227
Claims priority, application Germany, Nov. 8, 1963, F 41,231
U.S. Cl. 117—139.5 **4 Claims**
Int. Cl. C08d *13/24;* **B44d** *1/22*

1. A process for finishing synthetic textiles prone to acquiring an electrostatic charge comprising impregnating the textiles with an active amount of a mixture of a hydrophobic agent and polymers of a salt of a primary amino ester of a compound of the formula



$$CH_2{=}\underset{\displaystyle R}{\underset{|}{C}}{-}COO{-}A{-}NH_2$$

wherein R is defined as a member selected from the group consisting of hydrogen and methyl; A is a member selected from the group consisting of: (1) an alkylene group of 2–10 carbon atoms, and (2)

$$—(CH_2—CH_2—O—)_n—(CH_2—CH_2)—$$

in which n is an integer of 1–20; and thereafter drying and heating the treated textiles to effect setting.

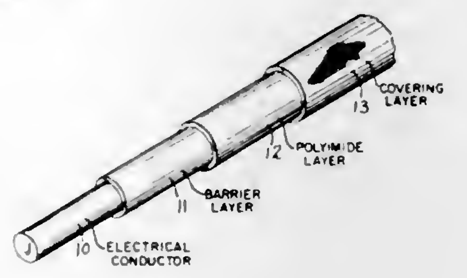
3,425,864
METHOD FOR MAKING ELECTRIC RESISTANCE HEATERS

Glen H. Morey, Terre Haute, Ind., assignor to Templeton Coal Company, Terre Haute, Ind., a corporation of Indiana
Filed July 21, 1965, Ser. No. 473,689
U.S. Cl. 117—215 **4 Claims**
Int. Cl. H01b *3/12*

A method for producing electric resistance coatings of molybdenum disilicide on alumina surfaces by conducting a current of electrons into a current of inert gas by means of a cathode and conducting electrons away from the gas by means of an anode positioned downstream of the cathode and at a rate sufficient to convert the inert gas into a plasma, introducing powdered molybdenum disilicide and/or powdered alumina selectively into the plasma and impinging the hot plasma with the added powdered ingredients upon an alumina surface.

3,425,865
INSULATED CONDUCTOR

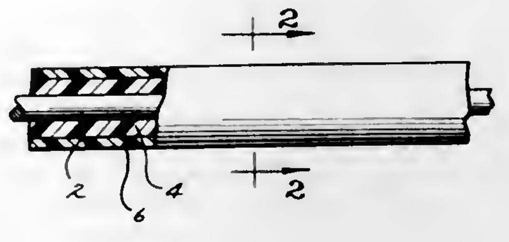
Charles F. Shelton, Jr., Branford, Conn., assignor to Cerro Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1965, Ser. No. 467,907
U.S. Cl. 117—218 **6 Claims**
Int. Cl. H01b *3/00*



This invention is directed to a lightweight, small-diameter, abrasion-resistant, insulated electrical wire capable of withstanding service at temperatures above 650° F. and in a direct open flame at temperatures above 1000° F. The insulated electrical wire comprises a conductor, covered with a barrier layer which in turn is covered with a layer of polyimide.

3,425,866
ELECTRICAL CONDUCTOR COATED WITH POLYESTERPOLYIMIDE INNER LAYER AND POLYESTER OUTER LAYER

John F. Meyer, Schenectady, Howard E. Sheffer, Burnt Hills, N.Y., and Edmund J. Zalewski, Rotterdam, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York
Continuation-in-part of applications Ser. No. 457,474, May 20, 1965, and Ser. No. 528,865, Feb. 21, 1966. This application Feb. 13. 1967, Ser. No. 633,313
U.S. Cl. 117—218 **13 Claims**
Int. Cl. H01b *3/38, 3/42*



A polyester-polyimide is prepared from (1) tris (2-hydroxyethyl) isocyanurate, (2) a polycarboxylic acid, e.g., terephthalic acid or isophthalic acid, (3) an aromatic diamine, e.g., oxydianiline or methylene dianiline and (4) an aromatic carboxylic anhydride containing at least one additional carboxyl group, e.g., trimellitic anhydride or pyromellitic anhydride. The polyester-polyimide is employed to coat an electrical conductor and there can be applied to the electrical conductor a second continuous coating of polyethylene terephthalate.

3,425,867
ELECTRON BEAM RECORDING MEDIUM WITH ACID SENSITIVE INDICATOR AND HALOGENATED POLYMER COATING

Horatio Serafino Stillo, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Sept. 23, 1963, Ser. No. 310,922
The portion of the term of the patent subsequent to Feb. 27, 1985, has been disclaimed
U.S. Cl. 117—230 **6 Claims**
Int. Cl. H01l *15/00*

1. A recording medium which is stable under vacuum conditions used in electron beam recording and which comprises an electrically conductive metallic substrate and, superimposed thereon, an acid-sensitive indicator capable of changing color at a pH below about 7 and, as the sole remaining constituent capable of liberating hydrogen halide under exposure to an electron beam, a normally solid, highly halogenated polymer having a molecular weight of at least about 1000 and having at least 25 weight percent of labile halogen selected from the group consisting of chlorine and bromine.

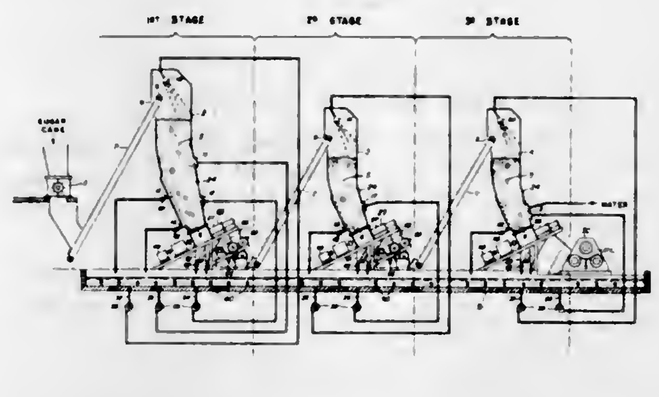
3,425,868
MANUFACTURE OF DEXTRIN

Robert E. Lanphere, Camanche, Iowa, assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 23, 1966, Ser. No. 536,666
U.S. Cl. 127—38 **9 Claims**
Int. Cl. C08b *25/02*

1. Process for preparing dextrin which comprises blending a small amount of boric acid with starch having a moisture content not greater than about 7.6% by weight and roasting the mixture at a dextrinizing temperature until a dextrin is obtained.

3,425,869
JUICE EXTRACTION PROCESS

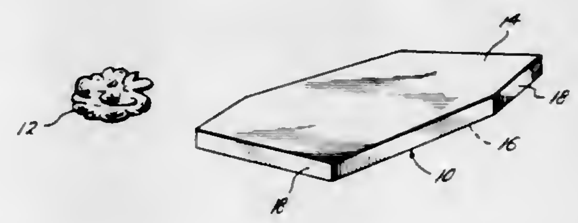
John Farmer, 3019 Hibiscus Drive, Honolulu, Hawaii 96815
Filed Nov. 4, 1964, Sr. No. 409,002
U.S. Cl. 127—43 **27 Claims**
Int. Cl. C13d *1/02*



A process for extracting juice from cellular material in one or more stages following disintegration, in each of which the material is cross-rinsed with diluent liquid to separate juice therefrom, and thereafter has excess liquid removed, the material in at least one stage being soaked prior to cross-rinsing for releasing juice therefrom.

3,425,870
SURFACE CLEANER FOR PREVIOUSLY POLISHED SURFACES

Charles W. Marsh, Amarillo, Tex., assignor to The Dorm Corporation, Amarillo, Tex., a corporation of Texas
Filed Nov. 9, 1964, Ser. No. 409,858
U.S. Cl. 134—6 **8 Claims**
Int. Cl. C23g *5/00;* **C09k** *3/14*



The present invention is directed to a method of, and a compound for, removing deposits from previously polished surfaces, the compound being comprised of a mixture of volcanic ash having a coplanar crystalline structure, cerium oxide and colored chalk. The method involves applying a specific amount of moisture to the compound before cleaning.

3,425,871
BATTERY SEPARATOR AND BATTERY INCORPORATING SAID SEPARATOR

Carl Berger, Santa Ana, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Feb. 18, 1966, Ser. No. 528,547
U.S. Cl. 136—6 **22 Claims**
Int. Cl. H01m *3/04*

Separator construction especially designed for incorporation in multiple plate batteries, comprising a flexible, preferably synthetic resinous, sheet having a plurality of porous substantially rigid inorganic separators mounted in openings and connected to the flexible sheet, and in spaced relation on said sheet. Such separator construction can be assembled in sinuous or coiled fashion around the electrodes in the battery case, with the inorganic separator elements properly positioned between positive and negative pairs of electrodes.

3,425,872
THERMAL BATTERY HAVING HEAT GENERATING MEANS COMPRISING EXOTHERMICALLY ALLOYABLE METALS

Samuel C. Levy, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 22, 1965, Ser. No. 489,441
U.S. Cl. 136—83 **6 Claims**
Int. Cl. H01m *21/14*

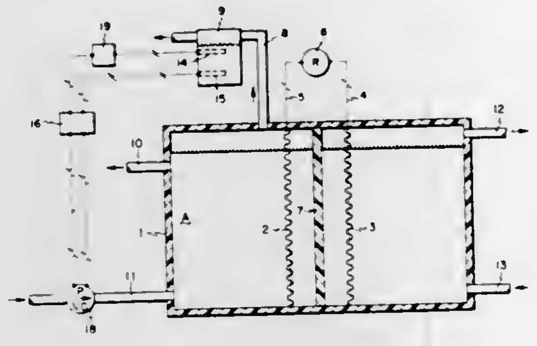
A self-activating thermal battery including electrical terminals forming a casing means, a normally solid electrolyte means within said casing means and a thermally actuable heat generating means adjacent said electrolyte means including first and second exothermically alloyable metals for melting the electrolyte means and energizing the battery.

3,425,873
PROCESS OF AUTOMATICALLY CONTROLLING FUEL CONCENTRATION IN FUEL CELL

Charles H. Worsham and Duane G. Levine, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,876
U.S. Cl. 136—86 **4 Claims**
Int. Cl. H01m *27/12*

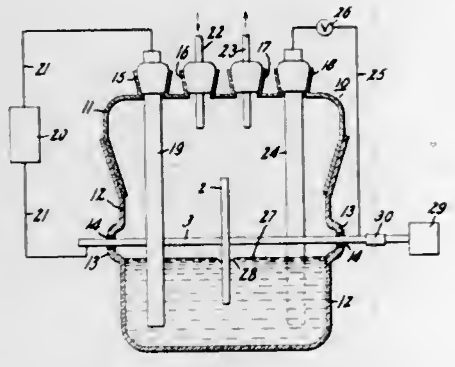
1. A method of controlling the fuel concentration in a fuel cell employing an aqueous electrolyte and a liquid

carbonaceous fuel which comprises condensing the exhaust gases from said cell, said gases comprising essentially carbon dioxide, water vapor and vaporized carbonaceous fuel, continually sensing the fuel concentration in the exhaust condensate and varying the fuel input to said cell in response to the concentration of the fuel in said exhaust condensate.



3,425,874
ROTATABLE HYDROPHOBIC ELECTRODE AND FUEL CELL THEREWITH

Henri J. R. Maget, Swampscott, and Richard J. Roethlein, North Reading, Mass., assignor to General Electric Company, a corporation of New York
Filed July 23, 1965, Ser. No. 474,412
U.S. Cl. 136—86 **12 Claims**
Int. Cl. H01m *27/06*

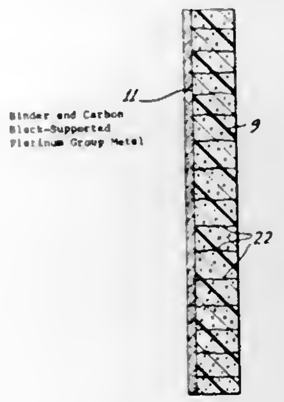


A rotatable fuel electrode assembly is formed of a sheet portion comprised of a porous electrocatalytic substrate having on opposite sides of the sheet a hydrophobic gas permeable, liquid impermeable film. The edge portions of the sheet are free of film. The liquid electrolyte intimately mingles with the electrocatalytic substrate, being drawn in by capillary action through the film free edge portion only.

3,425,875
METHOD OF PREPARING FUEL CELL ELECTRODE CONTAINING FLUOROCARBON POLYMER AND CARBON BLACK-SUPPORTED PLATINUM GROUP METAL

Otto J. Adlhart, Newark, Carl D. Keith, Summit, and George R. Pond, Newark, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Continuation-in-part of application Ser. No. 428,788, Jan. 28, 1965. This application Sept. 15, 1966, Ser. No. 579,775
U.S. Cl. 136—122 **2 Claims**
Int. Cl. H01m *27/10*

A method for the preparation of fuel cell electrodes consisting of an admixture of a fluorocarbon polymer binder and a carbon-black-supported platinum group metal catalyst on a supporting substrate which method involves the use of a carbon black of specific properties and preparation of the electrode under conditions which permit sintering, but avoid fusion, of the binder.



3,425,876
PHOSPHATE COATING PROCESS

Lester Steinbrecher, Southampton, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 505,432, Oct. 26, 1965. This application Oct. 17, 1967, Ser. No. 675,943
U.S. Cl. 148—6.15 **4 Claims**
Int. Cl. C23f *7/14*

A two-stage process for applying a uniform fine-grained zinc phosphate coating on aluminum surfaces is described. The first stage of the process is treatment of the aluminum surface with an aqueous solution containing, in combined form, titanium and a compound of phosphorus such as, for example, disodium orthophosphate. The second stage of the process is subjecting the pre-treated aluminum surface to a zinc phosphate coating solution containing zinc ion, nitrate ion, phosphate ion, silicofluoride ion, ferrous ion, and fluoride ion. In order to obtain uniform, fine-grained zinc phosphate coatings, it is said that the concentrations of the silicofluoride ion, ferrous ion, and the fluoride ion, must be kept within certain limits. These limits are set forth as: at least 3 grams/liter of silicofluoride ion calculated as SIF_6; from about 0.06 to about 0.2 gram/liter of ferrous ion; and from about 0.01 to about 5 grams/liter of fluoride ion.

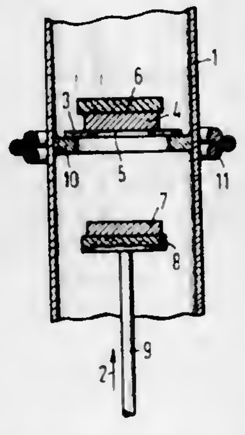
3,425,877
SAFETY RAZOR BLADES

Roger Frederick Deacon, Richmond, Surrey, England, assignor to Wilkinson Sword Limited, London, England, a British company, and Uddeholms Aktiebolag, Uddeholm, Sweden, a Swedish joint-stock company
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,460
U.S. Cl. 148—12.4 **6 Claims**
Int. Cl. C21d *7/14, 9/18*

Razor blade strip is manufactured from a corrosion-resistant stainless steel having a chromium content of from 10.0 to 20.0%, the composition being such that it can be annealed to form austenite and thereafter cooled to an elevated temperature at which the austenite is metastable. At this elevated temperature each edge region of the strip where a cutting edge is required is subjected to a substantial cross-sectional reduction to deform the austenite, strip being cooled thereafter to transform the deformed austenite to martensite.

3,425,878
PROCESS OF EPITAXIAL GROWTH WHEREIN THE DISTANCE BETWEEN THE CARRIER AND THE TRANSFER MATERIAL IS ADJUSTED TO EFFECT EITHER MATERIAL REMOVAL FROM THE CARRIER SURFACE OR DEPOSITION THEREON

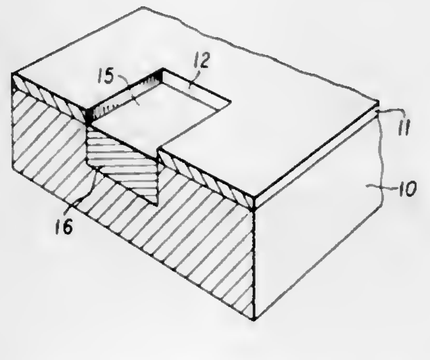
Hansjürgen Dersin, Ottobrunn, near Munich, and Erwin Früchte, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Feb. 16. 1966, Ser. No. 527,983
Claims priority, application Germany, Feb. 18, 1965, S 95,520
U.S. Cl. 148—174 **11 Claims**
Int. Cl. H01l *7/36*



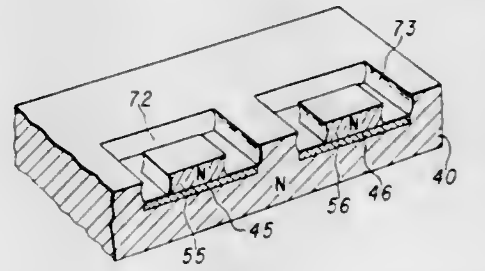
1. In the method of producing a semiconductor device by monocrystalline growth of semiconducting layers onto a carrier of semiconducting material, the carrier is heated at the beginning of the growth process through a strong local heating effect to a temperature so high that the oxide layer at the surface of the carrier is removed through a chemical reaction occurring at this temperature, this temperature is at least as high as the temperature of a body of transfer material which is to be transferred into a gaseous phase and is in direct contact with a heating substrate, the temperature of the carrier during the actual growth process is maintained lower than the temperature of the material which is to be transferred into a gaseous phase, the improvement which comprises spatially separating at the start of the growth process, the carrier and the body of transfer material, heating said carrier to a temperature so high as to remove the oxide layer at the surface, heating said body of transfer material, reducing the distance between said carrier and said body to the distance necessary for carrying out a transport reaction, reducing the temperature of the carrier body to the transport temperatue and thereafter carrying out the actual transport reaction.

3,425,879
METHOD OF MAKING SHAPED EPITAXIAL DEPOSITS

Don W. Shaw, Garland, and Edward W. Mehal, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,977
U.S. Cl. 148—175 **9 Claims**
Int. Cl. H01l *7/36*

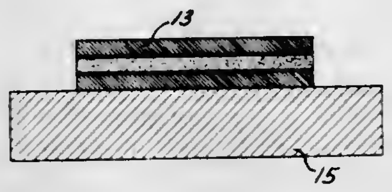


This specification discloses a method of effecting desired growth of semiconductor material on a substrate characterized by effecting a crystallographic orientation on the substrate underneath a suitable mask, and epitaxially depositing semiconductor material to take advantage of the fast-growing crystallographic orientation to deposit semiconductor material in a desired form, while simultaneously effecting extremely slow growth rates on undesired and slow-growing crystallographic planes. Specifically, semi-insulating substrates can be employed; pockets formed therein; and isolated regions of semiconductor material having properties desirable for effecting semiconductor components can be deposited, or grown, therein and achieve coplanarity between the deposited semiconductor material and the substrate with minimal process control. The reason minimal process control is necessary is because the pocket into which the semiconductor material is deposited will expose only the slow-growing planes when the pocket has been filled, such that a co-planar facet is effected which effectively terminates growth because of its slow rate of further deposition. Other specific embodiments disclose the embedment of dielectric layers and the creation of electrically isolating regions about the deposited semiconductor material to effect excellent properties for formation of semiconductor components within the epitaxially deposited semiconductor material.



3,425,880
METHOD OF MAKING P-N ALLOY JUNCTIONS

Raimondo Paletto, Catania, Italy, assignor to Ates Componenti Elettronici S.p.A.
Filed Oct. 22, 1965, Ser. No. 501,530
Claims priority, application Italy, Apr. 8, 1965, 7,701/65
U.S. Cl. 148—177 **6 Claims**
Int. Cl. H01l *7/46*



A method of making P-N alloy junctions comprises assembling on a solid semiconductor five superposed layers, the layer next to the semiconductor and the fifth layer from the semiconductor consisting essentially of indium or indium alloy, the second and fourth layers consisting essentially of a metal selected from the group consisting of nickel, gold, silver, copper and alloys thereof with each other, and the third or middle layer consisting essentially of aluminum or aluminum alloy. The composite is heated to a temperature higher than the melting point of the first layer until a portion of the second and third layers and of the semiconductor diffuse into the layer which is next to the semiconductor.

3,425,881

CHEMICAL POLISHING OF ALUMINUM AND ALUMINUM ALLOYS

Charles C. Cohn, Atlantic City, N.J., assignor to Samuel L. Cohn and Charles C. Cohn, co-partners trading and doing business as Colonial Alloys Company, Philadelphia, Pa.

No Drawing. Filed June 28, 1965, Ser. No. 467,698

U.S. Cl. 156—19 **8 Claims**

Int. Cl. C23g *1/12*

1. The method of chemically brightening a surface of aluminum comprising treating the surface with an acidic mixture including, by weight, approximately 40% to 64.6% of phosphoric acid, approximately 9.97% to 25% of sulphuric acid, approximately 1.5% to 4.0% of nitric acid, approximately 1.45% to 3.1% of aluminum, approximately 13.7% to 21.5% of water, and approximately 0.0116% to 0.0126% of copper, the ratio of phosphoric to sulphuric acid being about 1.57:1 to 6.5:1, the total phosphoric and sulphuric acid being about 59.0% to 74.0% of the mixture, the specific gravity of the mixture at 25° C. being about 1.72 to 1.77.

3,425,882

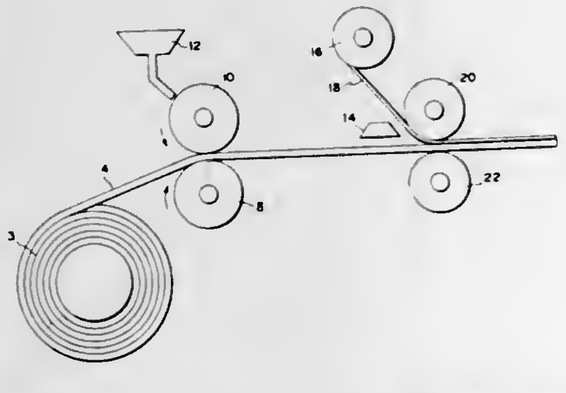
METHOD OF MAKING PATTERNED FOAM-TO-FABRIC LAMINATES

Albert L. McConnell, Sproul Estates, and Fred W. Meisel, Jr., Philadelphia, Pa., and Whitney R. Adams, Wilmington, Del., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 20, 1965, Ser. No. 449,527

U.S. Cl. 156—82 **8 Claims**

Int. Cl. B32b *3/30, 5/18*



Process for producing a patterned foam-to-fabric laminate by selectively applying a discontinuous pattern of a non-combustible liquid to a surface of the foam, heating said surface with a flame to melt the unmasked areas of said surface and intimately contacting said surface with a fabric sheet and compressing said sheets together.

3,425,883

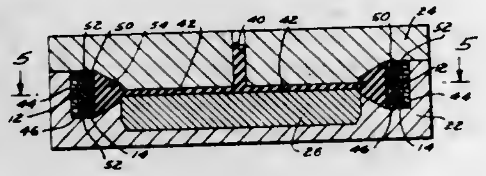
METHOD OF MAKING A MOLDED V-BELT

George D. Smith, Oakland, N.J., assignor to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

Filed Feb. 23, 1965, Ser. No. 434,286

U.S. Cl. 156—140 **5 Claims**

Int. Cl. B29h *7/22*



A method of making a molded V-belt by mold injecting under elevated pressure and temperature rubber stock into a mold cavity, said method comprising building a sleeve composed of a rubberized fabric back and a superimposed cord layer, said sleeve forming the tension section of the molded belt being produced, placing said sleeve into a part of a circular cavity of an injection mold with the fabric back of the sleeve in engagement with the outer circular wall of the cavity and the said cord layer facing inwardly of the mold cavity, the remaining part of the mold cavity being generally V-shaped in cross-section, and injecting rubber stock in a direction toward said sleeve thereby filling the said remaining part of the mold cavity, the injected rubber stock forming the compression section of the molded belt being produced, and curing the belt.

3,425,884

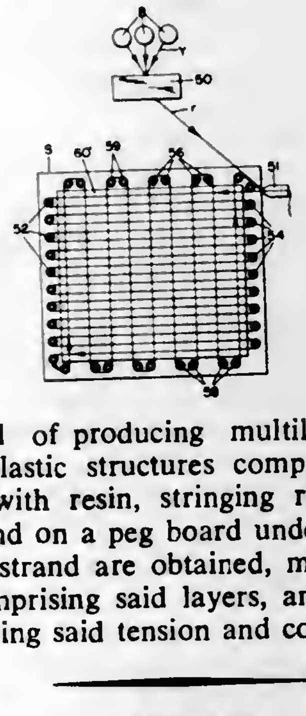
METHOD OF MAKING AN OPEN MESH, RIGID, GLASS FIBER REINFORCED RESIN STRUCTURE

Robert Jacob Brinkema, Rochester, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Continuation-in-part of applications Ser. No. 282,808, May 23, 1963, Ser. No. 552,228, May 23, 1966. This application Nov. 6, 1967, Ser. No. 680,615

U. S. Cl. 156—161 **4 Claims**

Int. Cl. B32b *5/12*



The method of producing multilayered glass reinforced open plastic structures comprising impregnating glass strands with resin, stringing reaches of said impregnated strand on a peg board under tension until several layers of strand are obtained, maintaining said tension while comprising said layers, and curing said resin while maintaining said tension and compression.

3,425,885

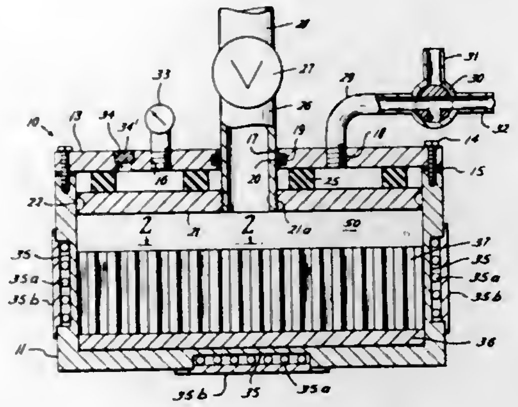
METHOD FOR MAKING A HEAT INSULATING AND ABLATIVE STRUCTURE

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Clive A. Newcombe, Ferguson, and John H. Proemsey, Maplewood, Mo.

Filed Feb. 11, 1965, Ser. No. 432,032

U.S. Cl. 156—242 **3 Claims**

Int. Cl. B32b *3/12;* **B64g** *1/00*



Procedure for filling a honeycomb matrix with deaerated paste filler for the construction of ablative heat shields for spacecraft, wherein the matrix is subjected to a vacuum to evacuate the air from the cells of the matrix; the paste filler is injected into the evacuated cells; pressure is applied to the paste to insure complete filling; the vacuum is released; and finally, the resultant structure is heated and allowed to cool.

3,425,886

ADHESIVE COMPOSITION AND PROCESS FOR ADHESIVELY JOINING ELASTOMERS TO METALS

Arnold Heins, Hilden, Rhineland, Germany, assignor to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

Filed Oct. 29, 1962, Ser. No. 233,935

Claims priority, application Germany, Jan. 11, 1962, H 44,580

U.S. Cl. 156—330 **6 Claims**

Int. Cl. C09j *3/00*

This invention relates to a composition for forming adhesive bonds between elastomers and metals comprising essentially an admixture of (1) an organic isocyanate compound having more than one isocyanate group in the molecule, and (2) a hardenable epoxide compound having more than one epoxide group in the molecule, and (3) from about 0.5 to 10%, based on the total weight of the composition, of an aromatic C-nitroso compound, as well as the method of forming the adhesive compounds utilizing said composition.

3,425,887

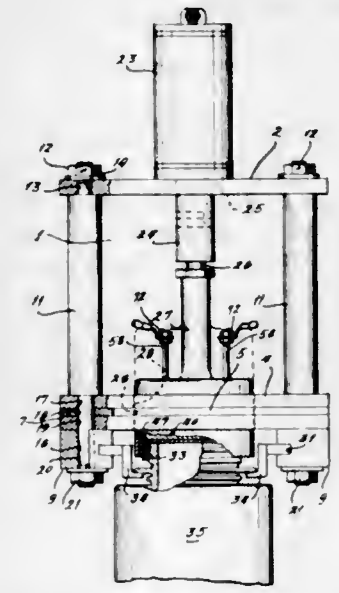
HEAT SEALER

Eldred W. Bowen, Brentwood, Mo., assignor to Pet Incorporated, a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,723

U.S. Cl. 156—518 **17 Claims**

Int. Cl. B65b *7/00, 51/10;* **B30b** *15/34*



A heat sealer for applying a thermosetting adhesive backed closure to a pour opening including means for cutting the closure and a flat ringlike heater positioned against an insulated backing and fitting within the cutter die to position the closure and seal it against the pour opening.

3,425,888

METHOD AND APPARATUS FOR PRODUCING FACED CORRUGATED MATERIALS

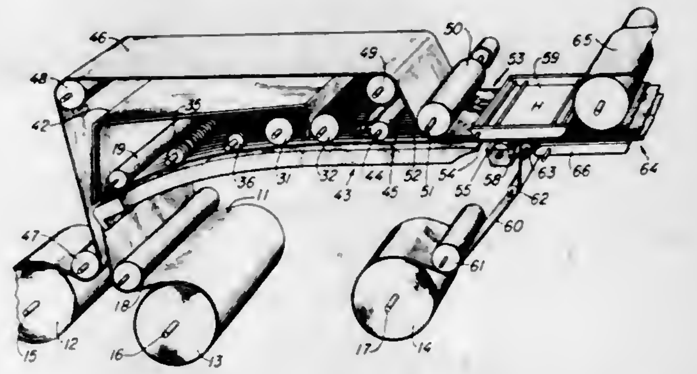
Keith Q. Kellicutt, 21 S. Owen Drive, Madison, Wis. 53705

Filed Sept. 4, 1964, Ser. No. 394,640

U.S. Cl. 156—593 **1 Claim**

Int. Cl. B31f *1/24*

A method and apparatus are disclosed for producing double faced corrugated materials. The corrugated products are produced by drawing a continuous length of the material to be corrugated between a plurality of wheel rollers and a gathering bed that has a longitudinally converging fluted surface, the amplitude and period of the flutes becoming progressively greater and smaller, respectively.



3,425,889

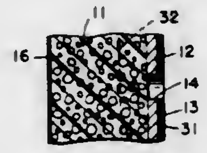
FLEXIBLE, MULTILAYER PANELS OR STRIPS

George W. Willits, Jr., Glen Ellyn, Ill., assignor to Selfix, Inc., a corporation of Illinois

Filed Apr. 20, 1964, Ser. No. 361,006

U.S. Cl. 161—43 **4 Claims**

Int. Cl. B32b *5/18, 3/10, 3/26*



A flexible multilayer panel or strip including a core of semi-rigid cellular foam, a covering having openings therein for receiving supporting elements and a layer of adhesive on the opposite surface of said foam for securing the panel or strip to a support.

3,425,890

STRETCHED-SET RETICULATED POLYURETHANE FOAM AND METHOD OF MAKING SAME

William Richards Powers, Cedar Crest, Penns Grove, N.J., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 423,848, Jan. 6, 1965. This application Dec. 30, 1966, Ser. No. 606,448

U.S. Cl. 161—46 **2 Claims**

Int. Cl. B29d *7/24, 27/00*

This invention relates to the production of plastic foam materials in which the foam is distorted and heat set in the distorted state. The distortion arises from stretching and/or compressing the foam.

3,425,891

FRINGED TOWEL

Richard C. Tanner, Leaksville, and Edward B. Baldwin, Jr., Spray, N.C., assignors to Fieldcrest Mills, Inc., Spray, N.C., a corporation of Delaware

Filed Sept. 29, 1965, Ser. No. 492,357

U.S. Cl. 161—61 **3 Claims**

Int. Cl. D04h *11/00;* **D03d** *3/00*

A fringed towel wherein the fringes have a twist stabilizing material applied thereto selected from the group consisting of thermosetting resins, cross-linking reactants and combinations thereof to maintain the integrity of the fringed yarns by substantially reducing the tendency of

the yarns to untwist, fray and become bunched with each other upon repeated launderings.

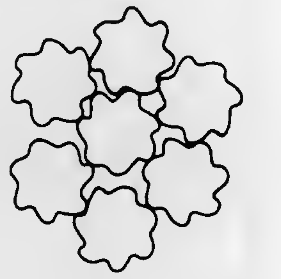
3,425,892
CEMENT SET RETARDER

New York, N.Y., a corporation of Connecticut
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,308
U.S. Cl. 106—89 **5 Claims**
Martin R. Edelson, Adelphi, and Richard L. Angstadt, Silver Spring, Md., assignors to W. R. Grace & Co.,
Int. Cl. C04b *7/56*

A process for retarding the setting time of a gypsum containing cement by adding 0.1 to 5 percent ferrous sulfate to the cement.

3,425,893
TEXTILE FILAMENTS

James G. Sims, 1818 E. Brainard, Pensacola, Fla. 32503
Continuation-in-part of application Ser. No. 249,822, Jan. 7, 1963. This application Aug. 3, 1965, Ser. No. 476,952
U.S. Cl. 161—177 **8 Claims**
Int. Cl. D01f *7/00;* **D02g** *3/00*



1. A threadline composed of a plurality of textile filaments having a cross-section of three, five, seven or nine lobes, the lobes of which are substantially equally spaced about the center thereof and are substantially uniformly bent in one direction along the length of the filaments, said filaments each having a corresponding multiple of axial symmetry and presenting neither planar symmetry nor radial symmetry, at least 10% of the filaments having their branches inclined in a direction opposite to the direction of inclination of the branches of the other filaments.

3,425,894
BINDERS FOR SHEET GLASS

Wolfgang Schafer and Reinhold Blass, Aix-la-Chapelle, Germany, assignors to Vereinigte Glaswerke Zweigniederlassung der Compagnie de Saint-Gobain, Aachen, Germany
No Drawing. Filed Sept. 10, 1965, Ser. No. 486,555
Claims priority, application Germany, Sept. 18, 1964, V 26,806
U.S. Cl. 161—203 **12 Claims**
Int. Cl. B32b *17/10;* **C09j** *3/14*

A glazing is provided which responds to increasing heat by becoming progressively obscure and vice versa. A polyvinyl caprolactam is the effective agent.

3,425,895
GLASS FIBERS SIZED WITH HYDROFORMYLATED POLYMER AND LAMINATE THEREFROM

Joseph K. Mertzweiller, Baton Rouge, and Neville L. Cull, Baker, La., and Roger S. Hawley, Cranford, N.J.; said Mertzweiller and said Cull assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 489,964
U.S. Cl. 161—204 **14 Claims**
Int. Cl. B32b *17/10, 17/06*

8. Sized glass fibers comprising individual glass fibers having a coating thereon of a binder comprising a water-soluble organic amine or ammonium salt of a C_4 to C_{20} polycarboxylic acid anhydride partial ester of a hydroformylated substantially saturated butadiene polymer, wherein said butadiene polymer has a molecular weight ranging from about 300 to about 4,000 and said polymer salt has a molecular weight ranging from about 500 to about 6,000.

9. A laminated article comprising the sized glass fibers of claim 8 tightly adhered to a lamina material selected from the group consisting of rubber, thermoplastic resins and thermoset resins.

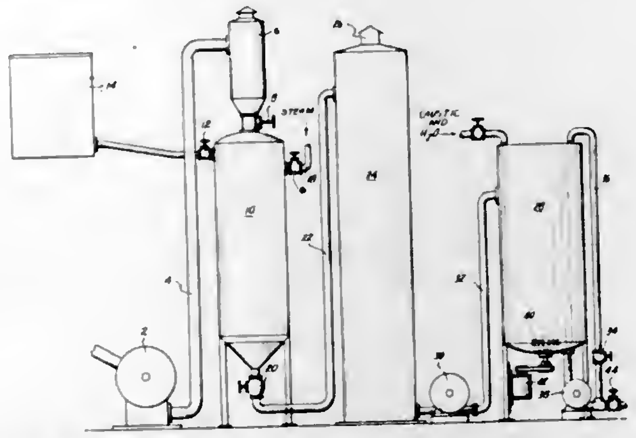
3,425,896
STARCH COATING INSOLUBILIZED WITH A ZIRCONIUM SALT

Robert T. Hart, Rumford, Maine, assignor to Oxford Paper Company, New York, N.Y., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 262,259, Mar. 1, 1963, which is a continuation-in-part of application Ser. No. 61,061, Oct. 7, 1960. This application Nov. 21, 1966, Ser. No. 595,655
U.S. Cl. 161—266 **9 Claims**
Int. Cl. B32b *23/14*

Coating compositions containing starch which is free of carboxyl groups in which the starch is insolubilized with a water-soluble zirconium salt by forming preferred coordinate covalent bonds with the free electron pairs of the oxygen atoms of the starch hydroxyl groups.

3,425,897
PROCESS FOR DEFIBERING WET STRENGTH PAPER BY MULTIPLE ALKALINE COOKS

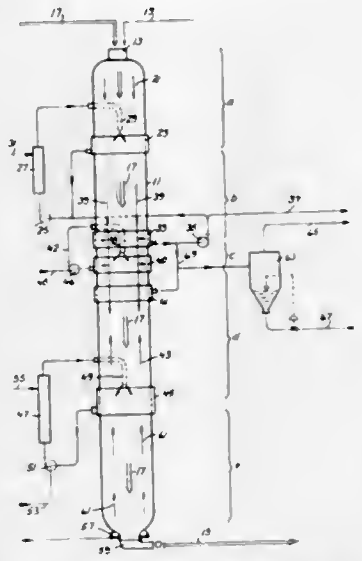
Thomas L. Murphy, Jr., Columbia, Miss., assignor, by direct and mesne assignments, of thirty-three percent to Bluff Creek Industries, Vancleave, Miss., a corporation of Mississippi, eleven and two-thirds percent to Bryan Bell and three and one-third percent to Rubie C. Bell, both of New Orleans, La.
Filed Nov. 22, 1965, Ser. No. 508,966
U.S. Cl. 162—8 **13 Claims**
Int. Cl. D21c *5/02*



Waste, wet strength, resin-impregnated paper is defibered for reuse by first cooking it with caustic solution under pressure for about one to five hours and then releasing the pressure, diluting the mass to pulping consistency and completing the defibering with a further alkaline treatment under milder conditions with agitation of the mass.

3,425,898
TWO STAGE CHEMICAL DIGESTION WITHIN A SINGLE VESSEL WITH WASH BETWEEN STAGES

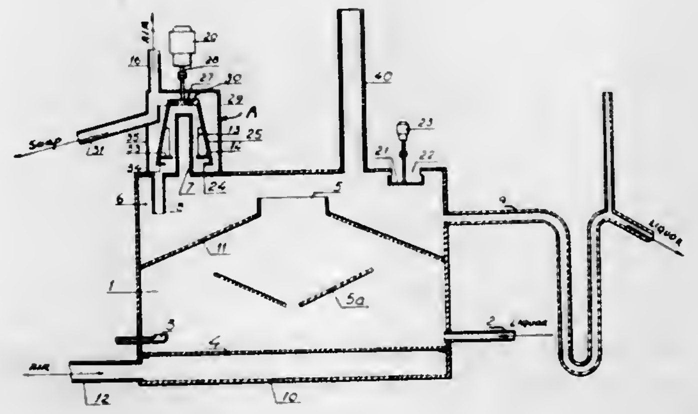
Oliver Armas Laakso, Glens Falls, N.Y., assignor to Aktiebolaget Kamyr, Karlstad, Sweden
Filed Dec. 14, 1964, Ser. No. 417,945
Claims priority, application Sweden, Dec. 13, 1963, 13,869/63
U.S. Cl. 162—19 **7 Claims**
Int. Cl. D21c *7/00*



Apparatus and a process are disclosed for performing a two-stage chemical treatment on cellulosic fibrous material, particularly digestion and/or bleaching thereof, comprising a longitudinal pressure-resistant vessel of a substantially uniform cross-section, which is provided with means for continuous feed of fibrous material into one end and for discharge thereof out of the other end, and further with means for supplying and withdrawing treating liquids of two different kinds at places spaced along the longitudinal direction of the vessel. This is shown achieved by supplying wash liquid at a place located between the two treatment stages and in an amount sufficient to cause a wash liquid flow counter-current to the direction of feed of the fibrous material to thereby displace the treatment liquid of the first stage and wash out the first stage treatment liquid before the fibrous material reaches the zone where it will be contacted by the treatment liquid of the second stage.

3,425,899
METHOD AND APPARATUS FOR BREAKING FOAM ON FOAMING LIQUIDS AND USE THEREOF IN OXIDATION SYSTEM FOR REGENERATION OF BLACK LIQUOR IN SULFATE PULP PROCESS

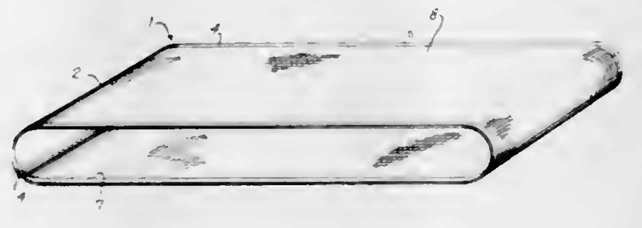
Goran A. Nilsson, P.O. Box 2190, Sandarne, Sweden
Filed Nov. 25, 1964, Ser. No. 413,699
U.S. Cl. 162—30 **5 Claims**
Int. Cl. D21c *11/02;* **B01d** *19/02*



Foam on foaming liquids, such as black liquor, is broken by treating the same in a chamber with high pressure air to convert the same into a foamed mass of bubbles. These bubbles are caused to be separated into their component liquid and vapor phases by acting upon them with centrifugal force which is sufficiently great to crush the bubbles when they contact the liquid film of previously broken bubbles flowing down along the wall of the centrifuging drum.

3,425,900
COATED PAPERMAKING WIRE

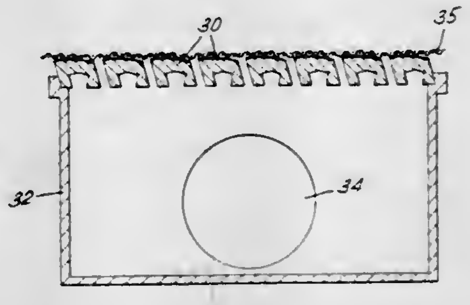
Bruce B. Purdy, Appleton, Wis., assignor to Appleton Wire Works Corp., Appleton, Wis., a corporation of Wisconsin
Filed Aug. 24, 1964, Ser. No. 391,696
U.S. Cl. 162—348 **3 Claims**
Int. Cl. D21f *1/10*



A chromium coated papermaking wire is provided with uncoated selvedge portions along its lateral edges. This product is made on a continuous plating apparatus wherein the wire is negatively charged by contact with charged rollers and moved through a chromium ion electrolyte between a pair of cathodes. The edges of the wires between the anodes are enclosed by an adjustable shield and inert masks are formed over the edges of the anodes to shield the selvedge portions of the wire from electrolytic deposition and to provide for a gradually increasing thickness of deposition along the edges of the coated bottom portion of the wire.

3,425,901
PAPERMILL SUCTION BOX COVER

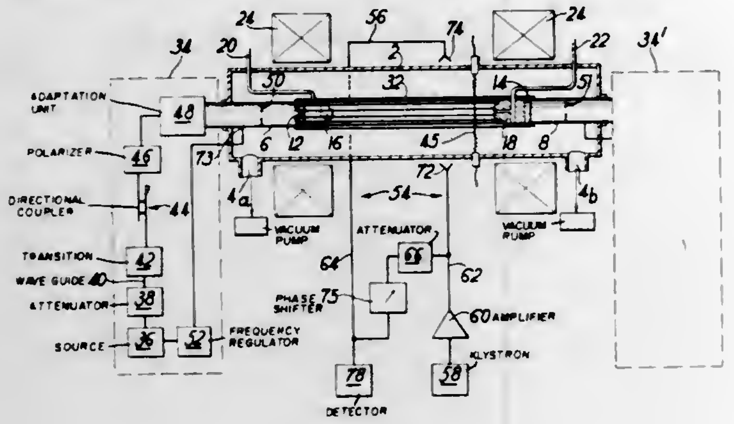
John M. Koffskey, Jr., Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 338,243, Jan. 16, 1964. This application Jan. 18, 1965, Ser. No. 426,112
U.S. Cl. 162—352 **7 Claims**
Int. Cl. D21f *1/48*



A stationary drainage element for use in a Fourdrinier papermaking machine is provided. The drainage element is fashioned with a curved surface having a radius of curvature ranging from 1 to 15 inches. In addition, the surface of the drainage element is asymmetrical with respect to the radius of curvature drawn to the highest point on the curved surface with the major portion of the curved surface being the trailing portion and the remaining surface being the leading portion when it is used to support the Fourdrinier wire in a papermaking machine.

3,425,902
DEVICE FOR THE PRODUCTION AND CONFINEMENT OF IONIZED GASES

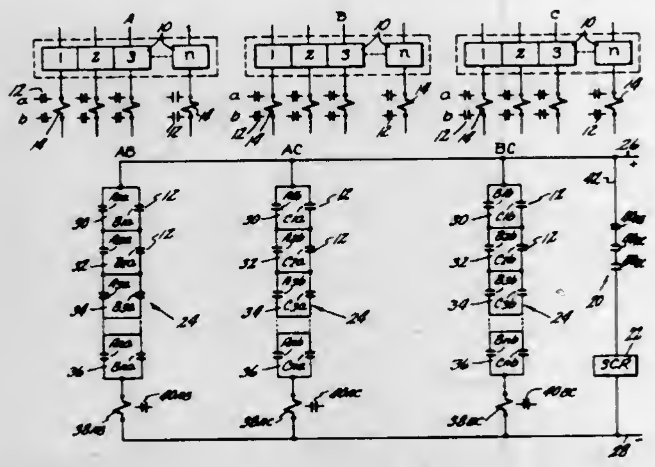
Terenzio Consoli, La Celle-Saint-Cloud, Lucien Dupas, Gif-sur-Yvette, and Jean Leroy, Le Perreux-sur-Marne, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Mar. 9, 1967, Ser. No. 621,942
Claims priority, application France, Mar. 11, 1966, 53,203
U.S. Cl. 176—7 **3 Claims**
Int. Cl. G21b *1/22*



A method of production and confinement of an ionized gas wherein a non-ionized ionizable gas is passed into a chamber at one end of a discharge space in which the gas thus introduced is subjected to a magnetic field having a continuous axial component as well as a radial component having a minimum value in at least a central region and to a circularly polarized high-frequency wave higher than 10^9 c./s., and a device for the application of said method.

3,425,903
NUCLEAR POWER PLANT PROTECTIVE SYSTEM EMPLOYING LOGIC MATRICES

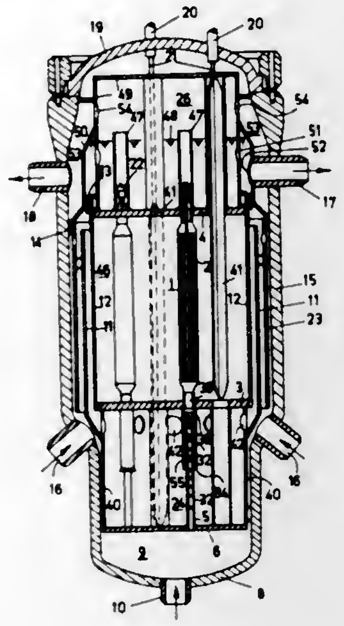
Frank Bevilacqua, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,908
U.S. Cl. 176—20 **10 Claims**
Int. Cl. G21c *7/00, 17/00;* **H02b** *5/04*



A nuclear reactor safety control system wherein a plurality of independent sensing devices are employed to monitor each of a number of reactor operating variables operative to terminate operation of the reactor whenever at least a plurality of the sensing devices associated with any one variable simultaneously respond to a preset condition of the monitored variable.

3,425,904
STEAM COOLED EPITHERMAL OR FAST NUCLEAR REACTOR

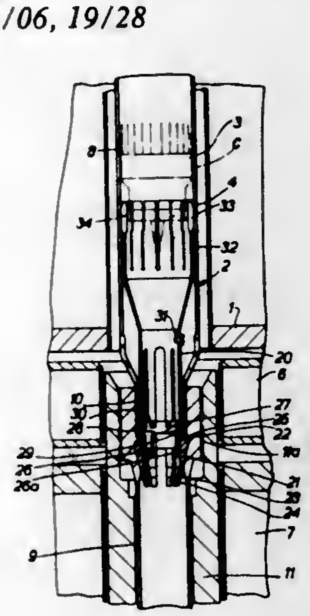
Maarten Bogaardt, The Hague, Netherlands, assignor to Reactor Centrum Nederland, The Hague, Netherlands, an institute of the Netherlands
Filed Apr. 7, 1967, Ser. No. 629,156
U.S. Cl. 176—40 **9 Claims**
Int. Cl. G21c *15/00*



A steam cooled, epithermal or fast nuclear reactor in which the fuel elements contain particles of a resonance absorber for thermal or epithermal neutrons so that accidental flooding of the reactor with water will not produce a super-critical condition.

3,425,905
NUCLEAR REACTORS

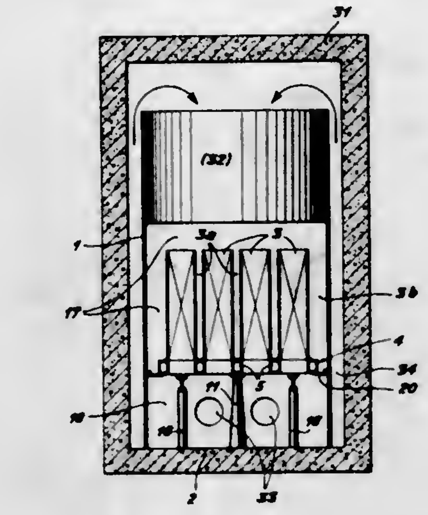
Frank Geoffrey Greenhalgh, and Walter John Cairns, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed July 18, 1966, Ser. No. 566,062
Claims priority, application Great Britain, July 22, 1965, 31,222/65; Jan. 13, 1966, 1,739/66
U.S. Cl. 176—50 **5 Claims**
Int. Cl. G21c *19/06, 19/28*



A nuclear reactor having a fuel assembly suspended within a vertical tube, the lower end of the assembly being freely encircled by a collar in contact with the tube; limited clearance between the lower end of the assembly and the collar enables the lower end to vibrate, but prevents the assembly contacting and damaging the tube.

3,425,906
HEAT EXCHANGER OF A NUCLEAR REACTOR

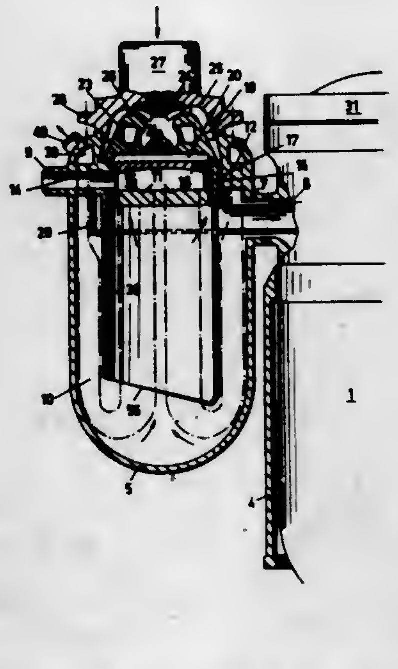
Max Weber, Wiesendangen, Zurich, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Apr. 5, 1966, Ser. No. 540,231
Claims priority, application Switzerland, Apr. 7, 1965, 4,836/65
U.S. Cl. 176—65 **10 Claims**
Int. Cl. G21c *15/26, 19/28*



The nuclear reactor includes a heat exchanger which is constructed with a grate formed with a plurality of apertures and upon which a plurality of heat exchange elements are mounted over the apertures. The grate is disposed within a duct of the heat exchanger so as to divide the duct into an upper and lower chamber. The heat exchange elements are disposed in the upper chamber to conduct a primary coolant into the lower chamber.

3,425,907
NUCLEAR ENERGY REACTOR PLANT HAVING ONE OR MORE HEAT EXCHANGERS

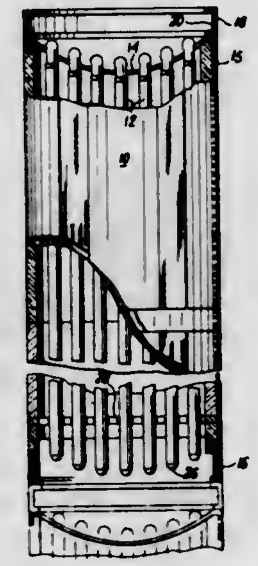
Wouter G. Bonsel, The Hague, and Henry H. Weevers, Gouda, Netherlands, assignors to Reactor Centrum Nederland, The Hague, Netherlands, Institute of the Netherlands
Filed Aug. 9, 1966, Ser. No. 571,255
Claims priority, application Netherlands, Sept. 20, 1965, 6512195
U.S. Cl. 176—65 **5 Claims**
Int. Cl. G21c *19/28, 15/00*



Nuclear energy reactor plant with a number of heat-exchangers connected with co-axial conduits to the reactor vessel, in which plant the same vessel and the same core lay-out may be adopted for a scale of power levels. For the required power level of the reactor ordered, only minor changes in prefabricated parts will be necessary.

3,425,908
NUCLEAR FUEL ASSEMBLY

Pierre Rouge, Orsay, Michel Roze, Paris, and Jean Vivien, Les Clayes-sous-Bois, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Nov. 13, 1967, Ser. No. 682,167
Claims priority, application France, Dec. 12, 1966, 87,131
U.S. Cl. 176—78 **12 Claims**
Int. Cl. G21c *3/34*



The fuel element, for use in vertical position, comprises a bundle of fuel pins, a grid which supports the pins and spacers between the pins. The grid is of paraboloidal shape and the pins have a ball and socket connection therewith.

3,425,909
METHOD OF CONVERTING STARCH

Edwin L. Speakman, Clinton, Iowa, assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 9, 1966, Ser. No. 532,845
U.S. Cl. 195—31 **5 Claims**
Int. Cl. C12d *13/04*

1. The method of preparing an enzyme-converted starch which comprises providing a slurry of water, starch, alpha-amylase and a small amount of dodecyl trimethyl ammonium chloride effective to increase the rate of conversion of the starch and maintaining the slurry at a temperature at which the enzyme converts the starch until the starch has been thinned to the desired extent.

3,425,910
PRODUCTION OF CYCLODEXTRIN

Frederick C. Armbruster and Earl R. Kooi, La Grange, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 24, 1966, Ser. No. 588,755
U.S. Cl. 195—31 **25 Claims**
Int. Cl. C12d *13/02, 13/04*

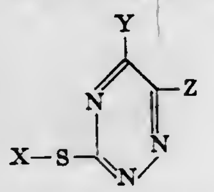
1. A process for preparing cyclodextrin from a starch hydrolysate having a D.E. not substantially less than about 0.5 to a D.E. not exceeding about 20, which comprises subjecting said starch hydrolysate to conversion with cyclodextrin transglycosylase in an aqueous medium, to obtain a conversion product containing cyclodextrin.

3,425,911
METHOD OF PRODUCING TETRACYCLINE

Miloslav Vondracek, Josef Slezak, Milos Herold, and Karel Culik, Prague, Czechoslovakia, assignors to Spofa Sdruzeni Podniku Pro Zdravotnickou Vyrobu, Prague, Czechoslovakia

No Drawing. Filed June 8, 1965, Ser. No. 462,398
Claims priority, application Czechoslovakia, June 13, 1964, 3,412/64
U.S. Cl. 195—80 **10 Claims**
Int. Cl. C12k *1/10*

A method for producing tetracycline, which comprises aerobically and submerged culturing in a liquid culturing medium containing assimilable carbon and nitrogen sources plus inorganic nutrient salts and including between 0.0001% and 0.02% of a compound of the formula



wherein X is selected from the group consisting of hydrogen and alkyl with between 1 and 6 carbon atoms, Z is selected from the group consisting of hydrogen, alkyl with between 1 and 6 carbon atoms, alkenyl with between 1 and 6 carbon atoms, aryl, aralkyl, $—CH—CH_6H_5$ and $—(CH_2)_nCOOH$, $—(CH_2)_nCONH_2$, *n* being an integer between 0 and 7 inclusive, and wherein Y is —OH, a microorganism belonging to the genus Streptomyces and capable of producing chlorotetracycline and tetracycline, whereby due to the presence of said compound in said culturing medium the proportion of tetracycline produced will be increased relative to the proportion of chlorotetracycline produced; and recovering tetracycline from the thus formed fermented broth.

3,425,912
LABORATORY REAGENT FOR ASSAY OF ALKALINE PHOSPHATASE

Daniel H. Deutsch, Pasadena, Stanley E. Green, Los Angeles, John D. Murray, Monterey Park, and Edward W. Saleeby, Alhambra, Calif., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,740
U.S. Cl. 195—103.5 **2 Claims**
Int. Cl. C12k *1/04*

1. A stable assay material for dissolving in water to create a liquid reagent for assaying a specimen for the enzymes, alkaline or acid phosphatases, including the combination of:

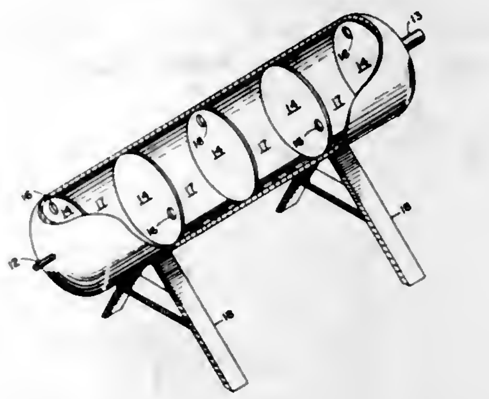
the substrate para-nitrophenyl phosphoric acid amine salt;
a dry buffer capable of maintaining the pH between 4 and 11;
a metal activator comprising a magnesium salt;
each substance above being present in that quantity so as to insure a uniform rate of reaction catalyzed by the alkaline phosphatase being determined and so as to cause said rate to be optimal or maximal.

3,425,913
APPARATUS FOR REMOVING PARAFFIN FROM CRUDE OIL

Harold H. Holden, Borger, Tex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,220
U.S. Cl. 196—14.5 **3 Claims**
Int. Cl. C10g *43/04*

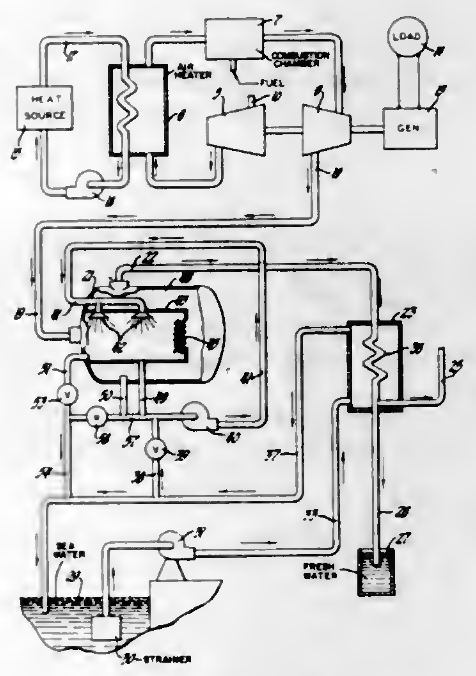
An apparatus for removing paraffin from crude oil comprising an elongated substantially horizontal tank having an inlet at one end and outlet at the opposite end, the tank containing a plurality of substantially vertically disposed horizontally spaced apertured baffle discs forming a series of sealed chambers except for the apertures in the baffle discs. When paraffin-laden crude oil is flowed through the tank, the paraffin drops out and accumulates in the series of chambers and tank side walls.



3,425.914
SPRAY-TYPE DISTILLATION USING GAS TURBINE EXHAUST DISTILLAND HEATING

Ziyad R. Kanaan, Ann Arbor, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 26, 1966, Ser. No. 589,666
U.S. Cl. 202—177 **2 Claims**
Int. Cl. B01d *3/06*



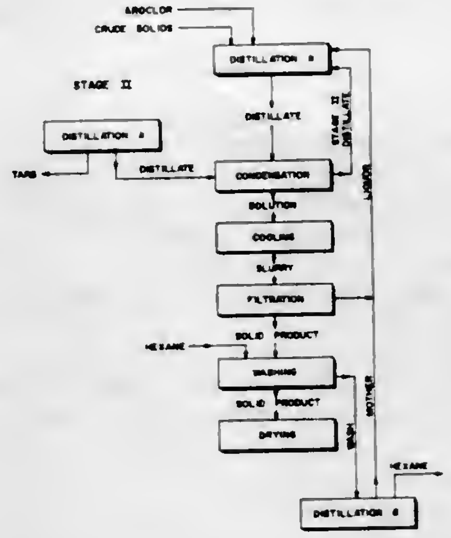
A plant for generating useful power and providing fresh water from salt water includes a gas turbine engine which drives a generator, a spray chamber through which the turbine exhaust gas is passed and into which salt water is sprayed, and a condenser cooled by the salt water to condense fresh water from the turbine exhaust.

3,425,915
PURIFICATION OF HIGH BOILING AROMATIC COMPOUNDS BY CODISTILLATION WITH A CHLORINATED DIPHENYL SOLVENT

Edward S. Roberts, 874 Woodward Ave., Ridgewood, N.Y. 11227, and Ludwig J. Christmann, 9 Center Knolls, Bronxville, N.Y. 10708

Continuation of application Ser. No. 256,523, Feb. 6, 1963. This application Feb. 9, 1967, Ser. No. 615,031
U.S. Cl. 203—47 **15 Claims**
Int. Cl. B01d *3/40*

High melting organic compounds can be purified by codistilling the high melting compound with a solvent in which the compound is highly soluble at high temperatures and relatively insoluble in the cold. This can be illustrated by the purification of crude terephthalic acid. Crude terephthalic acid and chlorinated diphenyl solvent were charged to a distillation apparatus and distilled in the range of 320–345° C. The purified product had a neutralization equivalent of 83 which is the theoretical for terephthalic acid.



3,425,916
ELECTROLYTIC PHOTOGRAPHIC PROCESS AND ITS MATERIAL

Shin-Ichi Tokumoto, 14 2-chome, Fujimi-machi, Chiyoda-ku, Tokyo, Japan, and Eiji Tanaka, 25–208–go, Japan House Corporation House, 48–1 Myojindai, Hodogaya-ku, Yokohama-shi, Kanagawa-ken, Japan

Continuation-in-part of application Ser. No. 134,794, June 30, 1961. This application Oct. 23, 1965, Ser. No. 503,684
Claims priority, application Japan, July 5, 1960, 35/30,043
U.S. Cl. 204—18 **10 Claims**
Int. Cl. B44c *1/04;* **B01k** *3/00*

A monochrome picture film and method of utilizing the same wherein a photoconductive layer controls the amount of electrolysis occurring in a reagent layer. The high sensitivity depends on the electrolytic formation of nuclei, which are produced by a very small quantity of electricity. The nuclei serve as centers for the chemical development reaction that produces the visible image. The process uses a photoconductive layer of, for example, cadmium sulfite and a reagent layer containing non-photosensitive metallic compounds such as sodium silver thiosulfate, nickel salts, organic metal salts, etc.

3,425,917
ELECTRODEPOSITION OF SILVER ANTIMONY ALLOYS

Hubert Offermanns, Solingen-Merscheid, and Willi Skaliks, Berlin, Germany, assignors to Schering A.G., Berlin Germany

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,701
Claims priority, application Germany, Apr. 10, 1964, Sch 34,943
U.S. Cl. 204—43 **10 Claims**
Int. Cl. C23b *5/24*

A method and electrolyte for electroplating bright, hard silver deposits. The electrolyte contains silver cyanide and antimony in the form of a compound formed by the reaction of an antimony compound and a tertiary alkanolamine, such as triethanolamine. The presence of antimony in this form allows broader bright plating ranges than the prior art. The electrolyte may additionally contain a divalent selenium compound.

3,425,918
ELECTROLYTE FOR THE PRODUCTION OF SELF-COLORED ANODIC OXIDE LAYERS ON ALUMINUM AND ALUMINUM ALLOYS

Walter Zweifel, Neuhausen am Rheinfall, Fritz Schneeberger, Schaffhausen, and Alfred Marquetant, Neuhausen am Rheinfall, Switzerland, assignors to Swiss Aluminum Ltd., Chippis, Switzerland, a joint-stock company of Switzerland

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,261
Claims priority, application Switzerland, Oct. 31, 1966, 15,654/65
U.S. Cl. 204—58 **6 Claims**
Int. Cl. C23b *9/02*

Electrotype containing sulfonic acid with tartaric acid and sulfuric acid and/or metal sulfate for use in the production of self-colored anodic oxide layers by the anodic oxidation of aluminum or aluminum alloys.

3,425,919
ELECTROLYTIC METHOD OF CONVERTING POLYCHLOROMETHYL GROUPS OF ORGANIC COMPOUNDS INTO MONOCHLOROMETHYL GROUPS

Masanori Nagao, Kanagawa-ken, Naotake Sato, Tokyo, and Takekazu Akashi, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,221
Claims priority, application Japan, Mar. 13, 1965, 40/14,491; May 1, 1965, 40/25,526
U.S. Cl. 204—73 **5 Claims**
Int. Cl. B01k *1/00*

1. An electrolytic method of converting a polychloromethyl group of an organic compound of the formula

$$Cl_nH_{3-n}C—R$$

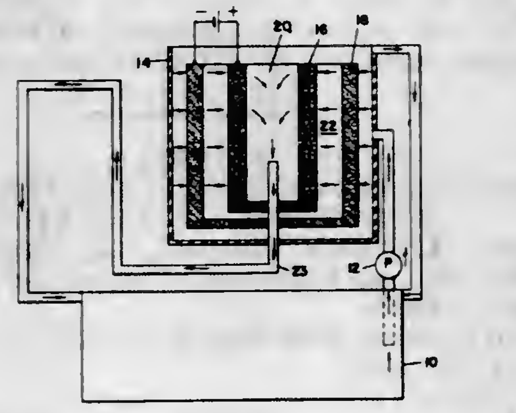
into the corresponding monochloromethyl group which comprises

(a) dissolving said compound and an ionizable salt in a mixture of water and an organic solvent soluble in said water; and
(b) passing electric current between a cathode in contact with the solution so obtained and said solution until said polychloromethyl group is converted to said monochloromethyl group.
    (1) *n* being 2 or 3, and R being an aliphatic radical having at least two carbon atoms,
    (2) said ionizable salt being a member of the group consisting of halides of alkali metal, ammonium and alkaline earth metal, and salts of lower-alkyl amines, benzylamines and quaternary lower-alkyl ammonium with a mineral acid or strong organic sulfonic acid.

3,425,920
ELECTROLYTIC METHOD OF REGENERATING ORGANIC ACID CLEANING SOLUTION FOR FERROUS METALS

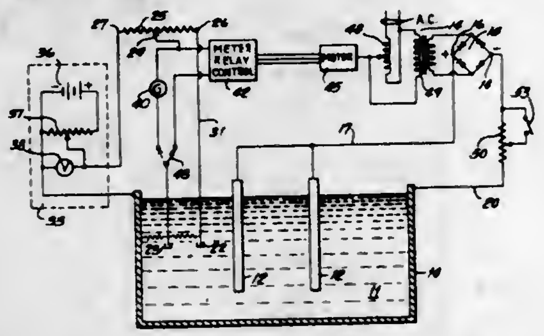
Nicholas Frantzis, 217B Haddon Hills Apartments, Haddonfield, N.J. 08033

Filed July 1, 1964, Ser. No. 379,502
U.S. Cl. 204—145 **11 Claims**
Int. Cl. C23g *1/08*



A process of cleaning ferrous metals employs an electrolyte consisting of citric or tartaric acid. The citric and tartaric acids are regenerated by another electrolytic process, and the regenerated solution is recycled for further use in removing the oxide deposits.

3,425,921
METHODS AND SYSTEMS FOR PROTECTING METAL STRUCTURES
Leon P. Sudrabin, Berkeley Heights, N.J., assignor, by mesne assignments, to Wallace & Tierman Inc., East Orange, N.J., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,961
U.S. Cl. 204—147 **12 Claims**
Int. Cl. B01k *3/00*



7. A method for cathodically protecting a metal structure immersed in a corroding electrolyte while maintaining the polarization potential of said structure substantially constant at a predetermined negative value, comprising continuously passing a flow of unidirectional current to said structure through said electrolyte from anode means immersed therein; establishing a control circuit comprising, in series, a first reference electrode immersed in said electrolyte, first and second resistances, a reference potential source providing a reference voltage equal to said predetermined negative value of polarization potential, said structure, and said electrolyte, and further including a second reference electrode connected to said control circuit by a bridge at a point intermediate said first and second resistances and immersed in said electrolyte in such position that the potential drop due to passage of current through said electrolyte between said second electrode and said structure is less than the potential drop due to passage of current through said electrolyte between said first electrode and said structure, said first and second electrodes having substantially equal and constant potentials, and said first and second resistances being so proportioned that the ratio of said first resistance to the resistance of the current path through said electrolyte between said first and second electrodes equals the ratio of said second resistance to the resistance of the current path between said second electrode and said structure, sensing the presence and direction of current flow between said second electrode and said point on said control circuit through said bridge as representing a difference between the polarization potential of said structure and said reference voltage; and regulating the flow of said unidirectional current in accordance with the sensed presence and direction of current flow through said bridge to adjust the polarization potential of said structure to substantial equality with said reference voltage.

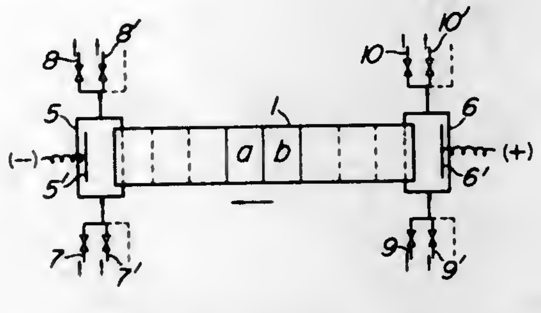
3,425,922
ISOMERIZATION OF DIFLUORAMINOOLEFINS WITH IONIZING RADIATION
Donald A. Guthrie, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 3, 1960, Ser. No. 47,321
U.S. Cl. 204—158 **4 Claims**
Int. Cl. B01j *1/10*

1. A process for isomerizing a C_4 to C_8 acyclic bis-(difluoramino) monoolefin having an internal double bond, which comprises subjecting said monolefin to high energy ionizing radiation of 1 to 50 mr. at about room temperature which makes a difluoramino group in said monoolefin migrate from one carbon atom to another and makes the double bond shift to a terminal position, and recovering the resulting product having an increased concentration of the resulting isomer with a terminal double bond.

3,425,923
GRAFT INTERPOLYMERS OF POLY(ALKYLENE MONOSULFIDES) AND VINYL COMPOUNDS
Arthur J. Yu, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed July 26, 1966, Ser. No. 567,819
U.S. Cl. 204—159.15 **26 Claims**
Int. Cl. C08f *1/16*

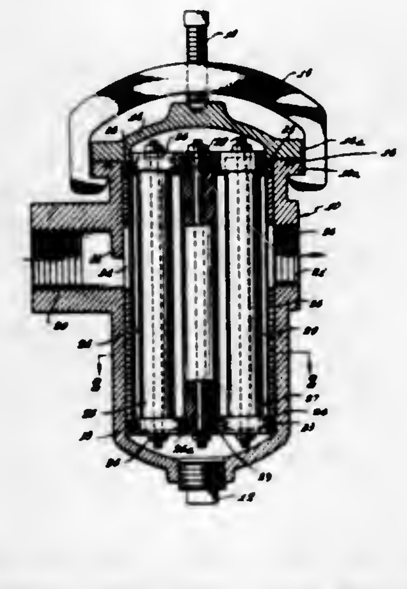
Novel graft interpolymers, which are the reaction products of a poly(alkylene monosulfide) and one or more vinyl monomers which are attached at intervals along the poly(alkylene monosulfide) backbone, being formed by a novel process wherein a poly(alkylene monosulfide) is reacted with at least one vinyl compound by means of ionizing radiation.

3,425,924
METHOD FOR SEPARATING AND ENRICHING ISOTOPES
Maomi Seko, Hidetake Kakihana, and Kimiko Kurisu, Tokyo, Japan, assignors to Asahi Kasei Kogyo, Kabushiki Kaisha, Hidetake Kakihana and Atomic Fuel Corporation
Filed June 17, 1964, Ser. No. 375,835
Claims priority, application Japan, June 21, 1963, 38/31,166
U.S. Cl. 204—180 **10 Claims**
Int. Cl. B01d *59/38*



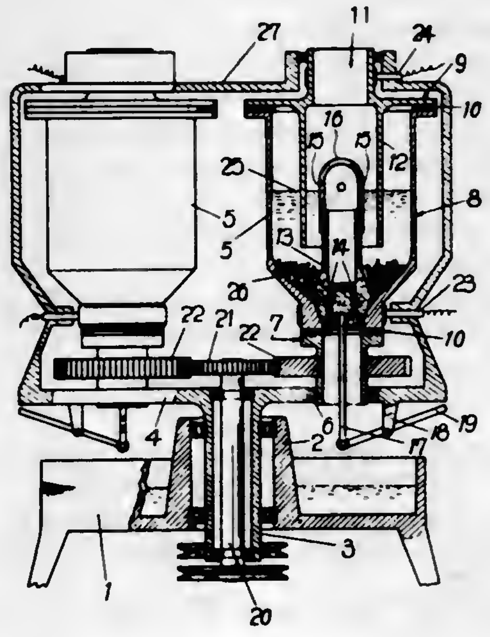
1. A method for separating and enriching isotopes existing in the state of ions in solution, said method comprising passing direct electric current through at least one ion exchange resin material having a large size in at least two dimensions to produce a potential gradient in the longitudinal direction through said ion exchange resin material, feeding alternately and repeatedly at least two different kinds of solutions containing different elements other than rare gas elements in the state of ions to one end of said ion exchange resin material connected to an electrode having the same polarity as the ions to be enriched and separated, the other end of said ion exchange resin material being connected to an electrode of opposite polarity to produce a series of alternate migration bands, each of said migration bands consisting exclusively of one kind of said isotopes in the state of ions and a plurality of partitions therebetween, to transfer said migration bands toward said other end of the ion exchange resin material through the said ion exchange resin material, and periodically collecting migration bands at the other end of said resin material by dividing each of the bands into at least two portions, to thereby obtain a solution containing the separated and enriched isotope in the state of ions in solution.

3,425,925
ELECTROLYTIC WATER CONDITIONING UNIT AND ELECTRODE ASSEMBLY THEREFOR
Raymond N. Fleischman, Whittier, Calif., assignor to Aqua-Vel, Whittier, Calif., a corporation of California
Filed Dec. 24, 1964, Ser. No. 420,873
U.S. Cl. 204—197 **11 Claims**
Int. Cl. C02b *1/82*



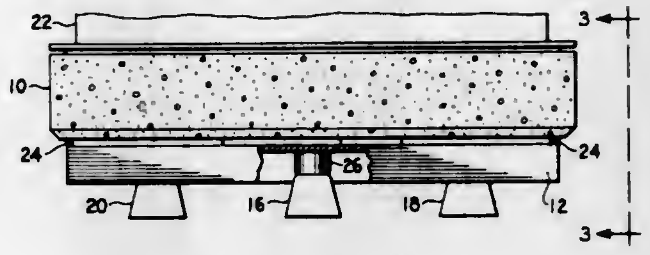
A water conditioning unit has a housing of copper bearing material within which is a removable assembly of magnesium bearing metal rods. The housing and the rods form a pair of electrodes, the rods being consumed in the process of conditioning the water. The overall design affords high efficiency in operation and simplifies access for service and replacement of the electrode rods.

3,425,926
APPARATUS FOR AUTOMATICALLY ELECTROPLATING VARIOUS ARTICLES WITH CHROMIUM
Kazuya Hojyo, 1215 1-chome, Mukaiga-oka, Ueno-shiba, Sakai, Japan
Filed July 27, 1965, Ser. No. 475,100
U.S. Cl. 204—213 **10 Claims**
Int. Cl. C23b *5/70*



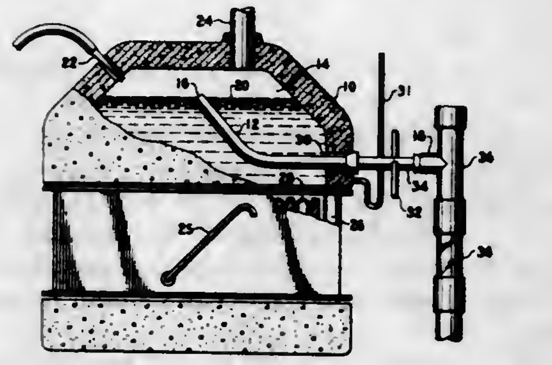
An automatic electroplating apparatus for various small articles comprising at least one electrolytic tank having an outer wall constituting a cathode and vertically oriented defining a vertical tank axis; an anode member disposed within each of the at least one electrolytic tank and spaced from the walls defining an article receiving region therebetween, means for orbiting the at least one electrolytic tank in a circular orbit about a central vertical axis parallel to and spaced from the vertical tank axis, for generating a centrifugal force on the articles in the article region causing the articles to press against the outer wall and the at least one electrolytic tank, and means for individually revolving each of the at least one electrolytic tank about its vertical tank axis whereby the articles are uniformly and evenly coated by movement on the outer wall of the tank due to its movement relative thereto.

3,425,927
SUPPORT SYSTEM FOR ELECTROLYTIC CELLS
John E. Currey, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Mar. 28, 1966, Ser. No. 537,951
U.S. Cl. 204—242 **7 Claims**
Int. Cl. B01k *3/00*



1. An electrolytic cell support system comprising a cell bottom having positioned thereunder a support member across the cell bottom, said support member being operatively connected with said cell bottom, said support member having leg means positioned near the center and under said support member wherein a free space is provided between said support member and said cell bottom, said cell bottom having two additional leg means positioned under said cell bottom in a spaced relationship to each other so as to distribute the weight of said cell bottom between said leg means.

3,425,928
ANOLYTE LIQUID LEVEL CONTROL FOR CHLOR-ALKALI DIAPHRAGM CELLS
Alvin T. Emery, North Tonawanda, and Charles W. Schmidtke, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Nov. 29, 1965, Ser. No. 510,179
U.S. Cl. 204—263 **5 Claims**
Int. Cl. B01k *3/00*



A rotatable elbow tube is provided in the anolyte chamber of a chlor-alkali diaphragm cell for withdrawal of anolyte and ease in adjusting the hydrostatic head of anolyte which varies the pressure imposed on the diaphragm by the anolyte. A sight glass is provided which provides for rapid observation of the anolyte level. Also a sight glass is provided in the liquor withdrawal portion of the rotatable elbow tube for observing the anolyte being withdrawn and the flow rate of anolyte from the cell.

3,425,929

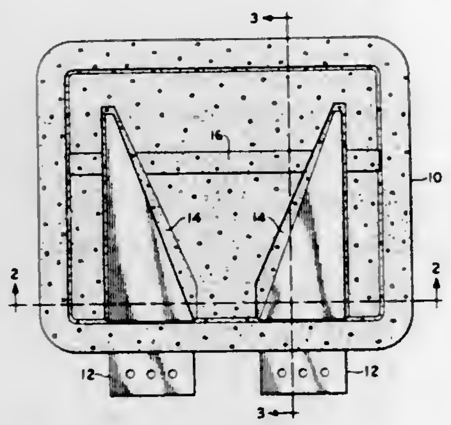
METHOD FOR STABILIZING THE POSITION OF ANODES AND ANODE BUS BARS IN AN ELECTROLYTIC CELL

Alvin T. Emery, North Tonawanda, and John E. Currey, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Mar. 28, 1966, Ser. No. 537,949

U.S. Cl. 204—266 **10 Claims**

Int. Cl. B01k *3/00*



1. A method for stabilizing the position of anodes and anode bus bars in an electrolytic cell which comprises constructing as a unit assembly the anodes and at least one anode bus bar in an anchorage means comprising a conductive medium having one surface thereof shaped to conform to a preformed irregularity of the bottom of said electrolytic cell, said irregularity of said cell bottom and conductive medium being a matching projection and recess wherein said irregularity is positioned transversely to the direction of the bus bar in said conductive medium, and positioning said unit assembly in said cell bottom.

3,425,930

OXIDATION OF WAXES IN THE PRESENCE OF AN ESTERIFYING AGENT AND REDUCTION OF OXIDIZED WAXES TO POLYHYDROXY-WAXES

Charles W. Ehrgott and Paul M. Kerschner, Trenton, N.J., assignors to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,027

U.S. Cl. 208—27 **9 Claims**

Int. Cl. C10g *43/02*

A process is disclosed for oxidizing hydrocarbon wax by agitating a molten wax charge with an esterifying agent, preferably an organic acid anhydride, while passing gaseous oxygen, usually at the rate of at least about 35 liters of oxygen per kilogram of wax per hour, over and in contact with the surface of the molten wax charge, whereby an oxy-wax having a high saponification number is obtained. Enhanced results are obtained when the esterifying agent is an alkanoic anhydride present in amounts at least about 500 grams per kilogram of wax. In another aspect the oxy-wax formed is subsequently reduced to form a polyhydroxy-wax having high hydroxyl number.

3,425,931

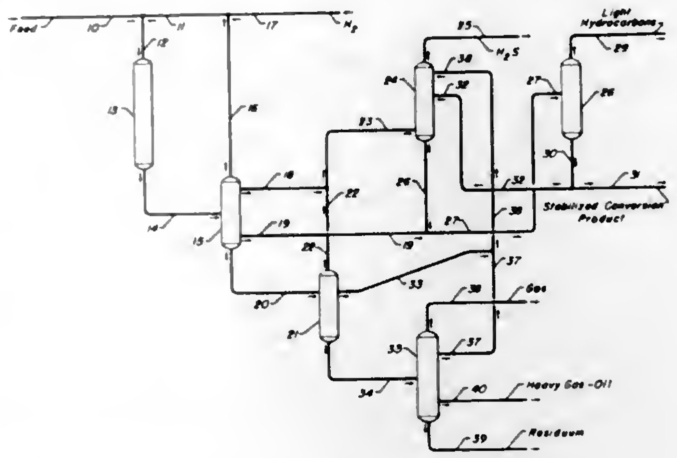
HYDROCARBON RECOVERY METHOD

J Robert Penisten, Palatine, and Bennett L. Atwater, Elk Grove Township, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 5, 1966, Ser. No. 599,161

U.S. Cl. 208—101 **10 Claims**

Int. Cl. C10g *37/00, 25/00*



Method for separating hydrogen, acid gas, and light hydrocarbons from other distillable hydrocarbons contained in the effluent of a catalytic hydrocracking reaction zone.

3,425,932

HYDROGENATION OF LUBE OILS

Harland J. Surrena, Media, Aubrey M. Kirby, Jr., Swarthmore, and Henry E. Reif, Bryn Mawr, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,324

U.S. Cl. 208—143 **9 Claims**

Int. Cl. C10g *23/00*

A process of hydrogenating lube oil fractions having a viscosity in the range of about 50 SUS at 100° F. and about 240 molecular weight at about 6000 SUS at 100° F. and about 500 molecular weight wherein the higher viscosity and higher molecular weight materials are enhanced as to the UV absorptivity at 260 mμ. Specifically, the heavier fractions enhanced in UV are those above about 1000 SUS at 100° F. and above about 360 molecular weight by blending same with a lower viscosity and lower molecular weight material having a viscosity in the range of about 50 SUS at 100° F. and about 240 molecular weight to below about 1000 SUS at 100° F. and below about 360 molecular weight, hydrogenating same over a sulfactive hydrogenation catalyst at a temperature in the range of about 450° to 750° F. and a hydrogen partial pressure of about 100 to 10,000 p.s.i.g. but preferably a temperature in the range of about 475° to 625° F. and a pressure in the range of about 500 to 2000 p.s.i.g., and then separating the two blended oils.

3,425,933

HALOGEN HYDRIDE RECOVERY IN A HYDROREFINING PROCESS

George R. Lester, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,016

U.S. Cl. 208—209 **5 Claims**

Int. Cl. C10g *29/12, 13/08*

An ammonium halide-containing, residual metallic sludge is heated to vaporize the ammonium halide. The vapors are contacted with an oxygen-containing boron compound at conditions selected to form ammonium borate and a halogen hydride. Suitable boron compounds are the oxyacids and the anhydrides thereof.

3,425,934

CATALYTIC REFINING WITH HYDROGEN

Robert L. Jacobson, Pinole, and Ronald S. Tolberg, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,609

U.S. Cl. 208—254 **5 Claims**

Int. Cl. C10g *13/04*

A sulfactive hydrogenation catalyst resistant to deactivation when sulfided is prepared by impregnating a calcined silica-alumina catalyst support having a weight ratio of Al_2O_3 to SiO_2 of between 3 and 5, a BET surface area above 300 m.^{2}/gm., an apparent bulk density below 0.6 mm./cc., and a DWT crushing strength of at least 12 pounds, with nickel and molybdenum compounds decomposable to the metal oxides on heating, in a weight ratio of MoO_3 to NiO of between 3 and 6, drying, and calcining at temperatures between 600 and 1,000° F. limited to avoid reducing the BET surface area below 125 m.^{2}/gm. while increasing the apparent bulk density to at least 0.6 gm./cc. The composition of this high metals content catalyst consists essentially of, in combination, from 42 to 60 weight percent alumina and from 9 to 18 weight percent silica in a weight ratio of Al_2O_3 to SiO_2 of between 3 and 5, and the balance oxides of molybdenum and nickel in a weight ratio of MoO_3 to NiO of between 3 and 6. The catalyst is used in a hydroconversion process at relatively lower hydrogen pressures.

3,425,935

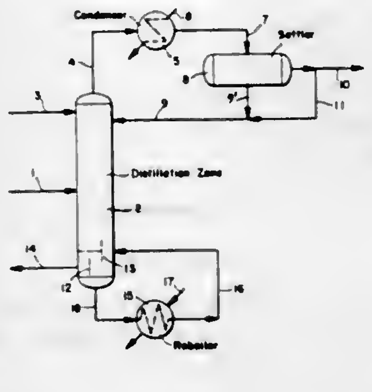
DISTILLATION IN THE PRESENCE OF WATER

Robert P. Cahn, Millburn, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 79,248, Dec. 29, 1960. This application Oct. 9, 1964, Ser. No. 402,749

U.S. Cl. 208—348 **6 Claims**

Int. Cl. B01d *3/34*



A method for separating a mixture of two or more fractions which are immiscible and insoluble in water by distillation. The fraction mixture is fed to a distillation tower having liquid water in all stages of the distillation zone. In the disclosure, operation of the improved (wet) system is compared with the conventional (dry) distillation system. In the improved process, separation is accomplished at a substantially lower temperature.

3,425,936

WASTE WATER TREATMENT SYSTEM

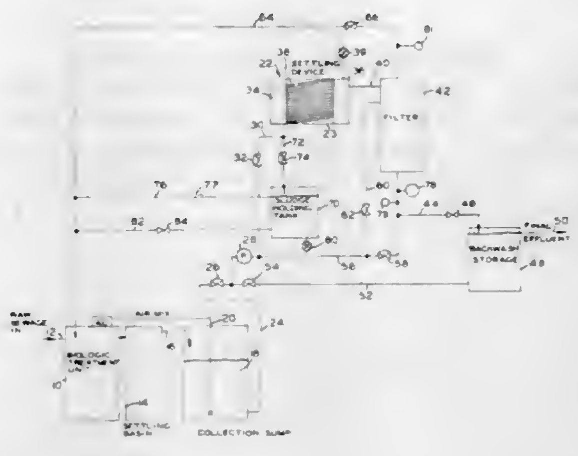
Gordon L. Culp, Robert D. Schilling, Sigurd P. Hansen, and Charles W. Botsford, Corvallis, Oreg., assignors to Neptune Microfloc, Incorporated, Corvallis, Oreg., a corporation of Oregon

Filed Mar. 2, 1967, Ser. No. 620,068

U.S. Cl. 210—8 **11 Claims**

Int. Cl. B01d *35/16*

A treatment system for organic wastes in which the effluent from a biological oxidation process is passed through a settling device having a plurality of small tubes in parallel in which settleable material carried over in the effluent may deposit. The semi-clarified effluent from the settling device is then passed through a filter capable of removing substantially all of the remaining particulate material in the effluent so that the final effluent is of a clear quality. Automatic control arrangements



are provided for backwashing the filter and returning the filter backwash to the biological process, and for draining the tubular settling device periodically so that excess biological solids are discharged to outside of the system and removed therefrom preventing upsets of the system.

3,425,937

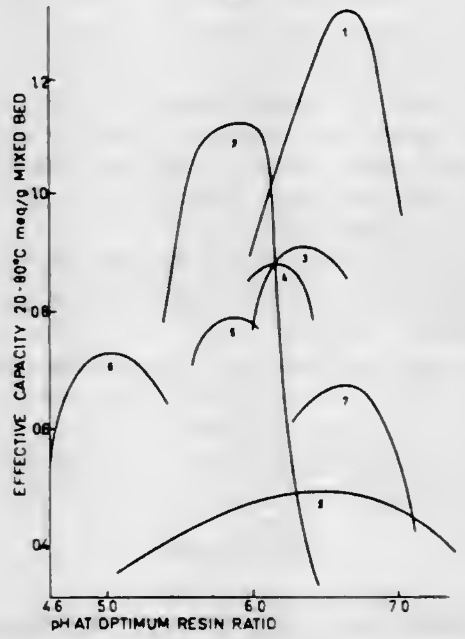
DEMINERALIZATION OF WATER

Donald Eric Weiss, 34 Lake Road, Blackburn, Victoria, Australia, and Brian Alfred Bolto, 29 Somers St., Mitcham, Victoria, Australia

Continuation-in-part of application Ser. No. 349,976, Mar. 6, 1964. This application May 25, 1966, Ser. No. 552,887

U.S. Cl. 210—32 **1 Claim**

Int. Cl. C02b *1/16, 1/42, 1/56*

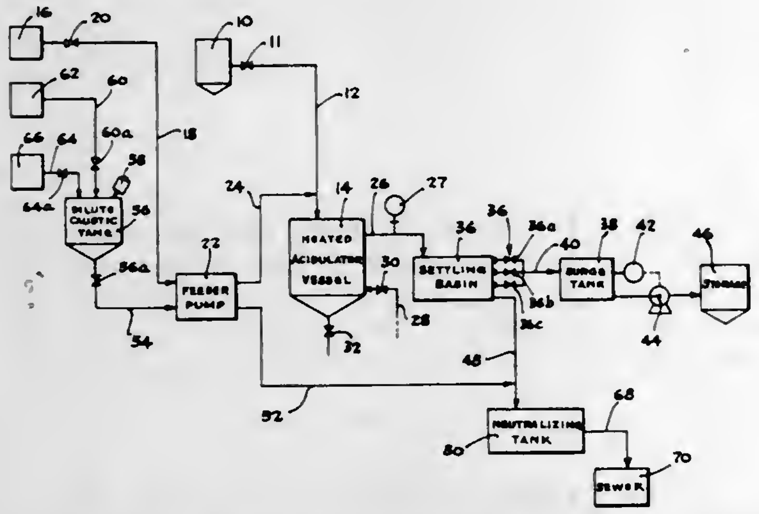


1. In a process for the demineralization of water using a mixed bed of ion-exchange resins of the weak electrolyte type in which the mixed resin bed comprises a weak base resin and a weak acid resin and is regenerated by elution with water or saline aqueous solutions at a temperature exceeding that employed in the adsorption stage and in which the weak base resin has a titration curve which is displaced to a more acid position by elevation of temperature and the weak acid resin has a titration curve at the temperature of the adsorption stage such that some portion of it falls within the area defined by the titration

curves of the weak base resin at the temperatures, respectively, of the adsorption and elution stages, the improvement which comprises adjusting the pH of the water in equilibrium with the resin bed during adsorption and choosing a ratio of acid resin to base resin such as to maximize the overlap of the acid and base titration curves.

3,425,938
SOAPSTOCK ACIDULATION

Fritiof M. Bloomberg and Thomas W. Hutchins, Stuttgart, Ark., assignors to Arkansas Grain Corporation, Stuttgart, Ark., a corporation of Arkansas
Filed June 9, 1967, Ser. No. 644,907
U.S. Cl. 210—59 **13 Claims**
Int. Cl. C02c *5/02*



A method for acidulating soapstock and for collecting the separated acid oil by acidulating a mixture of soapstock, water and mineral acid within a substantially filled and confined or acidulating area; transferring an overflow volume of the acidulated mixture to a confined settling area where the acid oil rises and the acid water settles; withdrawing an overflow volume of the acid oil from the substantially filled settling area to storage means; and said acid water being drained off from the lower portions of the settling area to means where the acid water may be neutralized and then disposed as waste. The method is made continuous by continuously delivering the mixture to the acidulator, and continuously removing the overflow to the settling basin, and then continuously transferring the overflow of acid oil to storage and acid water to the neutralizing means.

An apparatus for practicing the method includes pumping and delivery means to transfer the mixture to a confined acidulator heating vessel, conveying the overflow from an upper overflow port to a settling basin, and then transferring the acid oil as an overflow from an upper overflow port of the settling basin to storage means, while removing the acid water from the lower part of the settling basin through a drain to neutralizing means.

3,425,939
TWO-PHASE FIRE-EXTINGUISHING COMPOSITIONS

Jacques Juillard, Asnieres, and Jean Claude Alleton, Paris, France, assignors to Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture, Paris, France
No Drawing. Continuation-in-part of application Ser. No. 429,666, Feb. 1, 1965. This application Mar. 2, 1965, Ser. No. 436,642
Claims priority, application France, Jan. 31, 1964, 962,244; Apr. 17, 1964, 971,237
U.S. Cl. 252—7 **40 Claims**
Int. Cl. A62d *1/00*

A general use fire-extinguishing composition comprising a saturated liquid phase and dispersed therein are undissolved particulate solids present in a concentration which increases the fire-extinguishing effectiveness of the saturated aqueous phase. The flowability of the composition is maintained by a dispersing agent such as clay.

3,425,940
NON-STAINING LIQUID LUBRICANT

James Hall Norton, Corunna, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 476,664, Aug. 2, 1965. This application June 30, 1966, Ser. No. 561,766

U.S. Cl. 252—8.5 **11 Claims**
Int. Cl. C10m *1/40*

A liquid mineral oil-free lubricating composition that is particularly suited for use in the drilling of earth formations with a diamond coring bit, and which is superior to previous lubricants for this purpose in that it does not cause staining of the earth cores, comprises from 3 to 25 weight percent of a salt of an alkylated aromatic sulfonic acid, from 3 to 25 weight percent of a solubilizing agent, from 1 to 10 weight percent of a rust inhibitor and from 40 to 93 weight percent of water. The composition can be added to the circulating stream of water used in the drilling operation at the rate of 1 volume of lubricant per 200 to 1000 parts of the circulating water.

3,425,941
METHOD OF PREPARING CALCIUM ALKYLPHENOLATES

Doris Kivelevich, Fishkill, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,743

U.S. Cl. 252—42.7 **8 Claims**
Int. Cl. C10m *1/08*

Method of preparing a lubricating oil composition of detergent properties containing a calcium salt of an alkylphenol comprising contacting in the presence of a lubricating oil, alkylphenol with calcium carbide and an alkanol or alkoxyalkanol.

3,425,942
LUBRICANTS CONTAINING POLYMERS OF AROMATIC N-3-OXOHYDROCARBON-SUBSTITUTED ACRYLAMIDES

Lester E. Coleman, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,501

U.S. Cl. 252—51.5 **5 Claims**
Int. Cl. C10m *3/26;* **C14c** *9/00*

Novel N - 3 - oxohydrocarbon - substituted acrylamides containing an aromatic radical in either the 1 or 3 position on the oxohydrocarbon substituent are prepared by the reaction of acrylonitrile with an aromatic ketone having at least one alpha hydrogen atom, or with a mixture of such a ketone with an aromatic or aliphatic aldehyde or ketone having at least one alpha hydrogen atom, in the presence of sulfuric acid; or by the reaction of acrylonitrile with a β-hydroxy oxohydrocarbon or an α,β-unsaturated oxohydrocarbon derived from said aromatic ketone or mixture. Oil-soluble polymers formed by the polymerization of these acrylamides, and also by the polymerization of acrylamides containing at least two aromatic substituents, one in the 1 position and one in the 3 position of the nitrogen substituent, are useful as viscosity index improvers for lubricating oils.

3,425,943
NOVEL QUATERNARY SEMICONDUCTING COMPOSITIONS OF MATTER

George Augustus Castellion, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 26, 1966, Ser. No. 553,008
U.S. Cl. 252—62.3 **7 Claims**
Int. Cl. C04b *35/00*

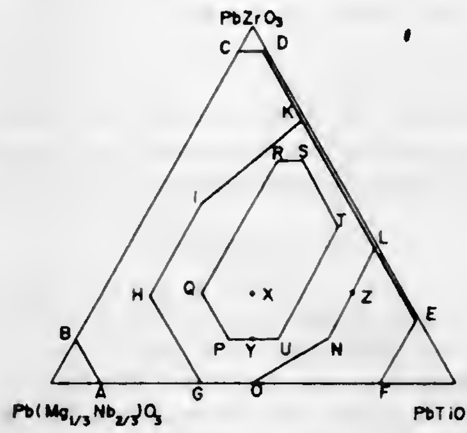
1. A semiconducting, single phase composition of matter having the formula:

$$M_{3-(m+n)}Zn_mCd_nAs_2$$

wherein M is an element selected from the group consisting of magnesium and manganese and *m* and *n* are each a value ranging from about 0.25 to about 2.5 in which the sum of *m* and *n* does not exceed about 2.75.

3,425,944
PIEZOELECTRIC CERAMIC COMPOSITIONS

Hiromu Ouchi, Toyonaka-shi, Osaka-fu, and Masamitsu Nishida, Osaka-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Dec. 14, 1965, Ser. No. 513,798
U.S. Cl. 252—62.9 **6 Claims**
Int. Cl. C04b *35/28, 35/36*



Piezoelectric ceramic compositions of the ternary system $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$-$PbZrO_3$ modified with combined MnO_2 and NiO additives for enhanced mechanical quality factor and coupling coefficient. These compositions have utility in various transducer applications.

3,425,945
NOVEL ZINC MANGANESE ARSENIDE SEMICONDUCTING MATERIALS

George Augustus Castellion, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 26, 1966, Ser. No. 553,011
U.S. Cl. 252—62.51 **5 Claims**
Int. Cl. H01f *1/04, 1/06*

1. A semiconducting, hexagonal crystal structure exhibiting spontaneous magnetization and having a single phase having the formula:

$$Zn_{3-x}Mn_xAs_2$$

wherein *x* is a value ranging from about 2.1 to about 2.9.

3,425,946
ELECTROLESS PLATING COMPOSITION

William M. Emons, Jr., Hazel Drive, Branford, Conn. 06405, and Saul Charms, 300 Calvin St., Westwood, N.J. 07675
No Drawing. Filed Aug. 26, 1966, Ser. No. 594,952
U.S. Cl. 252—79.1 **10 Claims**
Int. Cl. C09k *3/00*

A method of preparing a non-conducting plastic base for electroless plating of metal thereon by treatment with a dilute solution of a stannous compound in a glycol ether.

3,425,947
METHOD OF TREATING METAL SURFACES

Werner Rausch, Stierstadt, Taunus, and Gerhard Koch, Gottingen, Germany, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 2, 1966, Ser. No. 546,613
U.S. Cl. 252—105 **7 Claims**
Int. Cl. C11d *7/02, 7/06, 7/10*

An alkaline concentrate composition, useful in formulating alkaline treating solutions for removing organic impurities from ferrous metal surfaces which comprises an alkali metal hydroxide, an alkali metal permanganate, and an inorganic reducing agent, preferably selected from alkali metal sulfides, sulfites, bisulfites, pyrosulfites, phosphites and hypophosphites. The reducing agent is preferably present in an amount of about 1 gram equivalent of reducing agent per gram mole of the alkali metal permanganate.

3,425,948
COMPOSITION AND PROCESS FOR LIGHT-WEIGHT SURFACTANT PRODUCTS

Joseph V. Otrhalek, Dearborn, and Paul E. Luoma, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,910
U.S. Cl. 252—161 **12 Claims**
Int. Cl. C11d *1/12*

Discrete, hollow detergent particles are produced by subjecting a mass of finely divided solid alkali carbonate particles to a tumbling action by a continuously moving surface such as a rotating pan tilted at an angle. During the tumbling on the moving surface, the alkali carbonate particles are sprayed with an acid reacting surface active agent material whereby said carbonate reacts with the surface active agent material neutralizing same and releasing carbon dioxide gas. The release of the gas results in the formation of discrete, hollow particles of the detergent material.

3,425,949
NOVEL CHEMILUMINESCENT REACTION BETWEEN OXALYL CHLORIDE, A PEROXIDE, AND WATER OR A SUITABLE ALCOHOL IN THE PRESENCE OF A FLUORESCENT COMPOUND

Michael McKay Rauhut, Norwalk, and George Warren Kennerly, Darien, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 25, 1965, Ser. No. 442,818
U.S. Cl. 252—188.3 **9 Claims**
Int. Cl. C09k *1/00*

Process of admixing reactants including (1) a reactant selected from the group consisting of a ketodiacid halide and an oxalyl halide, (2) sufficient diluent to form a solution of reactants, (3) a peroxide selected from the group consisting of an organohydroperoxide and an organoperacid, and (4) a fluorescer to produce chemiluminescent light and to compositions comprising the reactants.

3,425,950
DYE PENETRANT

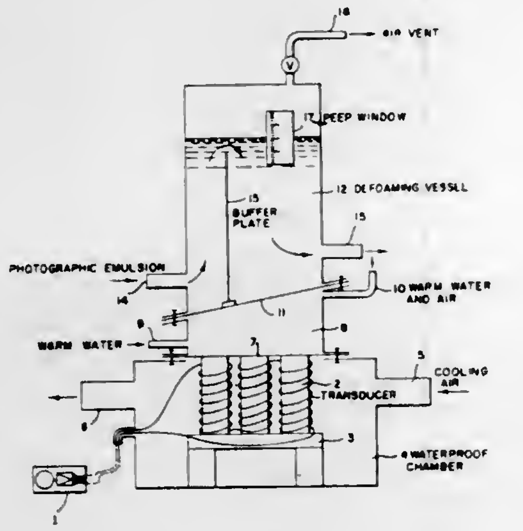
John Derbyshire, Jr., Los Alamitos, Isidore Pollack, Westminster, and Victor A. Pawloski, Long Beach, Calif., assignors to North American Rockwell Corporation
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,788
U.S. Cl. 252—301.2 **11 Claims**
Int. Cl. C09k *1/02*

A dye penetrant inspection technique and materials therefore are described. In particular, a solution of dye is hexachlorobutadiene-1,3 is employed for nondestructive testing of solid surfaces that may be contacted by liquid oxygen since the hexachlorobutadiene-1,3 suppresses the inherently violent reaction of conventional strong dyes with liquid oxygen.

3,425,951

DEFOAMING APPARATUS

Mamoru Ishiwata, Minami-Ashigara-Machi, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Minami-Ashigara-Machi, Ashigara-Kamigun, Kanagawa, Japan
Filed Mar. 21, 1966, Ser. No. 537,624
U.S. Cl. 252—361 **1 Claim**
Int. Cl. B01d *19/02*

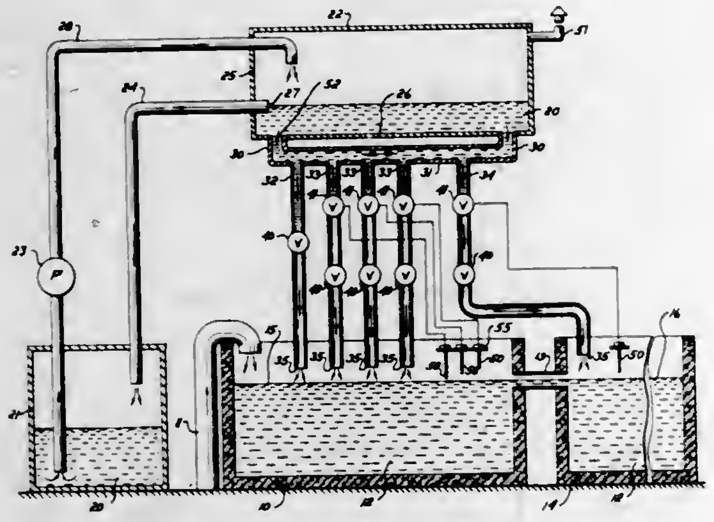


Apparatus for ultrasound removal of foam from liquids, such as photographic emulsions, so as to avoid pin holes in the emulsion.

3,425,952

APPARATUS FOR THE CONTROL OF FOAM FORMATION DURING THE PROCESSING OF LIQUIDS

Philip J. Gaughan, Philadelphia, George E. Dorwart III, Southampton, and John B. Lord, Abington, Pa., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 539,085, Mar. 31, 1966. This application Jan. 10, 1967, Ser. No. 608,354
U.S. Cl. 252—361 **8 Claims**
Int. Cl. B01d *19/04*



The present invention relates generally to the control of foam formation in the processing of liquids and to apparatus therefor, and particularly to feeding anti-foam agents to wet processes for the synthesis of phosphoric acid by means of an anti-foam distribution system. The anti-foam distribution system features (1) a plurality of valves through which the anti-foam agents pass, which valves operate in response to a plurality of sensing means located at gradually increased heights from the surface of the liquid being processed, and (2) a holding receptacle located at an elevation above the surface of the liquid being treated, said holding receptacle being connected to a plurality of feeders having valves therein, and making possible gravity flow of anti-foam agent.

3,425,953

DISPERSION PROCESS AND COMPOSITION

Jack C. Cowan, Augustus Earl Beasley, Jr., John W. Jordan, and Claude Malcolm Finlayson, Houston, Tex., and Robert O. Stearns, Barstow, Calif., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 244,905, Dec. 17, 1962. This application Jan. 28, 1966, Ser. No. 523,548
The portion of the term of the patent subsequent to Feb. 1, 1983, has been disclaimed and dedicated to the Public
U.S. Cl. 252—363.5 **2 Claims**
Int. Cl. B01f *3/00;* **C09k** *3/00;* **C10m**

A composition of matter is provided in which a long-chain alkyl ammonium lignosulfonate (such as dimethyl dioctadecyl ammonium lignosulfonate) is dispersed in an organic liquid vehicle (such as a petroleum oil), accompanied by a chemical compound selected from a named class (such as nonyl phenol, octanoic acid, phenyl acetate, etc.) and having a dispersibility-enhancing effect on the lignosulfonate.

3,425,954

FOUR COMPONENT MULTIPURPOSE CORROSION INHIBITOR

Peter M. Ruzevick and Ronald F. Adams, Chicago, and Albert H. Reynolds, Glen Ellyn, Ill., assignors to The Cromwell Paper Company, a corporation of Illinois
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,392
U.S. Cl. 252—392 **14 Claims**
Int. Cl. C23f *11/14, 11/12*

A multipurpose corrosion inhibitor comprising as the active ingredients a mixture of an alkali metal salt of aromatic carboxylic acids (sodium benzoate), an alkali metal salt of nitrous acid (sodium nitrite), an alkyl ester of benzoic acid (butyl benzoate) and a stable compound having a triazole function (benzotriazole). The composition is incorporated in a carrier vehicle such as propylene glycol and is adapted to inhibit the corrosion of metals in the presence of hydrogen sulfide and carbon dioxide by direct contact or as a vapor phase inhibitor.

3,425,955

REGENERATION OF ALUMINUM HALIDE CONTAINING CATALYSTS

Harold J. Hepp and Lewis E. Drehman, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,434
U.S. Cl. 252—411 **7 Claims**
Int. Cl. B01j *11/02*

Method and apparatus for regenerating aluminum halide containing catalysts by employing a cooling section and a scrubbing section disposed about an intermediate regeneration section, the cooling section being cooled with catalyst to be regenerated, catalyst being removed from the scrubbing zone and heated and introduced into said regeneration zone, and catalyst being removed from the scrubbing zone and cooled and reintroduced into the scrubbing zone.

3,425,956

PROCESS FOR PREPARING MOLECULAR SIEVE CONTAINING CRACKING CATALYSTS

Richard W. Baker, Ellicott City, and Frank G. Ciapetta, Silver Spring, Md., Charles P. Wilson, Jr., Cincinnati, Ohio, and Philip K. Maher, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Continuation-in-part of applications Ser. No. 242,892, Dec. 7, 1962, Ser. No. 355,101, Mar. 26, 1964, and Ser. No. 387,186, Aug. 3, 1964. This application Feb. 8, 1965, Ser. No. 431,162
U.S. Cl. 252—455 **5 Claims**
Int. Cl. B01j *11/40*

Molecular sieve promoted silica alumina cracking catalysts are prepared by admixing crystalline zeolite with a silica alumina slurry, and subsequently sequentially washing, heating, and washing the slurry to reduce the alkali metal oxide content thereof to below about 0.5%.

3,425,957

METHOD OF MANUFACTURING HYDROCRACKING CATALYSTS

George N. Pessimisis, Berwyn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed July 5, 1966, Ser. No. 562,500
U.S. Cl. 252—455 **8 Claims**
Int. Cl. B01j *11/46*

An improved method for impregnating a porous catalyst support with cobalt oxide and molybdenum trioxide by reacting a slurry of the catalyst support with a slurry containing molybdenum trioxide and cobalt carbonate, filtering the slurry and subsequently reacting the filter cake with an aqueous solution of cobalt and molybdenum salts.

3,425,958

PARTICULATE SILICA CONTACTED WITH A SILICIC ACID SOLUTION

Robert Paul Gentles, Linlithgow, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England, a British company
No Drawing. Filed Dec. 12, 1966, Ser. No. 600,761
Claims priority, application Great Britain, Dec. 21, 1965, 54,009/65
U.S. Cl. 252—458 **15 Claims**
Int. Cl. B01j *11/06, 11/32*

3. A process for the production of a supported catalyst comprising a catalyst deposited on a particulate silica carrier wherein the particulate silica carrier is brought into contact with a solution of silicic acid, and the solvent is removed from the silica.

4. A process according to claim 3 wherein the catalyst deposited on the silica is a transition metal compound.

6. A process according to claim 4 wherein the transition metal compound is chromium trioxide.

3,425,959

NONPYROPHORIC RANEY-TYPE CATALYSTS BY TREATMENT WITH AN OXIDIZING AGENT

André Haddad, Paris, France, assignor to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, France
No Drawing. Filed June 14, 1965, Ser. No. 463,900
Claims priority, application France, June 13, 1964, 978,232
U.S. Cl. 252—459 **18 Claims**
Int. Cl. B01j *11/22, 11/32*

To decrease their pyrophoricity, and to increase their storability in the dry state, Raney catalysts are treated with an aqueous solution of an oxidizing agent at a pH higher than 3, preferably 5–11, the amount of oxidizing agent being critical and necessarily less than the maximum amount consumable by the catalyst, the critical amount being preferably 20–80%, more preferably 30–60% of the maximum, and the oxidizing agent being preferably a hypochlorite.

3,425,960

POLYGLYCIDOL PROCESS

Stanley Robert Sandler, Springfield, and Florence Ray Berg, Philadelphia, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 2, 1965, Ser. No. 484,762
U.S. Cl. 260—2 **4 Claims**
Int. Cl. C08g *23/06, 23/12*

This invention relates to the method of preparing polymers of epoxidized C_3–C_8 straight chain alcohols by the use of a catalyst selected from the group consisting of alkali metal hydroxides, alkali metal amides, C_1–C_4 alkali metal alkoxide, alkyl and aryl tertiary amines and mixtures thereof at a temperature in the range of about 0°–30° C.

3,425,961

PROCESS FOR PREPARING SYNTHETIC RESINS FROM POLYGLYCIDYL ETHERS OF CYCLOALIPHATIC POLYHYDROXYL COMPOUNDS WITH HARDENING AGENTS

Karl Jellinek, Duisburg-Meiderich, and Udo Post, Angermund, Germany, assignors to Rutgerswerke und Teerverwertung Aktiengesellschaft, Frankfurt am Main, Germany
No Drawing. Filed July 6, 1966, Ser. No. 563,043
Claims priority, application Germany, July 10, 1965, R 41,062, R 41,063
U.S. Cl. 260—2 **10 Claims**
Int. Cl. C08g *30/14, 30/12, 30/02*

Synthetic resin masses which are resistant to creeping current and to arc, are prepared from cycloaliphatic epoxide compounds by reacting diglycidyl ethers of cycloaliphatic dihydroxyl compounds or triglycidyl ethers of cycloaliphatic trihydroxyl compounds, or polyglycidyl ethers of cycloaliphatic polyhydroxyl compounds with hardening agents or catalytic hardening agents. Such hardening or curing agents may be e.g. polyamines, polyaminoamides, polycarboxylic acid anhydrides, tertiary amines or Lewis acids.

3,425,962

SALT OF A DIETHYLAMINOETHYL CROSS-LINKED DEXTRAN ANION EXCHANGER

Edmund S. Granatek and Alphonse P. Granatek, Baldwinsville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 28, 1966, Ser. No. 605,230
U.S. Cl. 260—2.1 **1 Claim**
Int. Cl. B01j *1/08;* **A61k** *9/00*

The dioctyl sulfosuccinic acid salt of a diethylaminoethyl cross-linked dextran anion exchanger which is a tasteless compound useful as a fecal hydrator or stool softener.

3,425,963

MIXTURES OF BLOWING AGENTS AND FOAMABLE COMPOSITIONS OF MATTER EMPLOYING THE SAME

Thomas Francis, Toronto, Ontario, Maurice H. Jones, Scarborough, Ontario, and Melanie P. Thorne, Toronto, Ontario, Canada, assignors to Ontario Research Foundation, Toronto, Ontario, Canada
No Drawing. Filed Feb. 19, 1964, Ser. No. 345,861
U.S. Cl. 260—2.5 **10 Claims**
Int. Cl. C08j *1/18;* **C08g** *43/00*

1. In an all-solid foamable composition of matter containing a solid multifunctional epoxide and a solid amine containing more than one replaceable hydrogen atom attached to a nitrogen atom, a mixture of solid blowing agents comprising at least one solid blowing agent selected from the class consisting of 1,3-diaryltriazenes and at least one solid blowing agent selected from the class consisting of organic sulphonylhydrazides and azobisformamide, mixtures of azobisformamide with any of said sulphonylhydrazides being excluded, the ratio by weight of said sulphonylhydrazide to said triazene being be-

tween 60:40 and 20:80, and the ratio by weight of said azobisformamide to said triazene being less than about 20:80.

3,425,964
LATENT CURING AGENTS FOR THERMOSETTING POLYMERS

Henry Stanley, Cedar Grove, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 103,703, Apr. 18, 1961. This application Oct. 9, 1964, Ser. No. 402,957

U.S. Cl. 260—2.5 **4 Claims**

Int. Cl. C08g *53/10*

The invention relates to a process of adding a latent curing agent made from the reaction of carbon dioxide and water with a liquid polyfunctional amine to a thermosetting resin and heating to cure and foam the resin.

3,425,965
METHOD OF PRODUCING COLLAPSED EXPANDABLE CELLULAR CHLOROSTYRENE POLYMER PRODUCT

Richard E. Skochdopole, Midland, and Keith R. Denslow, Coleman, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,601

U.S. Cl. 260—2.5 **4 Claims**

Int. Cl. C08f *7/06, 47/00*

Re-expandable chlorostyrene polymer particles are prepared by foaming at superatmospheric pressure, cooling the particles to about room temperature, causing partial collapse of the cell wall. Such particles are re-expanded by exposing to air under ambient conditions.

This invention relates to the production of an improved collapsed expandable cellular thermoplastic product. It more particularly relates to an expandable cellular product comprising a polymer of chlorostyrene.

3,425,966
THREE STAGE SUSPENSION POLYMERIZATION PROCESS FOR VINYL ARYL MONOMERS

Clifford P. Ronden and John Yu, Edmonton, Alberta, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,898

U.S. Cl. 260—2.5 **15 Claims**

Int. Cl. C08f *7/04, 47/08*

Polymeric materials such as polystyrene may be produced in bead form by use of a process involving a three catalyst system and three temperature stages which results in higher viscosity average molecular weight, less residual monomer, greater uniformity and freedom from surface irregularities.

3,425,967
FOAMABLE ORGANOPOLYSILOXANE COMPOSITION AND FOAMED PRODUCT OBTAINED THEREFROM

Frank J. Modic, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

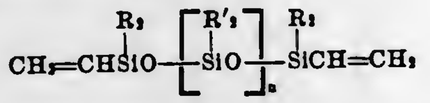
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,675

U.S. Cl. 260—2.5 **2 Claims**

Int. Cl. C08g *31/09, 53/08*

1. A foamable composition comprising,

(1) 100 parts of a vinyl chain-stopped polysiloxane having the formula:



$$CH_2{=}CH\overset{R_2}{\overset{|}{Si}}O-\left[\overset{R'_2}{\overset{|}{Si}}O\right]_n-\overset{R_2}{\overset{|}{Si}}CH{=}CH_2$$

where R and R′ are monovalent hydrocarbon radicals free of aliphatic unsaturation with at least 50 mole percent of the R′ groups being methyl and *n* has a value of from about 50 to 2,000, inclusive,

(2) from 10 to 100 parts of an organopolysiloxane copolymer comprising $(R'')_3SiO_{0.5}$ units and SiO_2 units and in which from about 2.5 to 10 mole percent of the silicon atoms contain silicon-bonded vinyl groups, where R″ is a member selected from the class consisting of vinyl radicals and monovalent hydrocarbon radicals free of aliphatic unsaturation,

(3) from 10 to 100 parts of an inorganic fibrous material selected from the class consisting of asbestos, fibrous potassium titanate and mixtures thereof,

(4) from 0 to 50 parts of a finely divided filler,

(5) a platinum catalyst,

(6) an amount of a liquid organohydrogenpolysiloxane having the formula:

$$(R)_a(H)_bSiO_{\frac{4-a-b}{2}}$$

where R is a monovalent hydrocarbon radical free of aliphatic unsaturation, *a* has a value of from 1.00 to 2.10, *b* has a value of from about 0.1 to 1.0, and the sum of *a* plus *b* is about 2.00 to 2.67, said organohydrogenpolysiloxane being present in an amount sufficient to provide from about 0.5 to 1.0 silicon-bonded hydrogen atoms per silicon-bonded vinyl group in said composition, and

(7) from 1 to 5 parts of a blowing agent.

3,425,968
NON-CURLING GUMMED COATED PAPER, METHOD AND COMPOSITION FOR MAKING THE SAME

Thomas L. Reilling, 200 Walnut St.,
Dedham, Mass. 02026

No Drawing. Continuation-in-part of applications Ser. No. 176,502, Mar. 7, 1962, and Ser. No. 355,914, Mar. 30, 1964. This application Sept. 17, 1965, Ser. No. 488,231

U.S. Cl. 260—8 **35 Claims**

Int. Cl. C09j *3/14, 7/04*

Non-curling gummed products include a layer of water remoistenable gum globules adhered to each other and to a base in a discontinuous phase. A water insoluble resin is also present as a discontinuous phase and forms a non-porous film, with the gum globules which make up at least 85% by weight of the layer. For release type coatings, the gum is insolubilized by use of formaldehyde, and the like; or a thermoplastic resin may be added to provide a layer having heat seal properties. A coating material is also described which includes 100 parts gum, 10–50 parts of water, 2–16 parts of a water insoluble polymer which acts as a protective colloid, and a solvent for dissolving the polymer; the gum being present as dispersed finely divided gum globules of very small size. Specific materials and methods of preparing coating compositions and coated products are also described.

3,425,969
PROCESS OF PREFERENTIALLY MODIFYING STEREOREGULAR POLYHYDROCARBONS TO IMPROVE DYEABILITY

Jack J. Press, 1218 E. Laurelton Parkway,
Teaneck, N.J. 07666

No Drawing. Continuation-in-part of applications Ser. No. 400,611, and Ser. No. 400,612, Sept. 30, 1964, Ser. No. 406,631, Oct. 26, 1964, Ser. No. 406,439, Oct. 27, 1964, Ser. No. 414,919, Nov. 30, 1964, Ser. No. 427,518, Jan. 22, 1965, Ser. No. 433,226, Feb. 16, 1965, Ser. No. 491,055, Sept. 28, 1965. This application Oct. 22, 1965, Ser. No. 502,719

U.S. Cl. 260—17 **20 Claims**

Int. Cl. C08f *45/66, 3/10*

A process of increasing the affinity of a stereoregular polyhydrocarbon for dyes whereby a modifier is dispersed

in the polyhydrocarbon predominantly in the amorphous regions.

3,425,970
SOFT FLOWING AMINOPLAST MOLDING COMPOSITIONS

Nicholas R. Segro, Baltimore, Md., and Eldon L. Hall, Fredericksburg, Va., assignors to FMC Corporation, a corporation of Delaware

No Drawing. Filed June 21, 1966, Ser. No. 559,098

U.S. Cl. 260—17.3 **5 Claims**

Int. Cl. C08g *51/40, 51/18, 37/28*

Aminoplast molding compositions which have improved flow under pressure and improved molding characteristics without loss of cure time are produced by incorporating in said molding composition as a flow promoter from 0.2 to 2 percent of sucrose benzoate.

3,425,971
SALT-RESISTANT THICKENERS COMPRISING BASE-SAPONIFIED STARCH-POLYACRYLONITRILE GRAFT COPOLYMERS

Lewis A. Gugliemelli, Pekin, and Mary Ollidene Weaver and Charles R. Russell, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,049

U.S. Cl. 260—17.4 **2 Claims**

Int. Cl. C08f *3/76*

Two percent dispersions of saponified starch-polyacrylonitrile graft copolymers provide viscosities of about 6000 cps. even though dispersed in a 12 percent brine. The presence of only a limited sensitivity to high salt concentrations provides the saponified graft copolymers with great potential as a bodying agent for use in secondary oil recovery operations from off-shore wells.

3,425,972
PREPARATION OF WATER SOLUBLE TRANSPARENT FILMS FROM DEXTRIN AND POLYVINYL ALCOHOL

Luciano Nobile and Carlo Alberto Tesei, Milan, Italy, assignors to Ledoga S.p.A., Milan, Italy

Continuation-in-part of application Ser. No. 375,294, June 15, 1964. This application Apr. 27, 1967, Ser. No. 634,278

Claims priority, application Italy, June 20, 1963, 12,749/63

U.S. Cl. 260—17.4 **4 Claims**

Int. Cl. C08f *29/30;* **B29d** *7/02*

Self-supporting transparent water-soluble films composed essentially of white dextrin, polyvinyl alcohol, an emulsifying agent and an alkali metal borate are prepared by heating a suspension of the emulsifying agent, the alkali metal borate and the white dextrin, then adding an aqueous solution of polyvinyl alcohol containing a plasticizing polyalcohol.

3,425,973
COATING COMPOSITION BASED ON AROMATIC DIISOCYANATES, POLYOLS, AND MONOHYDRIC ALCOHOLS

Fred D. Shaw, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,203

U.S. Cl. 260—18 **7 Claims**

Int. Cl. C08g *22/08*

A moisture-cure, one-package, fast-drying, polyurethane coating composition, prepared by reacting an aromatic diisocyanate, a polyol component, at least part of which is a triol, and a monohydric alcohol.

3,425,974
ALKYD RESIN-AMINOPLAST RESIN COATING COMPOSITION FOR GLASS

Charles V. Semroc, Natrona Heights, Pa., assignor to P.P.G. Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,953

U.S. Cl. 260—21 **8 Claims**

Int. Cl. C08g *37/34;* **C02d** *3/52*

Amino-modified silane additives are added to compositions comprising alkyd resins and aminoplast resins to provide adherent coatings on glass substrates.

3,425,975
AIR-DRYING FILM-FORMING COMPOSITIONS

Keith Edwin James Barrett, Windsor, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,767

Claims priority, application Great Britain, Sept. 27, 1963, 38,225/65

U.S. Cl. 260—22 **7 Claims**

Int. Cl. C08g *39/06*

1. An improved film-forming composition for air-drying applications at about ambient temperatures which comprises a natural or synthetic drying oil or other component containing an unsaturated air-drying radical having two or more ethylenically unsaturated groups, a metal drier salt and an ethylenically unsaturated compound which is substantially involatile at room temperature and which is capable of polymerization or copolymerization through the ethylenically unsaturated group, the monomer being an ester of acrylic or methacrylic acid with a higher alkanol or an alkene diol, an amide of acrylic or methacrylic acid, or a dialkyl ester of fumaric or itaconic acid.

3,425,976
ANTI-FOGGING FILM COMPRISING VINYL CHLORIDE POLYMER, GLYCEROL MONOSTEARATE AND INCOMPATIBLE PLASTICIZER

George Mellen Adams, Palos Heights, and Donatas Tijunelis, Chicago, Ill., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,771

U.S. Cl. 260—23 **14 Claims**

Int. Cl. C08f *3/30, 45/00*

An anti-fog vinyl chloride polymeric film is obtained by incorporating in a plasticized vinyl chloride polymer a monoglyceride of fat-forming fatty acids or mixtures of monoglycerides and diglycerides of fat-forming fatty acids in an amount sufficient to impart anti-fogging characteristics to the film. The plasticizer system employed consists of at least about 25 parts of a plasticizer which is incompatible with the anti-fog additive. Where the plasticizer system consists of at least one incompatible and one compatible plasticizer, the ratio of incompatible to compatible plasticizer should be at least 2.5 to 1.

3,425,977
WATER-CONTAINING COATING COMPOSITION COMPRISING A SALT OF AN ANHYDRIDE COPOLYMER PARTIAL ESTER

Martin Skoultchi, New York, N.Y., and Benjamin D. Jubilee, Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,321

U.S. Cl. 260—23 **16 Claims**

Int. Cl. C09d *3/64, 3/74;* **C08f** *27/17*

Novel water soluble, surface coating compositions characterized by their ability to crosslink upon being air-dried so as to yield solvent resistant films which display excellent adhesion to a variety of substrates; said coating compositions being based upon novel polymeric derivatives resulting from the reaction between a vinyl polymer containing anhydride groups within its molecule and an ester-alcohol derived from an unsaturated fatty acid.

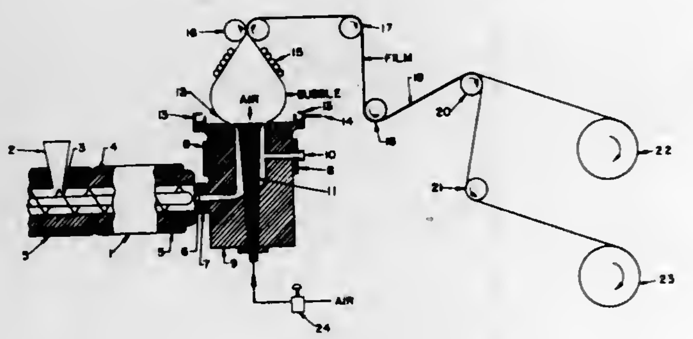
3,425,978
NOVEL NEOPRENE LATEX ADHESIVE COMPOSITIONS

Walter B. Armour, Plainfield, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 23, 1965, Ser. No. 474,486
U.S. Cl. 260—29.3 **1 Claim**
Int. Cl. C08g *37/20;* **C09g** *3/16*

A method of preparing an adhesive composition capable of yielding dry films characterized by their heat resistance, said method comprising the steps of first sulfonating a phenolic resin so as to render an aqueous solution of the thus sulfonated resin compatible with a polychloroprene emulsion with which the thus sulfonated phenolic resin is thereafter admixed.

3,425,979
PROCESS FOR THE BLOW EXTRUSION OF POLYVINYL ALCOHOL FILMS

Leo J. Monaghan and Vincent A. Aliberti, Springfield, and Daniel M. Sullivan, Granby, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application July 23, 1963, Ser. No. 297,075, now Patent No. 3,365,413, dated Jan. 23, 1968. Divided and this application Jan. 3, 1967, Ser. No. 629,035
U.S. Cl. 260—33.2 **9 Claims**
Int. Cl. C08f *29/42;* **B29d** *7/02*



This invention relates to a process for the blow-extrusion of clear water dispersible polyvinyl alcohol tubing. A critical plasticized polyvinyl alcohol composition having a residual acetate content of from 25 to 40% by weight is melted at temperatures in the range of 375 to 425° F. to form a plastic mass having a viscosity within the range of 100 to 20,000 poises. This material is extruded through a ring die and blown while in the plastic state. Upon cooling; a thin wall, continuous, non-tacky film is obtained.

3,425,980
PEROXIDE CURED POLYETHYLENE COMPOSITIONS CONTAINING COATED CLAYS

Bernard O. Baum, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 28, 1962, Ser. No. 247,834
U.S. Cl. 260—41 **29 Claims**
Int. Cl. C08f *45/72, 29/04, 29/34*

Clays coated with non-reactive, non-acidic, oxygen containing organic compounds having boilings above 135° C. are used as fillers for peroxide cured ethylene polymers to obtain white and colorable polymer compositions of improved strength.

3,425,981
OLEFIN POLYMER COMPOSITIONS CONTAINING ETHYLENE OXIDE POLYMERS HAVING A MOLECULAR WEIGHT OF FROM 100,000 TO 10 MILLION

Paul P. Puletti, Somerville, and Jack H. Gardner, South Bound Brook, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 12, 1965, Ser. No. 432,427
U.S. Cl. 260—41 **14 Claims**
Int. Cl. C08f *29/0;* **C08g** *43/02*

Olefin polymer compositions containing ethylene oxide polymers having a molecular weight of from 100,000 to 10 million are shown to exhibit enhanced anti-static properties.

3,425,982
WATER SOLUBLE WINDING MANDRELS AND METHOD OF MAKING THE SAME

Barry D. Fink, Fords, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 2, 1965, Ser. No. 445,291
U.S. Cl. 260—41 **11 Claims**
Int. Cl. C08f *7/14;* **B28b** *7/34*

A water soluble, filament winding mandrel made by mixing AFS 70–100 foundry sand with a 50–50 water solution of polyvinyl-pyrrolidone so that said polyvinyl-pyrrolidone constitutes 7 percent-by-weight of the mixture, depositing the mixture in a suitable mold, and drying the mixture to solidify it. A hydrating agent may be added to the mixture prior to the drying to accelerate that step in the process by binding some of the water and thereby obviating its removal.

3,425,983
MINERAL-FILLED HYDROCARBON COPOLYMER COMPOSITION CONTAINING AN ORGANOSILICON COMPOUND AND PROCESS OF PREPARING SAME

James Richard Wolfe, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 22, 1963, Ser. No. 296,432
U.S. Cl. 260—41.5 **1 Claim**
Int. Cl. C08f *45/58, 45/04, 29/02*

Mineral loaded chain-saturated hydrocarbon copolymer compositions containing a stabilizing amount of organosilicon compound which is insoluble in water at 75° C. and the process of preparing such a composition wherein said mineral-filled hydrocarbon is cured in the presence of a stabilizing amount of said organosilicon compound.

3,425,984
POLYOLEFINS STABILIZED BY 2,3-DIHYDROXYQUINOXALINE

Robert H. Patton, Baytown, Tex., and Delos E. Bown, White Plains, N.Y., assignors to Esso Research and Engineering Company
No Drawing. Continuation-in-part of application Ser. No. 385,477, July 27, 1964. This application May 3, 1967, Ser. No. 635,647
U.S. Cl. 260—45.8 **15 Claims**
Int. Cl. C08f *45/58, 29/02*

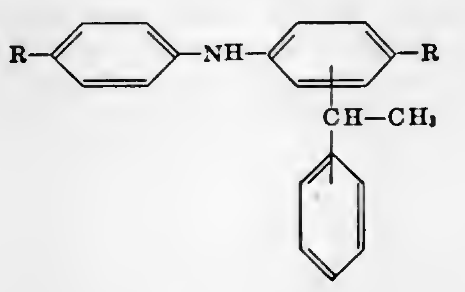
The contaminating effect of a multivalent metal on a solid polymer of an alpha olefin having 2 to 8 carbon atoms in the molecule containing at least one antioxidant at a concentration sufficient to inhibit oxidative attack of the polymer in the absence of said metal is inhibited

by the presence in said polymer of a sufficient concentration of 2,3-dihydroxyquinoxaline.

3,425,985
AMIDE COMPOSITIONS STABILIZED WITH ALKYLATED DIPHENYL AMINES

Helmut Freytag, Cologne-Stammheim, Ernst Reichold, Krefeld, Otto Bayer, Burscheid, Walter Bockmann, Krefeld-Uerdingen, and Joachim Wagner, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 18, 1966, Ser. No. 543,006
Claims priority, application Germany, Apr. 24, 1965, F 45,902
U.S. Cl. 260—45.9 **3 Claims**
Int. Cl. C08g *51/60, 41/02*

A stabilized polyamide composition comprising a synthetic, high molecular weight polyamide and a minor amount of an organic amine of the formula



wherein R is a branched alkyl radical of 3–4 carbon atoms. A process for preparing the polyamide composition described above. This composition is particularly useful in stabilizing polyamides which are employed in the preparation of fibers against the degrading effects of oxygen and heat.

3,425,986
PROCESS AND COMPOSITION OF MATTER

George B. Markert, Chester, Va., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed July 28, 1965, Ser. No. 475,580
U.S. Cl. 260—45.75 **2 Claims**
Int. Cl. C08g *41/02, 51/00*

The viscosity of nylon 6 (poly-omega-caproamide) is increased by the presence therein of 0.00005 to 0.003% of metal pyrophosphate. A suitable metal is titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, zirconium, molybdenum, silver, cadmium, tin, antimony, lead or bismuth. Such improved nylon can be further stabilized against degradation by light and heat by additionally adding 0.0025% to 0.05% of copper supplied by a copper salt soluble in caprolactam. Suitable copper salts include the chloride, bromide, fluoride, sulfite, acetate, sulfate, formate, stearate and naphthenate. The increase in the nylon viscosity is preferably obtained by subjecting the nylon containing pyrophosphate ions to a vacuum while the nylon is in a liquid state.

3,425,987
POLYOLEFIN STABILIZER COMPOSITIONS

Hendrikus J. Oswald, Morristown, Edith Turi, Livingston, and Richard B. Lund, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 24, 1964, Ser. No. 339,857
U.S. Cl. 260—45.95 **7 Claims**
Int. Cl. C08f *29/02, 45/58*

This specification discloses stabilizer systems for poly-α-olefins, particularly polypropylene, which protect the polymer from the effects of oxygen over very long periods of time. These systems comprise a synergistic combination of a phenol including 2,6-bis(2′-hydroxy-3′-t-butyl-5′-methylbenzyl)-4-methylphenol, 2,2′-methylene-bis(4-ethyl-6-t-butylphenol), 4,4′-thiobis (6-t-butyl-m-cresol) and α,α′-bis(p-hydroxyphenyl)-p-xylene and a phosphorous acid aromatic diester including diphenyl phosphite and bis(p-dodecylphenyl) phosphite.

3,425,988
POLYURETHANE POLYACRYLATE SEALANT COMPOSITIONS

Jeremy W. Gorman, West Hartford, and Alex S. Toback, Newington, Conn., assignors to Loctite Corporation, Newington, Conn., a corporation of Connecticut
No Drawing. Filed Jan. 27, 1965, Ser. No. 428,547
U.S. Cl. 260—47 **10 Claims**
Int. Cl. C08g *41/00, 22/04;* **C09k** *3/10*

Sealant compositions containing an acrylate terminated monomer and a peroxy polymerization initiator. The monomer is the reaction product of an organic polyisocyanate and an acrylate ester having an active hydrogen in the non-acrylate portion of the ester. Sealants of this type remain liquid when exposed to atmospheric oxygen, but will polymerize when oxygen is excluded such as when placed between non-porous surfaces.

3,425,989
PHENOL CONDENSATION PROCESS COMPRISING REACTING ANHYDROUS PHENOL AND AN ALKALI CATALYST AT A TEMPERATURE OF AT LEAST 130° C., AND THEN SLOWLY ADDING ALDEHYDE

Alvin F. Shepard, Grand Island, N.Y., and Thomas J. McNaughtan, Brentwood, Pa., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 411,175, Oct. 27, 1964. This application Jan. 17, 1968, Ser. No. 698,662
U.S. Cl. 260—55 **8 Claims**
Int. Cl. C08g *5/00*

A process which is useful for producing phenol-aldehyde condensates in which the phenol and aldehyde resins are joined to form o,o′-alkylidene linkages, comprises heating a mixture of a phenol in substantially anhydrous condition with an inorganic alkali catalyst to a temperature of at least 130 degrees centigrade and below the boiling point of the phenol, and then introducing an aldehyde slowly into the preheated mixture in total proportion of 0.1 to 1 mole of the aldehyde per 1 mole of the phenol, and retaining the resulting mixture at a temperature within the range stated until all the aldehyde has been introduced.

3,425,990
PROCESS FOR THE CHLOROMETHYLATION AND CROSSLINKING OF AROMATIC COMPOUNDS OF HIGH MOLECULAR WEIGHT

Herbert Corte, Opladen, Otto Netz, Cologne-Ehrenfeld, and Harold Heller, Leichlingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 16, 1965, Ser. No. 508,153
Claims priority, application Germany, Dec. 16, 1964, F 44,729/64
U.S. Cl. 260—67.6 **11 Claims**
Int. Cl. C08f *7/02, 45/46*

A process for chloromethylating and crosslinking high molecular weight aromatic compounds by contacting with methylal, chlorosulphonic acid and sulfuryl chloride reactants at a molar ratio of 2:.05–1:2–.5.

3,425,991

THERMALLY STABLE FORMALDEHYDE HIGH POLYMERS AND PROCESS FOR THEIR PREPARATION

Luigi Mortillaro and Mario Russo, Padova, Italy, and Silvio Bezzi, deceased, late of Padova, Italy, by Ladislava Viller, heir, Padova, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Filed Apr. 12, 1965, Ser. No. 448,578

Claims priority, application Italy, Apr. 13, 1964, 8,099/64; Dec. 11, 1964, 26,452/64

U.S. Cl. 260—67 **6 Claims**

Int. Cl. C08g *1/02, 1/22*

Preparation of thermally stable mixture of polyoxymethylene glycols, monoethers and diethers, having essentially orthorhombic crystalline structure, by reacting an aqueous suspension of polyoxymethylene with formaldehyde in the presence of a strong inorganic or organic acid at from 0°–60° C., optionally in the presence of either an aliphatic alcohol having 1–5 carbon atoms, or a neutral salt of an inorganic base and a strong acid, or both. Subsequent treatment of the solid product with Na_2CO_3 at 100°–220° C. produces polyoxymethylene diethers.

3,425,992

PROCESS FOR PRODUCING FORMALDEHYDE COPOLYMER HAVING EXCELLENT DYEABILITY

Junnosuke Yamauchi, Tamotsu Eguchi, and Kanji Matsubayashi, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,424

U.S. Cl. 260—67 **10 Claims**

Int. Cl. C08g *13/00, 51/66*

Thermally stable and mechanically tough formaldehyde copolymer having excellent dyeability is obtained by reacting a formaldehyde copolymer having 0.1–10 mole percent of comonomer units containing halogen atoms with ammonia or amines to effect amination of said copolymer.

3,425,993

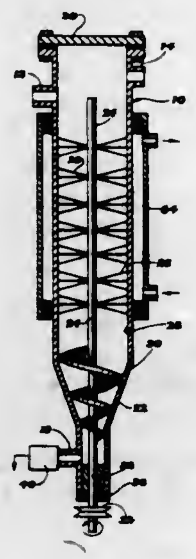
METHOD FOR PRODUCING AND PROCESSING VISCOUS MATERIALS SUCH AS POLYMERS

Edmond S. Perry, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 16, 1962, Ser. No. 217,381

U.S. Cl. 260—75 **4 Claims**

Int. Cl. C08j *1/32;* **C08g** *17/003*



Improvements in the control of chemical reactions that are subject to internal non-uniformities during the reaction (for example, condensation polymerization reactions involving viscous polymers) can be obtained by use of a process involving:

(a) Applying the reactant in a layer to a cylindrical surface, and

(b) Efficiently agitating the resulting layer by means of the ends of flexible "fingers" on a shaft coaxial to the inner cylindrical surface; the "fingers" penetrating the layer of reactant and sliding in continuous contact with the cylindrical surface.

3,425,994

PROCESS FOR THE MANUFACTURE OF A LINEAR POLYESTER USING STANNOUS OXALATE AS A POLYCONDENSATION CATALYST

Herbert Fitz, Burgkirchen (Alz), Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden,Biebrich, Germany

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,530

Claims priority, application Germany, Jan. 22, 1965, K 55,075

U.S. Cl. 260—75 **9 Claims**

Int. Cl. C08g *17/06, 17/08, 17/015*

This invention relates to a process for the preparation of a linear polyester which comprises polycondensing a bis-hydroxyalkyl ester of an aromatic or aliphatic dicarboxylic acid, other than bis-hydroxyethyl terephthalate, in the presence of stannous oxalate as a polycondensation catalyst and under effective polycondensation conditions.

3,425,995

DIRECT ESTERIFICATION METHOD

Mary E. Carter, Philadelphia, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,242

U.S. Cl. 260—75 **6 Claims**

Int. Cl. C08g *17/08*

Process of preparing polyethylene terephthalate comprising carrying out a direct esterification reaction between terephthalic acid and ethylene glycol in the presence of a phenolate which is an alkali metal or an alkaline earth metal salt of phenol to form a prepolymer and then polycondensing the said prepolymer in the presence of a polycondensation catalyst.

3,425,996

HEXAFLUOROPHOSPHATES AS FIRST STAGE ADDITIVES

Mary E. Carter, Philadelphia, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 3, 1966, Ser. No. 583,950

U.S. Cl. 260—75 **7 Claims**

Int. Cl. C08g *17/08*

Process of preparing polyethylene terephthalate wherein terephthalic acid and ethylene glycol are esterified in the presence of a hexafluorophosphate esterification additive selected from the group having the formulas $M(PF_6)_x$ and $NH_4PF_6 \cdot NH_4F$, wherein M represents a metal from Groups I–A or VII of the Periodic Table or an NH_4-group or lower alkyl substituted NH_4-group to form a polyester prepolymer and then said prepolymer is polycondensed in the presence of a polycondensation catalyst.

3,425,997

PHENOXIDES AS TRANSESTERIFICATION CATALYSTS

Otto K. Carlson, Marcus Hook, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 7, 1966, Ser. No. 584,970

U.S. Cl. 260—75 **5 Claims**

Int. Cl. C08g *17/08*

Process for preparing polyethylene terephthalate comprising carrying out a transesterification reaction between dimethyl terephthalate and ethylene glycol in the presence of a phenoxide having the formula $M(OC_6H_5)_2$, wherein M represents a metal from Groups II–A, II–B, or IV–A of the Periodic Table, to form a prepolymer and then polycondensing said prepolymer in the presence of a polycondensation catalyst.

3,425,998

LEAD SILICOFLUORIDE AS A TRANSESTERIFICATION CATALYST

Mary J. Koch, Drexel Hill, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 13, 1966, Ser. No. 586,354

U.S. Cl. 260—75 **2 Claims**

Int. Cl. C08g *17/08*

Process of preparing filament-forming polyethylene terephthalate comprising carrying out a transesterification reaction between dimethyl terephthalate and ethylene glycol in the presence of lead silicofluoride as a transesterification catalyst to form a polyester prepolymer and then polycondensing the said prepolymer in the presence of a polycondensation catalyst.

3,425,999

TETRAHYDROFURAN-ETHYLENE OXIDE POLYETHER URETHANE-UREA POLYMERS

Seymour L. Axelrood, Trenton, and Wayne G. Lajiness, Wyandotte, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed July 11, 1966, Ser. No. 563,992

U.S. Cl. 260—77.5 **14 Claims**

Int. Cl. C08g *22/14*

A polyether urethane-urea polymer is prepared from the reaction product of a heteric polyether polyol and an organic polyisocyanate with a polyamine. The heteric polyether polyol is obtained by the reaction of a mixture of ethylene oxide and tetrahydrofuran with a hydroxyl containing compound having functionality of at least two.

3,426,000

POLYCARBONAMIDES FROM DURENE DIACETIC ACID

James S. Ridgway, Durham, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,011

U.S. Cl. 260—78 **4 Claims**

Int. Cl. C08g *29/20, 41/02*

This invention is directed to novel copolyamides having increased boiling water shrinkage produced from hexamethylene diamine, adipic acid and durene diacetic acid. These copolyamides are useful in the production of fibers, having a high boiling water shrinkage.

3,426,001

POLYAMIDES FROM XYLYLENE DIAMINES AND 5-t-BUTYLISOPHTHALIC ACIDS

James S. Ridgway, Durham, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 29, 1966, Ser. No. 605,576

U.S. Cl. 260—78 **3 Claims**

Int. Cl. C08g *41/02*

Copolyamides are produced from hexamethylene diamine, adipic acid, xylylene diamine and 5-t-butylisophthalic acid. These polyamides are useful in the production of shaped articles, and particularly in the production of textile fibers and reinforcing cords.

3,426,002

ORGANO - TIN POLYMERS AND COPOLYMERS PREPARED BY INTERFACIAL CONDENSATION

Max Frankel and David Gertner, Jerusalem, Daniel Wagner, Tel-Aviv, and Albert Zilkha, Jerusalem, Israel, assignors to Yissum Research Development Company, Jerusalem, Israel, a company of Israel

No Drawing. Filed May 12, 1965, Ser. No. 455,306

Claims priority, application Israel, Mar. 22, 1965, 23,197

U.S. Cl. 260—78.4 **4 Claims**

Int. Cl. C08g *17/00*

Poly-organo-tin esters, insoluble in organic solvents, are obtained by the interfacial reaction of a salt of an acidic compound having at least two carboxyl groups, such salt being in an aqueous solution, with an organic-tin compound of the general formula $R_1R_2SnX_1X_2$ where X is a halogen atom, the organo-tin compound being dissolved in a water-immiscible organic solvent.

3,426,003

METHOD OF VULCANIZING BUTYL RUBBER

Robert I. Leib and Eiichi Morita, St. Albans, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,780

U.S. Cl. 260—79.5 **6 Claims**

Int. Cl. C08d *13/28*

Butyl rubber is vulcanized with a synergistic accelerator combination of a zinc phosphorodithioate and a thiuram sulfide which combination lowers heat build-up in the Goodrich Hysteresis Test.

3,426,004

CROSSLINKED ACRYLIC ACID INTERPOLYMERS

Frank A. Wagner, Avon Lake, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 13, 1965, Ser. No. 425,338

U.S. Cl. 260—80.3 **13 Claims**

Int. Cl. C08f *3/44, 3/46;* **C09j** *3/14*

Interpolymers prepared by the interpolymerization of acrylic or methacrylic acid with a polyallyl phosphate or polyallyl phosphite have been found to be improved thickening or suspending agents useful for mucilaginous applications having superior shear resistance. These polymers are insoluble but swellable in water and the maximum thickening is achieved by treating the aqueous suspension of the polymer with a neutralizing agent.

3,426,005

THERMOSETTING RESIN COMPOSITIONS AND A METHOD OF PRODUCING SAME

George E. Serniuk, Roselle, and Robert M. Thomas, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 443,641, Mar. 29, 1965. This application May 26, 1965, Ser. No. 459,088

U.S. Cl. 260—80.7 **18 Claims**

Int. Cl. C08f *1/72;* **C08f** *19/10;* **C08f** *19/16*

An insoluble reticulated rigid polymer suitable for casting and laminating is prepared by reacting a polar vinyl monomer, a vinyl aromatic compound and an alicyclic or acyclic multiolefin, under anhydrous conditions, in the presence of a Friedel-Crafts halide and a free radical initiator.

3,426,006

PROCESS FOR THE PRODUCTION OF POLYMERS OF CONJUGATED DIENES

Karl Nützel, Cologne-Stammheim, and Hermann Holzrichter, Bergisch-Neukirchen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,338
Claims priority, application Germany, Jan. 22, 1964, F 41,804

U.S. Cl. 260—83.5 **12 Claims**
Int. Cl. C08f *1/28, 3/16;* **C08d** *1/14*

Process for producing substantally colorless telomers, homopolymers and copolymers of conjugated diolefins comprising utilizing as polymerization catalyst a compound of the general formula:

$$Me—X(R)_y$$

wherein

Me is an alkali metal;
X is phosphorus, tin or lead;
R is a hydrocarbon; and
y is 2–3;

the Me—X bond being a homopolar bond.

3,426,007

POLYMERIZATION CATALYST SYSTEM

Joseph P. Kennedy, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,266

U.S. Cl. 260—85.3 **28 Claims**
Int. Cl. C08f *1/28, 15/04, 3/02*

A catalyst and a process for polymerizing monomers wherein the catalyst system comprises a catalyst of the type $Al(R)_2X$, wherein R is a branched or straight chain C_1–C_{12} alkyl and X is selected from the group consisting of hydrogen and halogen and a promoter comprising a solid (frozen) inorganic acid selected from the group consisting of inorganic oxygenated acids of sulfur, nitrogen, phosphorus, and boron.

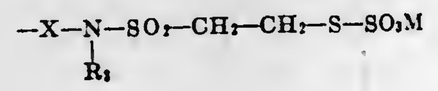
3,426,008

WATER-SOLUBLE MONOAZO DYESTUFFS AND THEIR METAL COMPLEX COMPOUNDS

Fritz Meininger and Ernst Hoyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Aug. 3, 1965, Ser. No. 477,000
Claims priority, application Germany, Aug. 6, 1964, F 43,675

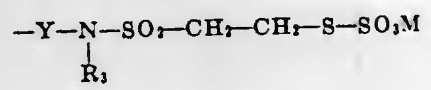
U.S. Cl. 260—151 **8 Claims**
Int. Cl. C09b *45/16, 45/18, 45/20*

Water-soluble monoazo-dyestuffs and their complex copper, chromium and cobalt compounds containing at least one or both groups of the formulae



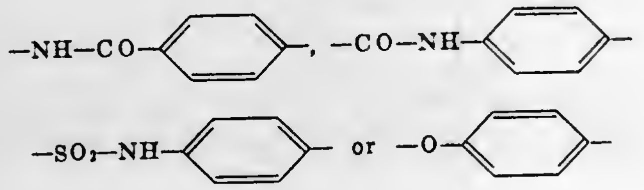
$$—X—\underset{\substack{|\\R_3}}{N}—SO_2—CH_2—CH_2—S—SO_3M$$

and

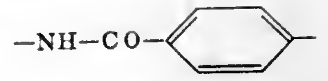


$$—Y—\underset{\substack{|\\R_3}}{N}—SO_2—CH_2—CH_2—S—SO_3M$$

wherein X is a direct linkage,



Y is a direct linkage or



R_3 is a lower alkyl, lower alkylene—COO—lower alkyl or lower alkylenecyano, and M is a hydrogen, alkali metal or calcium atom, which dyestuffs are suitable for dyeing or printing silk, wool, leather, synthetic polyamides and polyurethanes, and regenerated and natural protein and cellulose materials such as cotton, linen and viscose rayon.

3,426,009

MANUFACTURE OF ORGANIC FLUORINE COMPOUNDS

James Chapman and David Christopher Horner, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation of application Ser. No. 286,950, June 11, 1963. This application Oct. 27, 1967, Ser. No. 678,765

Claims priority, application Great Britain, June 13, 1962, 22,695/62

U.S. Cl. 260—653.7 **4 Claims**
Int. Cl. C07c *17/20*

This invention is directed to the manufacture of chlorofluoroalkanes which comprises reacting in the vapor phase compounds selected from the group consisting of fully chlorinated alkanes and fully chlorinated alkenes containing not more than 2 carbon atoms with hydrogen fluoride in the presence of black chromium fluoride catalyst, said catalyst being prepared by heating a member of the group consisting of chromic hydroxide and chromium trioxide in the presence of molecular oxygen at approximately 300° C. to 370° C.

3,426,010

THIAZOLE-PYRAZOLONE AZO YELLOW DYES

William Paul Dunworth, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,963

U.S. Cl. 260—158 **5 Claims**
Int. Cl. C07f *3/14*

Alkali metal salts of mono- and disulfonic acid derivatives of 3-alkyl-4-[(4-{6-methyl-2-benzothiazolyl}phenyl) azo]-5-pyrazolones, useful for coloring paper pulp.

3,426,011

CYCLODEXTRINS WITH ANIONIC PROPERTIES

Stanley M. Parmerter, Wheaton, Earle E. Allen, Jr., Chicago, and Glenn A. Hull, Oak Park, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 13, 1967, Ser. No. 615,331

U.S. Cl. 260—209 **12 Claims**
Int. Cl. C08b *19/00;* **C13l** *1/10*

This application describes cyclodextrin derivatives having ether substituents of the anionic type. These derivatives form anionic salts with many different cations. Also covered are methods for perparing the derivatives. The derivatives are useful in flocculation applications, in paper finishing, and as binders. They are also complexing or clathrating materials.

3,426,012

PROCESS FOR PREPARING LINCOMYCIN-2-ACYLATES AND NOVEL INTERMEDIATE COMPOUNDS

Walter Morozowich, Kalamazoo, and Mildred J. Taraszka, Kalamazoo Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 539,319, Apr. 1, 1966. This application July 27, 1966, Ser. No. 568,102

U.S. Cl. 260—210 **18 Claims**
Int. Cl. C07d *27/04;* **C07c** *47/18*

Process for preparing lincomycin-2-acylates which comprises condensing lincomycin with an aromatic aldehyde to produce 3,4-O-arylidene lincomycin, tritylating this compound to form 7-O-trityl-3,4-O-arylidene lincomycin, acylating this compound to form 7-O-trityl-3,4-O-arylidene lincomycin-2-acylate, and removing the protective groups to form lincomycin-2-acylate. The instant lincomycin-2-acylates are useful as antibacterial agents and disinfectants.

3,426,013

DIFLUORAMINATED DIALDEHYDE CELLULOSE AND NITRIC ACID ESTERS THEREOF

Henryk Zenftman, West Kilbride, and Donald Calder, Ardrossan, Scotland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed May 31, 1963, Ser. No. 284,744
Claims priority, application Great Britain, June 1, 1962, 21,330/62

U.S. Cl. 260—222 **8 Claims**
Int. Cl. C08b *21/12, 15/06;* **C06b** *5/00*

1. Difluoraminated dialdehyde cellulose.

2. Nitric acid esters of difluoraminated dialdehyde cellulose.

3,426,014

BENZODIAZEPINE COMPOUNDS

Josef Schmitt, L'Hay-les-Roses, Val-de-Marne, France, assignor to Etablissements Clin-Byla, Paris, France, a corporation of France
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,434
Claims priority, application France, Jan. 9, 1965, 1,391; Apr. 9, 1965, 12,687

U.S. Cl. 260—239.3 **24 Claims**
Int. Cl. C07d *53/06;* **A67k** *27/00*

This invention relates to compounds of the benzodiazepine series containing a mobile chlorine atom or atoms and to functional derivatives thereof. The compounds have utility as therapeutics and as chemical intermediates.

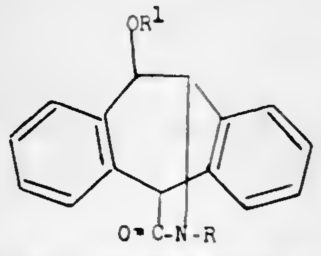
3,426,015

SUBSTITUTED 10,5-(IMINOMETHANO)-10,11-DIHYDRO - 5H - DIBENZO[a,d]CYCLOHEPTEN-13-ONE DERIVATIVES

Thomas A. Dobson, St. Laurent, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 24, 1966, Ser. No. 552,387

U.S. Cl. 260—239.3 **12 Claims**
Int. Cl. C07d *41/04*

This invention relates to chemical compounds of the formula:



wherein R and R^1 represent hydrogen, lower alkyl, benzyl, betaphenethyl, N,N-diloweralkylamino or a heterocyclic substituted alkyl group and to means for their preparation. These compounds have a variety of useful pharmacological properties.

3,426,016

BASIC PHTHALOCYANINE DYESTUFFS

Hartmut Springer, Frankfurt am Main, and Edwin Baier, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Oct. 1, 1963, Ser. No. 312,842
Claims priority, application Germany, Oct. 3, 1962, F 37,952

U.S. Cl. 260—239.6 **7 Claims**
Int. Cl. C07d *27/76;* **C09b** *47/04*

Phthalocyanine dyestuffs for dyeing cellulosic materials brilliant turquoise shades and capable of being fixed fast to washing, light and chlorine from an aqueous acid solution thereof by treatment with an alkali, such as sodium carbonate, sodium bicarbonate or the sodium salt of trichloroacetic acid.

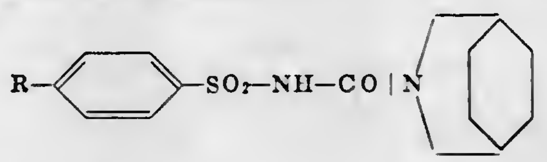
3,426,017

SULFONYLUREA COMPOUNDS

Ernst Jucker, Ettingen, and Adolf Lindenmann and Erhard Schenker, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Oct. 25, 1966, Ser. No. 589,244
Claims priority, application Switzerland, Oct. 27, 1965, 14,814/65

U.S. Cl. 260—239.6 **12 Claims**
Int. Cl. C07d *41/02, 41/00*

This invention is directed to heterocyclic sulphonylurea derivatives of the formula:



in which R signifies a hydrogen or halogen atom, an alkyl, alkoxy, alkylthio or acyl radical having from 1 to 4 carbon atoms or the nitro, amino or acetylamino radical, and their alkali metal alkaline earth metal, and ammonium salts. These compounds are useful in the treatment of diabetes mellitus.

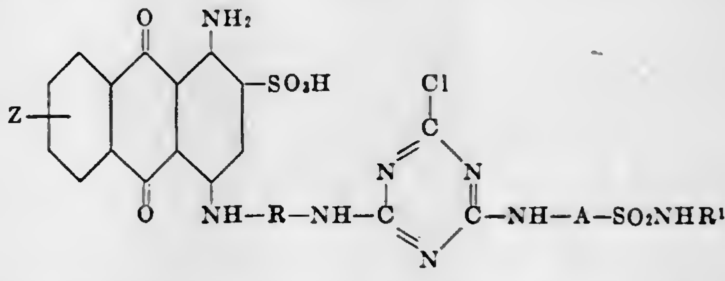
3,426,018

WATER-SOLUBLE REACTIVE ANTHRAQUINONE DYESTUFFS, THEIR PREPARATION AND USE

Dennis Eckersley and William Elliot Stephen, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,097
Claims priority, application Great Britain, Feb. 16, 1965, 6,654/65

U.S. Cl. 260—239.7 **3 Claims**
Int. Cl. C07d *55/20*

A water-soluble reactive anthraquinone dyestuff of the formula



Z can be a hydrogen or sulfonic acid while R is a sulphonphenylene radical or the 4,4'-divalent disulphostilbene radical. X can be N, C—CN or C—Cl while A is a phenylene or phenylene containing a SO_2NR^1 substituent. R^1 can be β-chloroethyl, β,α-dichloropropyl, β-sulphatoethyl or α-chloro-β-hydroxypropyl.

3,426,019
DERIVATIVES OF PTERIDINE AND A METHOD FOR THEIR PREPARATION

Irwin J. Pachter, Erdenheim, and Joseph Weinstock, Phoenixville, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 142,541, Oct. 3, 1961. This application June 29, 1962, Ser. No. 206,153

U.S. Cl. 260—240 **16 Claims**

Int. Cl. C07d *57/28, 51/42*

7-aminopteridine derivatives as diuretic and hypotensive agents are described.

3,426,020
SYNTHESIS OF 2-SUBSTITUTED PHENOTHIAZINES

Frank A. Dondzila, East Brunswick, Albert R. Restivo, Belleville, and Harry L. Yale, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,163

U.S. Cl. 260—243 **7 Claims**

Int. Cl. C07d *93/14*

This invention relates to the preparation of 2-substituted phenothiazines by a process which comprises refluxing a 2-acylamido-4-substituted-2′-nitrodiphenylsulfide in the presence of a basic condensing agent and a solvent which is aprotic under the reaction conditions.

3,426,021
PHOSPHINE COMPOUNDS

Dietmar Seyferth, Arlington, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,812

U.S. Cl. 260—246 **73 Claims**

Int. Cl. C07d *87/46;* **C07f** *9/16, 9/28*

This invention relates to certain organic phosphine chalkogenides, organometallic derivatives thereof and certain preparative intermediates. It is also relates to processes for reacting organometallic groups with phosphine chalkogenides and certain metathetical substitution reactions. The final products are useful as insecticides and microbiocides.

3,426,022
2-METHYL-3-PHENYL-4(3H)-PTERIDINONE

Michio Nakanishi and Tetsuya Tahara, Nakatsu, Oita, and Yutaka Maruyama, Tokyo, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan

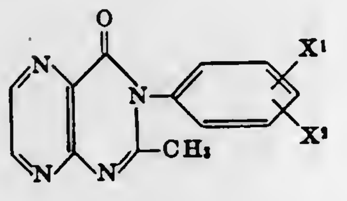
No Drawing. Filed May 25, 1967, Ser. No. 641,143

Claims priority, application Japan, May 28, 1966, 41/34,445

U.S. Cl. 260—251.5 **10 Claims**

Int. Cl. C07d *57/28, 99/04*

Pteridinones of the formula



wherein each of X^1 and X^2 is H, halogen, methyl, methoxy or trifluoromethyl, and wherein X^1 and X^2 may be the same or different, are useful anti-inflammatory agents.

3,426,023
1-(4′-METHYL-6′-METHOXY-2′-PYRIMIDINYL) 3-METHYL-5-METHOXYPYRAZOLE

Takeo Naito, Ichikawa-shi, Yasuo Oshima, Tokyo, Toru Yoshikawa, Urawa-shi, Akira Kasahara, Ichikawa-shi, Renzo Domori, Chiba-ken, and Yoshiaki Nakai and Wataru Tsukada, Tokyo, Japan, assignors to Daiichi Seiyaku Company, Limited, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 21, 1966, Ser. No. 544,081

Claims priority, application Japan, Apr. 23, 1965, 40/24,014, 40/24,015

U.S. Cl. 260—256.4 **1 Claim**

Int. Cl. C07d *57/00*

1 - (4′-methyl-6′-methoxy-2′-pyrimidinyl) - 3 - methyl-5-methoxypyrazole is a novel compound which is useful as an analgesic, anti-pyretic and anti-inflammatory agent.

3,426,024
AMINE COMPLEXES OF ZINC SALTS OF CHLORINATED THIOBISPHENOLS

Allan M. Harvey, Wilton, Conn., assignor to R. T. Vanderbilt Co., Inc., New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 439,395, Mar. 12, 1965. This application Nov. 17, 1967, Ser. No. 689,217

U.S. Cl. 260—270 **26 Claims**

Int. Cl. C07d *29/34, 29/16;* **C07f** *3/06*

Amine complexes of zinc salts of certain chlorinated bisphenols, such as the mono(ethylenediamine) complex of the mono-zinc salt of hexachlorophene, are useful as bacteriostatic agents, especially in combination with fabric softeners and soaps. The complexes may be produced by reaction of stoichiometric amounts of zinc oxide, a bisphenol and an amine; by reaction of stoichiometric amounts of an amine, zinc sulfate and a sodium salt of a bisphenol; or by reaction of excess amine with a zinc salt of a bisphenol.

3,426,025
CATALYSTS FOR PREPARING CARBODIIMIDES

Kenneth C. Smeltz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 28, 1961, Ser. No. 155,470

U.S. Cl. 260—288 **8 Claims**

Int. Cl. C07d *33/52, 31/40;* **C07c** *119/02*

Preparing carbodiimides by heating from 100° C. to 250° C. under anhydrous conditions,

(A) an organic isocyanate containing 1 to 3 isocyanate groups such as one to three ring carbocyclic aromatic isocyanates, saturated aliphatic isocyanate with two to eighteen carbons in the aliphatic group, pyridine isocyanate and quinoline isocyanates, the isocyanates being free of Zerewitinoff active hydrogen, and

(B) an organo-metallic catalyst such as tetraisopropyl titanate, tetrakis(2-ethylhexyl)titanate, tetraoctyl zirconate, tetraisopropyl zirconate or penaethyl niobiate.

3,426,026
PREPARATION OF PHENANTHROLINES

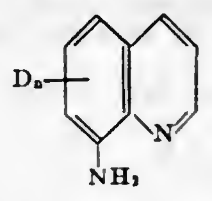
Brian Colwell Ennis, Ripponlea, Victoria, and William Edgar Matthews, Armadale, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, Australia, a company of Victoria

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,171

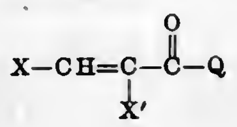
U.S. Cl. 260—288 **9 Claims**

Int. Cl. C07d *39/14*

1. A process for the preparation of a 1,10-phenanthroline which comprises reacting a quinoline, having an unsubstituted 7-position, selected from the group consisting of (a)

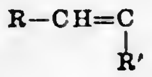


wherein D is selected from the group consisting of hydrogen, lower alkyl, phenyl, tolyl and xylyl, and *n* is an integer from zero to two, with a carbonyl component selected from the group consisting of (b) β-vinyl ketones of the formula,



$$\mathrm{X{-}CH{=}\underset{\displaystyle X'}{C}{-}\overset{\displaystyle O}{\overset{\|}{C}}{-}Q}$$

wherein X and X′ are each selected from the group consisting of hydrogen and lower alkyl, and Q is selected from the group consisting of phenyl and lower alkyl, (c) β-vinyl aldehydes of the formula,



$$\mathrm{R{-}CH{=}\underset{\displaystyle R'}{C}}$$

wherein R and R′ are each selected from the group consisting of hydrogen, lower alkyl and phenyl, and (d) the precursors of such ketones and aldehydes which are readily converted thereto under aqueous acidic conditions, the quinoline and the carbonyl component being heated, at a temperature of from about 50° C. to about 130° C., in a reaction medium consisting essentially of arsenic acid.

2. A process as defined in claim 1 wherein the molar ratio of arsenic acid to quinoline is from about 1.5:1 to about 10:1.

3,426,027
BERBINE DERIVATIVES AND PROCESSES THEREFOR

Georges Muller, Nogent-sur-Marne, and Andre Poittevin, Les Lilas, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,409

Claims priority, application France, Feb. 13, 1964, 963,667; Jan. 6, 1965, 997; Jan. 26, 1965, 3,343

U.S. Cl. 260—289 **13 Claims**

Int. Cl. C07d *35/10, 35/4*

Novel Berbine derivatives and synthesis of these and known berbines from phenethylamine and isochromane condensation and subsequent cyclization, reduction and debromination are disclosed. The compounds have analgesic and tranquillizing activity.

3,426,028
PIPERIDINE DERIVATIVES AND THEIR SALTS

Gustav Ehrhart, Bad Soden, Taunus, and Leopold Ther and Hans-Georg Alpermann, Kelkheim, Taunus, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

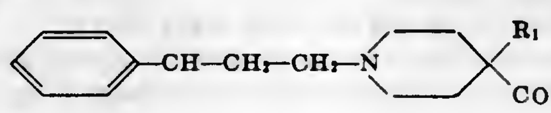
No Drawing. Filed Nov. 16, 1965, Ser. No. 508,132

Claims priority, application Germany, Dec. 3, 1964, F 44,603/64

U.S. Cl. 260—294.3 **4 Claims**

Int. Cl. C07d *29/24, 29/10*

Analgesically active piperidine derivatives, and salts thereof, of the formula



in which R is phenyl or cyclohexene-(1)-yl, R_1 is phenyl or cyclohexyl and R_2 is an alkyl of up to four carbon atoms.

3,426,029
POLYFUNCTIONAL POLYALKYLENEGLYCOLS AND THEIR POLYQUATERNARY AMMONIUM SALTS

Dorothy J. Beavers, Charles V. Wilson, and Charles F. H. Allen, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application June 12, 1962, Ser. No. 201,788, now Patent No. 3,253,919, dated May 31, 1966. Divided and this application Sept. 28, 1965, Ser. No. 512,586

U.S. Cl. 260—294.8 **7 Claims**

Int. Cl. C07c *103/54, 31/48*

Polyfunctional polyalkyleneglycols and their polyquaternary ammonium salts which are derived from ethylenediamine tetraacetic acid, alkylaminopropylamine-N,N′,N′-trisacetic acid, polyamino alcohols, N-methylgluconamine (or N-methylglucamine) and contain at least 6 alkyleneglycol units per molecule are used to advantage to increase the sensitivity of photographic emulsions which have already been sensitized to their optimum or near optimum with chemical sensitizers.

3,426,030
4-TETRAHYDROPYRIDYLACRYLIC ACID DERIVATIVES

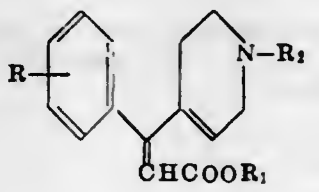
Vasken Paragamian, Dresher, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 441,351, Mar. 19, 1965. This application Oct. 21, 1966, Ser. No. 589,187

U.S. Cl. 260—295 **5 Claims**

Int. Cl. C07d *29/38;* **A61k** *27/00*

1. A compound selected from the group consisting of a compound of the formula



and the therapeutically active acid addition salts thereof wherein R is a member selected from the group consisting of hydrogen, halo, lower alkyl, lower alkoxy and trifluoromethyl; R_1 is a member selected from the group consisting of hydrogen and lower alkyl; and R_2 is a member selected from the group consisting of lower alkyl, phenyl-lower alkyl and substituted phenyl-lower alkyl in which the substituent is selected from the group consisting of lower alkyl, lower alkoxy, halo, and trifluoromethyl.

3,426,031
3,5,6 - TRICHLORO - 4 - [3 - (α,α,α,α′,α′,α′-HEXAFLUORO - 3,5 - XYLYL)UREIDO] PICOLINIC ACID AND THE CORRESPONDING AMIDE DERIVATIVE

Bryant C. Fischback, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 19, 1967, Ser. No. 610,236

U.S. Cl. 260—295 **2 Claims**

Int. Cl. C07d *31/44;* **A61k** *27/00*

The new compounds, 3,5,6-trichloro-4-[3-(α,α,α,α′,α′,α′-hexafluoro-3,5-xylyl)ureido] picolinic acid and 3,5,6-

trichloro - 4 - [3 - (α,α,α,α′,α′,α′-hexafluoro - 3,5 - xylyl) ureido] picolinamide which are useful as hypocholesteremic agents, and methods for their preparation.

3,426,032

(R_1—R_2-HYDROXYMETHYL)-(R_3—R_4-HYDROXYMETHYL)-CYCLOPENTADIENES

Richard J. Mohrbacher, Fort Washington, and Chris Royce Rasmussen, Ambler, Pa., assignors to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,656

U.S. Cl. 260—296 **4 Claims**
Int. Cl. C07d *31/20*

The compounds are of the class of di-substituted cyclopentadienes which are useful as ultra-violet light absorbers.

3,426,033

DI-(R_1—R_2-HYDROXYMETHYL)-CYCLOPENTADIENES

Joseph A. Meschino, North Wales, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,675

U.S. Cl. 260—296 **7 Claims**
Int. Cl. C07d *31/20*

The compounds are of the class of di-substituted cyclopentadienes which are useful as ultra-violet light absorbers.

3,426,034

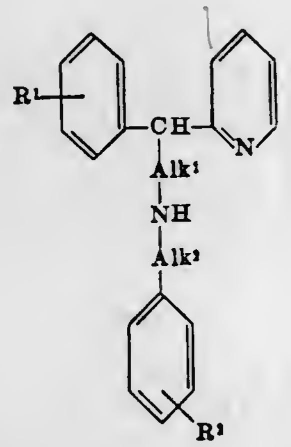
ω-PHENYL-ω-PYRIDYL ALKYLAMINE DERIVATIVES

Kurt Thiele, Frankfurt am Main, and Klaus Posselt, Bergen-Enkheim, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Continuation-in-part of application Ser. No. 328,119, Dec. 4, 1963. This application Mar. 24, 1966, Ser. No. 536,964

U.S. Cl. 260—296 **6 Claims**
Int. Cl. C07d *31/42*

Compounds of the formula



wherein each of Alk^1 and Alk^2 are alkylene of 2 to 4 carbon atoms, the total carbon atoms of Alk^1 and Alk^2 being at least 6, and each of R^1 and R^2 are selected from the group consisting of hydrogen, chlorine, hydroxy, lower alkoxy and lower alkyl which are active as coronary vasodilators and have positive inotropic activity.

3,426,035

HALOGENATION OF AROMATIC COMPOUNDS

Bart J. Bremmer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 3, 1966, Ser. No. 524,833
U.S. Cl. 260—297 **9 Claims**
Int. Cl. C07d *33/36;* **C07c** *17/00, 25/00*

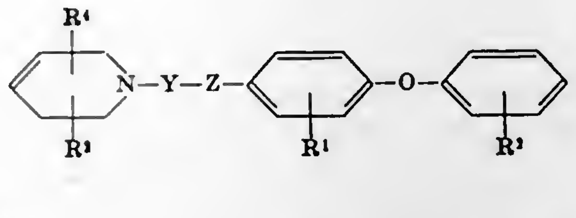
The liquid phase nuclear substitution bromination or chlorination of an aromatic compound is carried out at moderate temperatures using a vicinal alkylene oxide as an acid acceptor. The reaction is facilitated by the presence of water. Halogenated derivatives useful as solvents, chemical intermediates, and biocides are thereby produced.

3,426,036

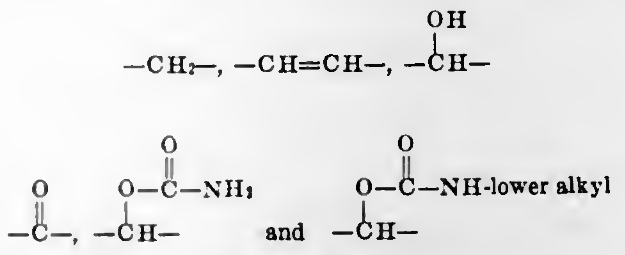
N - (p - PHENOXYBENZOYL - LOWER ALKYL)-4-PHENYL-TETRAHYDROPYRIDYL DERIVATIVES; THE CORRESPONDING ALCOHOL, CARBAMATE AND LOWER ALKYLENE DERIVATIVES

John H. Biel and Harvey B. Hopps, Milwaukee, Wis., assignors to Aldrich Chemical Company, Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed Aug. 4, 1966, Ser. No. 570,186
U.S. Cl. 260—297 **7 Claims**
Int. Cl. A61k *27/00;* **C07d** *27/00, 29/00*

1. A compound selected from the group consisting of a compound of the formula



wherein:
- R^1 and R^2 each represent a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, lower alkyl, lower alkoxy, methylenedioxy, nitro and amino;
- R^3 and R^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, hydroxy, lower alkynyl, lower alkoxy carbonyl, cycloalkyl radicals having from 3 to 7 carbon atoms, inclusive, phenyl, halophenyl, trifluoromethylphenyl, lower alkoxy phenyl and lower alkyl phenyl;
- Y is lower alkylene; and
- Z is a member selected from the group consisting of



$$-CH_2-,\ -CH=CH-,\ -\overset{\overset{OH}{|}}{C}H-$$

$$-\overset{\overset{O}{\|}}{C}-,\ -\overset{\overset{O-\overset{\overset{O}{\|}}{C}-NH_2}{|}}{C}H-\ \text{and}\ -\overset{\overset{O-\overset{\overset{O}{\|}}{C}-NH\text{-lower alkyl}}{|}}{C}H-$$

and the pharmaceutically acceptable nontoxic salts thereof.

3,426,037

ALPHA-4-DIMETHYLAMINO AND PYRROLIDINO-1,2 DIPHENYL-3-METHYL-2-BUTYL CYCLOPROPANE CARBOXYLATES

John H. Biel and Rolf E. Graeve, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed Apr. 6, 1966, Ser. No. 540,525
U.S. Cl. 260—326.3 **7 Claims**
Int. Cl. C07c *93/00;* **C07d** *27/02;* **A61k** *27/00*

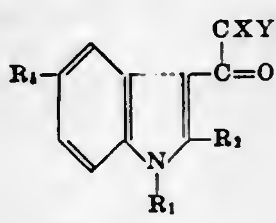
Alpha-4-dimethylamino and pyrrolidino-1,2-diphenyl-3-methyl - 2 - butylcyclopropane carboxylates prepared by esterification of 4-tertiaryamino-1,2-diphenyl-3-methyl-2-butanol with cyclopropanecarboxylic acid halide. The compounds are analgesics, or antitussives.

3,426,038

α-HALOMETHYL-1-THENOYL, FUROYL OR PYRROL CARBONYL-3-INDOLYLACETIC ACIDS

Tsung-Ying Shen, Westfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 222,222, Sept. 7, 1962. This application Apr. 29, 1965, Ser. No. 452,018
U.S. Cl. 260—326.12 **1 Claim**
Int. Cl. C07d *27/56, 63/16, 5/26*

1. A compound of the formula:



in which:
- R_1 is selected from the group consisting of thenoyl, furoyl and pyrrole carbonyl and substituted thenoyl, furoyl and pyrrole carbonyl in which the said substituents are selected from the group consisting of halogen, lower alkyl, allyl, lower alkylthio, lower alkoxy, phenoxy, phenyl cyclohexyl, lower alkoxyphenoyl, halogenophenyl, phenyl lower alkyl, lower alkanoyl-lower alkyl, lower alkoxy-lower ankyl, lower alkanoyl, cyano, carb-lower-alkoxy, lower alkoxyphenylsulfonyl, lower alkylsulfonyl, phenylthio, benzylthio lower alkyl, benzylsulfonyl, lower alkyl benzyloxy lower alkyl, furfurylthio lower alkyl, nitro, and being no more than 1 substituent on said group;
- R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, tolyl, and benzyl;
- R_5 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, nitro, cyano, benzylmercapto, methylthio, dimethylamino, allyloxy and benzyloxy;
- XYZ are selected from the group consisting of hydrogen and halogen is halogen has an atomic number of less than 53, no more than two being hydrogen at any one time.

3,426,039

PRODUCTION OF VICINAL EPISULFIDES BY THE OXIDE-CATALYZED REACTION OF AN ALKYLENE OXIDE AND A SULFUR-DONOR

Stephen W. Osborn, Yardley, and Edward Broderick, Perkasie, Pa., and Jose L. Villa, Cream Ridge, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 437,260, Mar. 4, 1965. This application Aug. 11, 1967, Ser. No. 660,139
U.S. Cl. 260—327 **20 Claims**
Int. Cl. C07d *59/00*

The reaction of an alkylene oxide with a sulfur-donor in the presence of a catalytic amount of certain oxides, using a temperature in the range from about 100° C. and 300° C. and pressures such that the reaction is carried out at a space velocity in the range from about 150 to about 500 hours^{-1}, directly yields the corresponding vicinal episulfide in high yields. The products are useful as monomers for the production of moldable thermoplastic polymers.

3,426,040

PROCESS OF PRODUCING TRIOXANE

Gerhard Langecker, Cologne-Lindenthal, Germany, assignor to Josef Meissner Kommanditgesellschaft, Cologne-Bayenthal, Germany
Filed Apr. 30, 1965, Ser. No. 452,267
Claims priority, application Germany, May 2, 1964, M 60,885
U.S. Cl. 260—340 **10 Claims**
Int. Cl. C07d *19/00*

A process of producing trioxane. An aqueous formaldehyde feed solution is treated with an acid catalyst to form a reaction solution, a portion of which is vaporized to form a vapor in equilibrium with the reaction solution. This vapor is passed through a distillation column maintained under vacuum. Trioxane and water are recovered at the head of the column and separated formaldehyde is returned to the reaction solution.

3,426,041

PROCESS FOR PRODUCING TETRAOXYMETHYLENE

Yasuhiko Miyake, Fujisawa, Saburo Adachi, Yokohama, Norifumi Yamauchi and Toshio Hayashi, Zushi, and Masamichi Akimoto, Hiratsuka, Japan, assignors to Toyo Koatsu Industries, Inc., Chuo-ku, Japan, a corporation of Japan
No Drawing. Filed June 1, 1965, Ser. No. 460,532
U.S. Cl. 260—340 **21 Claims**
Int. Cl. C07d *19/00*

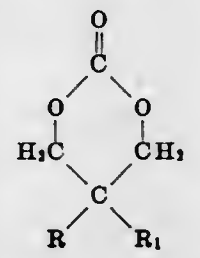
A process for producing tetraoxymethylene by heating stabilized polyoxymethylene in the presence of a catalyst selected from certain metal salts and organic acids.

3,426,042

ORGANIC CYCLIC CARBONATES

Fritz Hostettler and Eugene F. Cox, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 26, 1963, Ser. No. 311,622
U.S. Cl 260—340.2 **5 Claims**
Int. Cl. C07d *15/04;* **C08g** *17/13*

1. A compound of the formula



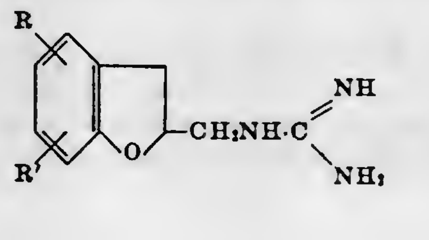
wherein R is nitro and wherein R_1 is of the group consisting of (a) alkanoyloxymethyl having up to 12 carbon atoms, (b) oleoyloxymethyl, and (c) linoleoyloxymethyl.

3,426,043

2-GUANIDINYLMETHYL-2,3-DIHYDROBENZOFURANS

Peter N. Green and Maurice Shapero, London, England, assignors to Ward Blenkinsop & Company Limited, London, England, a British company
No Drawing. Filed Nov. 28, 1966, Ser. No. 597,210
Claims priority, application Great Britain, Nov. 26, 1965, 50,450/65
U.S. Cl. 260—346.2 **8 Claims**
Int. Cl. C07d *5/42*

1. A 2-guanidinylmethyl 2,3-dihydrobenzofuran having the formula



in which each of R and R′ is selected from hydrogen and halogen atoms and alkyl and alkoxy groups having one to six carbon atoms, and acid addition salts thereof.

3,426,044

3,6 - DIHYDROXY - 1,2,3,6 - TETRAHYDROPHTHALIC ACID, ANHYDRIDE, DERIVATIVES AND POLYMERS THEREOF

Allen K. Sparks, Des Plaines, and Robert A. Dombro, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,461

U.S. Cl. 260—346.6 **10 Claims**

Int. Cl. C07d *5/38;* **C07c** *63/18, 63/16*

3,6-dihydroxy-1,2,3,6-tetrahydrophthalic acid and anhydrides and alkyl, phenyl and halogen derivatives thereof, suitable for use in the preparation of polymeric compositions by reaction with monomers containing reactive functional groups.

3,426,045

7-HALO AND 6-HALO, 6-DEHYDRO-A-NORPROGESTERONE

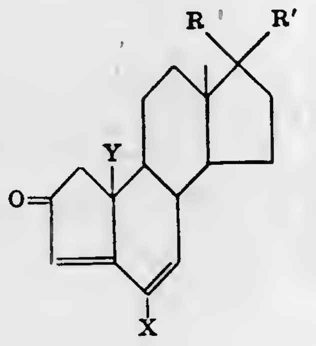
Patrick A. Diassi, Westfield, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 26, 1964, Ser. No. 370,355

U.S. Cl. 260—348 **10 Claims**

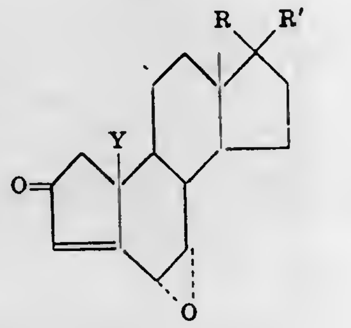
Int. Cl. C07c *171/06, 173/00*

1. A compound of the formula



wherein Y is selected from the group consisting of hydrogen and lower alkyl; X is halogen; R′ is selected from the group consisting of hydrogen and lower alkyl; R is selected from the group consisting of hydroxy and acyloxy wherein acyl is a hydrocarbon carboxylic acid of less than ten carbons; and together R and R′ is oxo (O=).

3. A compound of the formula



wherein Y is selected from the group consisting of hydrogen and lower alkyl; R is selected from the group consisting of hydroxy and acyloxy wherein the acyl is a hydrocarbon carboxylic acid of less than twelve carbons; R′ is selected from the group consisting of hydrogen and lower alkyl; and together R and R′ is oxo (O=).

3,426,046

SYNTHESIS OF EPOXIDES FROM ALLYLIC SULFONIUM SALTS

Melvin J. Hatch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,365

U.S. Cl. 260—348 **4 Claims**

Int. Cl. C07d *1/06*

Reaction of an allylic sulfonium salt with an aldehyde free of α-hydrogen in the presence of a strong aqueous base provides a novel synthesis of organic epoxides including propylene oxide and 3,4-epoxybutene.

3,426,047

ANTHRAQUINONE DYESTUFF MANUFACTURE

Guido R. Genta, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,256

U.S. Cl. 260—376 **9 Claims**

Int. Cl. C09b *1/14, 1/20, 1/50*

Anthraquinone dyestups are prepared in quantitative yields by reacting 1-amino-2-phenoxy-4-hydroxyanthraquinone with an acylhalide, such as acetyl chloride, in a thin fluid melt consisting essentially of anhydrous aluminum chloride in admixture with a compound that gives a fluid melt at low temperatures. After the acylation, the resulting diacyl intermediate is separated from the mass by drowning in ice water and filtering. An example of compounds prepared according to the method of the invention is 1-amino-2-(4-acetophenoxy)-4-hydroxyanthraquinone.

3,426,048

(OPTIONALLY 17-ALKYLATED) 17-OXYGENATED-7-METHYL-5α-ANDROST-2-ENES

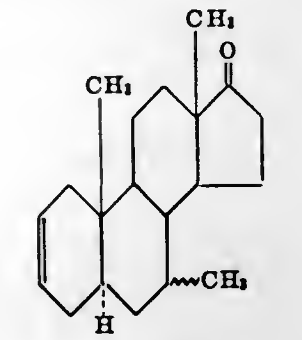
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

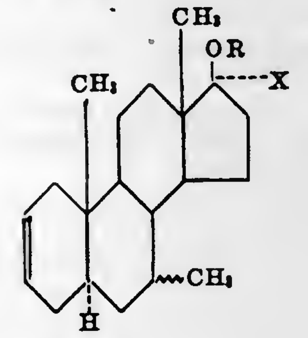
No Drawing. Filed Sept. 23, 1966, Ser. No. 581,462

U.S. Cl. 260—397.3 **11 Claims**

Int. Cl. C07c *169/22, 169/20*

1. A member selected from the group consisting of compounds of the formulas





wherein R is selected from the group consisting of hydrogen and a lower alkanoyl radical and X is a member of the class consisting of hydrogen and a lower alkyl radical.

3,426,049

NITROTRIFLUOROMETHYLANILIDES

Joseph W. Baker, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,437

U.S. Cl. 260—404 **6 Claims**

Int. Cl. C07c *103/30*

This disclosure relates to certain nitrotrifluoromethylanilides and complexes thereof as new compositions of matter. These compositions of matter have been found to possess microbiological activity and are particularly adapted for the control of bacteria.

3,426,050

TETRA(PHENYLPHOSPHINATES) OF TITANIUM AND ZIRCONIUM

Gerd Helmut Dahl, King of Prussia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 21, 1966, Ser. No. 522,043

U.S. Cl. 260—429.3 **5 Claims**

Int. Cl. C07f *7/28;* **C10m** *1/46*

Titanium and zirconium tetrakis(phenylphosphinates) useful as viscosity improvers for oils and as grease thickeners are provided having the formulae $M[OP(Ph)_2O]_4$ and $M[OP(R)(Ph)O]_4$ where M is titanium or zirconium, Ph is phenyl or substituted phenyl and R is alkyl.

3,426,051

STABILIZED STANNOUS CARBOXYLATES

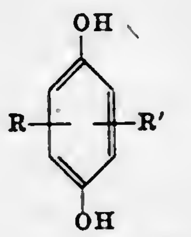
Samuel Hoch, Brooklyn, N.Y., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,968

U.S. Cl. 260—429.7 **14 Claims**

Int. Cl. C07f *7/22*

Stannous salts, which are widely used as catalysts in the production of polyurethane resins, are stabilized by the addition of small amounts of alkylhydroquinones that have the structure



wherein R represents a C_{1-6} alkyl group and R′ represents hydrogen or a C_{1-6} alkyl group. The resulting compositions lose little or their stannous tin content on prolonged exposure to air, are light in color, are compatible with the tertiary amines that are commonly used in polyurethane production, and do not react with these amines to form dark-colored products. Particularly satisfactory results are obtained when 2,5-di-tertiary-butylhydroquinone is used as the stabilizer.

3,426,052

FIVE MEMBERED ZIRCONIUM, BORON, THALLIUM AND GOLD HETEROCYCLIC COMPOUNDS

Karl W. Hubel and Emile H. Braye, Brussels, Belgium, assignors to Union Carbide Corporation, a corporation of New York

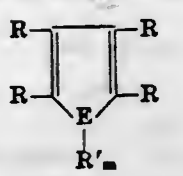
No Drawing. Continuation-in-part of application Ser. No. 18,805, Mar. 31, 1960. This application June 15, 1960, Ser. No. 36,132

Claims priority, application Great Britain, Apr. 7, 1959, 11,679/59

U.S. Cl. 260—429 **7 Claims**

Int. Cl. C07f *1/12, 7/00, 5/02*

7. As a new composition of matter, a five-membered heterocyclic compound having the formula



wherein R represents aryl; E represents zirconium; R′ is selected from the class consisting of phenyl, benzyl, cyclopentadienyl, halogeno, and alkyl; and *m* represents an integer having a value of the valence of E minus two with a maximum value of two.

3,426,053

DIFERROCENYL DERIVATIVES OF GROUP IV–A ELEMENTS

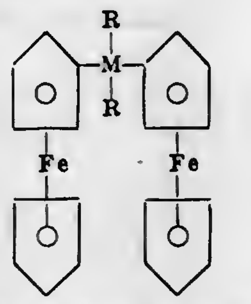
Harold Rosenberg, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,779

U.S. Cl. 260—429 **9 Claims**

Int. Cl. C07f *7/00, 15/02*

Compounds of the structure



where M is an element selected from the group consisting of Si, Ge, Sn and Pb, and R is a radical selected from the group consisting of halide, alkyl and aryl radicals.

These compounds are thermo stable and useful in making polymers and copolymers which find application in coating, adhesive and lubricating compositions.

3,426,054

PREPARATION OF METAL DIALKYL DITHIOPHOSPHATES

Helmuth G. Schneider, Westfield, and Thomas P. McNamara, Atlantic Highlands, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 16, 1964, Ser. No. 383,219

U.S. Cl. 260—429.9 **9 Claims**

Int. Cl. C07f *9/16, 3/07*

In preparing a polyvalent metal salt of a dialkyl dithiophosphoric acid having alkyl groups of from 1 to 30 carbon atoms, an alkali metal salt is first prepared and the latter is then converted to a polyvalent metal salt by double decomposition. The contribution of the present invention to the art consists in improving the quality of the products by keeping the proportion of dialkyl dithiophosphoric acid to alkali metal base within the narrow limits of one mole of the former to from 1.1 to 1.15 moles of the latter and by also keeping the proportion of polyvalent metal salt to dialkyl dithiophosphoric acid within very narrow limits in the double decomposition step, these limits being from 0.5 to 0.55 mole of divalent metal salt, or from 0.35 to 0.40 mole of trivalent metal salt, per mole of dialkyl dithiophosphoric acid.

3,426,055

PHENYL MERCURY SULFUR COMPOUNDS

Elliott L. Weinberg, East Brunswick, N.J., assignor to Cosan Chemical Corporation, Clifton, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,722

U.S. Cl. 260—433 **4 Claims**

Int. Cl. C07f *3/10*

1. An organo-mercury compound of the group consisting of phenyl mercury 4-nonyl thiophenate, phenyl mer-

cury 4-t-butyl thiophenate, and phenyl mercury mercaptoethanol.

3,426,056

PROCESS FOR MAKING TETRAMETHYL LEAD

Charles Anthony Sandy, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,043

U.S. Cl. 260—437 **5 Claims**

Int. Cl. C07f *7/26*

Method of preparing tetramethyl lead by reaction of methyl chloride and monosodium lead alloy in the presence of a caboxamide catalyst of the formula $RCONR_1R_2$ wherein

(1) R, R_1 and R_2 separately are H or C_1–C_4 alkyl and total up to 3 carbon atoms when said R_1 and R_2 are alkyl, and

(2) R and R_1 together constitute a C_3–C_5 polymethylene radical, when R_2 is H or methyl.

Optionally, water or a C_1–C_{18} aliphatic hydrocarbon alcohol may be used as a catalyst promoter.

3,426,057

ISOCYANATE COMPOUNDS AND PROCESS FOR PREPARING SAME

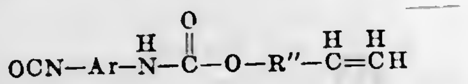
Bernard Kanner, 33 Batavia Drive,
Williamsville, N.Y. 14221

No Drawing. Continuation-in-part of application Ser. No. 307,007, Sept. 6, 1963. This application June 23, 1966, Ser. No. 559,746

U.S. Cl. 260—448.2 **5 Claims**

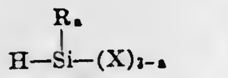
Int. Cl. C07f *7/12, 7/10*

Process for preparing organosilicon compounds having functional isocyanate groups which comprises contacting at reaction temperatures in the presence of a platinum catalyst an organic isocyanate compound having the general formula:



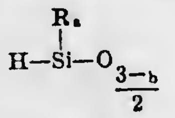
$$\mathrm{OCN{-}Ar{-}\overset{H}{N}{-}\overset{\overset{O}{\|}}{C}{-}O{-}R''{-}\overset{H}{C}{=}\overset{H}{C}H}$$

wherein Ar is a divalent arylene radical free of reactive substituent groups and attached to each of the adjacent nitrogen atoms in the molecule through different ring carbon atoms, R″ is alkylene radical containing from 1 to about 9 carbon atoms, with at least one hydrosilicone compound of the class consisting of silanes having the general formula:



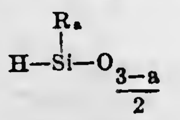
$$\mathrm{H{-}\overset{\overset{R_a}{|}}{Si}{-}(X)_{3-a}}$$

siloxanes having the general formula:



$$\mathrm{H{-}\overset{\overset{R_b}{|}}{Si}{-}O_{\frac{3-b}{2}}}$$

and siloxanes composed essentially of from 0.1 to 99.9 mole percent of the units having the formula:



$$\mathrm{H{-}\overset{\overset{R_a}{|}}{Si}{-}O_{\frac{3-a}{2}}}$$

and complementarily from 99.9 to about 0.1 mole percent of units having the general formula:

$$\mathrm{R_c{-}SiO_{\frac{4-c}{2}}}$$

wherein R is a monovalent hydrocarbon group containing 1 to about 18 carbon atoms free of aliphatic unsaturation, and X is a member selected from the group consisting of halogen and —OR radicals, *a* is an integer having a value of from 0 to 2 inclusive, and *c* is an integer having a value of from 0 to 3 inclusive.

3,426,058

PREPARATION OF ISOCYANATE COMPOSITIONS

Charles R. Wagner, Hamburg, Andrew Shultz, Williamsville, Robert A. Allen, Kenmore, and Cecil A. Friedman, Erie, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 2, 1965, Ser. No. 436,647

U.S. Cl. 260—453 **2 Claims**

Int. Cl. C07c *119/04;* **C08g** *41/00, 53/10*

Process for the corrrelative preparation of a mixture of 80%±2% 2,4-tolylene diioscyanate and 20% ±2% 2,6-tolylene diisocyanate and a tolylene diamine phosgenation product comprising a tolylene diisocyanate solution of congeneric non-volatile polyisocyanate solutes, said solution having an amine equivalent between about 90 and about 125, comprising (a) distilling a tolylene diamine phosgenation product prepared by the phosgenation of a mixture of 2,4-tolylene diamine and 2,6-tolylene diamine, said phosgenation product comprising a tolylene diisocyanate solution of congeneric non-volatile polyisocyanate solutes, until the distillate, which is over 50% by weight of the phosgenation product, becomes a mixture of 80±2% by weight 2,4-tolylene diisocyanate and 20 ±2% by weight 2,6-tolylene diisocyanate; and (b) adding sufficient distillate to the distilland until the amine equivalent of the distilland is about 90 to 125.

3,426,059

PROCESS OF PREPARING ACRYLONITRILE AND METHACRYLONITRILE BY CATALYTIC AMMOXIDATION OF PROPYLENE AND ISOBUTYLENE

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,793

U.S. Cl. 260—465.3 **12 Claims**

Int. Cl. C07c *121/04, 121/02*

Propylene or isobutylene, ammonia and oxygen are contacted at an elevated temperature with a catalyst containing molybdenum oxide, tellurium oxide and a zinc or cadmium phosphate to form acrylonitrile or methacrylonitrile.

3,426,060

PROCESS OF PREPARING ACRYLONITRILE AND METHACRYLONITRILE BY CATALYTIC AMMOXIDATION OF PROPYLENE AND ISOBUTYLENE

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,792

U.S. Cl. 260—465.3 **14 Claims**

Int. Cl. C07c *121/02, 121/32*

Propylene or isobutylene is reacted with ammonia and oxygen at an elevated temperature in the presence of a catalyst containing molybdenum oxide, tellurium oxide and a bismuth or antimony phosphate to form acrylonitrile or methacrylonitrile.

3,426,061

PREPARATION OF ACRYLONITRILE AND METHACRYLONITRILE

Wilhelm Gruber, Darmstadt, Germany, assignor to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,716

Claims priority, application Germany, Aug. 1, 1964, R 38,509

U.S. Cl. 260—465.3 **5 Claims**

Int. Cl. C07c *121/04, 45/02;* **B01j** *11/82*

Method of making acrylonitrile or methacrylonitrile from propylene or isobutylene respectively, directly or in two stages with intermediate aldehyde formation, by reacting the olefin with oxygen and ammonia in the

presence of a molybdenum oxide-bismuth oxide catalyst containing sulfate ions.

3,426,062

REACTION PRODUCT OF POLYHALOPOLYHYDROPOLYCYCLICDICARBOXYLIC ACIDS, ANHYDRIDES OR ESTERS THEREOF WITH N,N-DICYCLOALKYL-ALKANOLAMINE

Robert H. Rosenwald, Western Springs, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,759

U.S. Cl. 260—468 **8 Claims**

Int. Cl. C07c *69/94*

Reaction product of polyhalopolyhydropolycyclicdicarboxylic acid, anhydride or ester thereof with N,N-dicycloalkyl-alkanolamine, exemplified by reaction product of 5,6,7,8,9,9-hexachloro - 1,2,3,4,4a,5,8,8a - octahydro - 5,8-methano-2,3-naphthalenedicarboxylic acid with N,N - dicyclohexylethanolamine. The compounds are useful as stabilizing additives for gasoline, lube oil and other organic substrates normally subject to oxidative or thermal deterioration.

3,426,063

INHIBITING THERMAL POLYMERIZATION AND THE GROWTH OF POPCORN POLYMER

Harold Joseph Gros, Baton Rouge, La., assignor to Copolymer Rubber and Chemical Corporation, a corporation of Louisiana

No Drawing. Continuation-in-part of application Ser. No. 395,571, Sept. 10, 1964. This application Aug. 12, 1965, Ser. No. 479,059

U.S. Cl. 260—666.5 **24 Claims**

Int. Cl. C07c *7/18, 69/52*

14. A composition of matter comprising a mixture of at least one monomer selected from the group consisting of polymerizable ethylenically unsaturated hydrocarbons and polymerizable ethylenically unsaturated esters and an amount effective to inhibit thermal polymerization and the growth of popcorn polymer of at least one substance selected from the group consisting of N-nitrosoarylhydroxylamines and salts thereof, the mixture containing 0.001–0.5 part by weight of the said substance for each 100 parts by weight of the monomer.

3,426,064

PREPARATION OF ALPHA-NAPHTHYL ALKYL-CARBAMATES

Jean Lehureau, Saint-Rambert-l'Ile-Barbe, and François Pierrot, Lyon, France, assignors to Progil, Societe Anonyme, Paris, France, a corporation of France

No Drawing. Continuation of application Ser. No. 271,452, Apr. 8, 1963. This application Dec. 9, 1966, Ser. No. 600,394

Claims priority, application France, Apr. 9, 1962, 893,765

U.S. Cl. 260—479 **2 Claims**

Int. Cl. C07c *125/06*

A process of manufacturing substantially pure α-naphthyl carbamate by treating a mixture containing α-naphthol and other naphthalene derivatives with an isocyanate, possibly in the presence of an organic solvent, and maintaining the reaction mixture at room temperature until a precipitate of the carbamate is formed.

3,426,065

COMBINED SUBLIMATION-LEACHING PROCESS

Claiborne A. Duval, Jr., and Alvis B. Gainer, Beaumont, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 23, 1964, Ser. No. 377,226

U.S. Cl. 260—525 **13 Claims**

Int. Cl. C07c *51/42*

1. A process for purifying a normally solid acid which comprises heating an impure vaporizable solid benzene carboxylic acid to vaporize a mixture of said acid and at least one impurity associated therewith, condensing said vapor mixture by cooling it in contact with a selective liquid organic solvent to form a suspension of solid particles of at least a major proportion of said vaporized acid in said solvent while dissolving at least a major proportion of said vaporized impurity in said solvent, and thereafter separating said solid particles from the resulting solution.

3,426,066

PREPARATION OF KETONES

Robert A. Dombro, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 3, 1967, Ser. No. 650,585

U.S. Cl. 260—540 **7 Claims**

Int. Cl. C07c *49/00; 49/20, 49/76*

Ketones are prepared by reacting disubstituted disulfides with water over a metal oxide catalyst at elevated temperatures and pressures to prepare the desired ketones.

3,426,067

BENZENESULFONYL UREAS AND PROCESS FOR THEIR MANUFACTURE

Helmut Weber, Frankfurt am Main, Walter Aumüller, Kelkheim, Taunus, Rudi Weyer, Frankfurt am Main, Karl Muth, Kelkheim, Taunus, and Felix Helmut Schmidt, Mannheim, Neuostheim, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 13, 1964, Ser. No. 403,641

Claims priority, application Germany, Oct. 19, 1963, F 41,042

U.S. Cl. 260—553 **27 Claims**

Int. Cl. C07c *127/16*

Benzenesulfonyl urea compounds that are effective as oral antidiabetics.

3,426,068

CRYSTALLINE 2,2-ALKYLIDENE-BIS(p-BENZAMIDE) INCLUSION COMPOUNDS

Anthony Thomas Coscia, South Norwalk, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 318,067, Oct. 22, 1963. This application July 13, 1966, Ser. No. 564,740

U.S. Cl. 260—558 **1 Claim**

Int. Cl. C07c *103/24;* **C10l** *7/02*

1. The inclusion compound: crystalline 2,2-butylidenebis (p-benzamide)chloroform having a molecular configuration in which one mole of chloroform is combined with two moles of said bis-amide.

3,426,069

BIS[9-(SUBSTITUTED ALKYL)FLUOREN-9-YL]ALKANES

Henry E. Fritz, Tarrytown, N.Y., and David W. Peck, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 573,796, Aug. 22, 1966, which is a division of application Ser. No. 438,062, Mar. 8, 1965. This application Sept. 11, 1967, Ser. No. 666,989

U.S. Cl. 260—562 **3 Claims**

Int. Cl. C07c *103/12;* **C08g** *22/34*

A compound, bis[9-(N-alkanoyl-3-aminoalkyl)fluoren-9-yl]alkane may be used in the preparation of polyamide or polyurea polymers.

3,426,070

METHOD FOR PREPARING 2 - AMINOCYCYLOHEXANONE OXIME AND HYDROCHLORIDE THEREOF

Shunichi Doi, Tokyo, and Hidenori Tanaga and Masami Okumura, Yokohama, Japan, assignors to Nitto Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,426

Claims priority, application Japan, Nov. 27, 1965, 40/72,775

U.S. Cl. 260—566 **20 Claims**

Int. Cl. C07c *131/04*

2-chlorocyclohexanone is reacted with a hydroxylamine mineral acid salt in liquid ammonia to produce 2-aminocyclohexanone oxime. A polymerization inhibitor such as hydroquinone or pyrogallol may be optionally present.

3,426,071

METHOD OF PREPARING TETRAETHYLAMMONIUM DECAHYDRODECABORATE(2)

Gerald T. Hefferan, Butler, Pa., assignor to Mine Safety Appliances Company, a corporation of Pennsylvania

No Drawing. Filed Jan. 22, 1968, Ser. No. 699,363

U.S. Cl. 260—567.6 **2 Claims**

Int. Cl. C07f *5/02*

Tetraethylammonium decahydrodecaborate (2) is made by pyrolyzing tetraethylammonium octahydrotriborate in triethylamine borane solvent.

3,426,072

PREPARATION OF AMINE ETHERS

Glenn H. Warner, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 17, 1966, Ser. No. 572,918

U.S. Cl. 260—584 **9 Claims**

Int. Cl. C07c *93/02*

1. Process which comprises reacting (a) the bis-methohalide of a bis[beta-(N,N-dimethylamino)alkyl] ether wherein the alkyl is ethyl or 1-methylethyl with (b) a primary amine having a boiling point at atmospheric pressure of at least about 220° C., for a period of time and at an elevated temperature sufficient to produce as the product a bis[beta - (N,N - dimethylamino)alkyl] ether, and subsequently recovering said product.

3,426,073

MESOMERIC PHOSPHONIUM SALTS

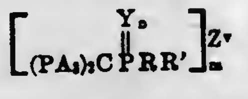
Gail H. Birum, Kirkwood, and Clifford N. Matthews, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,593

U.S. Cl. 260—606.5 **19 Claims**

Int. Cl. C07f *9/50;* **A61k** *27/00;* **C11d** *1/60*

1. Compounds as represented by the formula



$$\left[(PA_3)_3C\overset{Y_n}{\overset{\|}{P}}RR'\right]_m^{Z^v}$$

wherein each A is aryl, R and R′ are each organic radicals having 1 to 20 carbon atoms selected from the group consisting of alkyl, cycloalkyl, aryl, alkaryl, aralkyl, haloaryl and haloaralkyl, Y is a chalcogen element having an atomic weight of 16 to 80 selected from the group consisting of oxygen, sulfur and selenium, *n* is an integer from 0 to 1, Z is an anion, *v* is the actual valence of the anion Z and is an integer from 1 to 2, and *m* is an integer equal to *v*.

3,426,074

MESOMERIC TRIPHOSPHONIUM DICATION SALTS

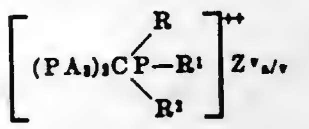
Clifford N. Matthews, St. Louis, and Gail H. Birum, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 31, 1966, Ser. No. 545,785

U.S. Cl. 260—606.5 **19 Claims**

Int. Cl. C07f *9/50;* **A61k** *13/00*

1. Compounds as represented by the formula:



$$\left[(PA_3)_3C\,P\begin{array}{l}\diagup R\\ -R^1\\ \diagdown R^2\end{array}\right]^{++} Z^{v}_{a/v}$$

wherein each A is aryl, R^1 and R^2 are organic radicals having from 1 to 20 carbon atoms in which any unsaturation is aromatic selected from the group consisting of hydrocarbyl, haloaryl and haloaralkyl, R is selected from the group consisting of hydrogen, alkyl of 1 to 12 carbon atoms, alkenyl of 2 to 12 carbon atoms, aralkyl of 7 to 12 carbon atoms, $—N{=}NC_6H_5$ and halogen, Z represents an anion, V is the actual valence of the anion Z and is an integer from 1 to 2 and *a* is an integer of 2.

3,426,075

MIXED POLYPHENYL ETHERS-THIOETHERS

John Robert Campbell, Tarkio, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 379,708, July 1, 1964. This application Apr. 22, 1965, Ser. No. 450,198

U.S. Cl. 260—609 **11 Claims**

Int. Cl. C07c *149/32, 149/36*

1. An ether-thioether selected from the group consisting of

(A) a compound represented by the structures

(1) $$R—S—R_1—O—R_1—S—R$$

in which one R_1 is substituted by S and O in the 1,3-position and the other R_1 is substituted by S and O in the 1,2- or 1,3- position, and

(2) $$R—S—R_1—S—R_1—O—R$$

in which at least one of the R_1's is substituted by S and O in the 1,2- or 1,3- position where R is selected from the group consisting of phenyl and substituted phenyl, R_1 is selected from the group consisting of phenylene and substituted phenylene, in which the substituents on said phenyl and said phenylene are selected from the group consisting of alkyl of 1 to 4 carbon atoms, alkoxy of 1 to 4 carbon atoms, halogen and perfluoroalkyl of 1 to 4 carbon atoms,

(B) a compound represented by the structure

$$R—\left(Y—R_1\right)_3—Y—R$$

where R, R_1, and Y have their aforedescribed significance and one to two of the Y's are O;

(C) a compound represented by the structure

$$R—\left(Y—R_1\right)_4—Y—R$$

where R, R_1, and Y have their aforedescribed significance and one to three of the Y's are O.

3,426,076

OXIDATIVELY STABLE ALKYLBIPHENYLS AND TERPHENYLS AS NON-SPREADING LUBRICANTS

Helen Mertwoy, Montgomery, and Henry Gisser, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed July 28, 1966, Ser. No. 568,680

U.S. Cl. 260—612 **2 Claims**

Int. Cl. C10m *3/10, 3/14*

Non-spreading lubricants and fluids which are oxidatively stable at low and high temperatures and comprising a mono or di-sec-butyl-biphenyl or terphenyl or mono or di-sec-butyl-methoxybiphenyl or methoxyterphenyl.

3,426,077

LOW FOAMING BIODEGRADABLE SURFACTANT COMPOSITIONS

Fred S. Eiseman, Jr., Maplewood, and Leslie M. Schenck, Mountainside, N.J., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,540

U.S. Cl. 260—615 **4 Claims**

Int. Cl. C07c *43/12*

Novel low-foaming and biodegradable non-ionic chloride surfactant compositions having good detergency, which are the chlorides of non-ionic surface active agents obtained by condensing 1 molar proportion of a straight chain alkanol of from 8 to 12 carbon atoms with from 6.7 to 20.8 molar proportions of ethylene oxide, said novel compositions having the formula

$$R—(OCH_2CH_2)_nCl$$

wherein R represents a linear alkyl group containing from 8 to 12 carbon atoms, *n* is an integer having an average value of from 6.7 to 20.8 such that the oxyethylene groups constitute from 66.6 to 81.6% by weight thereof.

3,426,078

PROCESS FOR THE PRODUCTION OF HEAT-STABLE FLUORINATED ORTHOCARBONATES, AND NOVEL COMPOUNDS PRODUCED THEREBY

Marion E. Hill, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California

No Drawing. Original application Mar. 2, 1964, Ser. No. 348,844. Divided and this application June 22, 1967, Ser. No. 647,894

U.S. Cl. 260—615 **7 Claims**

Int. Cl. C07c *43/00, 43/28*

The invention comprises a process of interacting substantially perfluorionated primary aliphatic alcohols (having an unsubstituted methylene radical attached to the hydroxyl radical) with certain tetrahalomethyl compounds (more fully defined below) in the presence of certain acid-acting catalysts, e.g., anhydrous ferric chloride, to produce novel class of substantially perfluorinated orthocarbonates, useful as hydraulic fluids, heat-exchange fluids, lubricants, and dielectric fluids.

3,426,079

PROCESS FOR RECOVERING PARAFORMALDEHYDE

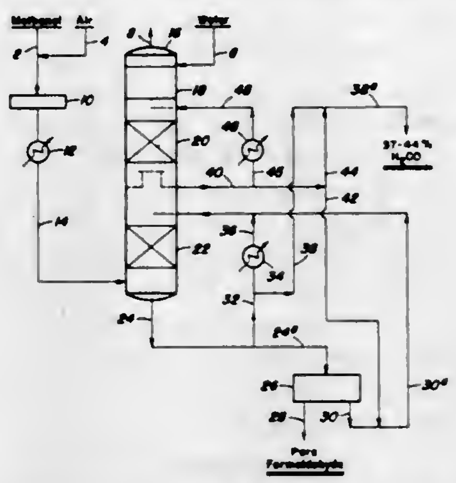
Adolph W. Gessner, Montclair, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Dec. 14, 1964, Ser. No. 417,926

U.S. Cl. 260—615.5 **7 Claims**

Int. Cl. C07c *47/10;* **C07d** *19/00*

An improved process for recovering paraformaldehyde from a formaldehyde containing gas in a multizone formaldehyde absorber wherein a portion of the formaldehyde solution withdrawn from the lowest zone of the absorber is cooled to effect crystallization of paraformaldehyde. The mother liquor from the crystallization is then mixed with a warmer less concentrated formaldehyde solution withdrawn from an intermediate zone of the absorber to effect heating thereof to a temperature above the point of polymer formation. The mixture is then recycled to the lowest zone of the absorber.



3,426,080

PROCESS FOR THE PRODUCTION OF PRIMARY MONOLS

Hans Tummes, Oberhausen-Sterkrade, and Josef Meis, Oberhausen-Osterfeld, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany, a corporation of Germany

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,819

Claims priority, application Germany, Aug. 26, 1964, R 38,665

U.S. Cl. 260—617 **10 Claims**

Int. Cl. C07c *35/02;* **C07b** *5/00*

Diols of the formula $HOCH_2—R—CH_2OH$, wherein R is a cycloaliphatic group of 6–12 carbon atoms are converted to the corresponding monols, by contacting the diol with at least partially reduced nickel catalyst at a temperature of 160–230° C., and in the presence of hydrogen.

3,426,081

PROCESS FOR PREPARING BIS(3,5,6-TRICHLORO-2-HYDROXYPHENYL) METHANE

Samuel Shore, Roselle, Thaddeus M. Muzyczko, Melrose Park, and Jerome A. Martin, Chicago, Ill., assignors to The Richardson Company, Melrose Park, Ill., a corporation of Ohio

No Drawing. Filed July 18, 1966, Ser. No. 565,693

U.S. Cl. 260—619 **9 Claims**

Int. Cl. C07c *37/20, 39/16*

A process for preparing bis(3,5,6-trichloro-2-hydroxyphenyl) methane without expensive chlorinated solvents by reacting the phenol and formaldehyde at a temperature of about 70–85° C. in a large amount of sulfuric acid to form a precipitate of the product which is then recovered without diluting the acid catalyst.

ERRATUM

For Class 260—621 see:
Patent No. 3,426,358

3,426,082

PHENOL ALKYLATION PROCESS

Robert P. Curry, Mobile, Ala., and James C. Geddes, Jr., Orangeburg, S.C., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation of application Ser. No. 307,306, Sept. 9, 1963. This application Mar. 18, 1966, Ser. No. 535,348

The portion of the term of the patent subsequent to May 19, 1981, has been dedicated to the Public

U.S. Cl. 260—624 **5 Claims**

Int. Cl. C07c *39/06*

Process for the concurrent production of ortho-tert-butyl phenol, 2,4-di-tert-butyl phenol and 2,6-di-tert-butyl phenol by reacting a mixture of phenol, isobutylene, aluminum phenoxide catalyst and halogen compound at a temperature of from about 90° C. to 160° C. and a pressure of from about atmospheric to about 900 p.s.i.g. The aluminum phenoxide catalyst is present initially in a quantity sufficient to provide from about 0.017 to about 0.04 gram atom of aluminum per gram mol of phenol and the halogen compound is present initially in a quantity sufficient to provide from about 0.1 to about 2.47 gram mols of halogen compound per gram atom of aluminum; and the mol ratio of halogen compound to aluminum is proportioned to the mol ratio of aluminum to phenol according to a defined inverse relationship showing a decreasing maximum permissible mol ratio of halogen compound to aluminum for an increasing mol ratio of aluminum to phenol.

3,426,083
METHOD FOR THE MANUFACTURE OF ALKALI METAL SALTS OF AROMATIC HYDROXY COMPOUNDS

Gerhard Otten, Frankfurt am Main, and Rudolf Halder and Horst Schreiber, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed May 28, 1965, Ser. No. 459,819
Claims priority, application Germany, May 30, 1964, F 43,024
U.S. Cl. 260—628 **5 Claims**
Int. Cl. C07f *1/00;* **C07c** *37/04*

A process has been provided for a continuous preparation of an alkali metal salt of hydroxy-benzene, 1,3-dihydroxy benzene, 1-hydroxy naphthalene, or 2-hydroxy naphthalene. This process comprises rapidly and homogeneously mixing a continuous stream of a molten benzene sulfonic acid, benzene-1,3-disulfonic acid, naphthalene-1-sulfonic acid, or naphthalene-2-sulfonic acid with a continuous stream of liquid alkali metal hydroxide having a concentration of 50 to 100% by weight, the balance being water. On a mole basis, at least 3 moles of the alkali metal hydroxide are being used per one of sulfonic acid substituent of the starting compound.

3,426,084
PROCESS FOR THE PRODUCTION OF β-NITROETHANOL

Hen N. Lee, Dearborn, and Russell W. Van House, Grosse Pointe Woods, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Continuation of application Ser. No. 259,733, Feb. 19, 1963. This application June 15, 1966, Ser. No. 557,603
U.S. Cl. 260—632 **4 Claims**
Int. Cl. C07c *79/18*

The product β-nitroethanol is produced usefully and in good yield in the reaction of ethylene oxide with sodium nitrite by the improvement involving control of the hydrogen ion concentration (pH 7.1 to 7.5) and maintenance of a light color in the reaction medium through use of a nitrite ion scavenger.

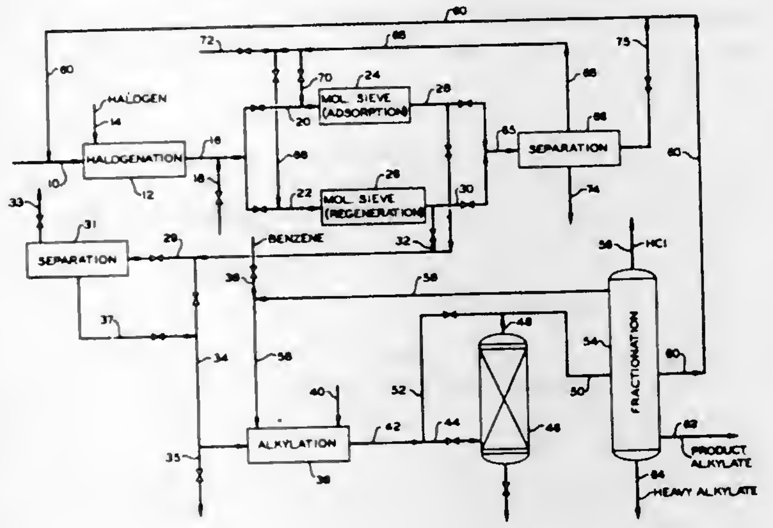
3,426,085
PROCESS FOR THE MANUFACTURE OF ETHYLENE CHLOROHYDRIN

Günther Mau and Lothar Hörnig, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 1, 1966, Ser. No. 598,218
Claims priority, application Germany, Dec. 24, 1965, F 47,997
U.S. Cl. 260—634 **6 Claims**
Int. Cl. C07c *29/04*

A process has been provided for producing ethylene chlorohydrin which comprises reacting, at a temperature from about 50° C. to about 300° C. and a pressure from about 1 to about 50 atmospheres,, ethylene, oxygen, and hydrogen chloride, in the presence of water, the molar ratio of ethylene to oxygen being from 2:1 to 20:1, and water to ethylene greater than 1:1, said reaction being carried out in the presence of a tellurium catalyst selected from the group consisting of elementary tellurium, tellurium dioxide, tellurium tetrachloride, telluric acid, alkali metal tellurites, alkali metal tellurates, tellurium sulfate, and tellurium nitrate, and recovering ethylene chlorohydrin. The process can be carried out in an aqueous phase as well as in a gaseous phase. If carried out in an aqueous phase, the concentration of hydrogen chloride in the aqueous catalyst solution is from 10% to 35% by weight. Further, gaseous hydrogen chloride may also be used in the aqueous process. When the process is carried out in a gaseous phase, the tellurium catalyst is deposited on a solid carrier and water is used in the form of steam. In another novel aspect of this invention, the ethylene may first be reacted with the catalyst solution and then the catalyst solution is reoxidized with oxygen in a separate reaction vessel.

3,426,086
PRODUCTION AND/OR RECOVERY OF PRIMARY HALOALKANES

Roy A. Gray and Carl W. Kruse, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,212
U.S. Cl. 260—652 **5 Claims**
Int. Cl. C07c *7/02, 7/12, 21/00*



Primary haloalkanes are separated from mixtures of same with secondary and/or tertiary haloalkanes by contacting said mixtures with a molecular sieve adsorbent to selectively adsorb said primary haloalkanes.

3,426,087
METHOD FOR THE PREPARATION OF GRIGNARD COMPOUNDS IN HYDROCARBON SOLUTION

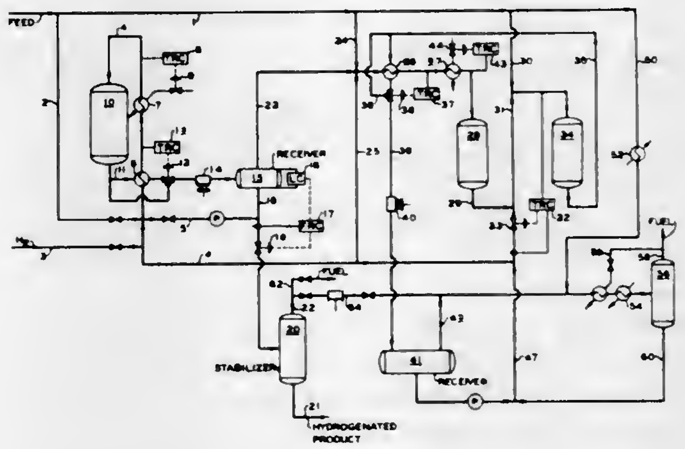
Eugene C. Ashby, Atlanta, Ga., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 29, 1965, Ser. No. 475,883
U.S. Cl. 260—665 **3 Claims**
Int. Cl. C07f *3/02*

A process for preparing a hydrocarbon solution containing a Grignard compound of the general formula RMgX, wherein R is a hydrocarbon radical selected from the group consisting of alkyl, aryl, and alkenyl, and X is a halogen atom, which comprises reacting in hydrocarbon, in an amount sufficient to dissolve said Grignard compound, magnesium, RX, wherein R and X are as defined above, and a tertiary alkyl amine, thereby forming

a hydrocarbon solution containing said Grignard compound RMgX.

3,426,088
CYCLOHEXANE SEPARATION

Oliver P. Proctor, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,429
U.S. Cl. 260—666 **3 Claims**
Int. Cl. C07c *5/10, 7/04*



In a mixture comprising a crystallizable first component, such as cyclohexane, and a second relatively noncondensable component, for instance, a mixture of hydrogen and light hydrocarbons, the crystallizable component is condensed and separated from the relatively noncondensable component without being crystallized, by means of adding to the mixture a third component, such as benzene, which lowers the freezing point of the crystallizable material thus allowing the condensation separation to take place at a lower temperature and still avoid plugging of lines due to undesired crystal formation. More specifically, a gas stream separated from a first hydrogenation zone effluent containing cyclohexane and non-condensable gases such as hydrogen and light ends is subjected to a condensation type separation to separate the cyclohexane from the non-condensable gas, benzene being added to lower the freezing point of the cyclohexane so as to enable the condensation separation step to be effected at a lower, more efficient temperature.

3,426,089
POLYMERIZATION PROCESS

Armand J. de Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Aug. 30, 1966, Ser. No. 575,987
U.S. Cl. 260—666 **8 Claims**
Int. Cl. C08f *1/72, 5/00, 3/14*

Unsaturated hydrocarbons can be polymerized by contact with a catalyst prepared by chemically combining a subfluoride vapor, such as aluminum subfluoride, with a refractory inorganic oxide, such as crystalline alumina modifications.

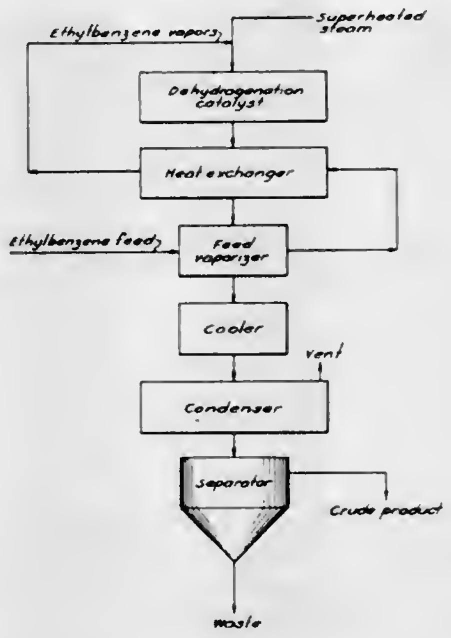
3,426,090
HYDROGENATION OF AN AROMATIC COMPOUND WITH A CATALYST CONTAINING A GROUP VIII METAL AND A SUBFLUORIDE

Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Oct. 10, 1966, Ser. No. 585,306
U.S. Cl. 260—667 **9 Claims**
Int. Cl. C07c *5/10*

An aromatic compound, such as a benzene hydrocarbon, is hydrogenated at a temperature of 10°–425° C. and a pressure of 1–200 atmospheres in contact with a catalyst comprising a refractory inorganic oxide containing a Group VIII metal and which has been chemically combined with a subfluoride vapor such as aluminum monofluoride or silicon difluoride.

3,426,091
REMOVAL OF POLYMER FROM PROCESS VESSELS

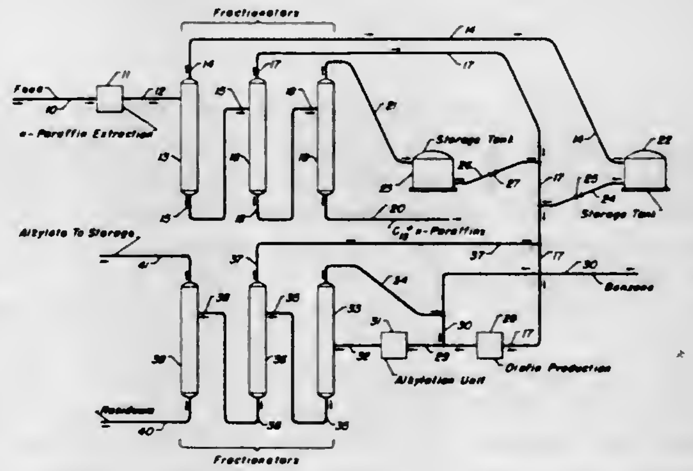
Simon Miron, Lake Jackson, and Wesley E. Holmes, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 2, 1967, Ser. No. 635,425
U.S. Cl. 260—669 **2 Claims**
Int. Cl. C07b *3/00;* **C07c** *5/18*



The method concerns the removal of polymeric deposits which build up in process vessels used in the manufacture of styrene by (a) contacting the polymer with a mixture of hot air and steam and (b) dissolving the residue resulting from (a) in crude styrene or any solvent suitable for dissolving polystyrene.

3,426,092
METHOD FOR PRODUCING DETERGENT-GRADE ALKYLATE

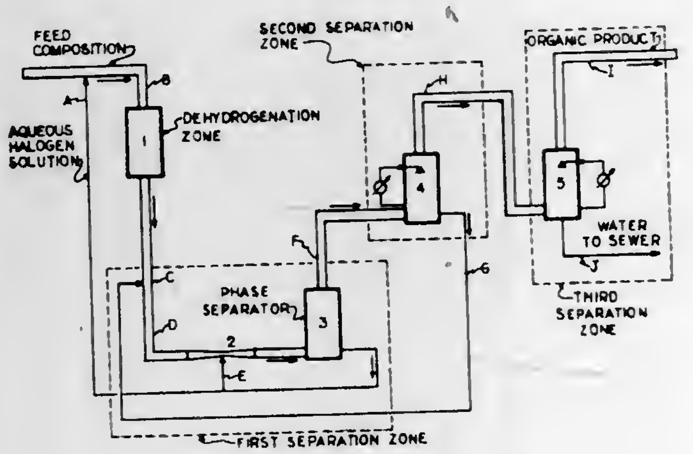
Don B. Carson, Mount Prospect, and Robert A. Lengemann, Arlington Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,181
U.S. Cl. 260—671 **4 Claims**
Int. Cl. C07c *3/54, 5/18*



Method for producing detergent-grade alkylate via n-paraffin separation, n-paraffin dehydrogenation to the corresponding mono-olefin, catalytic alkylation of the olefin with benzene, and separation of the desired alkylate product. The method is applicable particularly to the production of alkylbenzenes having a 5-carbon homolog spread, such as C_{10} to C_{14}, in the alkyl side-chain.

3,426,093
PROCESS OF DEHYDROGENATION

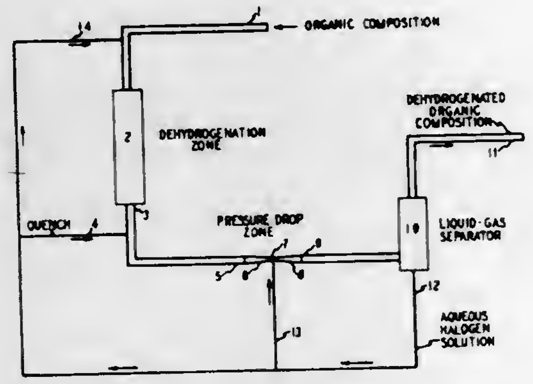
Olin C. Karkalits, Jr., and Clyde A. Leatherwood, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 262,901
U.S. Cl. 260—680 **10 Claims**
Int. Cl. C07c *11/22, 7/00*



Process for the oxidative dehydrogenation of specified organic compounds wherein halogen is employed, and which includes an improved separation of halogen values from the dehydrogenation effluent.

3,426,094
PREPARATION OF UNSATURATED COMPOUNDS

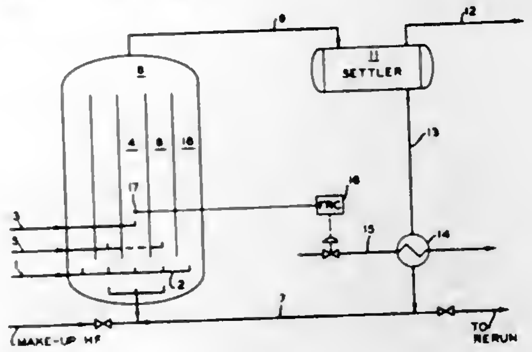
Olin C. Karkalits, Jr., Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 262,902
U.S. Cl. 260—680 **12 Claims**
Int. Cl. C07c *11/22, 7/00*



1. A process for the purification of a gaseous mixture of unsaturated aliphatic hydrocarbons at a temperature of at least 400° C. contaminated with inorganic halogen which comprises: quenching the gaseous mixture with an aqueous solvent for the inorganic halogen; then passing the gaseous quenched mixture through a pressure drop zone, said pressure drop zone having a restricted cross sectional area; contacting the gaseous quenched mixture passing through the restricted cross sectional area of the pressure drop zone with an aqueous contacting liquid, the pressure drop across the restricted cross sectional area being at least about 15 inches of water; and separating the exit gases from the pressure drop zone into an aqueous liquid phase containing a solution of the inorganic halogen, and a gaseous phase comprising the purified unsaturated aliphatic hydrocarbons.

3,426,095
PROCESS AND APPARATUS FOR CONDUCTING A PLURALITY OF ALKYLATION REACTIONS WITHIN A SINGLE REACTOR

Paul L. Passley, Springfield, Mass., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,471
U.S. Cl. 260—683.43 **9 Claims**
Int. Cl. C07c *3/50, 3/54*



Concentric separators divide an alkylation reaction vessel into a central zone and at least two annular zones and wherein alkylation is conducted in the central zone at a higher temperature than alkylation in a surrounding annular zone wherein a different alkylate is produced, and further wherein heat exchange fluid comprising alkylation catalyst and alkylating agent is passed through an outer annular zone.

3,426,096
POLYMERIC MATERIAL SOLUBLE IN ORGANIC SOLVENT AND BASED ON THE REACTION PRODUCT OF BORIC ACID WITH A LACTAM

Bryce P. Anderson, Berkeley, Calif., assignor to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 13, 1964, Ser. No. 367,241
U.S. Cl. 260—830 **9 Claims**
Int. Cl. C08g *49/00;* **C07d** *109/00*

Boric acid is reacted at moderate temperature with a lactam to form an addition product, the boric acid functioning as a trihydric compound in the reaction to combine with 1, 2 or 3 molecules of lactam depending on the molar ratio used. These addition products can be condensed to form organic solvent-soluble resinous polymers either alone or in the presence of additional lactam. These polymers are reactive and can be cross-linked by anhydride formation, imide formation, or with added reactive materials such as polyhydric alcohols, epoxy functional materials, primary diamines, amino alcohols, hydroxy acids and their anhydrides, divalent or polyvalent inorganic salts or polyisocyanate and the like. The polymers of the invention are also useful together with other resinous materials in the formation of ablation coating materials, such other resins being illustrated by epoxy resins.

3,426,097
LATENT CURING AGENTS FOR EPOXIDE POLYMERS AND POLYURETHANES

Gust A. Ilkka, Rochester, Mich., and Robert V. Slates, Syracuse, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed Aug. 24, 1965, Ser. No. 482,259
U.S. Cl. 260—830 **11 Claims**
Int. Cl. C08g *51/84, 22/04, 23/00*

A particulate diamine curing agent which is operable to rapidly cure polyurethane prepolymer compositions, polyepoxide compositions, and mixtures of these materials at elevated temperatures, but which agent is nonreactive with these compositions at room temperature, is prepared by reacting the solid amine in finely divided particulate form with an aqueous solution of formaldehyde for a time sufficient to convert amine groups exposed at the surface of the particle to chemical entities which are nonreactive with the synthetic resins at room temperature thereby blocking off the reactive amine groups below the surface, and separating the solid curing agent from the aqueous formaldehyde solution.

3,426,098
POLYESTER-POLYIMIDE WIRE ENAMEL

John F. Meyer, Schenectady, Howard E. Sheffer, Burnt Hills, and Edmund J. Zalewski, Rotterdam, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York
No Drawing. Filed May 20, 1965, Ser. No. 457,474
U.S. Cl. 260—841 **20 Claims**
Int. Cl. C08g *41/00;* **H01b** *3/42*

A polyester-polyimide is prepared from (1) tris (2-hydroxyethyl) isocyanurate, (2) a polycarboxylic acid, e.g., terephthalic acid or isophthalic acid, (3) an aromatic diamine, e.g., oxydianiline or methylene dianiline and (4) an aromatic carboxylic anhydride containing at least one additional carboxyl group, e.g., trimellitic anhydride or pyromellitic anhydride. The polyester-polyimide is employed to coat an electrical conductor.

3,426,099
POLYURETHANE ELASTOMERS CONTAINING AN INTERPOLYMER OF AN α,β-UNSATURATED DICARBOXYLIC ACID ANHYDRIDE AND AN ETHYLENICALLY UNSATURATED MONOMER

Milton Freifeld, Easton, Pa., and George S. Mills, Boonton, and Richard J. Nelson, Caldwell, N.J., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,375
U.S. Cl. 260—859 **11 Claims**
Int. Cl. C08g *41/00, 51/58*

A polyurethane composition of improved stability against discoloration and improved tensile strength comprising a linear thermoplastic polyester urethane elastomer and from about 0.1% to about 10% by weight of an interpolymer of an α,β-unsaturated dicarboxylic acid anhydride and an ethylenically unsaturated monomer.

3,426,100
CRYSTALLINE BLOCK POLYESTER-POLYCARBONATES

Leslie Marvin McDonough, Overland Park, Kans., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 3, 1964, Ser. No. 408,665
U.S. Cl. 260—860 **14 Claims**
Int. Cl. C08g *39/02*

Substantially crystalline block polyester/polycarbonates are prepared by reacting in an organic solvent medium at a temperature of from 160 to 240° C. (A) a crystallizable linear polyester such as polyethylene terephthalate having an intrinsic viscosity of at least 0.4 with (B) a bisphenol type polycarbonate having a glass transition temperature of at least 120° C.

3,426,101
ACRYLIC MODIFIERS WHICH IMPART IMPACT RESISTANCE AND TRANSPARENCY TO VINYL CHLORIDE POLYMERS

Charles Francis Ryan, Warminster, and Raymond John Crochowski, Feasterville, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Aug. 25, 1965, Ser. No. 482,603
U.S. Cl. 260—876 **21 Claims**
Int. Cl. C08f *19/10*

This invention relates to solid, thermoplastic, polymeric products resulting from the sequential polymerization of (1) alkyl esters of acrylic acid, (2) styrene or ring substituted styrenes and (3) lower alkyl esters of methacrylic acid. It also relates to high impact-resistant and transparent materials which result from blending such products with other polymeric materials, particularly homopolymers and copolymers of vinyl chloride. The copolymers which are used in such blends typically comprise at least 80% by weight of a polyvinyl halide with up to 20% by weight of another monovinylidene compound copolymerizable therewith, such as vinyl acetate, methyl methacrylate, styrene, or the like.

3,426,102
POLYMERIZATES OF OLEFINIC NITRILES AND DIENE-NITRILE RUBBERS

Thomas A. Solak, Bedford, and June T. Duke, Orange Village, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 480,766, Aug. 18, 1965. This application May 31, 1966, Ser. No. 553,705
U.S. Cl. 260—879 **8 Claims**
Int. Cl. C08f *3/76, 15/38*

Impact resistant polymers having low permeability to gases and vapors are prepared by polymerizing an olefinic nitrile such as acrylonitrile optionally with an olefinic ester such as ethyl acrylate in an aqueous medium in the presence of a nitrile rubber.

3,426,103
TRANSPARENT INTERPOLYMERS OF A RUBBER ACRYLONITRILE AND TERT.-ALKYL STYRENES

Richard H. Hall, Midland, Junior L. Lamson, Bay City, and Andrew J. Sikkema, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 292,063, July 1, 1963. This application Jan. 26, 1967, Ser. No. 611,819
U.S. Cl. 260—880 **10 Claims**
Int. Cl. C08f *7/02, 41/12*

Molding compositions of the ABS polymer type, and specifically substantially transparent compositions of tertiary alkylstyrenes, acrylonitrile and rubbery butadiene polymers.

A method of making the polymers by dissolving the rubbery polymer in the monomers and heating the solution to interpolymerize the monomers and the rubber.

3,426,104
DYE RECEPTIVE ACRYLONITRILE POLYMERS COMPRISING COPOLYMERIZED ALKYL ALLYLOXY BENZENE SULFONATES

James C. Masson, Chapel Hill, N.C., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 219,761, Aug. 27, 1962. This application Sept. 28, 1965, Ser. No. 491,005
U.S. Cl. 260—895 **22 Claims**
Int. Cl. C08f *15/32*

Acrylonitrile polymer compositions are copolymerized with alkyl allyloxybenzenesulfonates and then extruded to form fibers having improved basic dye receptivity.

3,426,105

COMPOSITIONS OF POLYPROPYLENE AND A COPOLYMER OF ETHYLENE AND BUTENE

Ralph E. Christensen, Bound Brook, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 20, 1961, Ser. No. 139,380
U.S. Cl. 260—897 **1 Claim**
Int. Cl. C08f *29/02;* **B29c** *5/06*

This invention relates to a composition suitable for use in the manufacture of blow-molded articles comprising a polypropylene having a density of from about .903 to about .915 and a melt index of from about 0.04 to about 2, and a copolymer consisting of ethylene and 1-butene containing from about 0.5 to about 5 percent combined 1-butene.

3,426,106

PROCESS FOR PREPARING POLYMER MIXTURES CONTAINING A POLYVINYL HALOGENIDE

Jan W. H. Zijp, Geleen, and Wilhelmus J. M. M. Dullens, Brunssum, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Mar. 23, 1966, Ser. No. 536,605
Claims priority, application Netherlands, Mar. 24, 1965, 6503709
U.S. Cl. 260—897 **7 Claims**
Int. Cl. C08f *29/24*

A process for preparing a homogeneous mixture of 95–5 parts by weight of a polyvinyl halide or a copolymer thereof containing up to 20 moles percent of a copolymerizable monomer and 5–95 parts be weight of an ethylene copolymer containing 2–25 moles percent of a copolymerization monomer, the mixing being conducted at a temperature at which the ethylene copolymer is gelatinized and the polyvinyl halide remains as a powder, the temperature not exceeding 150° C.; the mixture may subsequently be heated to a temperature up to 180° C.

3,426,107

POLYPROPYLENE CONTAINING PARTIALLY HYDROLYZED ETHYLENE-VINYL ACETATE COPOLYMER

Jack G. Scruggs and Cilton W. Tate, Cary, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 187,196, Apr. 13, 1962. This application Nov. 16, 1966, Ser. No. 594,701
U.S. Cl. 260—897 **1 Claim**
Int. Cl. C08f *29/42, 29/50*

This invention relates to compositions of matter comprising polypropylene and partially hydrolyzed copolymers of ethylene and an acyloxy substituted ethylene.

3,426,108

METHOD OF FABRICATING SHELL TYPE POLYSTYRENE ARTICLES

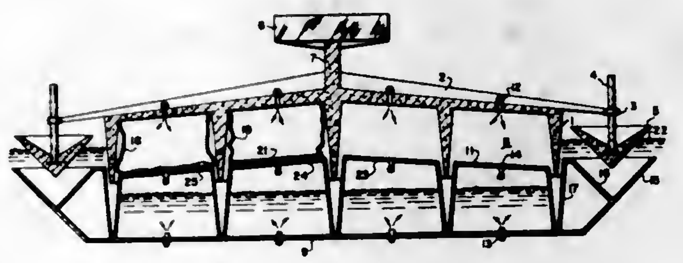
George C. Britten, Massapequa, N.Y., assignor to Ilikon Corporation, Natick, Mass., a corporation of Delaware
No Drawing. Filed May 28, 1965, Ser. No. 459,908
U.S. Cl. 264—21 **9 Claims**
Int. Cl. B29d *27/00;* **B29c** *13/00*

A method of fabricating shell type polystyrene articles in which pre-expanded polystyrene particles are electrostatically charged while they are contained in an air fluidized bed. The electrostatically charged particles are then brought in contact with a portion of the interior wall of a cavity mold, such as by dipping the center core of a cylindrical mold into the bed, to produce a uniform distribution of particles over the contacted surface of the mold. The mold is then assembled and heated thereby expanding the particles to substantially fill the portions of the cavity adjacent to those portions of the wall on which the particles have been adhered.

3,426,109

METHOD OF FABRICATING A CONCRETE FLOTATION PIER

Harry E. Dempster, 6507 Neddy Ave., Canoga Park, Calif. 91304
Filed Oct. 24, 1965, Ser. No. 504,593
U.S. Cl. 264—34 **6 Claims**
Int. Cl. B63c *1/02*

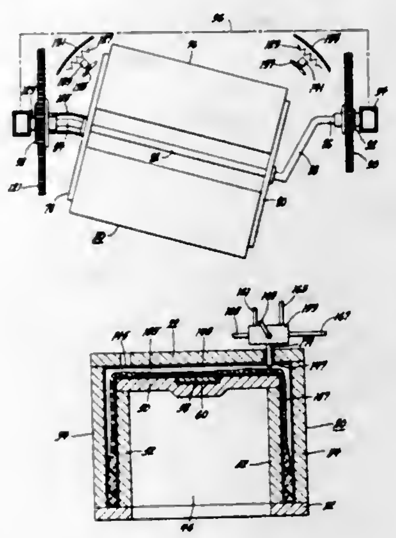


A method of casting buoyant pontoons or the like is described in which casting material is poured into a floating form. Thereafter, by sequentially controlling the ingress and egress of water into compartments within the form and also within the cast pontoon, the form is separated from the pontoon and recovered and the pontoon is left floating in the water.

3,426,110

REFRIGERATING APPARATUS

Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 26, 1965, Ser. No. 443,041
U.S. Cl. 264—46 **3 Claims**
Int. Cl. B32b *5/20, 1/06*

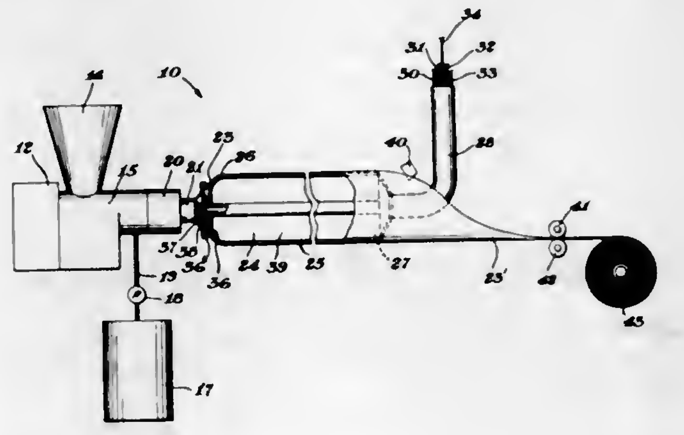


In the preferred form, a multiple compartment insulated refrigerator cabinet is formed within a hollow walled mold which includes outer rear, top, bottom, side and front walls together with removable inner walls for the lower, upper, rear and side walls of each compartment which are spaced from the outer walls to provide a continuous hollow space between them. Insertions are provided between these walls for forming air circulating ducts. The mold is heated to an elevated temperature and a measured amount of plastic resin suitable for forming the wall surfaces is introduced and the mold is rotated about one axis and revolves about another axis to distribute the resin throughout the heated hollow walls of the mold until all the walls are coated with the resin in a fluid state to the desired thickness. A foam forming resin is introduced into this space and expands throughout to substantially fill the remaining space with a foamed plastic resin. The insertions and the inner walls are then removed from the remainder of the mold along with the plastic structure forming the refrigerator cabinet.

3,426,111

METHOD AND APPARATUS FOR THE PRODUCTION OF FOAM PLASTIC SHEET

Donald W. Simpson, Auburn, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,715
U.S. Cl. 264—48 **16 Claims**
Int. Cl. B29d *27/02*

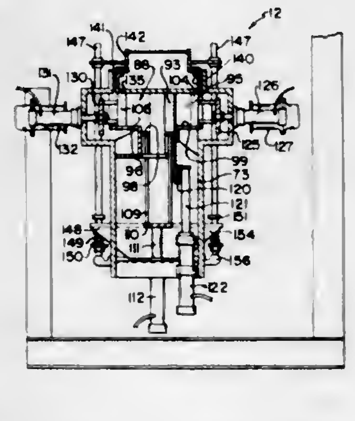


Improved thermoplastic resinous sheet is prepared by extruding a foamed tube, stretching the tube over a mandrel and contacting the extruded tube adjacent the die prior to stretching over the mandrel with annular cooled surfaces.

3,426,112

BUILDING UNIT CASTING AND FACING METHOD AND APPARATUS

Ernest J. Taylor-Smith, 2905 W. 37th Ave., Vancouver, British Columbia, Canada
Continuation of application Ser. No. 385,945, July 29, 1964. This application May 16, 1966, Ser. No. 550,570
Claims priority, application Canada, Mar. 17, 1961, 819,272
U.S. Cl. 264—71 **31 Claims**
Int. Cl. B44c *1/26*

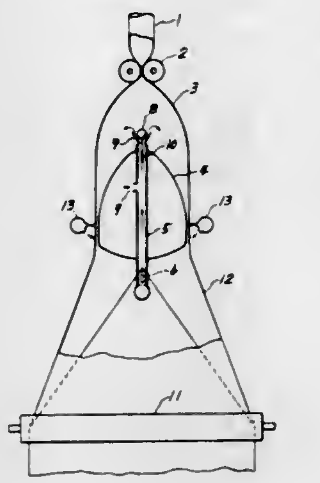


A method and an apparatus for the production of building blocks having a plurality of rock-like particles formed in at least one face thereof. The concrete and the rock-like particles are placed in adjacent compartments and turned so that the rock-like particles are located beneath the concrete, which concrete then drops on to the rock-like particles. Face and/or back plates are then vibrated and moved to size and to compress the block and to move the concrete into the spaces between the rock-like particles.

3,426,113

BIAXIAL AFTER-STRETCHING OF THERMOPLASTIC TUBULAR FILM

Masahide Yazawa, Tokyo, Japan, assignor to Polymer Processing Research Institute Ltd., Itabashiku, Tokyo, a corporation of Japan
Filed Dec. 6, 1965, Ser. No. 511,837
U.S. Cl. 264—95 **7 Claims**
Int. Cl. B29d *7/24*



A method of biaxially after-stretching a thermoplastic tubular film. The tubular film is fed while it is hot and passed over an inflatable mandrel which is inflatable to the maximum diameter to which the tubular film is to be stretched. Simultaneously the film is drawn longitudinally at a speed faster than the speed at which it is supplied to the mandrel. A fluid under pressure is supplied to the inflatable mandrel for inflating the mandrel to a diameter equal to the maximum diameter of the film at a predetermined desired inflation ratio. The supplying of fluid is such that it enables the mandrel to deflate under the pressure of the film when the film collapses. Fluid under pressure is supplied to the space above the mandrel and within the tubular film at a pressure sufficient to expand the film to the maximum diameter at a predetermined desired inflation ratio. The pressure is also sufficient to cause the fluid to leak out of the film along the surface of the mandrel between the mandrel and the film to maintain the pressure within the film above the mandrel such that the film is at the desired inflation diameter. If a fault occurs in the film, the fluid under pressure will leak out of the space above the mandrel and the film will collapse and the mandrel will collapse within the film until the pressure is again built up inside the space above the mandrel after the fault has passed the mandrel, at which time the film and the mandrel will again expand.

3,426,114

METHOD OF TREATING MONOLITHIC CERAMIC CAPACITORS

Ronald J. Brandmayr, Neptune, and Sam Di Vita, West Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Feb. 4, 1965, Ser. No. 430,503
U.S. Cl. 264—102 **1 Claim**
Int. Cl. H01g *13/00*

Void free monolithic ceramic capacitors of high density and improved electrical reliability are obtained by first heat treating the capacitor at a temperature between 500° F. and 2000° F. for about 2 hours. The capacitor is then embedded in a suitable parting agent inside a platinum lined, stainless steel container. The container is evacuated, then sealed, and then subjected to an isostatic inert gas pressure of 10,000 pounds per square inch at 2000° F. for about one-half hour.

3,426,115

METHOD OF MAKING A SELF-COILING SHEET

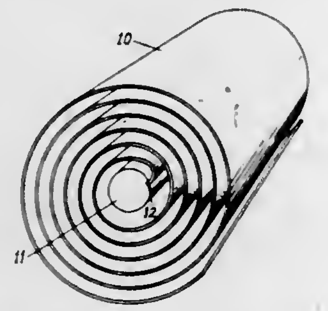
Russell E. Taber, Atlanta, Ga., assignor to The Mead Corporation, Atlanta, Ga., a corporation of Ohio

Continuation of application Ser. No. 164,372, Jan. 4, 1962, which is a division of application Ser. No. 749,151, July 17, 1958. This application July 23, 1965, Ser. No. 477,637

U.S. Cl. 264—160 **2 Claims**

Int. Cl. B29c *25/00*

Self-coiling sheets of crystalline resin material, e.g., polyethylene terephthalate (Mylar), are produced by cutting an uncoiled sheet having a thickness of about .0075 inch to the required dimension, thereafter rolling the sheet into a multi-layered convolute coiled sheet. The coiled sheet is heated to a temperature below the melting point of the terephthalate resin (250° to 255° C.) to relieve the internal stresses due to coiling without causing softening or deformation of the coiled sheet. After the heating, the sheet is allowed to cool while maintained in the coiled condition in order to provide a substantially permanent coil set.



3,426,116

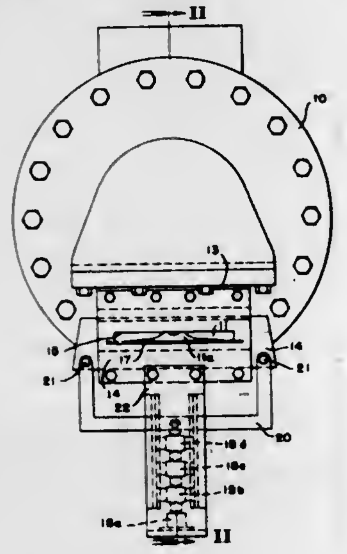
METHOD AND APPARATUS FOR EXTRUDING TIRE TREADS

Marvin W. Walters, Grosse Pointe Woods, Mich., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 336,492, Jan. 8, 1964. This application Dec. 8, 1967, Ser. No. 689,123

U.S. Cl. 264—167 **6 Claims**

Int. Cl. B29h *17/36*



Two sections of tread stock material are continuously extruded in varying widths so that they may be wound around tire carcasses to build up tread slabs of the proper thickness. Two tread dies having openings in the form of the tread cross-section are placed on opposite sides of an extruder head, the dies being inverted relative to each other. Vertically movable gates are provided to permit extrusion of material successively through opposed dissimilar sections of the dies, the full movement of the gates being effective to extrude the entire tread cross-sections.

3,426,117

METHOD FOR TREATING ACRYLIC COMPOSITE FIBER

Keitaro Shimoda and Koji Miyashita, Saidaiji, Japan, assignors to Japan Exlan Company Limited, Osaka, Japan

No Drawing. Filed Dec. 6, 1967, Ser. No. 688,365

Claims priority, application Japan, Dec. 14, 1966, 41/82,290

U.S. Cl. 264—168 **6 Claims**

Int. Cl. D02g *1/00*

Acrylic composite fiber which is produced and used in the manner known in the art for this type of fiber is improved for its intended purposes by a modification according to which the relaxation heat treatment is carried out by immersing the stretched fiber, while it is in such a state that its moisture content is at least 20 percent relative to the dry weight of the fiber, in an organic liquid medium which does not dissolve the fiber at a temperature of at least 105° C. and is immiscible with water, thereby not only subjecting the fiber to a relaxing heat-treatment but also simultaneously causing a three-dimensional coil crimp to be developed in said fiber.

3,426,118

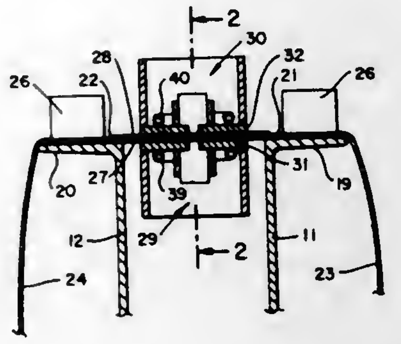
METHOD FOR COVERING LARGE ROLLS AND THE LIKE WITH FILMS

Frank M. Chapman and Harry S. Chapman, Milan, Mich., assignors to Fluorodynamics, Inc., Wilmington, Del., a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,898

U.S. Cl. 264—230 **10 Claims**

Int. Cl. B29c *27/20, 27/02*



The invention is directed to the covering of large rollers with heat-shrinkable films, such as of fluorinated ethylene polymer resins. An important aspect of the invention concerns a novel method of joining heat-sealable films along a seam of great length, utilizing a moving heat source, which is physically separated from the seam by a non-movable slip sheet. The slip sheet serves to effect precise alignment of the edges of the butted films and isolates the film from effects of movement in the heat source. Other aspects of the invention are directed to procedures to rendering the material heat-shrinkable and procedures for applying the heat-shrinkable material as a covering material for rollers.

3,426,119

COVERING OF ROLLS WITH FLUORINATED ETHYLENE POLYMERS AND THE LIKE

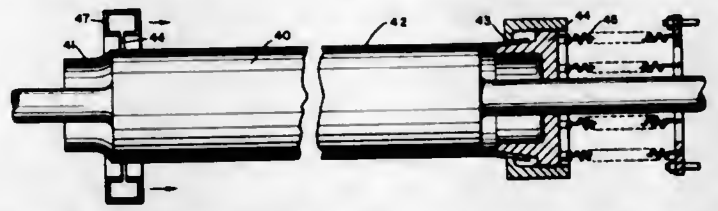
Frank M. Chapman and Harry S. Chapman, Valley View, Hockessin, Del., assignors to Fluorodynamics, Inc., Wilmington, Del., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,245

U.S. Cl. 264—230 **3 Claims**

Int. Cl. B29c *27/20*

The invention is directed to an improved process for the installation on a roller surface of a heat-shrinkable, thermoplastic material, particularly including such materials as fluorocarbon polymers (e.g., Teflon FEP). The procedure comprises applying a heat-shrinkable tubing axially over the roll, seating, a necked-down portion of the cover at one end of the roll, applying axial tension to the cover material, and thereafter heat-shrinking the covering material progressively along the roll, starting from the necked-down end, while maintaining the covering under axial tension.



3,426,120

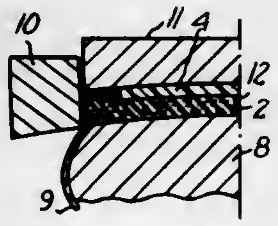
METHOD OF MANUFACTURE OF FOOTWEAR HAVING ANTI-SKID SOLES

Andrew Szerenyi and Anton Liebscher, Waynesville, N.C., assignors to Ro-Search, Incorporated, Waynesville, N.C.

Original application July 22, 1963, Ser. No. 296,534, now Patent No. 3,295,230, dated Jan. 3, 1967. Divided and this application Aug. 2, 1965, Ser. No. 485,142

U.S. Cl. 264—244 **1 Claim**

Int. Cl. A43d *65/00*



Method of manufacturing shoes wherein a lasted upper and elastomeric material are placed into a mold and pressure is applied only for a time sufficient to cause the elastomeric material to flow and assume the approximate shape of the mold but insufficient to completely cure the same after which a non-flowable tread sole insert is placed on top of the elastomeric material and pressure is again applied to cure the elastomeric material without substantial flow thereof so that the tread sole insert is maintained in its proper position within the mold and is embedded in the sole and the sole is bonded directly to the upper.

3,426,121

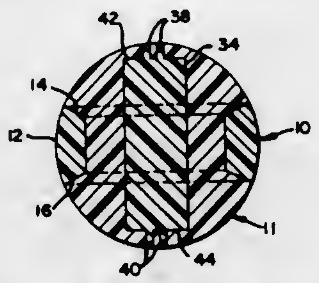
A METHOD OF FABRICATING A PLASTIC GAME BALL

Ellis May Faulkner III, Albany, N.Y., assignor to Albany Billiard Ball Company, Albany, N.Y., a corporation of New York

Original application Aug. 4, 1961, Ser. No. 129,415, now Patent No. 3,228,686. Divided and this application May 11, 1965, Ser. No. 493,945

U.S. Cl. 264—250 **1 Claim**

Int. Cl. A63b *37/00*



A method of fabricating a plastic game ball comprises forming an open core structure having at least one through opening extending between opposite sides of the core. The core has an annular exterior surface connected to an elongated axis. The core is placed in a generally spherical mold with the annular exterior surface and the elongated axis contacting the mold for support. Plastic substance is injection molded in the mold and about the core whereby the plastic substance occupies the openings of the core and conforms to the core and mold contours.

3,426,122

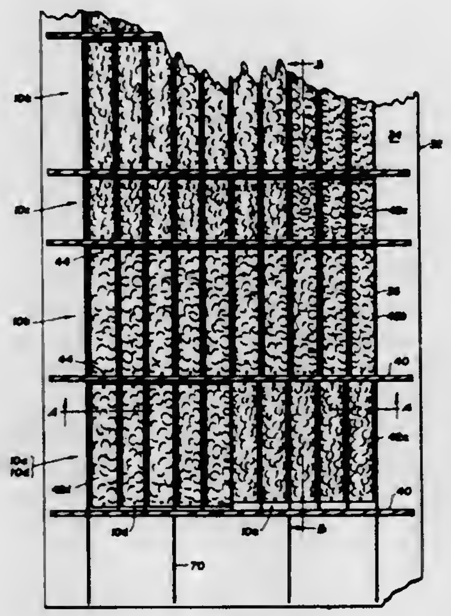
PROCESS FOR PRODUCING STONE BLOCK STRUCTURES

Edmond M. Gaudelli, 109 Idelworth Drive, Coraopolis, Pa. 15108, and Edward E. Shepler, Pittsburgh, Pa., assignors, by mesne assignments, to said Gaudelli

Continuation of application Ser. No. 467,157, May 13, 1965, which is a division of application Ser. No. 228,389, Oct. 4, 1962. This application Jan. 18, 1968, Ser. No. 698,987

U.S. Cl. 264—297 **6 Claims**

Int. Cl. B28b *7/06*



The present invention relates to a process for molding cement products which are used to make retaining walls. The molded product is made within a mold cavity having a resilient mold piece at the bottom of the mold cavity and which is held at the opposite ends thereof only, so that the mold piece will flex upwardly thereby providing gradual release between the mold piece and the molded article. In this way, the molded piece can be removed while still green and without producing breakage of the article during such removal.

3,426,123

DIAGNOSTIC TEST FOR INFECTIOUS MONONUCLEOSIS WITH ALDEHYDE TREATED EQUINE ERYTHROCYTES

Gail Hoff, Monmouth Junction, N.J., assignor to Princeton Laboratories, Inc., Princeton, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 486,362, Sept. 10, 1965. This application May 13, 1966, Ser. No. 557,851

U.S. Cl. 424—12 **4 Claims**

Int. Cl. G01n *33/16*

Method and composition for the diagnosis of infectious mononucleosis, involving the use of a saline suspension of aldehyde treated equine erythrocytes for the titration of test serums, the presence in such serums of the heterophile antibodies associated with infectious mononucleosis effecting agglutination of the thus treated erythrocytes.

3,426,124

COSMETIC COMPOSITION CONTAINING PHENYL-BENZOFURYL-(2)-KETONES AND METHOD OF USING SAME

Heinrich Baron, Darmstadt-Eberstadt, and Rainer Klink and Günther Mohr, Darmstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany

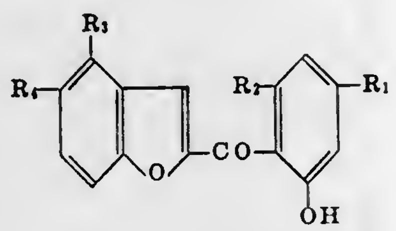
No Drawing. Filed June 29, 1965, Ser. No. 468,147

Claims priority, application Germany, July 9, 1964, M 61,658

U.S. Cl. 424—59 **7 Claims**

Int. Cl. A61l *23/00;* **C07d** *5/32*

For protection against UV radiation, compositions and processes based on highly effective UV absorbents of the formula:



wherein

R_1 represents methyl, hydroxy, alkoxy of 1–12 carbon atoms, or allyloxy,

R_2 is hydrogen or methoxy, and

R_3 and R_4 represent hydrogen or, together, the group —CH=CH—CH=CH—.

3,426,125

METHOD OF TREATING DIABETES MELLITUS

Yukio Shigeta, 3, 6-chome, Minatogawa-cho, Hyogo-ku, Kobe, Kozo Okamoto, 14 Takahara-cho, Tanakahigashi, Sakyo-ku, Kyoto, and Jiro Terumichi, 1156–2, Okamoto, Motoyama-cho, Kobe, Japan

No Drawing. Continuation of application Ser. No. 446,411, Apr. 7, 1965. This application Jan. 25, 1968, Ser. No. 700,652

U.S. Cl. 424—94 **5 Claims**
Int. Cl. A61k *19/02*

1. A method of treating diabetes mellitus in a human, which comprises administering an effective quantity of coenzyme Q_7 to the human.

3,426,126

PROCESS FOR THE CONTROL OF NEMATODES USING PETROLEUM OIL AND WATER EMULSIONS

Gerald Thorne, Madison, Wis., and Allen F. Millikan, Crystal Lake, Ill., assignors, by mesne assignments, to The Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,524

U.S. Cl. 424—170 **17 Claims**
Int. Cl. A01n *9/04, 21/00*

The invention comprises a method for the control of nematode infestation of plants which comprises contacting the plant and, preferably, the roots thereof with a non-phytotoxic emulsion of a petroleum oil in water. Suitable petroleum stocks include kerosene, diesel fuel, Stoddard solvent, cycle stock, furnace oil, range oil, lubricating oil, solvent extracts, residual oil, mineral fuel oil and mixtures thereof. A highly suitable material comprises a mixture of cycle stock and residual fuel oil which is used as an aqueous emulsion containing from 0.1 to 6.0 weight percent of the oil in the oil and water emulsion. Stability of the emulsion can be promoted by use of various conventional emulsifying agents. A particular application is the control of nematodes in flowering plants, and in particular in crysanthemums.

3,426,127

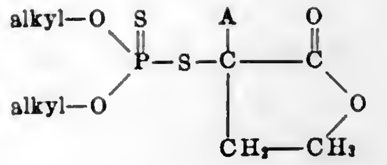
2-OXO-TETRAHYDROFURANYL COMPOUNDS IN INSECTICIDAL COMPOSITIONS AND METHODS

Joseph W. Baker, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Apr. 21, 1960, Ser. No. 23,650. Divided and this application Oct. 19, 1962, Ser. No. 231,845
tion Oct. 19, 1962, Ser. No. 231,845

U.S. Cl. 424—203 **16 Claims**
Int. Cl. A01n *9/36*

1. An insecticidal composition comprising a phosphorothioate of the formula



wherein A is acetyl and wherein "alkyl" means alkyl of from 1 to 2 carbon atoms dispersed in an extending agent selected from the class consisting of solid and semisolid extending agents, the composition containing 0.1 to 25 percent by weight of said phosphorothioate.

3,426,128

$\Delta^{1,4}$-16α-METHYL STEROIDS

Klaus Kieslich and Ulrich Kerb, Berlin-Charlottenburg, and Gerhard Raspe, Berlin-Zehlendorf, Germany, assignors to Schering A.G., Berlin, Germany

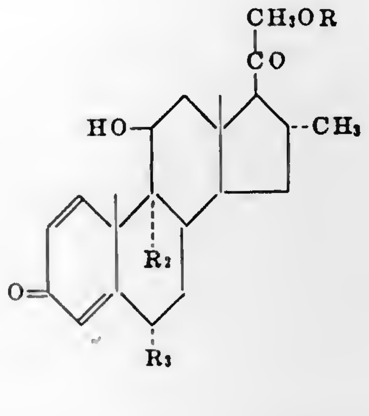
No Drawing. Continuation-in-part of application Ser. No. 323,062, Nov. 12, 1963. This application Oct. 23, 1965, Ser. No. 504,233

Claims priority, application Germany, Feb. 22, 1961, Sch 29,274; July 27, 1963, Sch 33,627

The portion of the term of the patent subsequent to Jan. 31, 1983, has been disclaimed

U.S. Cl. 424—243 **24 Claims**
Int. Cl. A61k *17/06;* **C07c** *169/36*

A compound of the formula:



wherein R is acyl derived from a member selected from the group consisting of branched chain aliphatic carboxylic acids having at least four carbon atoms and straight chain aliphatic carboxylic acids having at least 6 carbon atoms in the acyl radical, R_2 is selected from the group consisting of hydrogen and halogen and R_3 is selected from the group consisting of hydrogen, halogen and methyl.

An example of the compounds of the invention is the following:

16α - methyl - 6α - fluor - 9α - chloro - $\Delta^{1,4}$ - pregnadiene-11β,21-diol-3,20-dione-21-trimethylacetate.

3,426,129

TREATMENT OF DEPRESSION OF THE CENTRAL NERVOUS SYSTEM WITH ALKYL ESTERS OF 1-AZIRIDINEPROPIONIC ACID

Arthur G. Jelinek, Wilmington, Del., assignor to E. I. du Pont de Nemours, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 324,886, Nov. 19, 1963. This application Aug. 20, 1965, Ser. No. 482,004

U.S. Cl. 424—244 **12 Claims**
Int. Cl. A61k *27/00*

Effecting depression of the central nervous system in warm-blooded animals with an alkyl ester of 1-aziridinepropionic acid. A typical compound is the methyl ester of 1-aziridinepropionic acid.

3,426,130

COMPOSITIONS CONTAINING A BENZOTHIADIAZINESULFONAMIDE 1,1-DIOXIDE

Charles Riffkin, Highland Park, and Martin Goldberg, New Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,464

U.S. Cl. 424—246 **7 Claims**
Int. Cl. A61k *27/00*

7. A dry, non-lyophilized, stable, sterile composition comprising 6-trifluoromethyl-7-sulfamyl-3,4-dihydro-1,2,4-benzothiadiazine 1,1-dioxide and as a substantially dry, water soluble, physiologically acceptable, moderately alkaline substance, N-methyl-glucamine.

3,426,131

MEDICAMENT BASED ON A SALT OF PYRIDOXAMINE

Marcel Perrault, Paris, France, assignor to Laboratoires Laroche Navarron, Levallois-Perret, France, a French company

No Drawing. Filed May 16, 1966, Ser. No. 550,098

Claims priority, application France, May 19, 1965, 17,572

U.S. Cl. 424—263 **3 Claims**
Int. Cl. C07d *31/36;* **A61kl** *27/00*

Pyridoxamine is reacted with a higher unsaturated fatty acid such as arachidonic acid, linoleic acid and linolenic acid, in proportions such as to form the mono-acid addition salt. These salts or mixtures thereof exhibit interesting pharmacological properties and may be administered internally or externally in a suitable vehicle for the prevention or treatment of skin disorders.

3,426,132

FUNGICIDAL COMPOSITIONS CONTAINING COPPER BIS-DIMETHYL ACRYLATE

Heinz Frensch, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,129

Claims priority, application Germany, Oct. 18, 1962, F 38,076

U.S. Cl. 424—294 **2 Claims**
Int. Cl. A01n *9/24*

Compositions containing copper bis-dimethyl acrylate as the active fungicidal ingredient of excellent plant tolerability.

3,426,133

PEST OR RODENT REPELLENT COMPOSITION AND ARTICLE TREATED THEREBY

James A. Shotton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,668

U.S. Cl. 424—300 **9 Claims**
Int. Cl. A01n *17/00, 9/18;* **H01b** *7/28*

Repellent composition for use, for example, to protect polycarbonate containing geophone cases or other articles at least in part made of a polycarbonate which contains a repellent, a ketone, for example, methylethyl ketone and a xylene, for example, a mixture of xylenes as obtained in a refinery and a predominantly isoparaffinic petroleum distillate having a boiling range of from about 335 to about 410° F. In one embodiment the repellent is at least one of N,N-dimethyl-S-methylsulfenyl dithiocarbamate and N,N-dimethyl-S-tert-butylsulfenyl dithiocarbamate. Other control agents or pest repellents can be used, for example, mercapto-benzo-thiozole, cis- and trans-isomers and mixtures of the two of cycloalkane sulfonyl fluorides. The protected article treated with a composition according to the invention can be in any form, for example, pipes, fittings, films, sheets, wires, cables, filaments, moldings, woven fabrics, ropes, etc. Severe cracking of polycarbonate geophone cases is prevented by incorporation with the ketone and xylene solvent mixtures of the predominantly isoparaffinic petroleum distillate.

3,426,134

SLIMICIDAL COMPOSITION AND METHOD

Bernard F. Shema, Glenside, Pa., John P. Reilly, Cherry Hill, N.J., and Paul E. Kubasko, King of Prussia, Pa., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 9, 1966, Ser. No. 532,890

U.S. Cl. 424—302 **10 Claims**
Int. Cl. A01n *9/18, 9/14*

The invention concerns biocides containing methylene bisthiocyanate and bis(trichloromethyl) sulfone or bis (tribromomethyl) sulfone and particularly the use of these biocides in aqueous paper mill systems and cooling water for the control of slime formed by microorganisms. The combination of the thiocyanate and sulfone yields a synergism in which the cooperative action of the combined ingredients produces a total effect which is greater than the sum of the effects of the ingredients when taken separately. A typical composition within the invention comprises 20% by weight of methylene bisthiocyanate and 80% by weight of bis(trichloromethyl) sulfone.

3,426,135

PENTACHLOROBENZYL ALCOHOL, ACETATE, PROPIONATE AND BUTYRATE FOR COMBATTING RICE BLAST

Hiroji Sumi, Yukiyoshi Takahi, Yasuhiko Kondo, and Yoshio Hamamoto, Yasu-gun, and Tsunehiko Nishimura, Hiraoka, Japan, assignors to Sankyo Company, Limited, and Dainippon Ink & Chemicals, Incorporated, Tokyo, Japan

No Drawing. Filed Oct. 27, 1964, Ser. No. 406,880

Claims priority, application Japan, Nov. 1, 1963, 38/58,487; Sept. 25, 1964, 39/54,864

U.S. Cl. 424—311 **4 Claims**
Int. Cl. C07c *39/36;* **A01n** *9/26*

This invention relates to agricultural fungicidal compositions, more particularly, compositions suitable for the treatment of plant diseases caused by pathogenic fungi, especially of rice blast caused by *Piricularia oryzae*, the compositions containing an active ingredient and a carrier for the same; as active ingredients we use pentachlorobenzyl alcohol or aliphatic monocarboxylic acid esters thereof; as carrier an inert or fungicidal material known per se.

3,426,136

METHOD FOR THE TREATMENT OF CARDIAC DYSRHYTHMIAS WITH SODIUM THIOGLYCOLLATE

Martin F. Tansy, Philadelphia, Pa., assignor to Temple University, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,038

U.S. Cl. 424—317 **6 Claims**
Int. Cl. A61k *25/00, 27/00*

Sodium thioglycollate, administered parenterally or orally is effective in terminating cardiac dysrhythmias in mammals.

3,426,137
HAIR GROWTH INHIBITING BY AMINOBENZOPHENONES

Richard F. Philpitt, Somerset, N.J., and Eugene P. Rubacky, 7201 Clarendon Rd., Bethesda, Md. 20014; said Richard F. Philpitt assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,128

U.S. Cl. 424—330 **17 Claims**

Int. Cl. A61k *27/00, 7/14, 7/00*

This invention pertains to hair growth inhibiting compositions and processes for inhibiting the growth of hair with substituted benzophenones as 2-amino-5-chlorobenzophenone, 2-amino-5 - trifluoromethylbenzophenone, 2-amino-5-fluorobenzophenone, 2-amino - 5 - bromobenzophenone, 2-amino-5-cyanobenzophenone and 2-amino-5-trichloromethylbenzophenone.

3,426,138
BIS-SULFONYL DIHALOMETHANES AS FUNGICIDES AND BACTERICIDES

Don R. Baker, Pinole, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,810

U.S. Cl. 424—337 **6 Claims**

Int. Cl. A01n *9/14*

1. The method of inhibiting the growth of bacteria and fungi, comprising applying thereto an effective amount of a compound

$$RSO_2CX_2SO_2R$$

wherein R is a member selected from the group consisting of lower alkyl, phenyl and 4-chlorophenyl and X is a member selected from the group consisting of chlorine and bromine.

ELECTRICAL

3,426,139
POTTED EQUIPMENT INCLUDING A HEAT TRANSFER DEVICE

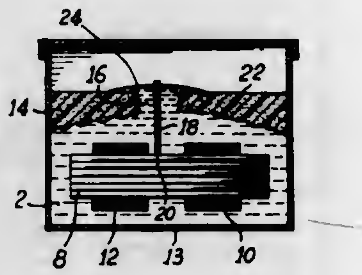
Jean Lauliac, Viroflay, France, assignor to Claude Paz et Visseaux

Filed Mar. 17, 1966, Ser. No. 535,082

Claims priority, application France, Mar. 18, 1965, 9,678, Patent 1,436,783

U.S. Cl. 174—15 **7 Claims**

Int. Cl. H01b *7/34, 9/06*



Heat transfer device to assure that the casing of potted equipment does not crack and the hermetic seal of the potting mixture is retained in spite of the fact that the heat generated by the potted equipment is sufficient to melt and expand some of the potting mixture.

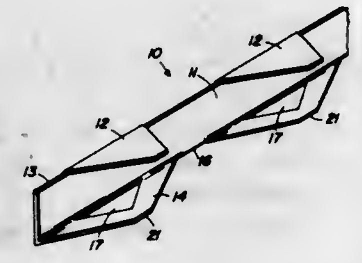
3,426,140
CONNECTOR RFI SEAL SPRING

Leslie W .Templeton, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Nov. 10, 1966, Ser. No. 593,369

U.S. Cl. 174—35 **4 Claims**

Int. Cl. H05k *9/00;* **B21d** *53/00, 53/04*



This invention comprises a radio frequency interference seal spring which can be inserted in a groove about a plate and against which a cover fits to provide a seal.

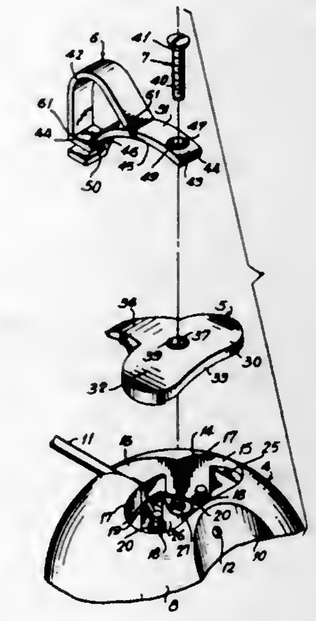
3,426,141
FINGER GRIP FOR A HEATING ELEMENT OF A VAPORIZER

Adolph D. Storch, 50 Sutton Place S., New York, N.Y. 10022

Filed July 15, 1966, Ser. No. 565,435

U.S. Cl. 174—46 **2 Claims**

Int. Cl. H01b *17/56*



A finger grip for an electrically operated vaporizer heating element formed from a unitary molded non-conductive material and adapted to be fixed to said heating element by the means utilized to fixedly mount a closure within the opening formed in the cover portion of said heating element for the passage of an electric wiring cable therethrough.

3,426,142
ELECTRICAL WALL OUTLET

Sigmund Berk, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

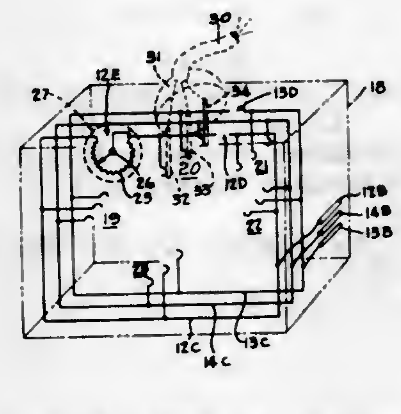
Filed June 6, 1966, Ser. No. 556,815

U.S. Cl. 174—58 **4 Claims**

Int. Cl. H01r *13/46*

A wall outlet box for electrical appliances in which the internal electrical conductor elements form a cage around the inner walls between electrical outlets which are provided in the sides and ends but not on the front face. The open back of the box seats on a wall plate and

is secured thereto with electrical contact between the conductor elements and supply connections on the wall plate. Circuit control means for certain outlets are inserted in gaps in the conductor elements.



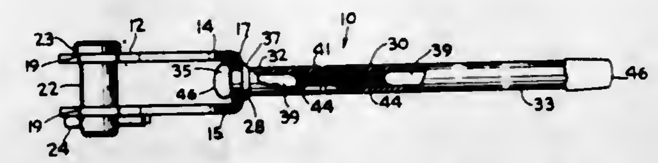
3,426,143
DEAD END CONNECTOR AND CONNECTION FOR ALUMINUM CONDUCTORS

Emmett E. Anderson, Cleveland Heights, Ohio, assignor to The National Telephone Supply Company, a corporation of Ohio

Filed Dec. 21, 1966, Ser. No. 603,552

U.S. Cl. 174—79 **6 Claims**

Int. Cl. H02g *7/04, 15/04*



1. A dead end connector for conductors which consist of a plurality of aluminum and steel wires including in combination a clevis member which comprises first and second spaced side members connected together at one end by an end member and wall means at their other ends defining aligned openings, a pivot member located in said aligned openings and adapted to pivotally connect said clevis member to a support, wall means defining an opening through said end member extending in a direction generally normal to said pivot member, a generally cylindrically shaped aluminum connector member having first end portion thereof and on the opposite side of said connector member extending freely through said opening in said end member and having a head thereof larger than said opening to prevent removal of said connector member in a direction away from said pivot member while permitting turning of same about its axis, a member located on the outer surface of said connector member at said first end portion threof and on the opposite side of said end member to limit movement of said connector member in a direction toward said pivot member, said connector member having an axial opening extending thereinto from said first and second end portions and terminating at a barrier wall at an intermediate portion of said connector member, a grease and grit mixture in said axial opening on either side of said barrier wall, and a cover member covering said axial opening at both said first and second end portions.

3,426,144
TRANSCEIVER APPARATUS FOR TRANSMITTING AND RECORDING OPTICAL INFORMATION

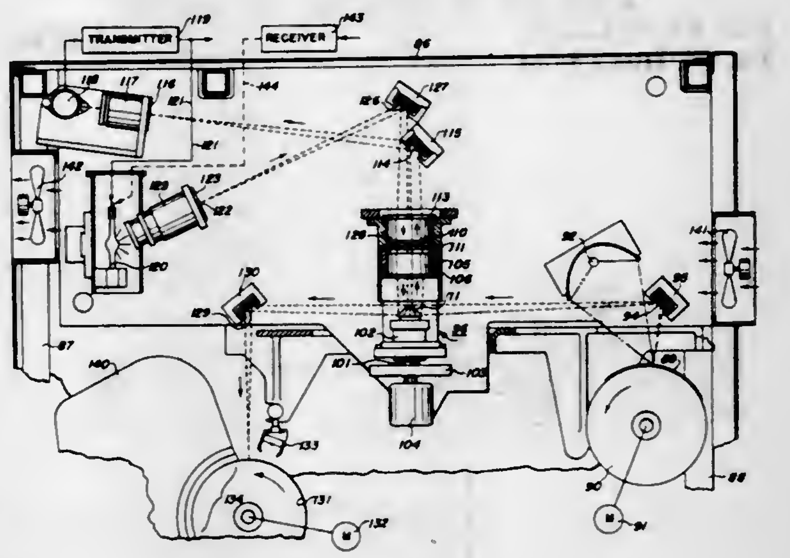
Charles T. Roth, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 20, 1965, Ser. No. 488,470

U.S. Cl. 178—6.6 **9 Claims**

Int. Cl. H04n *5/76*

Transceiver apparatus for simultaneously and/or alternately transmitting and recording optical intelligence information and including common optical scanning means comprising a partially pyramidally-formed multi-faced mirror rotating continuously about a concentric axis extending from its base and a projection lens supported with its optical axis coaxially aligned with the rotational axis of said mirror.



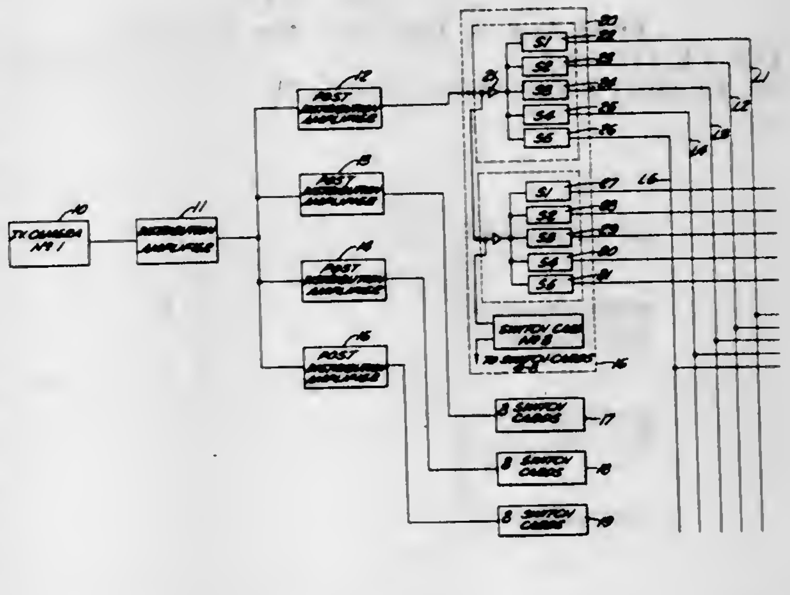
3,426,145
SYSTEM FOR COUPLING ONE OR MORE OF A PLURALITY OF OUTPUT DEVICES SUCH AS TELEVISION MONITORS TO ONE OF A PLURALITY OF INPUT DEVICES SUCH AS TELEVISION CAMERAS

James L. Kimball, La Mesa, and William R. Tompkins and Harold R. Ahrens, San Diego, Calif., assignors to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware

Filed May 4, 1965, Ser. No. 453,116

U.S. Cl. 178—6.8 **23 Claims**

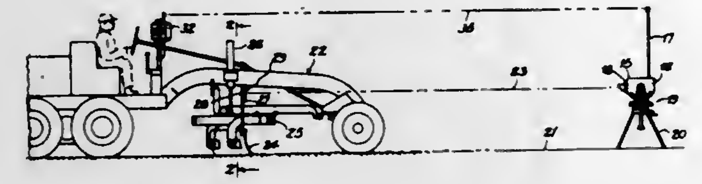
Int. Cl. H04n *7/02*



A video switching system for coupling one or more of a plurality of TV monitors to a single one of a plurality of TV cameras. An individual, externally operated, switch is connected between each camera and each monitor to form the necessary plurality of unique signal paths. Various amplifiers are also connected in each signal path and are constructed to operate as switches. These later switches are actuated by a DC logic signal which is internally generated within the system and which is passed to the amplifiers through the externally actuated switches.

3,426,146
GRADE AND ALIGNMENT APPARATUS UTILIZING CLOSED CIRCUIT TELEVISION

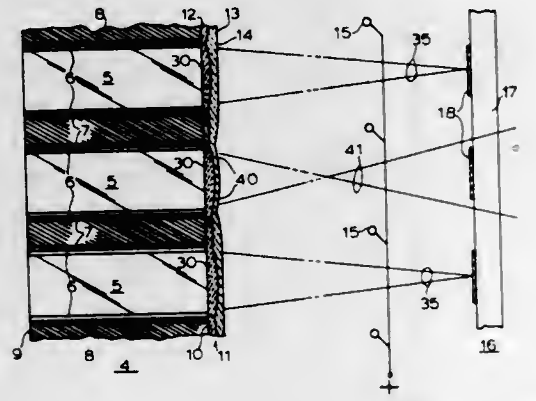
Donald J. Seaman, Glendale, Wis., assignor to Seaman Nuclear Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 22, 1965, Ser. No. 500,733
U.S. Cl. 178—6.8 **6 Claims**
Int. Cl. H04n *5/84*



A construction machine including a blade member or the like, means for displacing said blade member vertically and laterally, a target member carried by the blade member, a television camera mounted in a fixed position displaced from the construction machine and being constructed and arranged to be mounted at a preselected height and angular position to establish a predetermined line of sight. A transmitter is associated with the camera and a receiver is mounted on the construction machine and located to be observed by the operator, wherein the target member may be disposed in the camera's field of view and the blade member displaced vertically and laterally in accordance with the line of sight established by the camera.

3,426,147
LIGHT GATE SYSTEM MEANS

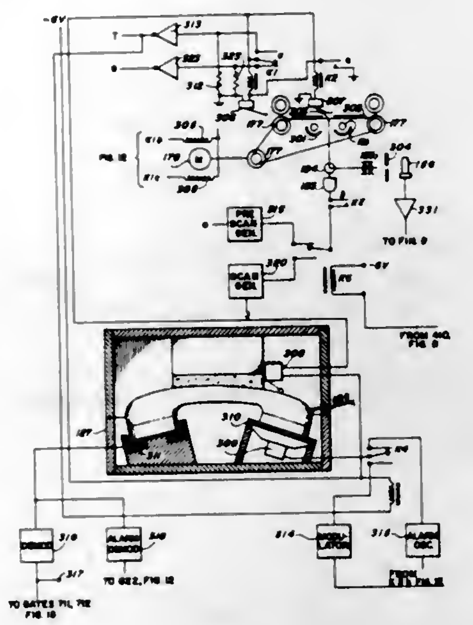
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif. 92041
Filed Aug. 3, 1966, Ser. No. 570,047
U.S. Cl. 178—7.87 **8 Claims**
Int. Cl. H01j *29/89;* **H04n** *5/44, 5/76*



A light valve having a plurality of light guides each individually surrounded by an electrical conductor said light guide additionally having an adjustable refracting surface adjacent one end of said guide. A corona generator supplies positive ions to the outer portion of said refracting surface while an electron beam deposits electrons on the inner portion establishing an electric field which in turn deforms the refracting surface. A light bean projected through the light guides follows divergent paths beyond the limits of a mask in accordance with deformation of the refracting surface.

3,426,148
FACSIMILE SYNCHRONIZATION LOSS DETECTOR

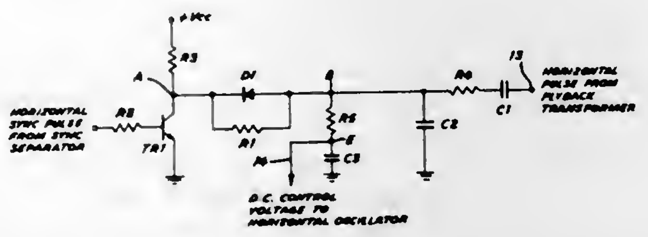
George T. Shimabukuro, Monterey Park, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,157
U.S. Cl. 178—69.5 **3 Claims**
Int. Cl. H04l *1/00, 7/10, 7/08*



In a facsimile system, apparatus for detecting loss of synchronization between the transmitter and receiver and including means for interrupting and resetting the facsimile receiver when loss of synchronization is detected.

3,426,149
PHASE DETECTOR

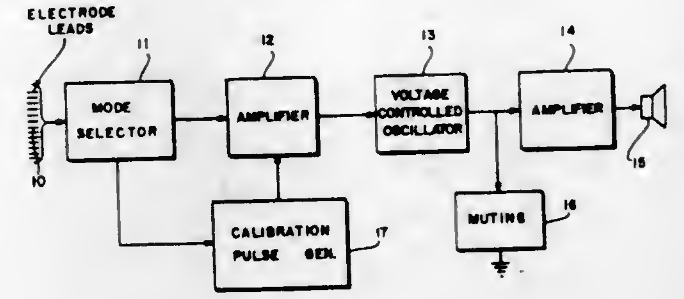
James E. McTaggart, Waterloo, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada
Filed Oct. 23, 1965, Ser. No. 503,149
U.S. Cl. 178—69.5 **11 Claims**
Int. Cl. H04l *7/06*

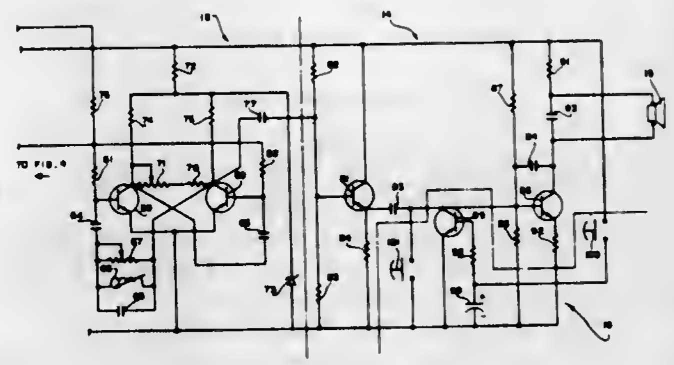


A phase detector senses the difference in phase between two input signals and produces a D.C. voltage indicative of phase difference. The phase detector includes a transistor, one input signal in the form of spaced-apart pulses being supplied to the base electrode of the phase detector. A second signal is applied to a sawtooth forming circuit, and the resultant sawtooth is applied to a filter network. A source of potential is connected to the collector electrode of the transistor, and at least a part of the potential of this source is supplied via a resistor to the filter network. A diode is connected between the collector electrode and both the sawtooth forming circuit and the filter network with polarity such that instantaneous forward diode current flows only during at least a part of the duration of individual ones of the pulses developed at the collector electrode of the transistor.

3,426,150
SYSTEM FOR FM TRANSMISSION OF CARDIOLOGICAL DATA OVER TELEPHONE LINES

William H. Tygart, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 27, 1965, Ser. No. 490,359
U.S. Cl. 179—2 **20 Claims**
Int. Cl. H04m *11/00;* **H03b** *5/08*



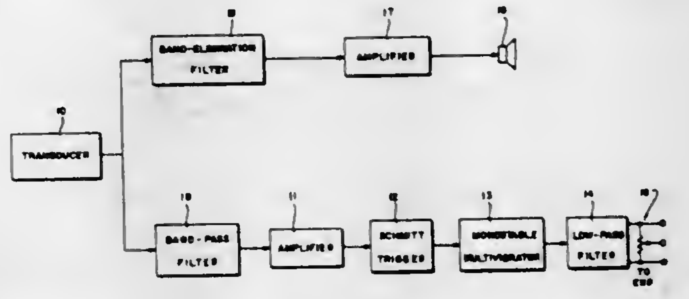


A portable transistorized data transmission apparatus especially suited for transmitting cardiological or other medical data as produced by the body of a patient over a conventional telephone circuit for evaluation at a remote location. The apparatus, which is designed to be capable of use by technically unskilled persons, converts the body electrical signals to a frequency-modulated audio signal which is acoustically coupled to a microphone such as a telephone handset. A switching arrangement permits the apparatus to be used with a full set of cardiological electrodes so that a number of modes of cardiological data may be transmitted, and the voltage controlled FM oscillator of the apparatus can be provided with square wave calibration pulses causing a modulation signal of a known value to permit calibration of instruments at the remote end of the communication link. The oscillator includes band-elimination circuitry to render it incapable of producing an output within a certain narrow frequency band used by the telephone company for signaling. Provision is made to overcome the adverse effects of galvanic body electrode potentials.

3,426,151
APPARATUS FOR RECEPTION OF REMOTELY TRANSMITTED DATA UTILIZING A FREQUENCY MODULATED CARRIER SIGNAL WITHIN THE AUDIO SPEECH RANGE

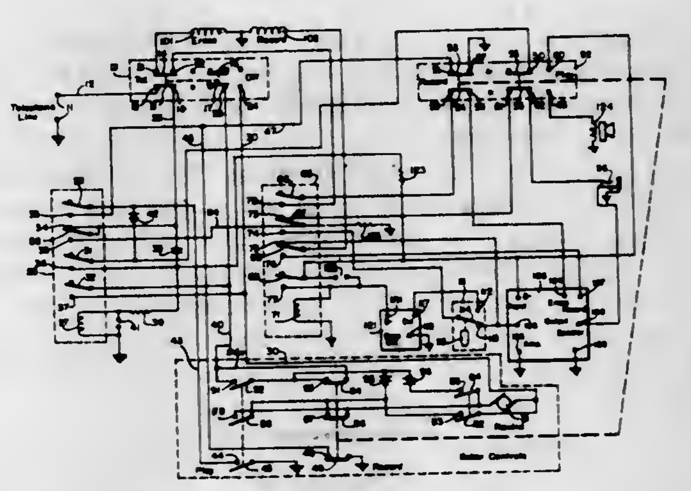
William H. Tygart, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 15, 1965, Ser. No. 507,819
U.S. Cl. 179—2 **13 Claims**
Int. Cl. H04m *11/00*

Apparatus for receiving cardiological information or other data which has been converted to a frequency modulated carrier signal within the audio speech range and then transmitted over a voice communication link such as a conventional telephone system or the like. Signals present in the receiving telephone are coupled to the data demodulating portion of the present apparatus through a band-pass filter which permits substantial passage only of the modulated carrier frequency. The instantaneous carrier frequency triggers a pulse source having output pulses of equal duration and of a repetition rate controlled by the instantaneous carrier frequency. These output pulses go to a low-pass filter the output of which is a reproduction of the data signals originally producing the frequency modulation. Circuitry is provided which receives the output of the lowpass filter and cancels the carrier signal portion thereof, leaving only the modulation signal portion for presentation to a recorder or other utilization device. The signal received by the transducer also is supplied through a band elimination filter to an amplifier and loudspeaker, the band elimination filter substantially removing the carrier signal to permit simultaneous voice communication over the telephone system without the presence of an annoying audible carrier signal.



3,426,152
TELEPHONE ANSWERING DEVICE

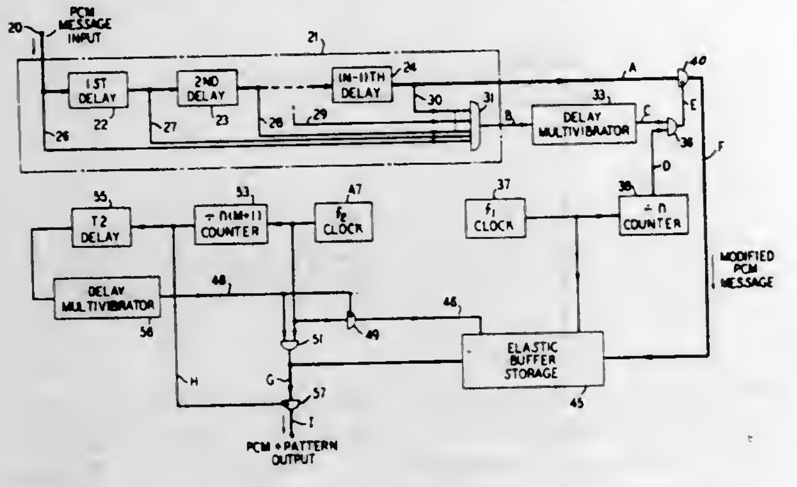
Timothy J. O'Halloran, 10 Walbridge Ave., Babylon, N.Y. 11702, and James E. O'Donnell, 9 N. 12th St., New Hyde Park, N.Y. 11040
Filed May 20, 1964, Ser. No. 368,799
U.S. Cl. 179—6 **10 Claims**
Int. Cl. H04m *11/00*

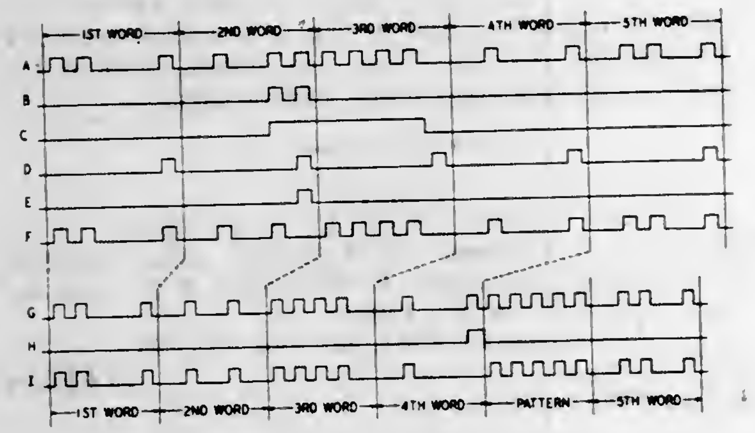


An automatic telephone answering device including a recording means having a single record medium for both prerecording a message to be played back to a calling party and for recording a message from the calling party. Control means are provided to control the operation of the recording means to reproduce the prerecorded message for the caller and to operate the recording means to record the incoming message. The control means is actuated by a first control member mounted on one side of the record medium and a second control member mounted on the other side of the record medium. The space between the first control member and the second control member define the prerecorded message space and the space between the second control member and the next adjacent control member define the incoming message space so that a single record medium is utilized to reproduce the prerecorded message and to record the incoming message.

3,426,153
SYSTEM FOR SYNCHRONIZING DIGITAL COMMUNICATION APPARATUS

Sotirios C. Kitsopoulos, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 18, 1963, Ser. No. 331,422
U.S. Cl. 179—15 **6 Claims**
Int. Cl. H04j *3/06;* **H04b** *1/00, 7/00*



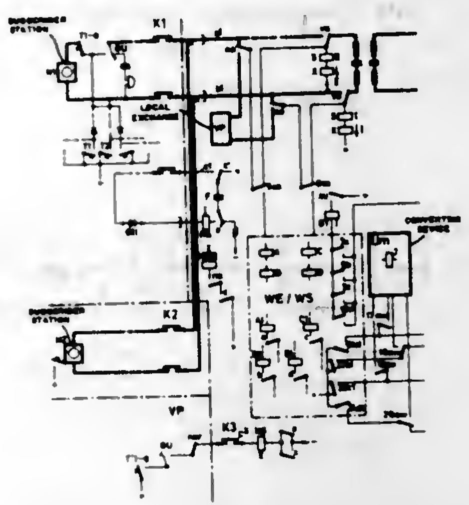


Apparatus for developing word synchronization between the transmitting and receiving terminals of a digital communications link through the insertion of a prefix pattern code into the message train at the transmitting terminal. To avoid incorrect framing the message signal is examined to ascertain whether any succession of message digits is identical to the chosen prefix pattern code. When such an event occurs the least significant digit of the message signal is inverted to avoid incorrect framing while at the same time imparting no more than a single quantization level of error to the intentionally altered message word.

3,426,154
CIRCUIT ARRANGEMENT BRANCH EXCHANGE FOR A TELEPHONE INSTALLATION, ESPECIALLY AN INSTALLATION WITH CODE SELECTION AND IMPULSE SELECTION OF THE SUBSCRIBER STATIONS

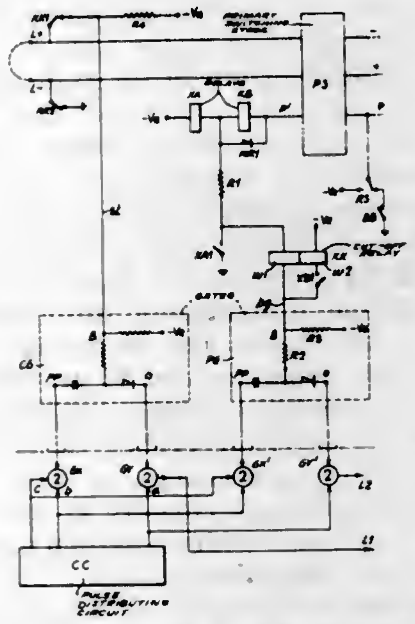
Dieter Finkhaüser, Unterpfaffenhofen, and Walter Strobelt, Munich, Germany, assignors to Siemens Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Apr. 23, 1964, Ser. No. 362,205
Claims priority, application Germany, Apr. 26, 1963, S 84,917
U.S. Cl. 179—16 **6 Claims**
Int. Cl. H04m *3/00*

A circuit arrangement for telephone systems, particularly private branch exchange telephone systems with a subscriber group having code dialing and another subscriber group having decimal impulse dialing, in which relays of the feeding circuit, controlled by signals of the subscriber stations of either group and switching devices designating such group connected through marking switching devices assigned by the calling subscriber station, control the disconnection of receiving devices for signals of the subscriber stations of the other group from the connection line and connection of receiving devices for signals of the calling subscriber station to the connection line.



3,426,155
SUBSCRIBER'S LINE CIRCUIT USING REED RELAYS

Bloomfield Warman, Charlton, London, England, assignor to Associated Electrical Industries Limited, London, England, a company of Great Britain
Filed June 29, 1965, Ser. No. 467,934
Claims priority, application Great Britain, July 2, 1964, 27,368/64
U.S. Cl. 179—18 **9 Claims**
Int. Cl. H04m *3/00*



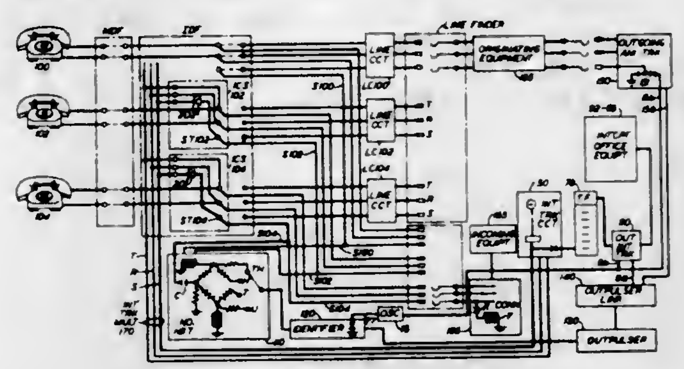
A subscriber's line circuit in an electronic telephone exchange provides for distinguishing between a normal calling condition and a so-called "permanent" calling condition in which the line wires are looped but no impulse trains received within a reasonable time. The circuit utilises sealed-reed relays.

3,426,156
AUTOMATIC NUMBER INTERCEPT IDENTIFICATION SYSTEM

Bernard E. McCaffrey, Atlantic Highlands, Harold R. Moore, Middletown, and Douglas H. Pennoyer, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 17, 1965, Ser. No. 514,610
U.S. Cl. 179—18 **6 Claims**
Int. Cl. H04m *3/00, 3/60*

1. In a telephone switching system
a plurality of telephone lines,

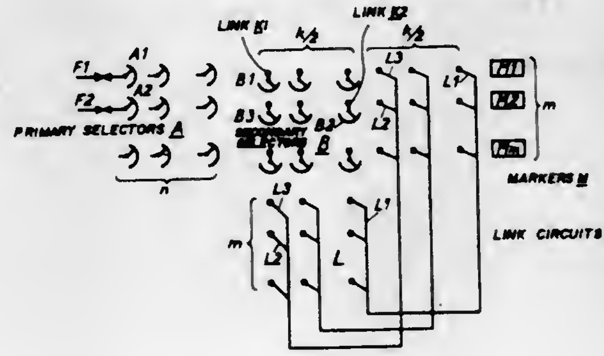
a distributing frame affording an appearance thereon for each of said lines,
number identifying means individual to each said distributing frame appearance of said lines,
an intercept trunk multiple,
a plurality of signal-directing element means connected between predetermined ones of said distributing frame appearances of said lines and said intercept trunk multiple,



means for applying an identification signal to said intercept trunk multiple, and
means responsive to the establishment of a switching connection to one of said predetermined lines for rendering said signal-directing element means individual thereto conductive to couple said identification tone from said intercept trunk multiple to said number identifying means individual to said last-mentioned one of said lines.

3,426,157
CIRCUIT ARRANGEMENT FOR GROUP SELECTORS IN AUTOMATIC TELEPHONE EXCHANGES

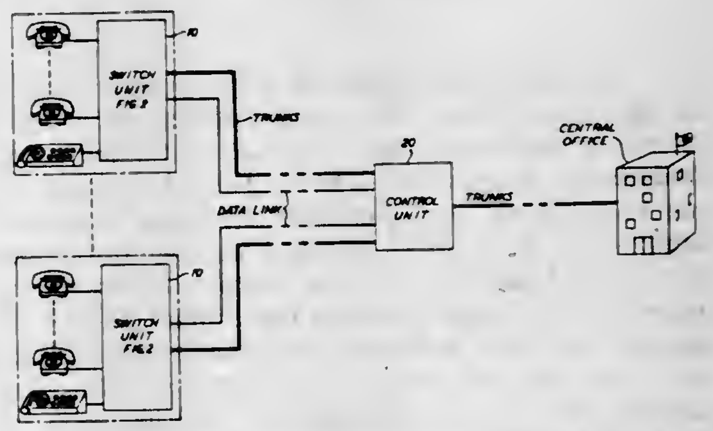
Anton Christian Jacobaeus, Stockholm, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Continuation of application Ser. No. 363,137, Apr. 28, 1964, which is a continuation-in-part of application Ser. No. 126,784, June 21, 1961. This application July 27, 1967, Ser. No. 656,594
Claims priority, application Sweden, June 22, 1960, 6,117/60
U.S. Cl. 179—18 **2 Claims**
Int. Cl. H04m *3/00*



A telephone exchange wherein a plurality of line equipments can be connected to establish telephone connections by means of at least markers and a group selector stage. The group selector stages include an array of primary selectors and an array of secondary selectors. There is a primary selector for each of the line equipments and these primary selectors are divided into groups. A plurality of groups of trunks, each of which is associated with one of the primary selector groups. In addition, each of the trunks is associated with one of the secondary selectors. There are also a number of links equal to the number of trunks. One side of the links is available to the primary selectors and the other side of the links is available to the secondary selectors. A marker establishes connections between line equipments via the primary selectors of the associated line equipments, one secondary selector and one link in the group selector stage.

3,426,158
REMOTE SWITCH UNIT IN A COMMON CONTROL TELEPHONE SYSTEM

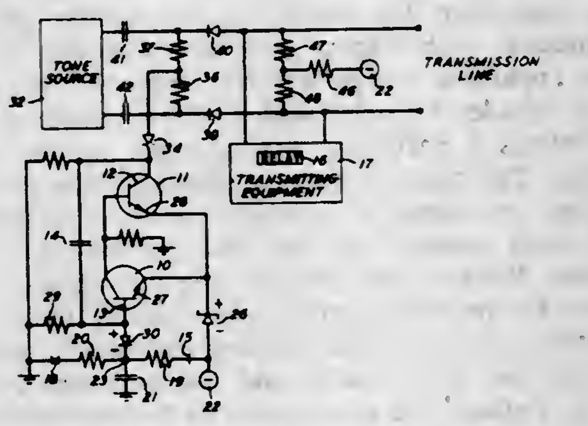
Thomas E. Browne, Red Bank, Wilmer B. Gannt, Jr., and Karl Goldschmidt, New Shrewsbury, and Frank S. Vigliante, Piscataway Township, Middlesex County, N.J., Oscar H. Williford, Bronxville, N.Y., and Robert K. York, Piscataway Township, Middlesex County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 23, 1965, Ser. No. 509,375
U.S. Cl. 179—27 **17 Claims**
Int. Cl. H04m *3/00*



1. A communication system comprising a plurality of lines, a control unit for recording the status of calls and for directing line interconnections, a remote switch unit comprising a memory, a switching network terminating said lines and responsive to signals developed from line identities stored in said memory for interconnecting an active pair of said lines, scanning means comprising means for detecting the supervisory state of each of said lines, means for storing the detected line state in said memory and means for comparing the stored line state with the current scan state to determine each change in line state, means for transmitting a line state change message from said memory to said control unit for processing, and means for transmitting a line connection message from said control unit to said memory pursuant to the establishment of the connection of said active pair of lines.

3,426,159
PULSE CORRECTOR

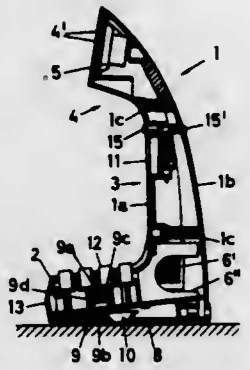
Henry Mann, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 12, 1965, Ser. No. 507,458
U.S. Cl. 179—84 **4 Claims**
Int. Cl. H04m *1/00*



Pulse stretcher circuit whose output signal persists for a minimum predetermined time interval.

3,426,160
TELEPHONE HANDSET

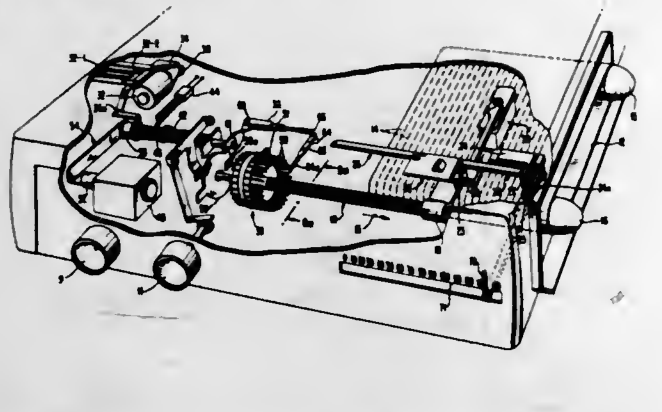
Gustav Alfred Ring, Volvat, Oslo 3, Norway
Filed Oct. 11, 1965, Ser. No. 494,546
Claims priority, application Norway, Oct. 19, 1964, 155,201
U.S. Cl. 179—100 **4 Claims**
Int. Cl. H04m *1/02, 1/11*



A telephone handset having a foot-stand upon which the apparatus rests in its normal position, and from which extends a handle ending in a head containing a receiver loudspeaker is provided. The foot-stand contains at least one microphone and a contact arranged to connect an amplifier in the receiver circuit when the contact-set is in an operated position and to disconnect or reduce the output of said amplifier when the contact set is in an unoperated position. A button for operating the contact projects from the base of the foot-stand so that when the handset rests in a predetermined position on a surface the button is depressed to operate the contact.

3,426,161
REGISTRATION APPARATUS FOR DICTATING MACHINES AND SYSTEMS

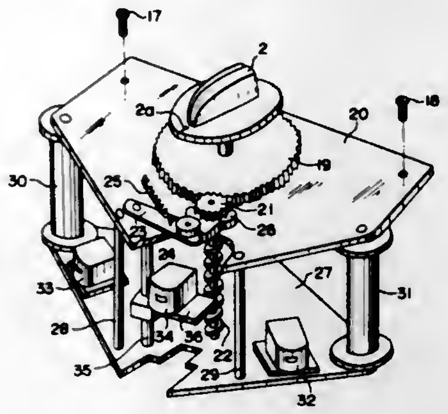
William L. Dollenmayer, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 30, 1965, Ser. No. 452,102
U.S. Cl. 179—100.1 **10 Claims**
Int. Cl. G11b *3/70*



The invention relates to registration devices for dictating equipment for indicating the relative position of a transducer with respect to a record media. The registration apparatus comprises two memory control portions. One includes a carrier with switch contacts and indicates or selects a particular helical track on the belt record media. The other includes a pinwheel memory which indicates or selects a particular point of reference along the track selected by the first portion of the marking means. Prior to any backspacing operation of the transducer for reviewing previously material, the two memory control portions of the marking mechanism, including the carrier and its contacts, and the pinwheel memory, are set to indicate the exact point of farthest advance during the dictating interval just completed. Subsequently, the memory control portions control the drive to insure that the transducer returns to the point of farthest advance.

3,426,162
TAPE RECORDER HEAD SHIFTING MECHANISM

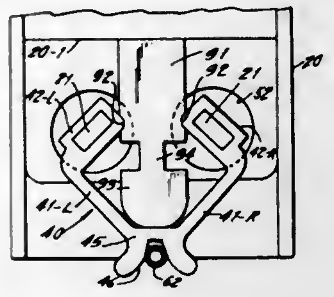
Masato Matsumoto and Yukihide Samejima, Tokyo-to, and Kazunari Watanabe, Kawaguchi-shi, Japan, assignors, by direct and mesne assignments, of one-third each to Corona Kogyo Kabushiki Kaisha, Adachi-ku, Kabushiki Kaisha Copal, and Kabushiki Kaisha Tec, Tokyo-to Japan, joint-stock companies
Filed Mar. 8, 1965, Ser. No. 437,917
Claims priority, application Japan, Mar. 9, 1964, 39/12,790, 39/12,791; Mar. 10, 1964 (utility model), 39/18,491
U.S. Cl. 179—100.2 **1 Claim**
Int. Cl. G11b *5/00;* **G05g** *11/00*



A channel selection device for a tape recorder employing a multichannel tape. A helical cam shaft having a helical groove and driven by a channel selecting member has the edge of a shifting plate which is guided on a guide shaft engaged in the helical groove. Rotation of the channel selecting member moves the shifting plate, which carries the transducer head, vertically along the guide shaft. A click device is provided to set the head exactly at a position corresponding to the channel selected by the channel selecting member.

3,426,163
STEREOPHONIC PHONOGRAPH PICKUPS WITH V-TYPE STYLUS TO TRANSDUCER COUPLER AND COUPLER DAMPER

Richard P. Muttick, Buchanan, Louis A. Di Vico, Elmsford, and Philip Kantrowitz, Bronx, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York
Filed Oct. 11, 1965, Ser. No. 494,737
U.S. Cl. 179—100.41 **9 Claims**
Int. Cl. H04r *1/16*



1. In a stereophonic phonograph pickup for playing back two distinct but related record undulations extending along different faces of a record groove;

a stylus arranged to be driven by said two distinct record undulations;

a mounting structure carrying said stylus;

two laterally spaced distinct mechano-electric transducers operatively carried by said mounting structure and each having a movable transducer portion for generating signals corresponding to transmitted motion;

a motion transmitting integrally formed coupling member having a junction element driven by said stylus and,

two divergent drive arms extending from said junction element and each having remote coupler ends engaging respectively one of said two movable transducer portions for transmitting the two distinct motion components of said stylus to their respective distinct movable transducer portions and generating corresponding two distinct signal sequences;

each of said transducers having a predetermined transducer audio resonant frequency;

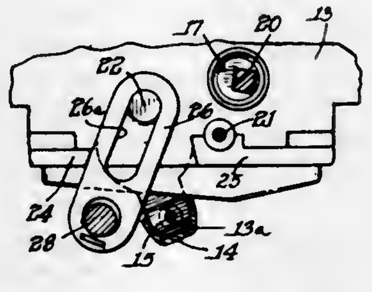
and a distinct elastomer damping body held in damping engagement with a substantial surface portion of each of said two laterally spaced coupler ends;

said coupling member being integrally formed of solid substance selected from plastic and elastomeric polymers,

said elastomer damping body being formed of an elastomer polymer other than and distinct from the polymer of said coupling member and causing material suppression of crosstalk between said two transducers and said two distinct signal sequences in the frequency range near and materially above said transducer resonant frequency.

3,426,164
MULTIPOLE CIRCUIT BREAKER WITH PIVOTABLE HANDLE LOCKING MEMBER

Edward P. Dessert, Cedar Rapids, Iowa, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Apr. 10, 1967, Ser. No. 629,476
U.S. Cl. 200—42 **3 Claims**
Int. Cl. H01h *9/28*



A multipole circuit breaker having a factory-installed generally flat handle locking member pivotably and extensibly-retractably trapped between adjacent casings of two single-pole molded-case circuit breakers secured together to form the multipole circuit breaker. The handle locking member may be locked by a padlock in an extended position in which it blocks attempted movement of a handle tie member securing together separate operating handles of two or more single-pole circuit breakers.

3,426,165
ELECTRIC SWITCH OPERATING AND MOUNTING MEANS

Norman V. Beaman, La Habra, Calif., assignor to Par-Way Mfg. Co., Los Angeles, Calif., a corporation of California
Filed Dec. 6, 1966, Ser. No. 599,615
U.S. Cl. 200—61.41 **4 Claims**
Int. Cl. H01h *3/16*

1. In an electric switch:

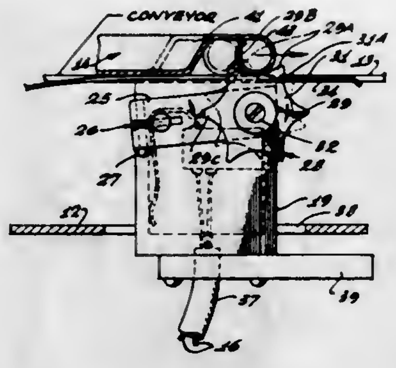
a housing having a cavity therein;

a self-contained electric switch mounted in said cavity and having an operating plunger also disposed in the cavity;

an actuator for said switch;

means mounting said actuator for movement to operate the switch, said actuator being adapted to be moved by the passage of a surface therepast;

a rotor mounted on said actuator to be freely rotatable and having a plurality of lobes thereon projecting into the level of the surface which is to effect movement of said actuator, said rotor receiving surfaces of a width less than the distance between its lobes in the depressions therebetween to rotate the rotor without substantially moving the actuator, engagement of a surface wider than the distance between the lobes of said rotor with two of the lobes thereof causing said actuator to move into switch operating position;



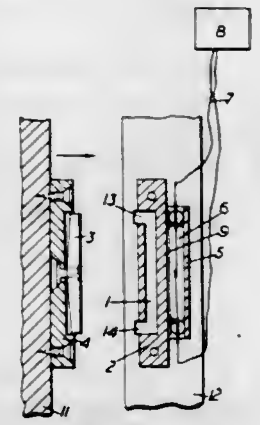
a pin pivotally mounted in said housing across said cavity, said actuator including an arm rigidly secured to said pin at the exterior of the housing;

means mounting said rotor on said arm at the exterior of said housing spaced from said pin and for free rotation relative to said arm; and

a double-armed spring member mounted on said pin within said cavity, one of the arms of said spring member being positioned to engage said switch plunger to operate the switch, the other arm of said spring member engaging an abutment within said housing and serving to bias the actuating arm into a non-operating position.

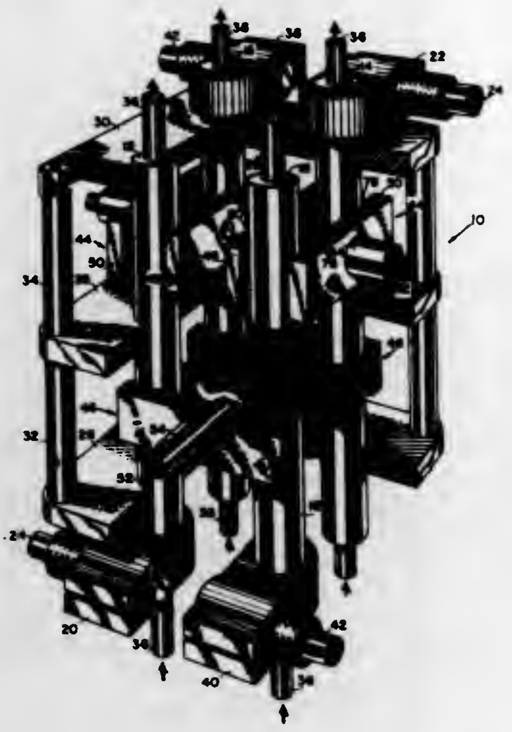
3,426,166
MAGNETIC CLOSURE AND SWITCH FOR DOORS AND SIMILAR DEVICES

Bernard Jean-Jacques Canceill, Paris, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,483
U.S. Cl. 200—61.62 **1 Claim**
Int. Cl. H01j *36/00*



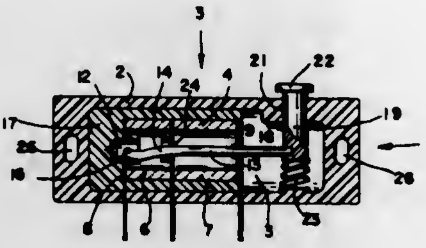
A magnetic closure and switch for doors or the like in which a magnetically actuatable switch connected to an external circuit is mounted on a first member carrying a permanent magnet. The switch and magnet are fixedly mounted in such a manner that the switch is closed by the field of the magnet. A magnetic shunt mounted on a second member movable toward the first member reduces the external field sufficiently to open the switch when the two members are in close proximity. The magnet and shunt also serve to hold the two members together.

3,426,167
REVERSING SWITCH
Max P. Schlienger, 19 Rollingwood Drive, San Rafael, Calif. 94101
Filed Mar. 13, 1967, Ser. No. 622,516
U.S. Cl. 200—82 **13 Claims**
Int. Cl. H01h *35/38*



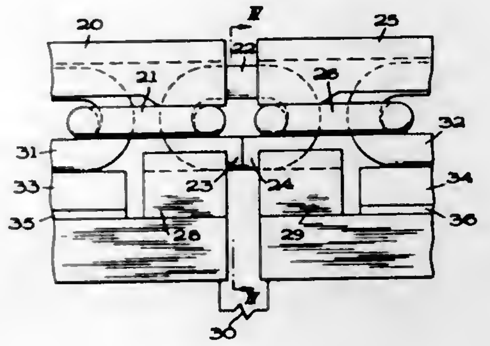
A reversing switch having four spaced, generally parallel, electrodes, two of which are to be coupled to a source of electrical power and the other two adapted to be coupled to an electrically actuated device. First and second pairs of electrical contact shoes are disposed to bridge respective electrodes in a manner such that the polarities of the electrodes to be connected to the electrically actuated device can be reversed by merely shifting one pair of shoes out of engagement with respective electrodes as the other pair of shoes is shifted into engagement with respective electrodes. Selectively actuated drive means effect the movement of the shoes.

3,426,168
MANUALLY OPERATED ENCAPSULATED SINGLE POLE-DOUBLE THROW HIGH VOLTAGE VACUUM SWITCH
Robert W. Hansen, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,545
U.S. Cl. 200—144 **1 Claim**
Int. Cl. H01b *33/00;* **H01h** *9/30;* **H01h** *3/12*



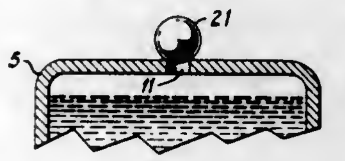
A high voltage vacuum switch in which a vacuum switch assembly is encapsulated within an outer housing. The switch assembly includes a hermetically tight envelope enclosing fixed and movable switch contacts. Plunger means journaled in the outer housing is connected to an actuator rod which embodies the movable switch contact. Preferably the switch envelope is supported in the housing by a dielectric cushioning material.

3,426,169
APPARATUS FOR THE RESISTANCE WELDING OF CHAIN LINKS
Egon Göte Alf Wehlin, Huddinge, Sweden, assignor to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a corporation of Sweden
Filed Nov. 29, 1966, Ser. No. 597,714
Claims priority, application Sweden, Dec. 8, 1965, 15,858/65
U.S. Cl. 219—51 **6 Claims**
Int. Cl. H05b *1/00;* **B21l** *3/02*



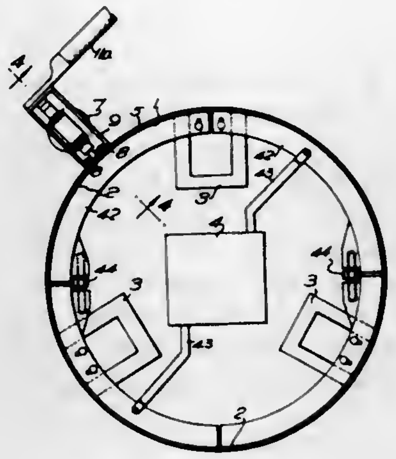
This disclosure relates to a chain welding machine of the kind in which the link ends to be welded are each clamped by a pair of clamping members one or both of which are connected to one terminal of a source of welding current. According to the disclosure, the link to be welded has such a position with regard to the clamping members that the clamping force is parallel to the plane of the link. One clamping member in each of the pairs of clamping members is adapted to straddle the jointless side of the link, while the other clamping member has a groove adapted to receive and position the link end. A pair of auxiliary members inserted into the link at right angles to the link plane serve to transmit the clamping force from the first-mentioned clamping members to the respective link ends. Said auxiliary members may be constituted by the next adjacent links of the chain. The disclosure provides accurate alignment of the link ends and imposes no dimensional limitations on the grooved clamping member.

3,426,170
HERMETIC SEALING PROCESS
Robert C. Miller, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,775
U.S. Cl. 219—74 **4 Claims**
Int. Cl. B23k *9/16, 9/00*



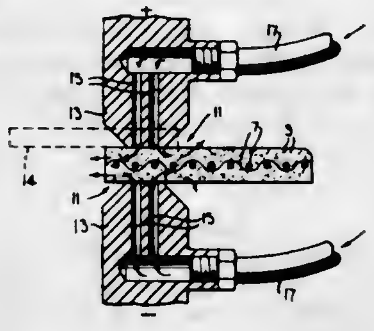
A thin-walled container having an aperture therein and containing a corrosive liquid subject to the formation of gases and pressure when heated is hermetically sealed by a process wherein the container surrounding the aperture is contacted by a metal body, the contacting container and body are shielded by an inert atmosphere, energy is applied to the body and container in an amount, at a rate, and for a period sufficient to alloy the container and body without forming gases and pressure, and the application of energy is discontinued to effect solidification of the alloy hermetically sealing the aperture.

3,426,171
WELDING OF HOLLOW COMPONENTS
Fred Pedley, The Grange, Birch, Middleton, England
Filed Aug. 23, 1965, Ser. No. 481,498
U.S. Cl. 219—78 **6 Claims**
Int. Cl. B23k *11/02*



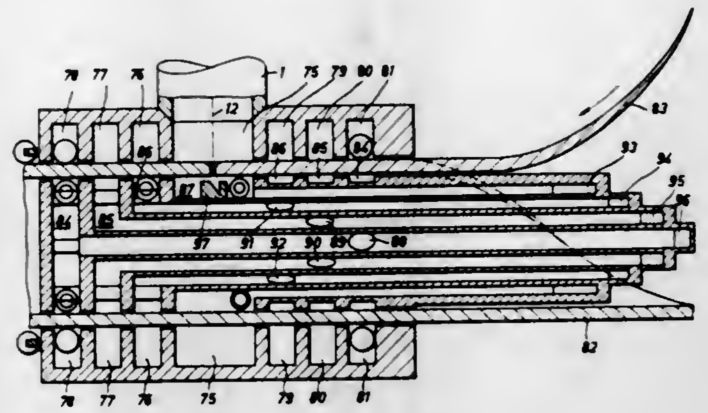
Apparatus for welding a member within a hollow component while the member is clamped interiorly thereof at a weld station. A band surrounds the outer surface of the component and is readily movable therealong to enable several members to be welded thereto at different weld stations. The band includes means to support and position a welding gun at a number of positions around the band and hollow component at each weld station to provide a ring of welds therearound.

3,426,172
METHOD OF WELDING A TERMINAL TAB TO THE PLATE OF AN ELECTROCHEMICAL CELL
Ernest M. Jost, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,556
U.S. Cl. 219—91 **11 Claims**
Int. Cl. B23k *11/10*



Method of welding a conductive terminal tab to a porous, oxide activated plate for use in an electrochemical cell. The oxides are eliminated from the pores of the substrate metal by introducing, into the area of the weld, a liquid or gaseous oxide reducing agent. The conductive terminal tab is then welded to the oxide-free local area by conventional welding techniques.

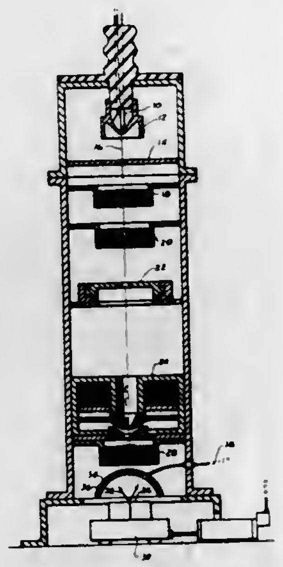
3,426,173
MACHINING DEVICE USING A CORPUSCULAR BEAM
Karl Heinz Steigerwald, 6 Bahnhofstrasse, 7083 Wasseralfingen, Germany
Filed Aug. 6, 1965, Ser. No. 477,691
Claims priority, application Germany, Aug. 8, 1964, St. 22,516
U.S. Cl. 219—121 **9 Claims**
Int. Cl. B23k *15/00*



A device is described for welding a longitudinal pipe seam with a workpiece-penetrating beam of charged particles wherein the pipe seam is produced by forming a continuous flat stock workpiece material into a tubular shaped pipe wall wherein the pipe has an end thereof in communication with atmospheric pressure. A gaseous sealing member is inserted internal to the pipe to effectively gaseously seal the internal portion of the pipe directly below the seam being welded by the beam from the end exposed to atmospheric pressure. An annular external evacuated chamber is described which embraces the entire external circumference of the pipe and covers an axial section of the pipe seam immediately adjacent the welding point. Several intermediate pressure stretches are provided flanking the main beam working chamber which is spaced with slight radial clearance from the pipe to permit free continuous passage of the pipe and at the same time minimize gaseous flow into the beam working chamber. An internal gaseous sealing member may be provided with a beam working chamber on the inner side of the pipe opposite the external beam working chamber and is evacuated to a pressure substantially the same as the pressure in the external beam working chamber. An intermediate pressure stretch is provided on the side facing the atmospheric opening of the pipe to further provide sealing of the welding vicinity. Another charged particle beam working apparatus is described wherein the beam working area is defined by a peripheral wall spaced from the workpiece and provided with an annular pressure stretch surrounding the beam working area and which is also spaced with clearance from the workpiece. Pumps are provided to remove gas leaking through the clearance. The peripheral wall and the annular pressure stretch may be telescopically moved along a path parallel with the beam.

3,426,174
ELECTRON REFLECTION SEAM TRACKER
Richard H. Graham, Glastonbury, and Edward C. Wingfield, Wethersfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 9, 1965, Ser. No. 512,630
U.S. Cl. 219—121 **10 Claims**
Int. Cl. H05b *7/18*

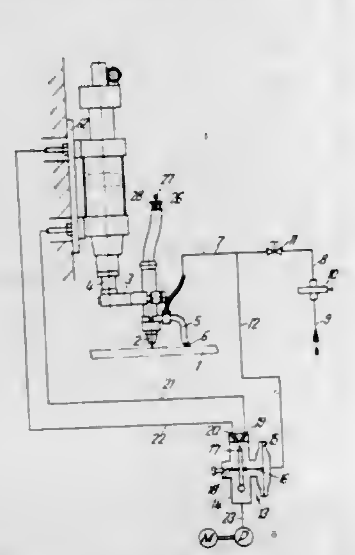
A device is described for tracking and welding a seam formed between abutting workpieces to be welded along the seam by a beam of electrons wherein a detector is used which provides a voltage in response to reflected electrons generated by a beam impinging upon the workpieces in the vicinity of the seam. The beam cross-sectional size is commensurate with the separation of the workpieces along the seam for at least partial entry of the seam by the beam. The beam is deflected over the surface of the workpieces across the seam to generate a detectable pulse from the detector corresponding to the entry of the seam by the portion of the beam and the



thus amplitude modulated detector voltage is combined with a signal representing the deflection voltage to produce a signal representative of the deviation in time between the pulse in the detector voltage and a recurring value in the deflection voltage corresponding to a desired position of the seam. Thereupon the beam and the seam are moved relative to one another either by movement of the workpieces or by deflection of the seam to bring the beam directly onto this seam.

3,426,175
DISTANCE MAINTENANCE DEVICE FOR TORCH

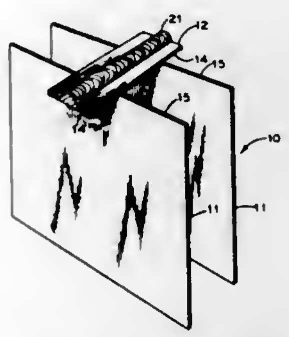
Siegfried Hahne, Rheinkamp-Baerl, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed July 27, 1966, Ser. No. 568,273
Claims priority, application Germany, Aug. 11, 1965, M 66,289
U.S. Cl. 219—125 **10 Claims**
Int. Cl. B23k *9/12;* **H05b** *31/18*



1. An apparatus for maintaining a distance between a torch and a work piece during the relative movement of said torch with respect to the work piece comprising a torch, distance adjusting means connected to said torch, Pitot tube means connected to said torch, said tube means having a gas stream directed toward the plane of the work piece and having a velocity head, and control means actuated by the velocity head for controlling the operation of said adjusting means.

3,426,176
WELDMENT AND PROCESS FOR WELDING THIN SHEET METALS

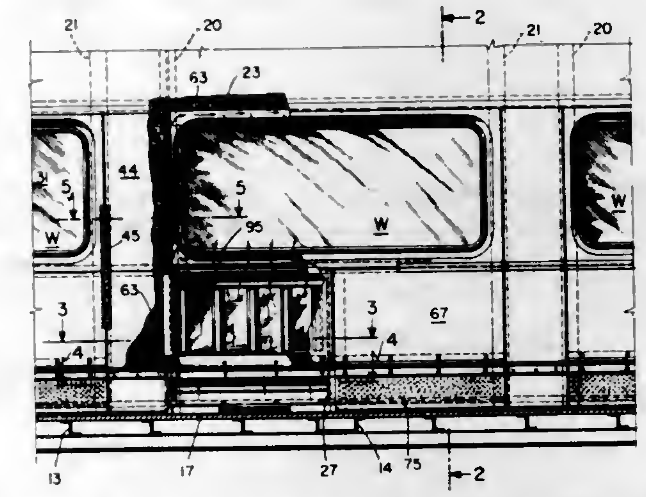
Joseph E. Simon, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 19, 1967, Ser. No. 610,393
U.S. Cl. 219—137 **10 Claims**
Int. Cl. B23k *9/12*



A process of welding a surface of a thin sheet metal strip to adjacently disposed end edges of a plurality of thin sheet metal plates formed from separated plates or from a continuous folded strip. A rigid weldment manufactured by gas-metal arc welding a surface of a thin sheet metal strip to the end edges of a plurality of thin sheet metal plates which are disposed substantially parallel with respect to each other so as to define a predetermined space therebetween. A rigidly constructed laminar flow heat transfer element and process of manufacturing the same.

3,426,177
HEATER DUCT ARRANGEMENT

Louis M. Skypala, Montgomery County, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1966, Ser. No. 574,669
U.S. Cl. 219—213 **2 Claims**
Int. Cl. H05b *1/00;* **F24h** *9/02, 3/00*



A floor heater arrangement in which air flow is directed upwardly through side wall structure of a vehicle to sweep a window area. Heater elements are secured to a panel having bifurcated clips engaging planar portions which extend upwardly from the floor.

3,426,178
CONTROL APPARATUS

David J. Squiers, North Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,922
U.S. Cl. 219—502 **18 Claims**
Int. Cl. H05b *1/02*

17. Apparatus for controlling the energization of an electrical load in response to variations in the resistance of a sensor, said apparatus comprising:

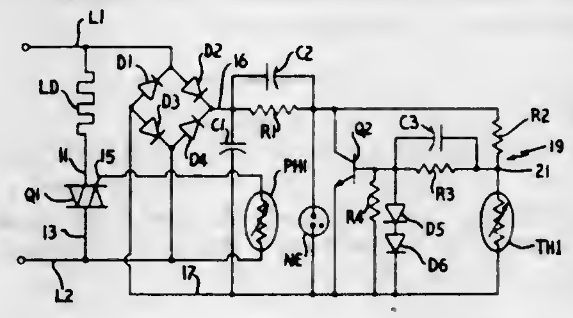
a light-emitting, gaseous discharge device which is triggered into conduction substantially at a first voltage and which then continues to conduct at a substantially lower voltage;

circuit means including a current limiting resistance in series with said device for connecting said device across a D.C. voltage source;

controllable semiconductor current switching means for switching the flow of current to said load;

a photocell responsive to light emitted from said gaseous discharge device for controlling said switching means;

a transistor having a collector-emitter output circuit connected across said discharge device and a base-emitter input circuit having a voltage threshold which must be exceeded before substantial conduction occurs in said output circuit;

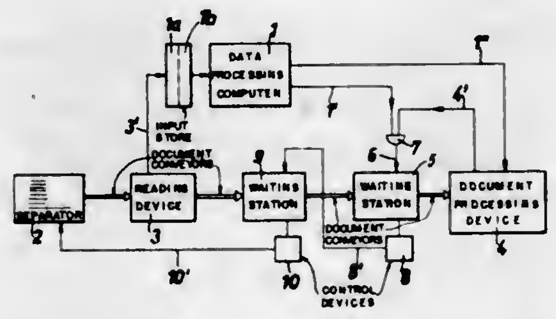


a voltage divider connected across said discharge device and including a variable resistance sensor and a reference resistance connected in series with said sensor, said divider having a junction between said sensor and said reference resistance providing a control voltage which varies substantially as a function of the resistance of said sensor; and

means for connecting said sensor across the base-emitter input circuit of said transistor for coupling said control voltage to said input circuit whereby sensor resistances above a predetermined level cause the output circuit of said transistor to shunt said discharge device thereby preventing triggering thereof and thereby controlling the energization of said load.

3,426,179
DOCUMENT PROCESSING ARRANGEMENT

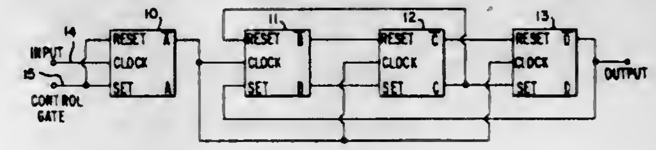
Wilhelm Grimm, Fritz Rudolf Guntsch, and Werner Strauss, Constance, Germany, and Gunther Luther, Marly-le-Rol, Yvelines, France, assignors to Telefunken Patentverwertungsgesellschaft m.b.H.
Filed Dec. 15, 1965, Ser. No. 514,060
Claims priority, application Germany, Dec. 28, 1964, T 27,715
U.S. Cl. 235—61.11 **3 Claims**
Int. Cl. G06k *7/00;* **B07c** *5/00*



In a document processing installation including a reading device through which a succession of documents pass, a data processing computer for reading the information contained on the documents in order to determine the further processing to which each document is to be subjected, and a document handling device for further processing the documents in accordance with the data supplied by the computer, two successive waiting stations disposed in line between the reading device and the document handling device and electrically connected to the computer and handling device for causing each document in succession to be released from the downstream waiting station only when the document handling device has received the document processing information relating to that document and for holding a succeeding document in the upstream waiting station, and preventing the reading of any subsequent documents, until the document then in the downstream waiting station is released to the document handling device.

3,426,180
COUNTER AND DIVIDER

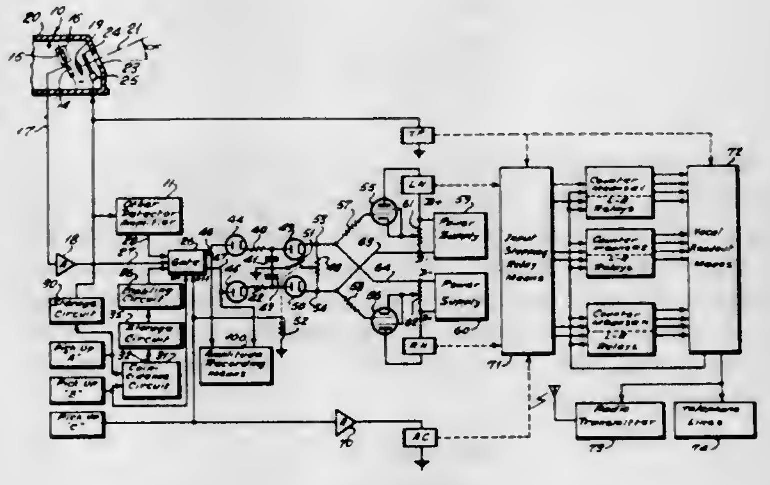
George E. Smith, Bridgeton, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 18, 1965, Ser. No. 440,830
U.S. Cl. 235—92 **19 Claims**
Int. Cl. G06f *5/02*



A digital bi-quinary counter/divider comprising four flip-flops interconnected to provide an output which is easily decoded into decimal or binary coded decimal form. At least all but the first flip-flop stage is a clocked J–K flip-flop. One of the two complementary outputs of the first stage flip-flop is connected to the clock input terminals of all three of the other flip-flops.

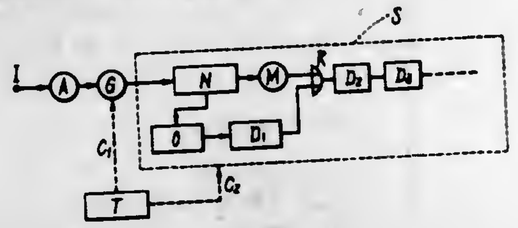
3,426,181
VOCAL COUNTER CIRCUIT

Joseph Roy De Priest, Richmond, Va., assignor, by mesne assignments, to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Continuation of application Ser. No. 147,317, Oct. 24, 1961, now Patent No. 3,226,540, dated Dec. 28, 1965. This application May 18, 1965, Ser. No. 456,698
U.S. Cl. 235—92 **6 Claims**
Int. Cl. G06f *7/48;* **G06g** *7/02*



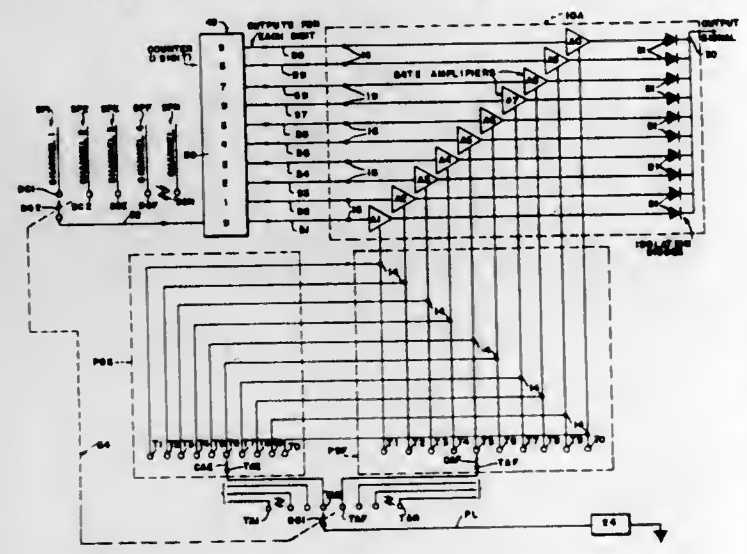
A vocal counter circuit for automatically vocalizing the axle position of an overheated journal box in a passing train characterized by a message generator having a plurality of channels equal in number to at least the numeric base of the axle counter. Each channel is broken into discrete time zones, each zone representing a vocal digit. The channels are cycled in common and selected channels are sequentially coupled to the output on a time sequence basis.

3,426,182
DECIMAL COUNTING APPARATUS
Kazuo Husimi, Tokyo, Japan, assignor to Takeda Riken Industry Company Limited, Tokyo, Japan
Filed July 8, 1965, Ser. No. 470,390
Claims priority, application Japan, July 13, 1964, 39/39,708
U.S. Cl. 235—92 **8 Claims**
Int. Cl. G06c *19/00;* **G06f** *7/38*



A decimal counting apparatus includes a binary counting circuit and a decimal counting circuit, wherein multiplied carrying signals are delivered to an upper stage for one carrying signal from a lower stage thereby elevating the entire counting speed to the counting speed of a flip-flop circuit of the first stage thus providing the function necessary for the universal counting apparatus.

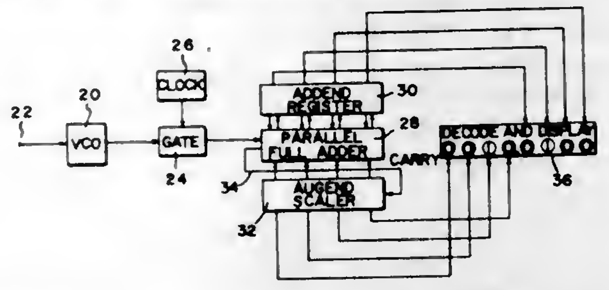
3,426,183
MULTI-CHANNEL DIGITALIZED PROCESS PARAMETER MONITORING AND SCANNING MEANS WITH MULTIPLE LIMIT PRESET
Robert R. Walsh, Wilmington, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 8, 1965, Ser. No. 494,107
U.S. Cl. 235—92 **10 Claims**
Int. Cl. G06g *7/06*



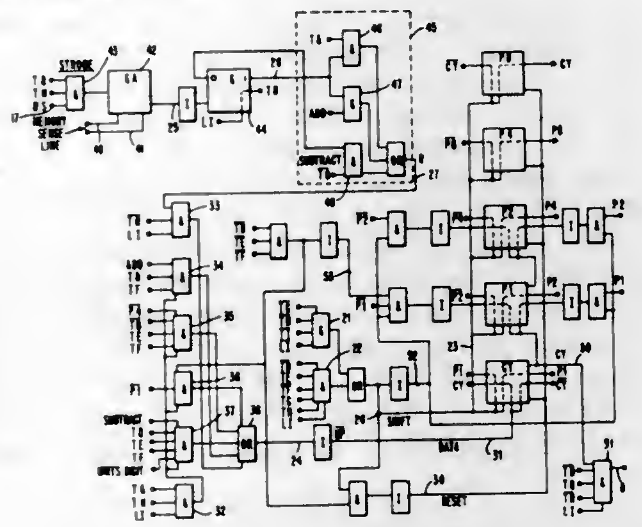
This invention relates to a multiple channel parameter monitoring system. A single presettable electronic counter scans the parameter channels on a time shared basis. The counter is constructed so that presetting is independently variable for each parameter channel. A plurality of logic gates operates in response to the counter output to switch power among the various parameter channels as each preset count is achieved.

3,426,184
LOGARITHMIC CIRCUIT
John H. Riseman, Cambridge, Mass., assignor to Orion Research, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 4, 1966, Ser. No. 547,121
U.S. Cl. 235—152 **11 Claims**
Int. Cl. G06f *1/02*

A system for providing a digital or numerical output signal which approximates the antilog of an input logarithmic analog signal. Means are provided for deriving a pulse train having a number of pulses proportional to the magnitude of an input logarithmic analog signal. Other means are provided for raising an arbitrary digital numeral to an exponential power which is defined by the number of pulses in the pulse train, the resulting output product being substantially the digital antilogarithmic value of the input signal.

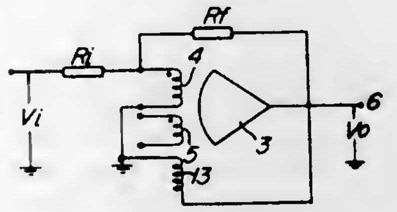


3,426,185
ACCUMULATOR FOR PERFORMING ARITHMETIC OPERATIONS
Cecil Wayne Cox and Louis M. Hornung, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,563
U.S. Cl. 235—176 **11 Claims**
Int. Cl. G06f *7/50*



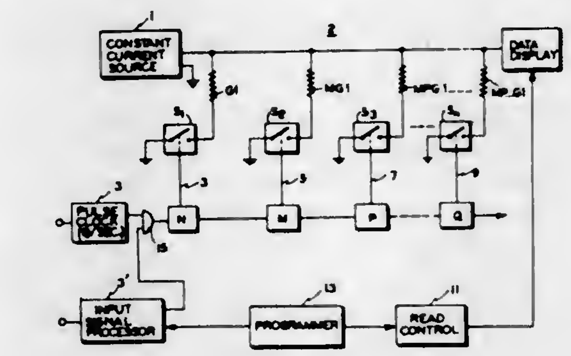
The invention relates to accumulator circuits combining shift register operation and accumulating operation. Arithmetic factors with 1–2–4–8 weighted bit positions, and other factors, such as the corrective six and corrective ten, are applied serial-by-bit, serial-by-digit to a common trigger position, Carry (CY), and are supplied for utilization from the same trigger position (CY). Each bit interval includes a counting sub-interval and shifting sub-interval.

3,426,186
ANALOG COMPUTING CIRCUITS FOR ABSOLUTE VALUES
Katsumi Takemura, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed June 5, 1964, Ser. No. 372,895
Claims priority, application Japan, June 14, 1963, 38/30,534
U.S. Cl. 235—197 **4 Claims**
Int. Cl. G06g *7/26, 7/28;* **G06f** *15/34*



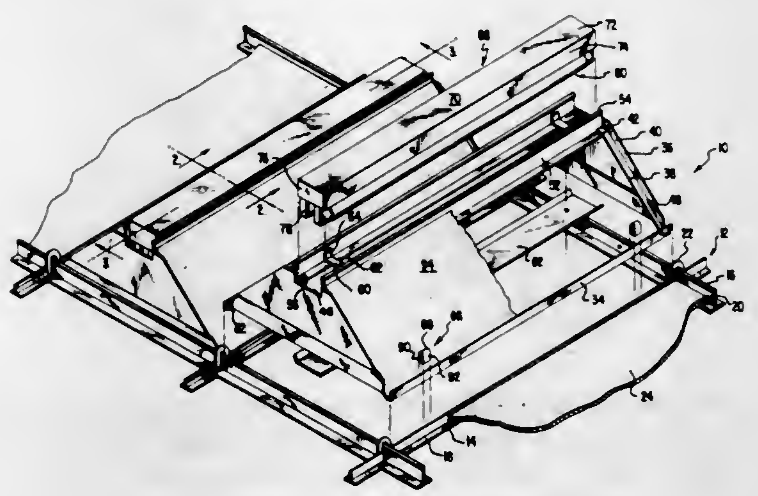
An analog computing circuit formed by a magnetic operational amplifier having two control windings operated in accordance with the ampere-turns given by two control windings, each being independently controllable. The polarity of the output signal obtained from the circuit is determined by the direction of the ampere-turns of the control windings which is unchanged regardless of the polarity of the input signals. This property is utilized to obtain an operational circuit for calculating absolute values. The input signal is supplied to each control winding through a diode in a manner to cause the control windings to generate a unidirectional ampere-turn regardless of the polarity of the input signals.

3,426,187
CONVERSION APPARATUS AND METHOD
Gordon R. Partridge, Sudbury, Mass., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts
Filed Sept. 8, 1964, Ser. No. 394,790
U.S. Cl. 235—197 **10 Claims**
Int. Cl. G06g *7/26;* **G01r** *23/02*



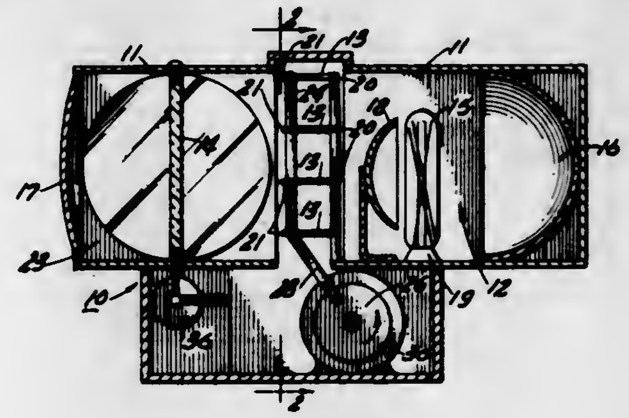
This disclosure deals with the automatic conversion of electrical quantities into their reciprocal with the aid of a variable conductance matrix, the resultant conductance of which is varied in accordance with the quantity-to-be-inverted.

3,426,188
FIXTURE FOR USE IN A SUSPENDED GRID CEILING SYSTEM
Eugene Baranowski, Forestville, Conn., assignor to Integrated Systems, Inc., Hartford, Conn., a corporation of Connecticut
Filed Nov. 3, 1966, Ser. No. 591,837
U.S. Cl. 240—9 **5 Claims**
Int. Cl. F21s *1/02, 3/02*



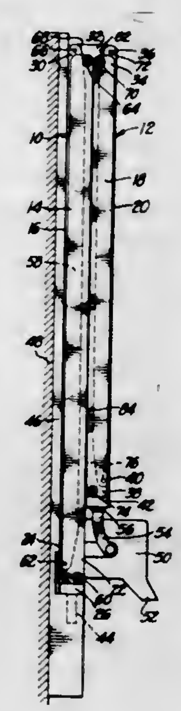
A fixture support for use in suspended grid ceiling systems having a substantially rectangular frame with side pieces, angular end elements extending above the side pieces, a pair of top braces secured to the elements, and end plates secured to the end elements. A fixture box having bulb mounts depending therefrom is disposed between the top braces. Between the side pieces, and elements, and top braces is mounted the ceiling panels. Clips connect the side pieces of the rectangular frame to any selected one of the grids.

3,426,189
APPARATUS FOR PENETRATING FOG WITH A LIGHT BEAM
Marshall P. Deputy, 114 S. 1st St., Apt. 2, Council Bluffs, Iowa 51501
Continuation-in-part of application Ser. No. 427,696, Jan. 25, 1965. This application June 12, 1967, Ser. No. 655,256
U.S. Cl. 240—46.07 **11 Claims**
Int. Cl. F21v *11/04*



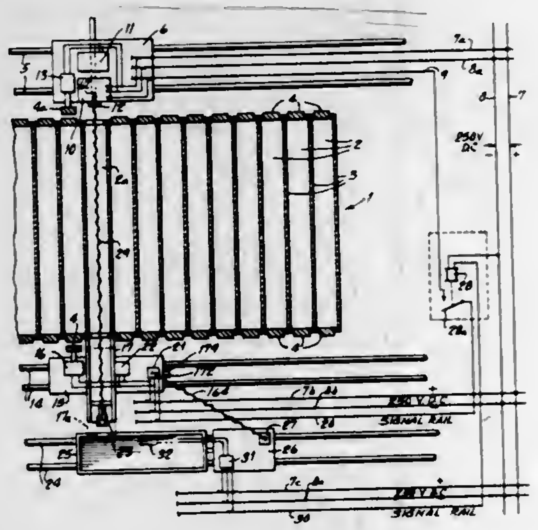
A fog penetrating lamp having a constant light source, filter for filtering the light emitted by the light source, which filter in one embodiment is rotatable, and movable shutters rotatable downward from a parallel, open position to a substantially closed position so that a major proportion of the light emitted by the light source is oscillated between a high intensity and a low intensity. The speed of the shutters is such that the light oscillates fast enough to prevent excessive flickering, but slow enough to prevent the creation of an excessive glow zone.

3,426,190
SUPPORT ARMS FOR LAMPS AND THE LIKE
Mitchell Bobrick, Pacific Palisades, Calif., assignor to P. N. Luminous Equipment Co., Franklin Park, Ill.
Filed Nov. 7, 1966, Ser. No. 596,380
U.S. Cl. 240—73 **4 Claims**
Int. Cl. F21s *1/02, 5/00*



Two sets of support arms are end pivotally connected, each set being comprised of preferably opposed, U-shaped cross section arms which are at least partially transversely internested forming substantially closed arm assemblies with control chambers enclosed therein. The end pivotal connection of each arm of each set mounts the arms of each set at least transversely shiftable, and also preferably longitudinally shiftable, relative to each other while still maintaining said transversely closed assembly during arm pivotal movement. Control springs are contained within the arm assembly control chambers regulating arm pivotal movements.

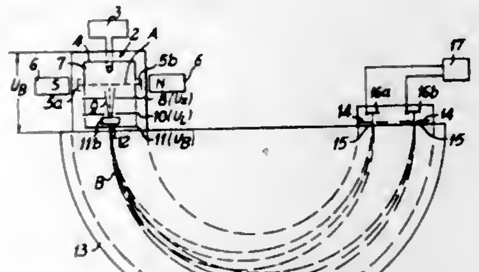
3,426,191
DETECTOR OF STOPPED OR PASSING VEHICLES
Thomas J. Radcliffe, Warrensville Heights, Daniel M. McElhaney, Jr., Euclid, and Daniel F. Havel, Cleveland, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Original application Sept. 12, 1961, Ser. No. 137,588, now Patent No. 3,304,241. Divided and this application July 7, 1966, Ser. No. 563,471
U.S. Cl. 246—167 **1 Claim**
Int. Cl. B60k *1/10;* **H01h** *47/04*



1. Apparatus for detecting a vehicle stopped in a given location, and distinguishing it from a passing vehicle, comprising:
- (a) first control mechanism on said vehicle;
- (b) second control mechanism located along the wayside of the path of movement of the vehicle;
- (c) one of said control mechanisms comprising source means for producing a beam of radioactive rays directed transversely to said path; and
- (d) the other of said control mechanisms comprising a detector for said beam of rays and mounted in a position intersected by said beam of rays as the vehicle moves along said path;

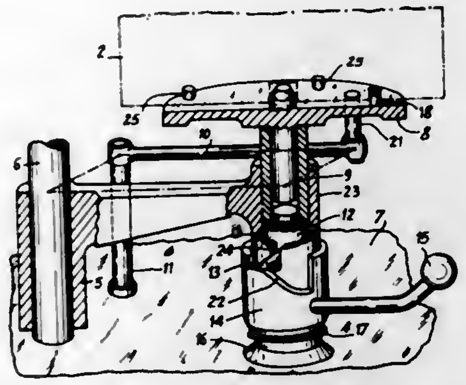
wherein the improvement comprises:
- (e) energizable time delay means in said other control mechanism comprising:
  - (1) a control element; and
  - (2) means effective after a predetermined time interval of the order of a few seconds following energization of the time delay means to shift the control element from an inactive condition to an active condition;
- (f) electric circuit means energized in response to detection of a beam of rays by the detector to initiate energization of the time delay means; and
- (g) holding means responsive to shifting of the control element to its active condition to continue the energization of the electric circuit means without regard to the continued detection of the beam by the detector,
- (h) whereby the control element is shifted to its active condition only when the vehicle is stopped with said source means aligned with the detector, so that the beam from the source means impinges on the detector for a time greater than said predetermined interval.

3,426,192
MASS SPECTROSCOPES HAVING MEANS FOR FOCUSING THE ION BEAM IN SYNCHRONISM WITH THE SCANNING VOLTAGE
Curt Brunnée and Günter Kappus, Bremen, Germany, assignors to Atlas Meb- & Analysentechnik G.m.b.H., a limited company of Germany
Filed Sept. 3, 1965, Ser. No. 484,814
U.S. Cl. 250—41.9 **2 Claims**
Int. Cl. H01j *39/36*



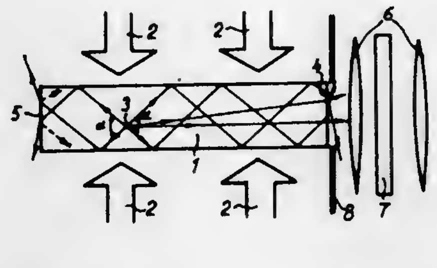
A mass spectroscope has an exit slit through which ions leave the ion source and follow a circular path determined by the ion source acceleration voltage toward one of two separated entrance slits corresponding to respective ones of the circular paths. A split lens electrode for focusing the ion beam upon the exit slit has a predetermined potential difference across the two lens halves to deflect the ion beam so that it passes through the exit slit. This poential difference is varied in accordance with the acceleration potential so that regardless of the mass range being scanned, ions within that mass range are always emitted through the exit slit.

3,426,193
APPARATUS FOR INSERTING A CONSTANTLY ORIENTED SPECIMEN CHAMBER IN A MICROANALYSER
Jacques Guernet, Courbevoie, France, assignor to Compagnie d'Applications Mecaniques à l'Electronique, au Cinema et à l'Atomistique, a corporation of France
Filed Jan. 19, 1965, Ser. No. 426,588
Claims priority, application France, Jan. 21, 1964, 960,995
U.S. Cl. 250—49.5 **5 Claims**
Int. Cl. H01j *37/26*



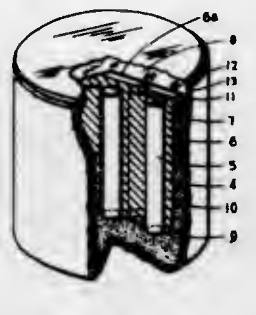
An arrangement for inserting a specimen chamber in or removing it from an electron beam microanalyser comprising a first arm supported for pivoting about and being translated along an axis parallel to the axis of the microanalyser, a support mounted in said arm slidably along a direction parallel to the axis of the microanalyser for supporting the specimen chamber and a further arm pivotally mounted about an axis parallel to the last mentioned axes and carrying a finger engaging the support for determining with the first arm two opposite sides of a parallelogram so as to keep constant the orientation of the support.

3,426,194
FLUORESCENCE RADIATION DEVICE RADIATING AT 280 mμ WAVE LENGTH, AND METHOD OF MAKING SAME
Werner Donne, Alvsjo, Sweden, assignor to LKB-Produkter Aktiebolag, Stockholm, Sweden, a joint-stock company of Sweden
Filed Mar. 31, 1965, Ser. No. 444,344
Claims priority, application Sweden, Apr. 16, 1964, 4,722/64
U.S. Cl. 250—71 **4 Claims**
Int. Cl. G01n *21/38;* **H01j** *1/63*



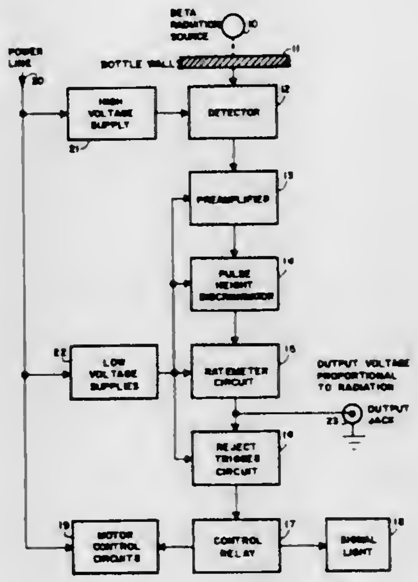
A fluorescent radiation device for producing radiation of 280 mμ comprises an elongate light guiding member or rod of a special silicon dioxide glass, and a mercury vapor gas discharge device located adjacent the smooth side surfaces thereof. The light guiding member has a fluorescent characteristic with respect to a wave length of 280 m/μ which is substantially the same as that provided by a silicon dioxide glass of greater than 99% purity which has been exposed to gamma radiation. Two examples of a material having suitable characteristics are glasses manufactured by the French company, Quartz and Silice and sold under the names of Pursil and Germisil, respectively. A satisfactory material can also be made by subjecting 99% pure silicon dioxide glass to neutron radiation.

3,426,195
SCINTILLATION COMPONENT FOR USE IN RADIATION DETECTION DEVICES WHICH ARE SUBJECT TO WIDE TEMPERATURE VARIATIONS
Julious M. Menefee and Joseph W. Erker, Cleveland, Ohio, assignors to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 533,153
U.S. Cl. 250—71.5 **4 Claims**
Int. Cl. G01t *1/20*



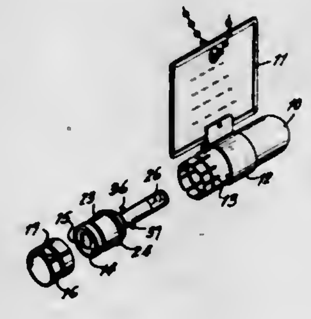
A packaging of a scintillation crystal or crystals for use in radiation detection which is more rugged and resists physical or optical damage over wide temperature ranges which comprises a light tight metal container having its inner surface coated with a reflective material, the opening in such container consisting of a transparent window hermetically sealed to said container, the scintillation crystals in the container are surrounded by a normally liquid coupling material which in turn is surrounded by a core which is made up of hydrogenous materials such as Lucite, polyvinyl toluene and polystyrene, said core material being solid at normal operating conditions for the detector in which the scintillation component is used but which softens and becomes plastic at higher temperature so as to accommodate the expansion of the scintillation crystal.

3,426,196
APPARATUS FOR DETERMINING WALL THICKNESS UTILIZING RADIATION ABSORPTION
Christopher J. O'Shea and Richard Quinn, Muncie, Ind., and Donald S. Johnson, Jr., Boulder, Colo., assignors to Ball Brothers Research Corporation, Boulder Industrial Park, Boulder, Colo., a corporation of Colorado
Continuation of application Ser. No. 339,787, Jan. 23, 1964. This application Feb. 21, 1967, Ser. No. 617,716
U.S. Cl. 250—71.5 **3 Claims**
Int. Cl. G01t *1/16;* **H01j** *39/18*



An apparatus for testing wall thickness wherein a pulse output is produced by a radiation detector situated at the side of the wall to be tested opposite to that of a radiation source, with the produced pulse output being coupled to a pulse discriminator that generates pulses of both constant amplitude and width which are then utilized to produce an analog voltage signal which triggers a reject circuit when the level exceeds a predetermined value.

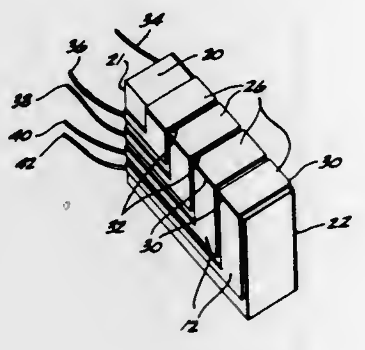
3,426,197
DOSIMETER FOR MEASURING NEUTRON AND GAMMA RADIATION
Adnan Waly, Stamford, Conn., and Richard Just, Syosset, Leonard Schwartzman, Plainview, and David I. Alster, Westbury, N.Y., assignors to Electrospace Corporation, Glen Cove, N.Y., a corporation of New York
Filed July 16, 1965, Ser. No. 472,550
U.S. Cl. 250—83 **11 Claims**
Int. Cl. H01j *39/00*



A dosimeter for measuring both gamma and fast neutron radiation in which a cylindrical probe having a photoluminescent glass member and a silicon diode is carried within a casing. A lead shield is provided in the casing around the photoluminescent glass for equalizing its response. Windows in the probe admit ultraviolet light and permit emission of visible luminous light. The diode is provided with outwardly extending terminals to measure the neutron radiation by the application of an electrical current.

3,426,198
DETECTOR ARRAY WITH ELECTRODE CONNECTIONS

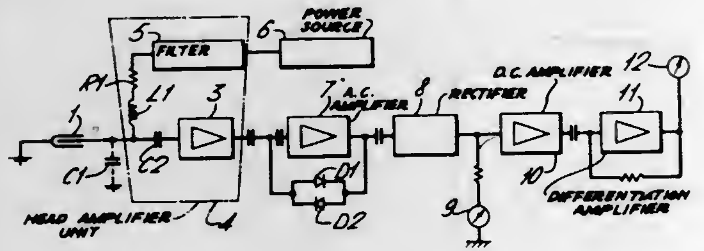
Evert A. Autrey, Santa Barbara, Calif., assignor to Santa Barbara Research Center, Goleta, Calif., a corporation of California
Filed Apr. 29, 1966, Ser. No. 546,330
U.S. Cl. 250—83 **7 Claims**
Int. Cl. G01t *1/202*



A detector array comprising individual substrate modules having opposed parallel surfaces generally perpendicular to a third surface. The third surface is provided with a plurality of detector material segments. The other surfaces have electrode leads plated thereon electrically connected to each segment of detector material. In an array pattern, the modules may be offset as seen in plan view to provide convenient electrical lead connection.

3,426,199
NUCLEAR FLUX MEASURING APPARATUS EMPLOYING CURRENT FLUCTUATIONS FROM NEUTRON DETECTORS

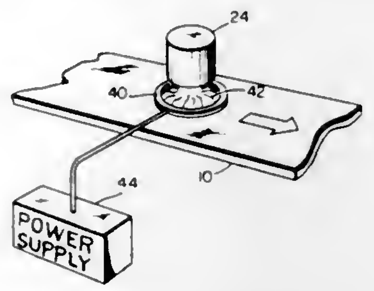
Eliot Patrick Fowler, Studland, Swanage, Dorset, Donald Harrison, Broadstone, Dorset, and Roy William Levell, Poole, Dorset, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed July 19, 1965, Ser. No. 472,942
Claims priority, application England, July 22, 1964, 29,635/64
U.S. Cl. 250—83.1 **8 Claims**
Int. Cl. G01t *3/00*



Neutron flux is commonly measured with an instrument responsive to the mean current from an ion chamber at high flux levels and with a pulse counting equipment at the lower flux levels. An alternative approach with which the instant invention is concerned uses the statistical fluctuations of the current from an ion chamber as a measure of neutron flux. This varying current is filtered to provide an A.C. input signal which is fed to a log A.C. amplifier and a rectifier providing a D.C. output proportional to the rate of pulse generation in the chamber.

3,426,200
AIR GAP CONDITIONING SYSTEM FOR A RADIATION GAUGE

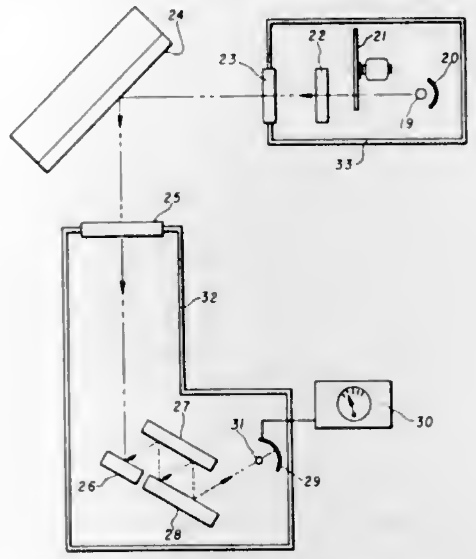
Don F. Lehman, Columbus, Ohio, and Donald E. Varner, Hanover, Mass., assignors to Industrial Nucleonics Corporation, a corporation of Ohio
Continuation of application Ser. No. 786,381, Jan. 12, 1959. This application Ser. No. Jan. 16, 1967, Ser. No. 609,688
U.S. Cl. 250—83.3 **7 Claims**
Int. Cl. G01t *1/16;* **G01b** *15/02*



1. Measuring apparatus comprising a radiation source providing radiation toward a sheet material to be measured, a radiation detector for detecting radiation from said material, said radiation source and detector defining with said sheet a measuring gap through which said radiation passes, a manifold fixedly positioned about the outer limits of said measuring gap and substantially surrounding said gap, said manifold having a plurality of spaced openings in communication with said measuring gap, means for generating heated air, means for passing said heated air into said manifold, and means for discharging said heated air from said exhaust ports to maintain said measuring gap at a substantially constant temperature.

3,426,201
METHOD AND APPARATUS FOR MEASURING THE THICKNESS OF FILMS BY MEANS OF ELLIPTICAL POLARIZATION OF REFLECTED INFRARED RADIATION

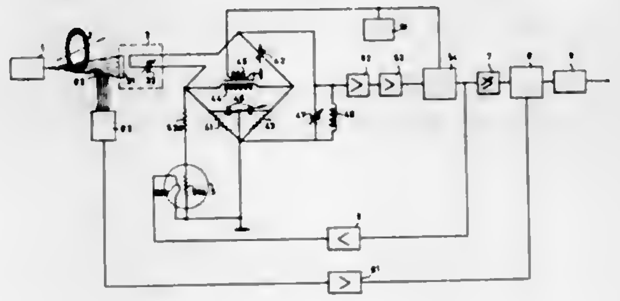
Albert R. Hilton and Charlie E. Jones, Jr., Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,208
U.S. Cl. 250—83.3 **11 Claims**
Int. Cl. G01t *1/32*



Disclosed is a method and apparatus for measuring the thickness of a film on a surface. A beam of infrared energy is reflected from the surface on which the film is deposited, and the reflected beam is elliptically polarized by a suitable polarizer to a degree equal and opposite to the degree of elliptical polarization produced by reflecting the beam from the surface, thereby causing said reflected beam to be plane polarized. The plane polarized reflected beam is then passed through a polarized analyzer, and the polarizer analyzer is rotated 90° with respect to the plane of the plane polarized reflected beam, thereby causing extinction of the light transmitted therethrough, and thereby providing direct measurement of the azimuth angle and phase shift of infrared energy reflected from the surface.

3,426,202
MEASURING SYSTEM FOR PNEUMATIC INFRARED DETECTOR

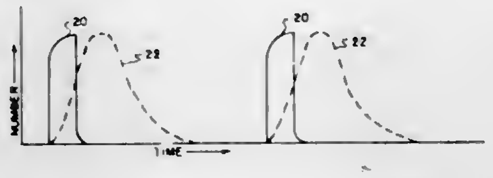
Michel J. L. Gay, Villeneuve-Saint-Georges, and Marcel Penaud, Nanterre, France, assignors to Office National d'Etudes et de Recherches Aerospatiales, a body corporate of France
Filed May 25, 1967, Ser. No. 641,227
Claims priority, application France, May 31, 1966, 63,580
U.S. Cl. 250—83.3 **2 Claims**
Int. Cl. G01t *1/16*



A measuring system for a pneumatic infra-red detector comprising a variable capacitor whose capacitance depends on the infra-red energy applied, in which said infra-red energy is modulated at a low frequency, said capacitor is included in one arm of a high-frequency tuned Schering bridge modulating at said low frequency the high-frequency output signal of said bridge and an indirect-heating thermistor connected in parallel to a resistive arm of said bridge is heated by the continuous component of said output signal for controlling said bridge at zero.

3,426,203
METHOD OF CORE ANALYSIS USING THERMAL NEUTRON CAPTURE CROSS SECTION

Arthur H. Youmans, Houston, Tex., assignor to Dresser Industries Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,037
U.S. Cl. 250—83.6 **5 Claims**
Int. Cl. G01v *5/00*

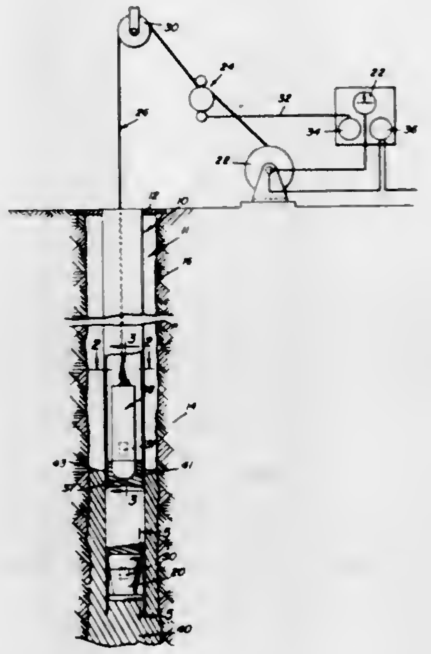


A preselected volume of a preselected standard material is irradiated at the earth's surface with a burst of fast neutrons, after which the decline of the thermal neutron population is measured.

3,426,204
METHOD FOR MEASURING DEPTH OF TOP PLUG IN WELL CASING CEMENTING

Ralph O. Sutton, Salem, W. Va., assignor of fifty percent to Paul M. Chaney, Windsor, Va.
Filed July 15, 1965, Ser. No. 472,188
U.S. Cl. 250—83.6 **5 Claims**
Int. Cl. H01j *39/28*

A method of measuring the relative position of the top of a cementitious settable material which has been pumped downwardly within a well casing. The relative depth of the top of the cementitious material is determined by inserting a pre-formed top plug into the well casing and forcing the pre-formed top plug downwardly within the casing, and thus forcing the cementitious settable material ahead of the pre-formed top plug. A radiation detector, such as supported by wire line, is moved downwardly within the well casing to continuously monitor the relative depth of the pre-formed top plug which is provided with a receptacle having a suitable radiation emitting material therein. In a preferred embodiment the pre-formed top plug is formed of a drillable material and to avoid contamination of the well the radiation emitting material within the receptacle in the pre-formed top plug is preferably chosen to have a half-life of approximately the time necessary to permit the initial curing of the cementitious settable material being utilized.



3,426,205
METHOD FOR TAGGING SAND WITH A GASEOUS RADIOACTIVE ISOTOPE

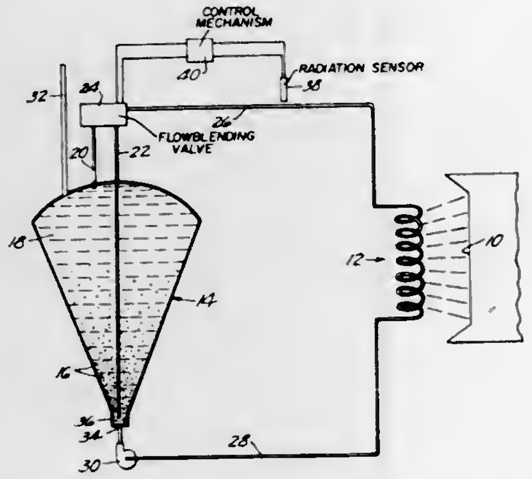
Elick H. Acree and Forrest N. Case, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 28, 1967, Ser. No. 671,484
U.S. Cl. 250—106 **4 Claims**
Int. Cl. G21h *5/02*

A process for tagging sand with a gaseous radioactive isotope is provided for the purpose of facilitating the tracing and monitoring of natural sand movement in coastal areas. The tagging of the sand is achieved by subjecting sand to an environment containing a gaseous radioisotope selected from ^{133}Xe, ^{85}Kr, ^{131}I, ^{125}I, and ^{37}Ar and the heating of the confined sand to effect sorption of the gaseous isotope into the sand.

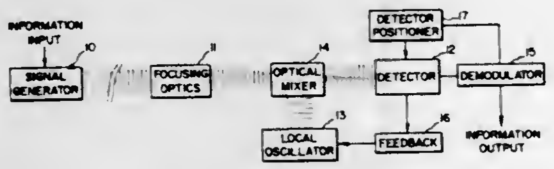
3,426,206
CONTROLLABLE IRRADIATION DEVICE

Gordon R. Smith, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 486,851
U.S. Cl. 250—106 **2 Claims**
Int. Cl. G21h *5/00*

Means for varying and controlling the intensity of radioactive emission directed toward a target area, in which a mixture of radioactive particles and a non-radioactive liquid is discriminately agitated to maintain the particles suspended in a first portion of the liquid and not in a second portion thereof. The particles and liquid drawn from the first portion and the clear liquid drawn from the second portion are selectively blended to achieve the desired intensity level and then directed to a tubing array in the vicinity of the target to be irradiated.



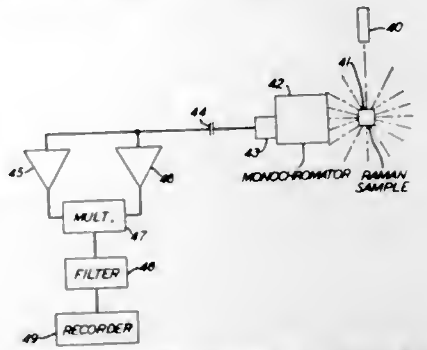
3,426,207
FOCUSED OPTICAL HETERODYNE SYSTEM
David L. Fried, Woodland Hills, and Wendell S. Read, Los Angeles, Calif., assignors to North American Rockwell Corporation
Filed June 17, 1964, Ser. No. 375,907
U.S. Cl. 250—199 **22 Claims**
Int. Cl. H04b *9/00*



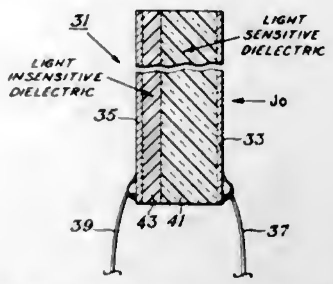
1. A heterodyne detector comprising:
means for focusing a beam of coherent light of a first frequency into an Airy disk at a focal plane;
means for impinging an unfocused beam of coherent light of a second frequency on the focal plane; and
means at the focal plane for detecting a heterodyne frequency between the focused beam of light and the unfocused beam of light, including means for excluding a portion of the unfocused beam of light from said means for detecting.

3,426,208
METHOD AND APPARATUS FOR MEASURING LIGHT SIGNALS OF LOW INTENSITY BY UTILIZATION OF SHOT NOISE
James E. Griffiths, Murray Hill, Yoh-Han Pao, Chatham, N.J., and Robert N. Zitter, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1965, Ser. No. 515,605
U.S. Cl. 250—200 **6 Claims**
Int. Cl. H01j *39/10;* **G01j** *1/24*

The specification describes a new method for detecting electron emission from light detectors. The D.C. output of a phototube characteristically reflects random fluctuations called shot noise. In the usual prior art measurements this shot noise is filtered out and the D.C. component is recorded. However, in certain situations where the light radiation is weak there is more power in the fluctuations than in the steady current component. This method suggests using the fluctuating or shot noise component as the signal and discarding the D.C. component. The recognition that the shot noise is in fact a useful part of the signal is significant. The "noise" arises from the random behavior of the electron emission and when integrated provides a true measure of the incident photon flux.

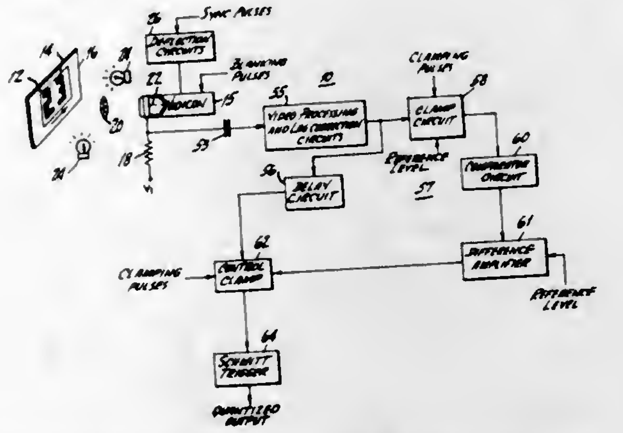


3,426,209
LIGHT RESPONSIVE VARIABLE CAPACITOR
Yro T. Sihvonen and David R. Boyd, Richardson, and Earle L. Kitts, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 376,926, June 22, 1964. This application Sept. 11, 1967, Ser. No. 667,012
U.S. Cl. 250—211 **9 Claims**
Int. Cl. H01j *39/12;* **G01j** *1/46*



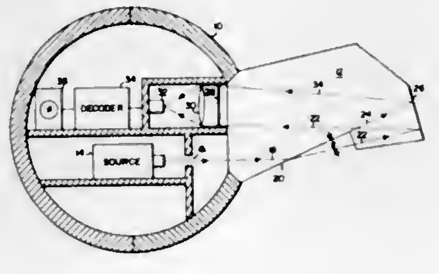
A capacitor structure which varies in capacitance in response to the application of light thereto. The capacitor includes at least two conductive plates which are sufficiently spaced apart to define a charge path. At least one of the plates is substantially transparent to light. A light responsive dielectric layer and a separate dielectric layer, which is relatively unresponsive to light, are disposed within the charge path with the light responsive dielectric layer being positioned with respect to the transparent conductive plate to receive light passing through the plate. The light responsive dielectric layer changes in conductivity in response to the application of light thereto and thus effects variance of the capacitance of the capacitor structure.

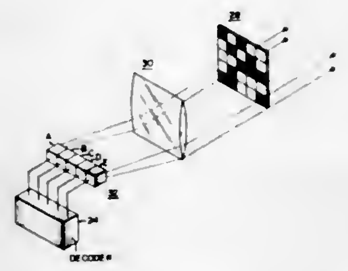
3,426,210
CONTROL CIRCUIT FOR AUTOMATICALLY QUANTIZING SIGNALS AT DESIRED LEVELS
Julius Agin, Pennsauken, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 22, 1965, Ser. No. 515,595
U.S. Cl. 250—214 **4 Claims**
Int. Cl. H01j *39/12*



An automatic quantizing circuit quantizes video signals at a predetermined level regardless of variations in the amplitude of the video signals.

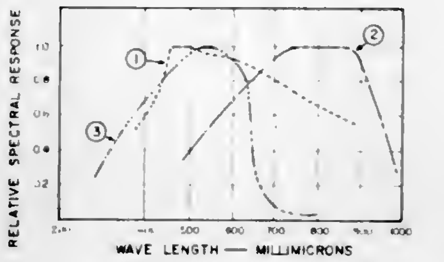
3,426,211
REFRACTOMETERS
Willard E. Anderson, Lauderdale, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,484
U.S. Cl. 250—218 **2 Claims**
Int. Cl. G01n *21/16, 21/00;* **G01j** *3/00*





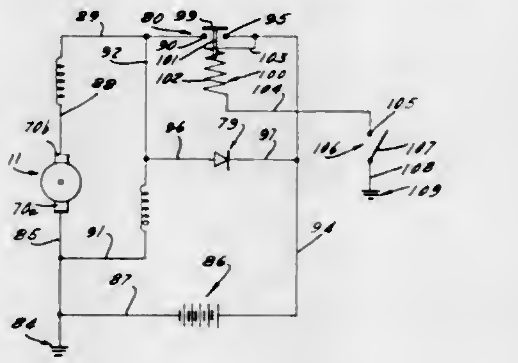
A refractometer in which light is directed through a refracting sample by a prism and the density of the sample is measured by a coded detector which senses the position of incidence of the refracted light beam.

3,426,212
RADIATION CONVERTER COMPRISING TRANSPARENT PARALLEL LAYERS CONTAINING FLUORESCENT SUBSTANCES
Ruth Elizabeth Barry Klaas, Arden Hills, Minn.
(10 Oriole Drive, Wyomissing, Pa. 19610)
Continuation of application Ser. No. 454,299, May 10, 1965. This application Mar. 14, 1968, Ser. No. 713,259
U.S. Cl. 250—226 **13 Claims**
Int. Cl. H01j *5/16;* **G01n** *21/00*



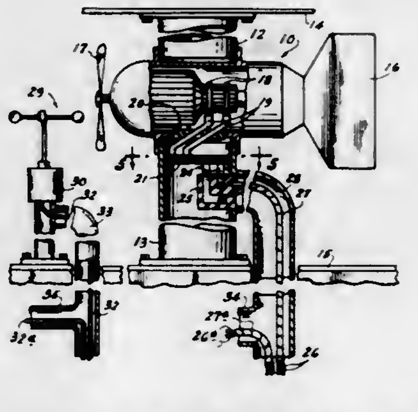
A radiation converter is disclosed comprising at least two substantially parallel layers each comprising (a) solid polymeric material that is substantially transparent at least in the near ultraviolet and visible regions of the spectrum, and (b) fluorescent substance, said layers containing different fluorescent substances and disposed in optical relationship and adjacent to each other. In its simplest embodiment, the radiation converter is useful for converting electromagnetic radiation of wavelength between about 2900 A. and about 15,000 A. into radiation of different wavelength; in more sophisticated embodiments, the radiation converter is useful for converting electromagnetic radiation into electrical energy, for effecting useful chemical reactions, and for other purposes.

3,426,213
DIRECT CURRENT STARTER-GENERATOR MECHANISM
Robert V. Jackson, Los Angeles, and Wilford B. Burkett, Pacific Palisades, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Aug. 12, 1965, Ser. No. 479,110
U.S. Cl. 290—31 **1 Claim**
Int. Cl. H02p *9/04;* **H02k** *23/52;* **F02n** *11/04*



A direct-current starter-motor-generator system for internal combination engines including a compound wound motor-generator where the wire of the shunt field coil has a positive temperature coefficient and has a size that causes a substantial decrease in the generated voltage of the motor-generator after the motor-generator has operated as a generator for a selected period of time.

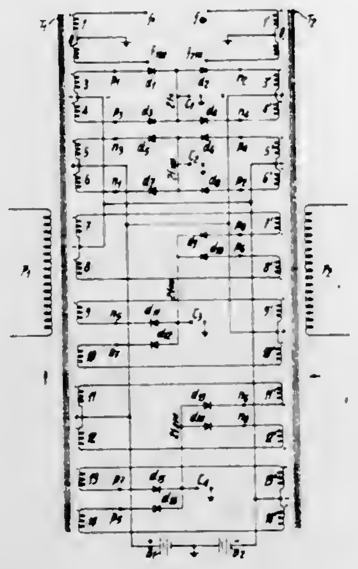
3,426,214
ELECTRIC POWER GENERATING SYSTEM
Martin J. O'Malley, 222 Paulson Ave., Passaic, N.J. 07055
Filed Feb. 7, 1966, Ser. No. 525,599
U.S. Cl. 290—55 **5 Claims**
Int. Cl. F03d *9/00;* **H02p** *9/04*



An electric power generating system adapted to have its generators driven by high velocity winds has each generator provided with means for facing it into the wind and rotatably supported between two aligned rigid column sections whereby the generators are constrained against vertical movement by winds blowing in a direction other than truly horizontal.

3,426,215
PROCESS AND DEVICE FOR PRODUCING FOUR SUBSTANTIALLY SINUSOIDAL VOLTAGES
Enzo Ascoli, Lausanne, Vaud, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a corporation of Swltzerland
Filed May 26, 1965, Ser. No. 459,034
Claims priority, application Switzerland, June 18, 1964, 8,000/64
U.S. Cl. 307—83 **7 Claims**
Int. Cl. H02j *5/16, 5/10*

A source consisting of a pair of transformers having primary windings energized by alternating feed signals of a pilot frequency and each having plural secondary windings whereby the secondary windings constitute an output, for the source, of four alternating signals of a frequency the same as the pilot frequency and respectively offset in phase from each other by 90°, 180° and 270° four circuit groups each having an individual output with each circuit group having four circuits each, each of said circuits connected to receive at least one of the alternating pilot frequency current signals from the source, and each of the circuits having at least one diode polarized to pass only the peak of one alternation of the respective alternating pilot frequency current signal connected to that circuit. The diode outputs of the four circuits of each of the four circuit groups are connected to the individual output of the respective group whereby four alternating output currents offset in phase with respect to one another by 90° and having a frequency that is double the frequency of the pilot frequency feed signal are respectively provided at the individual outputs of the four circuit groups.



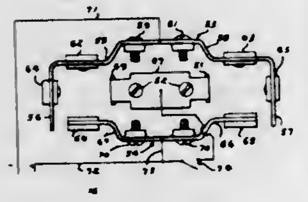
3,426,216
RECEPTACLE

Glenn D. Smith and Robert G. Cook, Sr., Dayton, Ohio, assignors to The Gem City Engineering Company, Dayton, Ohio, a corporation of Ohio

Filed July 28, 1965, Ser. No. 475,500

U.S. Cl. 307—112 **20 Claims**

Int. Cl. H01r *27/00*



A plug receptacle providing for insertion of a plug in alternate positions in a single plug location, with contact members applied in a unique readily accessible manner establishing in one position a continuously energized circuit and in the other position a selectively energized circuit.

3,426,217
BREAKWIRE SIGNAL CONDITIONER

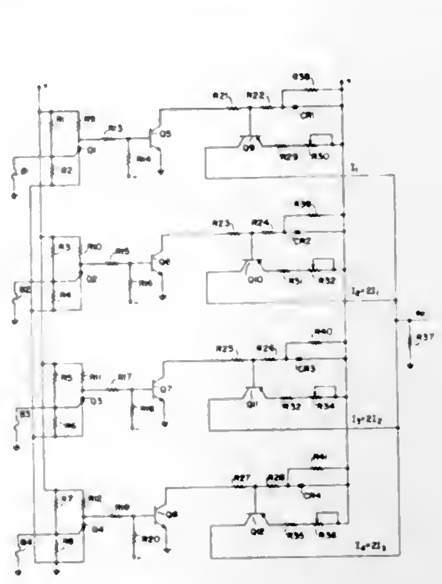
Monroe E. Womble, Jr., Auburn, Ala., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 26, 1966, Ser. No. 553,605

U.S. Cl. 307—231 **6 Claims**

Int. Cl. H03k *5/20*

A plurality of circuits wherein the breaking of a breakwire causes an SCR to turn on a current source. Each discrete current source is connected to a common resistor whereby the output may be analyzed to determine which breakwire or breakwires have broken.



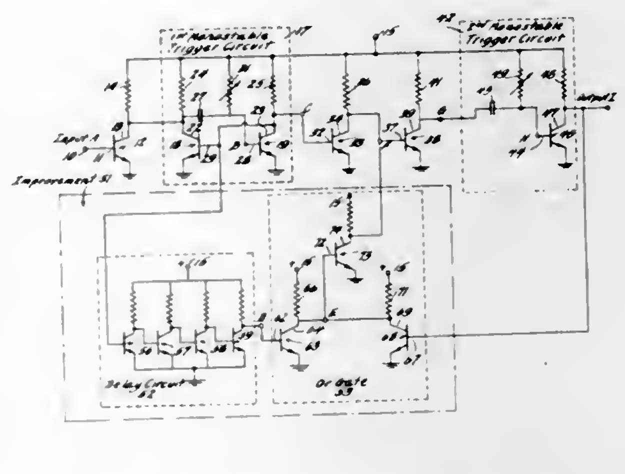
3,426,218
PULSE GENERATOR EMPLOYING TWO SEQUENTIALLY GATED MONOSTABLE MULTIVIBRATORS AND DELAY CIRCUIT

Joseph S. Baynard, Jr., Burlington, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 8, 1966, Ser. No. 541,273

U.S. Cl. 307—265 **3 Claims**

Int. Cl. H03k *1/14*


1st Monostable Trigger Circuit
2nd Monostable Trigger Circuit
Delay Circuit
Or Gate

A delay pulse generator includes two serially connected monostable trigger circuits wherein the trailing edge of the pulse from the first trigger circuit actuates the second trigger circuit. Circuitry is provided for rendering the duration of actuation of the second trigger circuit independent of the magnitude or length of the pulse from the first trigger circuit.

3,426,219
LOW POWER DRAIN SEMI-CONDUCTOR CIRCUIT

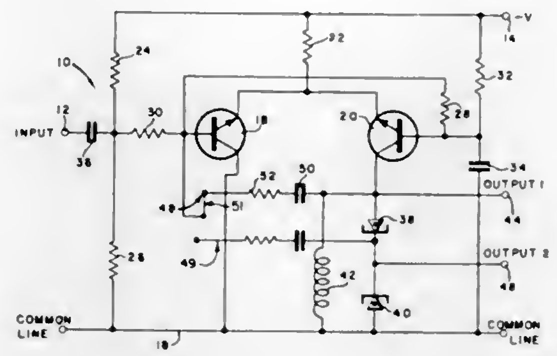
Ciro A. Cancro, Silver Spring, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Jan. 7, 1966, Ser. No. 519,395

U.S. Cl. 307—268 **12 Claims**

Int. Cl. H03k *5/00, 3/26*

A solid state low power drain circuit which generates an output pulse with width independent of input pulse width. A transistor constant current source drives a tunnel diode, the output thereof being fed back to the input. By controlling the relative amplitudes of the input pulse and the feedback signal, the circuit may be made to act as a frequency limiter or gated oscillator. The circuit also provides a delayed output.



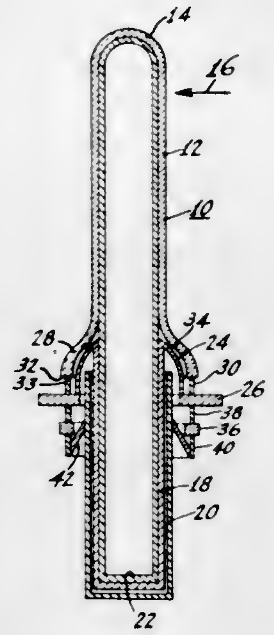
3,426,220
HEAT-SENSITIVE SEAL FOR THERMIONIC CONVERTERS

Fred G. Block, Lancaster, and William B. Hall, Landisville, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Feb. 16, 1966, Ser. No. 527,861

U.S. Cl. 310—4 **12 Claims**

Int. Cl. H02n *3/00, 7/00;* **F28d** *15/00*



Means for protecting a heat sensitive seal from detrimental temperatures, including a channel of capillary dimensions extending from the region of the seal to a region of high temperature. The channel serves to retain, by capillary action, a liquid medium which achieves a thermal gradient decreasing in the direction of the seal.

3,426,221
THERMIONIC CONVERTER

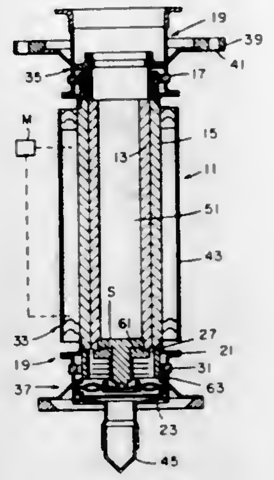
Willis E. Harbaugh, Leola, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 29, 1966, Ser. No. 538,926

U.S. Cl. 310—4 **3 Claims**

Int. Cl. H02n *3/00, 7/00*

Thermionic generator having a radioisotope heated emitter, a controlled temperature collector adjacent thereto, and equal area adsorption means that are specifically located near the collector and emitter at different temperatures for the interchange of alkali metal vapor therebetween as the emitter temperature decreases due to the radionuclide decay of the radioisotope heat source.



3,426,222
MAGNETO-HYDRO DYNAMIC GENERATORS

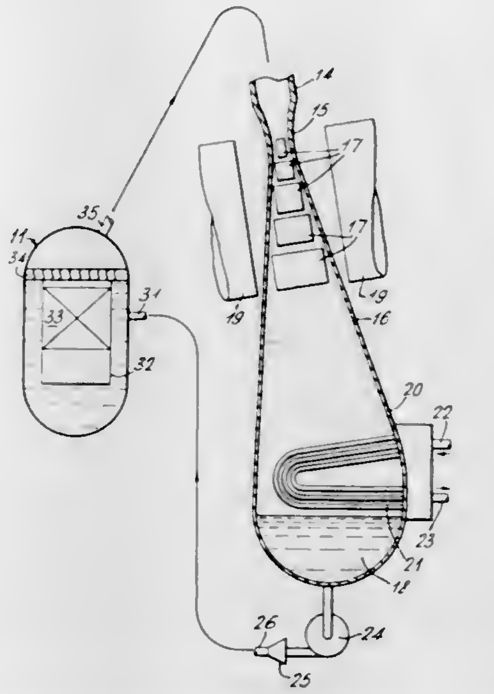
Eric John Robbins, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Apr. 22, 1964, Ser. No. 361,828

Claims priority, application Great Britain, May 1, 1963, 17,119/63

U.S. Cl. 310—11 **11 Claims**

Int. Cl. H02k *45/00;* **G21d** *7/02*



A magnetohydrodynamic generator wherein the working fluid is partially condensed just prior to passing through the magnetic field whereby the density of the fluid at a given temperature is changed and thus the energy required to produce electrons is reduced.

3,426,223
MINIATURE DIRECT CURRENT MOTOR WITH PERMANENT MAGNET ROTOR

Roy C. Vaughan, 7–9 Bowlers Croft, Honywood Road, Basildon, Essex, England

Filed Sept. 9, 1966, Ser. No. 578,382

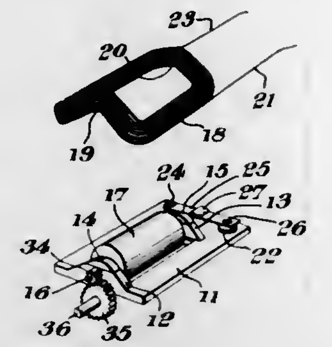
Claims priority, application Great Britain, Oct. 15, 1965, 43,782/65

U.S. Cl. 310—42 **7 Claims**

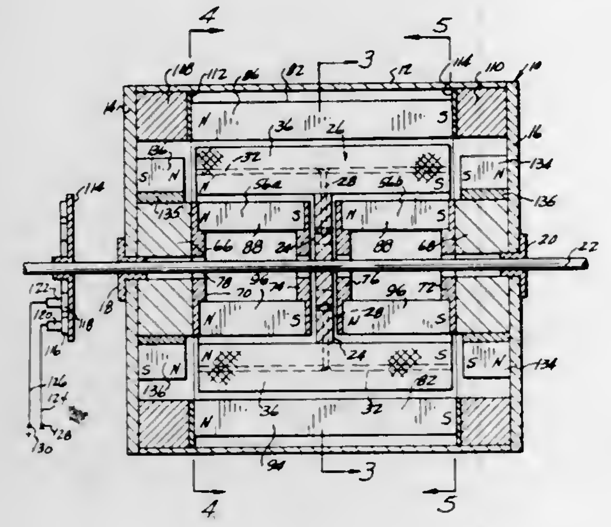
Int. Cl. H02k *15/00, 1/04, 37/00*

1. A direct current motor comprising a rotor in the form of a drum shaped bi-polar permanent magnet

mounted for rotation about its physical axis and having its magnetic axis perpendicular to its physical axis, a stator winding consisting of at least one coil encompassing the drum and having two opposite sides lying substantially in a plane containing the physical axis of the drum with its magnetic axis intersecting and perpendicular to the said physical axis, a pair of contacts connected in series with the winding, and means to open and close the contacts in synchronism with the rotation of the motor.



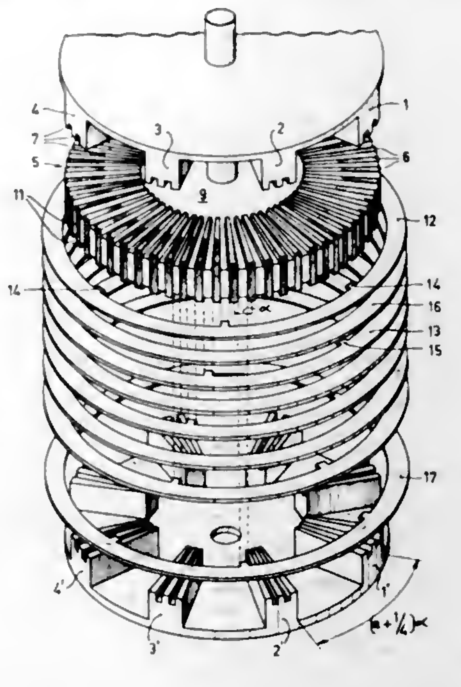
3,426,224
DYNAMOELECTRIC MACHINE WITH PLURAL SPLIT PERMANENT MAGNET STATORS
Ernie Byron Esters, 54 Elmhurst, Highland Park, Mich. 48203
Filed Aug. 26, 1966, Ser. No. 575,306
U.S. Cl. 310—46 10 Claims
Int. Cl. H02k *37/00*



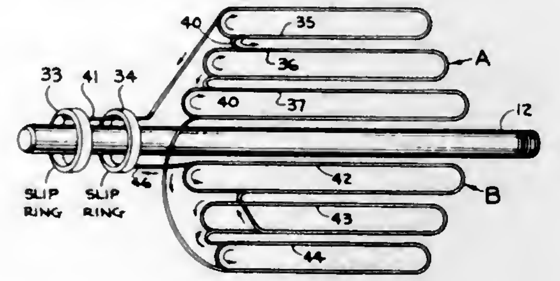
A dynamoelectric machine having a cylindrical hollow rotor, a cylindrical inner stator, a cylindrical outer stator and annular end stators.

3,426,225
SYNCHRONOUS STEP MOTOR INCLUDING MEANS FOR PRODUCING ASYNCHRONOUS OPERATION
Arie Johannes Cornelis Bakhuizen, Mierlo, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,333
Claims priority, application Netherlands, Jan. 13, 1965, 6500348; Nov. 24, 1965, 6515206
U.S. Cl. 310—49 18 Claims
Int. Cl. H02k *37/00*

A synchronous step motor comprising a rotor having a plurality of teeth composed of magnetic material and a stator having a plurality of stator poles each of which includes a plurality of teeth. The stator windings are selectively energized in a given sequence of pole groups. The motor also includes means for producing asynchronous operation thereof comprising short-circuited winding means on the rotor and means for energizing the stator windings with out of phase currents so that the asynchronous motor speed is determined by the number of stator poles and the mode of energization thereof.



3,426,226
DYNAMOELECTRIC MACHINE WITH ROTATING ARMATURE HAVING PARTIALLY DISTRIBUTED SPIRAL WINDINGS
Jacob Frank, 400 Rock Lake Drive, Orlando, Fla. 32805
Filed July 21, 1966, Ser. No. 569,791
U.S. Cl. 310—162 4 Claims
Int. Cl. H02k *19/00, 1/24, 3/04*



1. In a dynamoelectric machine, a stator, an armature surrounded by said stator and rotatable relative thereto, means forming a single flux field with magnetic lines of force flowing transversely of said armature relative to the axis thereof, first coil means carried on said armature on one side of a medial axially extending plane thereof, said coil having the wire of opposite reaches thereof extending longitudinally of said armature, a second coil means carried by said armature on the opposite side of said medial plane, the wire of opposite reaches of said second coil extending longitudinally of said armature, and means connecting said first and second coil means in series so that the direction of current flow through the respective coils is in opposite directions.

3,426,227
MOTOR FIELD MOUNTING
Daniel A. Miller, Glen Arm, and William F. Saffell, Rocks, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 4, 1967, Ser. No. 672,830
U.S. Cl. 310—180 10 Claims
Int. Cl. H02k *5/04*

A portable electric tool which includes a housing having an electric motor supported therein. The motor is of

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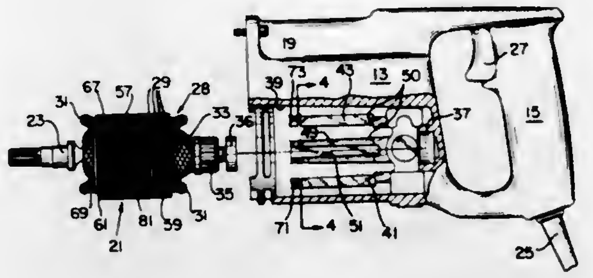
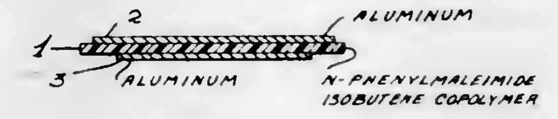
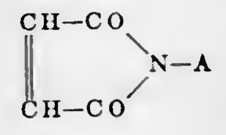
the universal type having a stationary field core and a rotatable armature and which, when energized, is adapted to power the tool. The field core includes laminations or stackings, and field windings and is removably secured within the housing.



3,426,228
ELECTRICAL APPARATUS
Ian Torrance Barrie, Amwell, and Eric Nield, Ware, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Feb. 26, 1965, Ser. No. 435,451
Claims priority, application Great Britain, Mar. 11, 1964, 10,301/64
U.S. Cl. 310—215 18 Claims
Int. Cl. H02k *3/36;* **H01f** *27/32;* **H01b** *7/02*



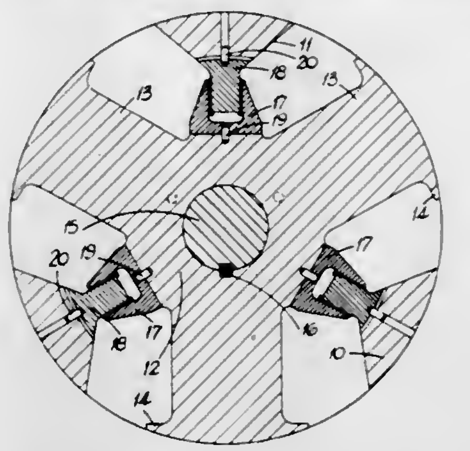
An electrical conductor which incorporates insulation which comprises a copolymer of (i) from 99% to 1% molar of at least one N-aryl maleimide of the formula



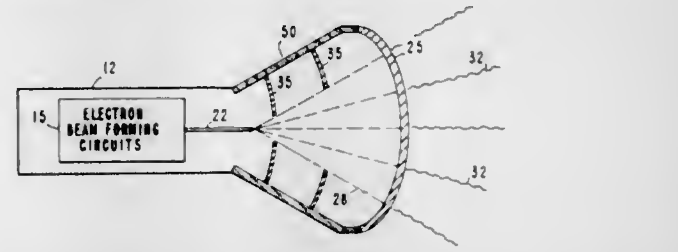
in which A is an aryl radical and (ii) from 1% to 99% molar of at least one ethylenically unsaturated hydrocarbon. These copolymers have power factors which are surprisingly low in view of the polar nature of the N-substituted maleimides. Furthermore, the capacitance of a capacitor in which the dielectric comprises one of the N-substituted maleimide copolymers varies very little with temperature.

3,426,229
ROTORS FOR DYNAMOELECTRIC MACHINES
Dennis Alexander Pannell, London, England, assignor to Rotax Limited, London, England
Filed June 3, 1965, Ser. No. 461,083
Claims priority, application Great Britain, June 12, 1964, 24,441/64
U.S. Cl. 310—265 2 Claims
Int. Cl. H02k *1/30*

A rotor for a brushless alternator, the rotor comprising a cylindrical field tube formed from magnetizable material and having formed in its periphery a plurality of equi-angularly spaced apertures. There being provided within the field tube, a spider having a boss from which extends a plurality of legs equal in number to the number of apertures the legs terminating in pole heads which are situated respectively within the aforesaid apertures. The field tube and spider are secured together by a plurality of two part distance pieces which extend in a generally radial direction intermediate the legs respectively of the spider, the co-operating surfaces of the tube, the distance pieces and the boss being electron beam welded to define a unitary structure.



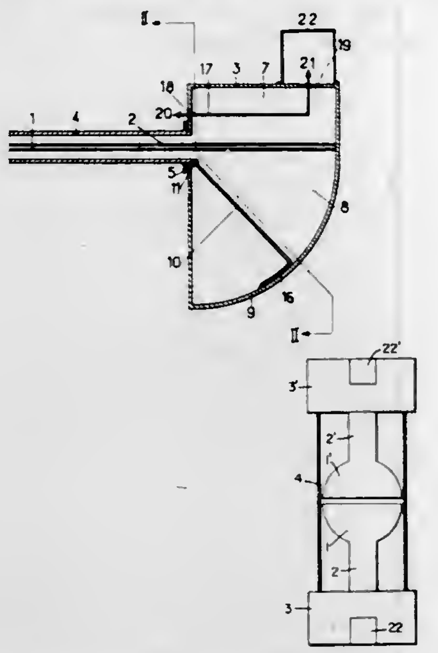
3,426,230
DIRECT RADIATION COOLING OF THE COLLECTOR OF LINEAR BEAM TUBES
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Lloyd J. Derr, La Crescenta, Calif.
Filed Apr. 18, 1967, Ser. No. 632,164
U.S. Cl. 313—44 4 Claims
Int. Cl. H01j *7/24*



In a linear beam tube the normal electron beam collector is thermally isolated and made of small mass so that it is heated to incandescense by the impacting electron stream. The heated collector is made parabolic in shape to produce a favorable unidirectional heat radiation pattern and is positioned near the end of the tube opposite the cathode end. Said collector is oriented to radiate its heat out of the tube's envelope through a vacuum tight window which in this case has good heat transmitting properties, thereby cooling the collector electrode without special cooling means. The collector also includes a reflector, so positioned with respect to the parabolic section, so that most of the heat from the collector is radiated towards the window either directly from the collector or the reflector thereof. As a result about 80% of the heat generated by the thermal conversion is radiated out of the tube.

3,426,231
PARTICLE ACCELERATOR HAVING TUNABLE HIGH FREQUENCY POWER SUPPLY
Jean Claude Schnuriger, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Dec. 16, 1964, Ser. No. 418,607
Claims priority, application France, Dec. 17, 1963, 957,393
U.S. Cl. 313—62 9 Claims
Int. Cl. H05h *13/00*

A cyclotron, wherein the resonant circuit formed by each of D electrodes and its support is tuned by rotating a panel extending radially in a box having a part thereof in the form of a cylindrical sector, said support extending into said box and having its extremity fixed to the back wall thereof.



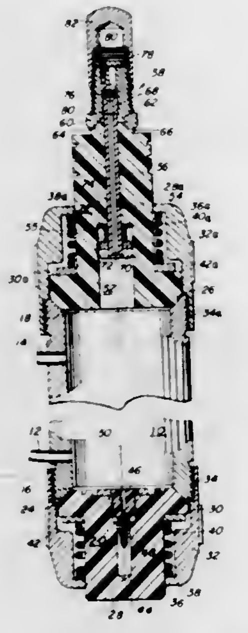
3,426,232
RADIATION DETECTOR FOR WIDE-TEMPERATURE-RANGE OPERATION

Robert L. Molitor, Chicago, Ill., assignor to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware

Filed Mar. 19, 1965, Ser. No. 441,120

U.S. Cl. 313—93 **9 Claims**

Int. Cl. H01j *39/26, 1/88*



A flow-type proportional counter for use in gas chromatography employs a tetrafluoroethylene insulator for support of the anode wire. The insulator is bevelled and seated in a correspondingly bevelled end of the tubular cathode. A spring maintains the gas seal despite the elevated temperatures encountered in each period of use.

3,426,233
PLASMA STABILIZATION BY ROTATION OF ARC DISCHARGE TUBE

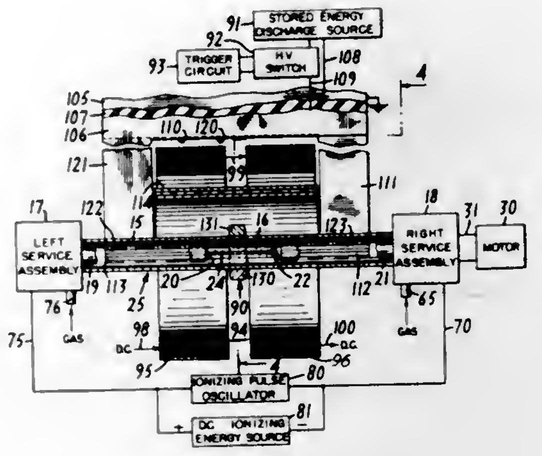
Donald R. Simon, Bloomingdale, N.J., and Kenneth C. Rogers, New York, and Francis R. Sileo, Saratoga Springs, N.Y., assignors to Vitro Corporation of America, New York, N.Y., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,447

U.S. Cl. 313—161 **19 Claims**

Int. Cl. H01j *1/50, 3/32, 29/76*

A gaseous medium with an initial density of at least 0.02 kilogram/meter^3 is pre-ionized to yield an electron density of at least 10^{16} electrons/cc. by the passage through the medium of an electric arc which is positionally stabilized by rotating the enclosure for the medium to rotate the medium. The pre-ionized medium is caused to emit soft X-rays and/or short ultraviolet by compression thereof by a transient axial magnetic field generated by a theta coil. The yield of radiation may be enhanced by the use of a supplemental D.C. axial magnetic field opposing the transient field.



3,426,234
EXPLOSION-PROOF FLUORESCENT LAMP APPARATUS

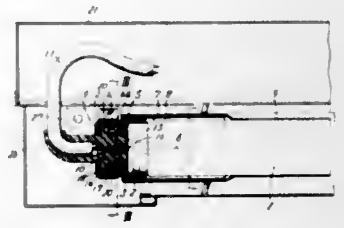
Koro Hayasaka, Tokyo, Fukuji Sato, Yokohama-shi, and Tosio Hattori and Takeshi Sato, Tokyo, Japan, assignors to Kabushiki Kaisha Aiden, Tokyo, Japan

Filed May 16, 1966, Ser. No. 550,248

Claims priority, application Japan, Feb. 15, 1966, 41/12,570

U.S. Cl. 313—312 **12 Claims**

Int. Cl. H01j *5/02, 19/54, 1/62*



A lamp having a lamp tube covered with a light permeable covering tube which is in contact with the entire tube except in the region of the filaments at the ends of the tube where sleeves mounted on end caps shield the covering tube from the filaments and also form with the lamp tube, and covering tube, an enclosed air space.

3,426,235
PICKUP DEVICE

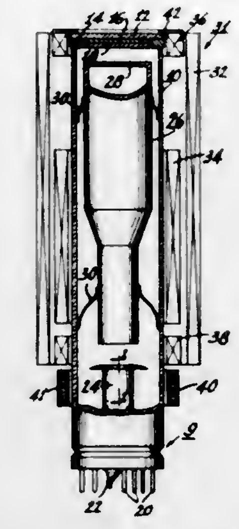
Otto H. Schade, Sr., West Caldwell, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 20, 1966, Ser. No. 603,266

U.S. Cl. 315—11 **12 Claims**

Int. Cl. H01j *31/48*

A high resolution vidicon type pickup device includes a two-gun assembly comprising two off-axis cathodes having emitting surfaces tilted with respect to the longitudinal axis of the device so as to cause electron beams originating at such surfaces to be in tangent relation with respect to magnetic flux lines produced by a focusing coil to prevent spiralling of the beam. One gun is a reading gun and the other gun is an erase gun.



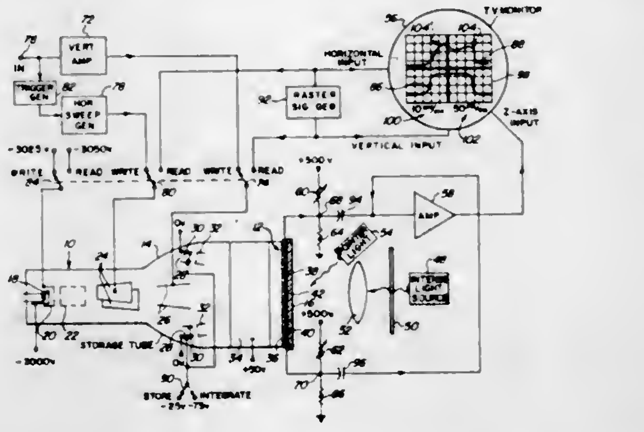
3,426,236
BISTABLE STORAGE TUBE HAVING PHOTOSENSITIVE PHOSPHOR STORAGE DIELECTRIC, APPARATUS AND METHOD OF STORING LIGHT IMAGE BY SUCH TUBE

Herbert J. Mepham, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Mar. 26, 1965, Ser. No. 443,150

U.S. Cl. 315—12 **12 Claims**

Int. Cl. H01j *29/41*



A charge image storage apparatus is described which employs a direct viewing bistable storage tube having a photosensitive storage dielectric of phosphor material. The storage apparatus includes means for directing a light image and an electron image onto the storage dielectric to produce corresponding charge images thereon which may be stored bistably. The storage tube may be provided with electrical readout to a remote television monitor in addition to the optical readout provided by the light images emitted by the phosphor storage dielectric.

3,426,237
AUTOMATIC ERASE CIRCUIT FOR STORAGE TUBE

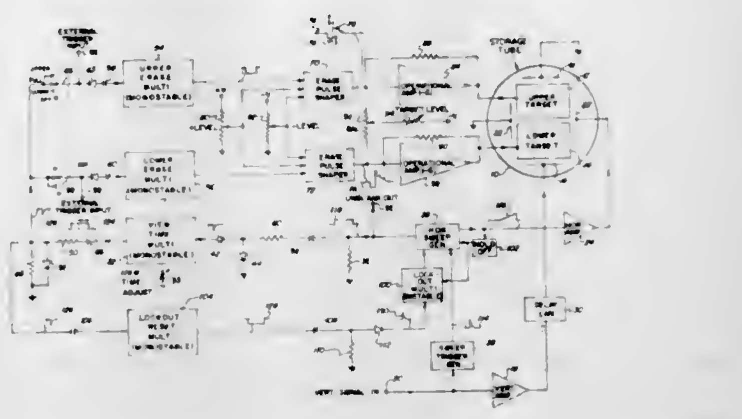
Donald C. Calnon, Jr., Beaverton, and Russell V. Fillinger, Melvin A. Holznagel, and Richard W. Stack, Portland, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Aug. 23, 1965, Ser. No. 481,770

U.S. Cl. 315—12 **9 Claims**

Int. Cl. H01j *29/41*

An automatic erase circuit for a direct viewing storage tube is described in which the erase pulse is generated in response to the end of the horizontal sweep signal after a predetermined time delay. The time delay provides a viewing time during which a light image produced by the storage tube corresponding to the stored charge image, may be viewed. The viewing time as well as the amplitude limits of the erase pulse may be varied, as may be the quiescent voltage level of the storage target electrode to which the erase pulse is applied. A lockout circuit is provided for applying a lockout signal to the sweep generator to prevent it from producing a sweep signal during such viewing time and such erase pulse. The lockout circuit includes a bistable multivibrator for generating the lockout signal which is triggered at the end of the previous sweep signal and reverted after the end of the erase pulse.



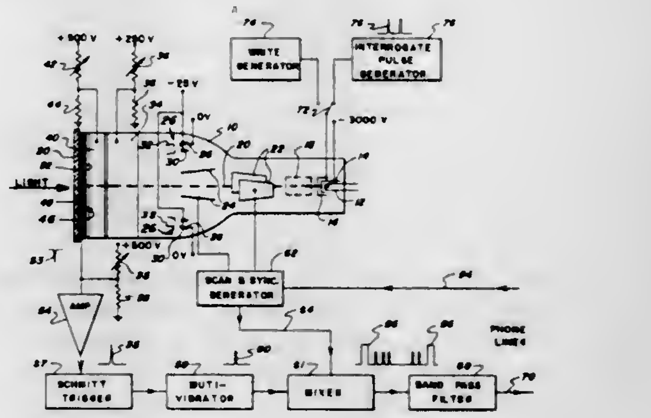
3,426,238
CHARGE IMAGE STORAGE METHOD AND APPARATUS

Charles B. Gibson, Jr., Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Dec. 7, 1966, Ser. No. 599,933

U.S. Cl. 315—12 **16 Claims**

Int. Cl. H01j *29/41;* **G01d** *15/00*



The information stored on the dielectric target of a bistable storage tube is read out nondestructively employing a pulsed electron beam. The electron beam is turned on for a period having a duration less than necessary to change a given area of the target from one stable stored potential to another, while the period between pulsations is long enough so the tube's flood beam can return a given area to its original stored potential.

3,426,239
MAGNETIC BEAM SWITCHING CATHODE-RAY TUBE

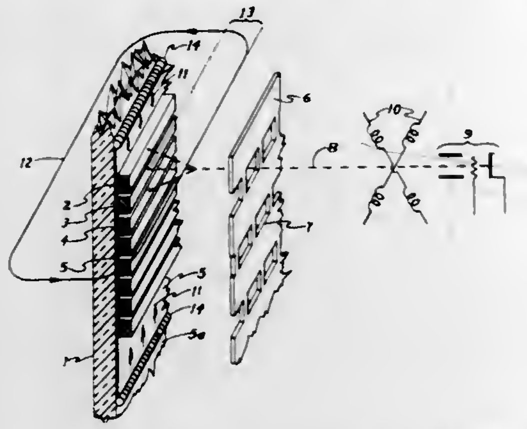
Lester L. Kushner, 5425 Gentry Ave., North Holywood, Calif. 91607

Filed July 1, 1965, Ser. No. 468,756

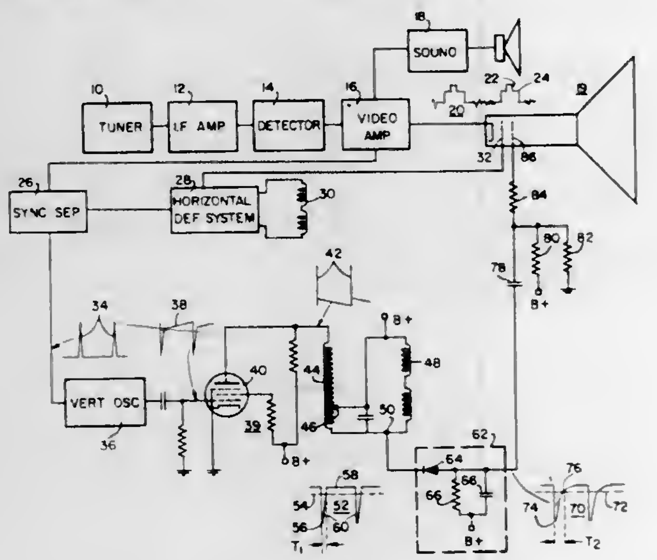
U.S. Cl. 315—21 **2 Claims**

Int. Cl. H01j *29/76*

Color selection in a cathode ray tube having multicolored phosphor strips is effected by the combination of a perforated shadow mask and a magnetic field producing structure. The magnetic field is produced by passing a current through a thin coating of transparent, electrically conductive material on the tube face or in the alternative through a plurality of fine wires disposed perpendicularly to the phosphor strips.



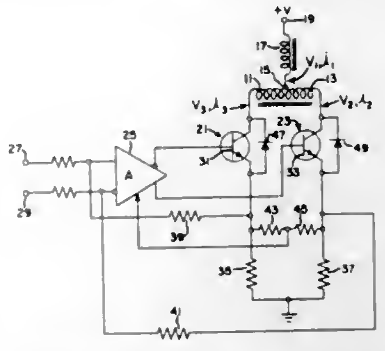
3,426,240
TELEVISION CIRCUIT
Theodore V. Lester, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 28, 1965, Ser. No. 490,900
U.S. Cl. 315—22 **2 Claims**
Int. Cl. H01j *29/70*



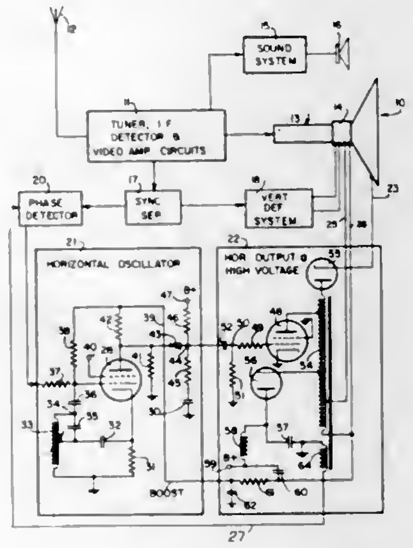
A circuit for increasing the pulse width of a blanking pulse applied to the cathode ray tube of a television receiver includes a capacitor coupled in parallel with a resistor. A rectifier couples pulses from a pulse source to the capacitor charging the capacitor according to the amplitude of the pulses. The capacitor discharges through the resistor so that the discharge time for the capacitor is greater than its charging time to increase the width of the blanking pulse.

3,426,241
MAGNETIC DEFLECTION SYSTEM FOR CATHODE RAY TUBES
Donald W. Perkins, De Witt, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 7, 1966, Ser. No. 592,660
U.S. Cl. 315—27 **8 Claims**
Int. Cl. H01j *29/70*

There is disclosed a magnetic deflection driver circuit for cathode ray tubes which affords high beam deflection rates without correspondingly high voltage power supply. The circuit as shown comprises a pair of solid state inverting amplifiers which differentially control the current flow from a common source including an inductive energy storage element for supply of peak deflection rate power. For assuring adequate energy storage in this element common mode current feedback is employed to hold the total current nearly constant, and for linearizing the input-output relationship differential mode current feedback and base current compensation are employed as described.



3,426,242
TELEVISION RECEIVER
William H. Slavik, Oak Lawn, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 19, 1965, Ser. No. 457,118
U.S. Cl. 315—27 **5 Claims**
Int. Cl. H01j *29/70*

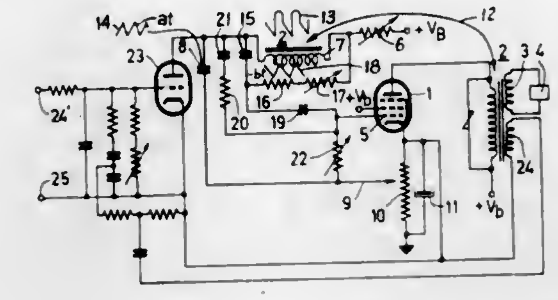


A television sweep system includes an output stage and a synchronized driven stage with a diode device coupled between the stages. The device is normally cutoff but driven into conduction after start of the development of control pulses in the driver stage to reduce the time for cutting off the output stage.

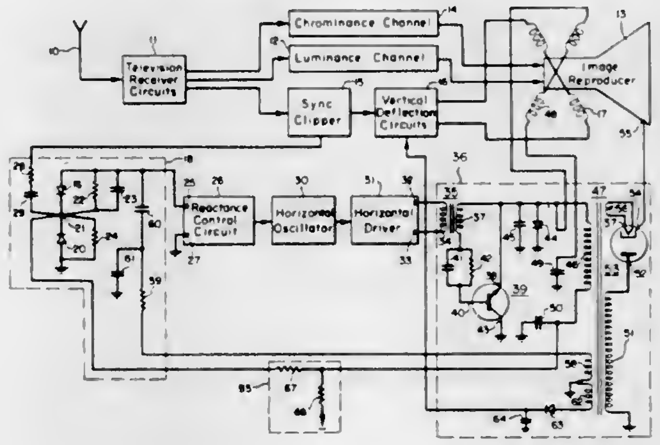
3,426,243
CIRCUIT ARRANGEMENT FOR PRODUCING A SAWTOOTH CURRENT ACROSS THE VERTICAL DEFLECTION COIL OF A TELEVISION RECEIVER
Wouter Smeulers and Johannes Simon Albert van Hattum, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,096
Claims priority, application Netherlands, Apr. 3, 1965, 6504264
U.S. Cl. 315—27 **6 Claims**
Int. Cl. H01j *29/70*

A circuit for introducing adjustable parabolic and S-components in a sawtooth current in a coil, wherein the coil is connected in the output of an amplifier device, consists of the series circuit of a charging capacitor, a winding coupled to the coil, and a first resistor. A first series circuit of a second resistor and a reservoir capacitor is connected between the junction of the first resistor and winding and the junction of the winding and charging capacitor, in that order. The junction of the second resistor and second capacitor are connected to the control

electrode of the amplifier. The other end of the charging capacitor is connected to a variable tapping on a parallel resistance capacitance circuit in another input circuit of the device, in order to permit varying of the relative amplitudes of the parabolic and S-components. A variable resistor is connected between the control electrode and the variable tapping in order to permit variation of the amplitudes of the parabolic and S-component with respect to the sawtooth component.

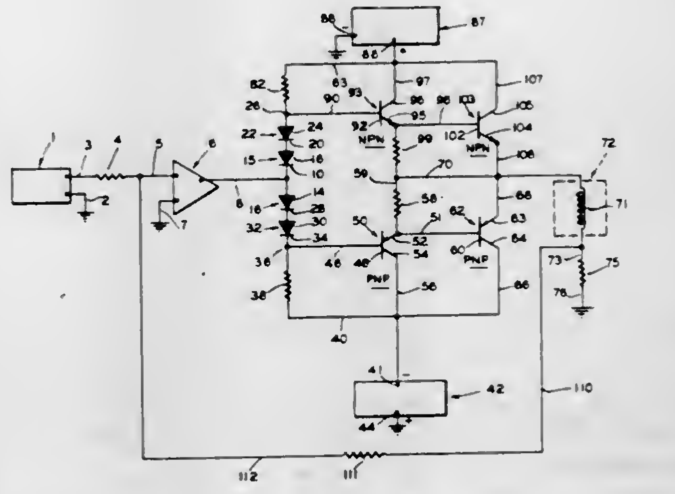


3,426,244
HORIZONTAL DEFLECTION SYSTEM
Grigory Strachanow, Des Plaines, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,974
U.S. Cl. 315—27 **6 Claims**
Int. Cl. H01j *29/70*



A reaction-scanning type horizontal deflection system which produces in a television receiver having an unregulated sweep-excited high-voltage power supply for supplying accelerating potential to its image reproducer a raster of substantially constant width and lateral position regardless of brightness variations in the reproduced image. The system includes synchronizing circuitry which maintains synchronism between the transmitted and reproduced images by comparing the phase of received sync pulses with comparison pulses derived from the horizontal deflection output stage. A resistor series-connected between the receiver power supply and the output stage develops a control voltage which is applied to the synchronizing circuitry to counteract the raster shift which would otherwise result from changes in the width of the comparison pulses brought about by load variations imposed on the output stage by the sweep-excited high voltage power supply with brightness variations in the reproduced image. The series resistor also compensates for raster width variations by reducing the available operating current to the output stage during high-brightness low-high voltage conditions. The system is more economical to manufacture than previous designs because it obviates the need for a costly high voltage regulator stage.

3,426,245
HIGH SPEED MAGNETIC DEFLECTION AMPLIFIER
John F. Yurasek, Oakland, and Abner Owens, Jr., Paramus, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,906
U.S. Cl. 315—27 **12 Claims**
Int. Cl. H01j *29/76*

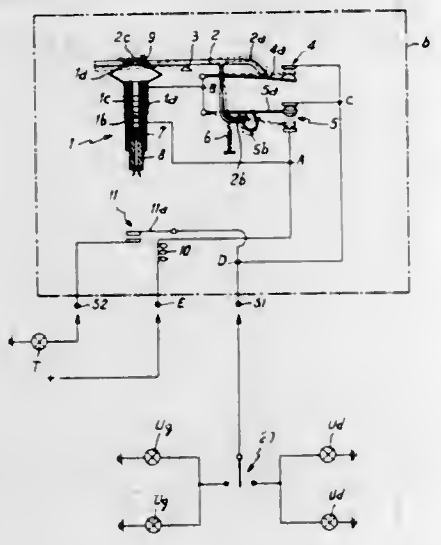


An amplifier network for electrical signals to be applied to a yoke deflection coil of a cathode ray tube with a resistor to sense current flow in the yoke deflection coil so as to feedback a voltage to the amplifier to stabilize energization of the yoke deflection coil. In the amplifier network an electrical signal from a signal source is applied to an input of a typical differential amplifier and the resultant output signal voltage from the differential amplifier applied through a cross-over distortion elimination stage to a driving stage that will amplify only positive components of the signal. The output of the driving stage is applied to one-half of a push-pull amplifier. Negative components of the differential amplifier output signal are applied, through a different path, to a driving stage and the output of that stage is applied to the other half of the push-pull amplifier. The two components of the signal are re-united at an output of the push-pull amplifier which in turn provides an energizing current to the yoke deflection coil in a cathode ray tube. The deflection of the electron beam in the cathode ray tube is a function of the current in the yoke deflection coil. The current sensing resistor is connected in series with the yoke deflection coil so that the current passing through the coil causes a voltage across the current sensing resistor which is picked off and fed back to the input of the differential amplifier. The feedback voltage is proportional to the current in the yoke deflection coil and as applied to the input of the differential amplifier serves to stabilize the yoke deflection coil current.

3,426,246
FLASHING DEVICE FOR SELF-PROPELLED VEHICLES IN PARTICULAR
Jacques Alphen, La Celle-St.-Cloud, France, assignor to Societe dite: Projecteurs Cibie, Bobigny Seine-Saint-Denis, France, a company of France
Filed Dec. 12, 1966, Ser. No. 600,824
Claims priority, application France, Dec. 13, 1965, 42,074
U.S. Cl. 315—83 **6 Claims**
Int. Cl. B60q *1/02*

1. A flashing device for supplying electric current intermittently from a battery to the direction indicator lamps of a motor vehicle, which device includes a delay element having an arm composed of ferromagnetic material and mounted upon a pivot, the arm being controlled for pivotal

movement by an electromagnet and a pneumatic delaying device; means connecting in a series circuit, between the terminals of the said battery, the indicator lamps and the said electromagnet whereby when said electromagnet is energized said arm is pivoted; and contact means associated with said arm for causing de-energization of said electromagnet and for causing a lowering of the overall resistance of said series circuit, when said arm is pivoted.



3,426,247

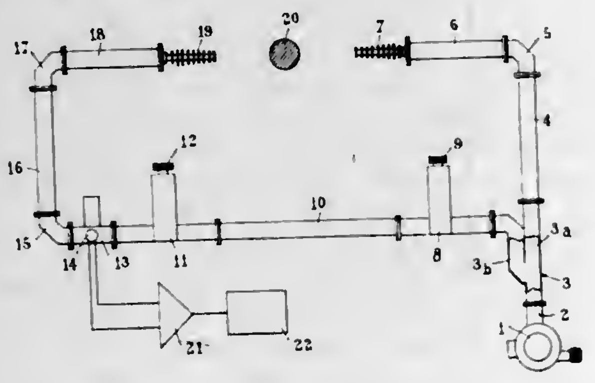
PHOTOGRAPHIC SPARK GENERATOR HAVING A VERY HIGH FREQUENCY BRIDGE TRIGGER

Roger Loyen, Vernon, France, assignor to Etat Francais (French state) represented by the Minister of Armed Forces, Ministerial Delegation for Armament, Direction of Researches and Manufacture of Armament Laboratory of Ballistic and Aerodynamic Researches, Vernon, France

Filed Feb. 11, 1965, Ser. No. 431,806

U.S. Cl. 315—149 **1 Claim**

Int. Cl. H05b *37/02, 39/04*



1. Device for detecting the passage of a projectile moving at a very high velocity and for photographing said projectile which comprises two very high frequency antennas namely a transmitting antenna and a receiving antenna disposed on opposite sides of the path of travel of said projectile, a very high frequency generator having an output with a wavelength not exceeding the diameter of said projectile, a directional coupler connected to the output of said very high frequency generator and having a first section and a second section, a magic T having a first arm and a second arm, a crystal detector carried by said magic T, and a closed electromagnetic circuit comprising a first branch and a second branch connected in parallel with one another between said directional coupler and said magic T, said first branch consisting essentially of said antennas, first wave guide means connecting said first section of said directional coupler to said transmitting antenna and second waveguide means connecting said receiving antenna to said first arm of said magic T to provide a first path of travel of electromagnetic waves from said first section of said directional coupler through said first waveguide means, said transmitting antenna, said receiving antenna and said second wave guide means to said first arm of said magic T, and said second branch consisting essentially of an adjustable phase converter, an adjustable attenuator and third wave guide means connecting said phase converter and attenuator in series between said second section of said directional coupler and said second arm of said magic T to provide a second path of travel of electromagnetic waves from said second section of said directional coupler through said phase converter and attenuator to said second arm of said magic T, an amplifier connected to said detector crystal and a spark generator connected to said amplifier for photographing said projectile when it is caused to pass between said antennas.

3,426,248

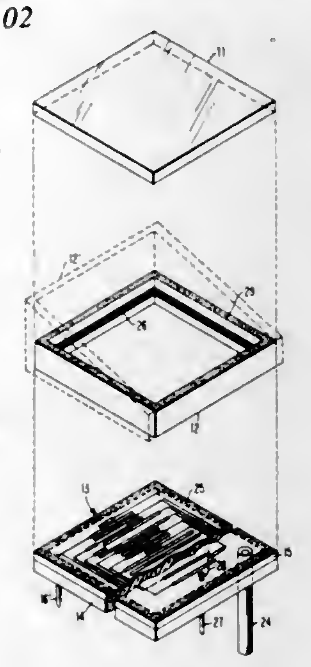
PLANAR VISUAL READOUT DISPLAY DEVICES

Anthony B. Cistola, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 17, 1966, Ser. No. 535,097

U.S. Cl. 315—169 **10 Claims**

Int. Cl. H05b *41/02*



A visual composite character display device in which an electric conductive pattern is arranged in a set of co-planar lines, and a member is placed in contacting and covering relationship with the conductive pattern. The member is provided with openings to expose the electrical conductive pattern at those portions of the lines which define the elements of the particular characters of the device.

3,426,249

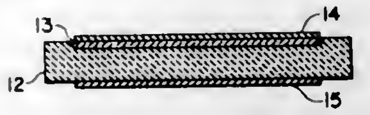
DONOR ION MODIFIED $BaTiO_3$ CAPACITOR AND PROCESS

Donald M. Smyth, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Aug. 1, 1966, Ser. No. 569,306

U.S. Cl. 317—230 **4 Claims**

Int. Cl. H01g *9/00, 13/00, 1/00*



A ceramic capacitor has a thick semiconducting zone and a thin dielectric zone adjacent at least one side thereof. The thick zone is barium titanate containing a semiconductivity-imparting-proportion of a donor ion. The thin zone is a surface region on the semiconducting zone containing additional donor ion. An electrode is affixed to the dielectric zone. The method of preparing the capacitor involves adding the semiconductivity- and nonconductivity-imparting-proportions of the donor ion to the barium titanate, firing to maturity and applying the electrode to the fired body.

3,426,250

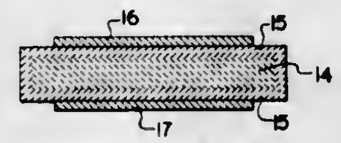
CONTROLLED REDUCTION AND REOXIDATION OF $BaTiO_3$ CAPACITORS AND RESULTING CAPACITOR

Manfred Kahn, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Aug. 1, 1966, Ser. No. 569,308

U.S. Cl. 317—230 **8 Claims**

Int. Cl. H01g *9/00, 9/22, 13/00*



A barium titanate capacitor has a thick semiconducting zone and a thin dielectric zone. At least one large crystallite extends from the semiconducting zone into the dielectric zone. The semiconducting zone is characterized by reduction, at least along its grain boundaries, and that portion of the crystallite therein is reduced to a depth not exceeding the average radius of the grains. The dielectric zone, including that portion of the crystallite extending therein, is completely reoxidized. An electrode is affixed to the dielectric zone.

3,426,251

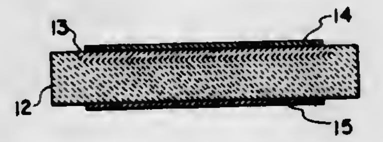
DONOR-ACCEPTOR ION-MODIFIED BARIUM TITANATE CAPACITOR AND PROCESS

Thomas I. Prokopowicz, North Adams, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Aug. 1, 1966, Ser. No. 569,309

U.S. Cl. 317—230 **5 Claims**

Int. Cl. H01g *9/00, 13/00, 1/00*



A ceramic capacitor has a thick semiconducting zone and a thin dielectric zone adjacent at least one side thereof. The thick zone is barium titanate containing a semiconductivity-imparting-proportion of a donor ion. The thin zone is a surface region on the semiconducting zone containing in addition to said donor ion, a compensating, nonconductivity-imparting-proportion of an acceptor ion. An electrode is affixed to said dielectric zone. The method of preparing the capacitor involves adding the semiconductivity-imparting-proportions of the donor and acceptor ions to the barium titanate, firing to maturity and applying the electrode to the fired body.

3,426,252

SEMICONDUCTIVE DEVICE INCLUDING BEAM LEADS

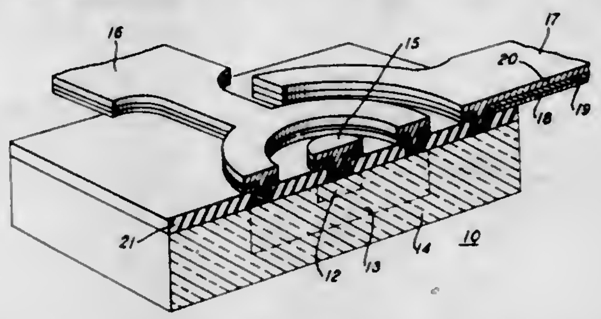
Martin P. Lepselter, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 331,168, Dec. 17, 1963. This application May 3, 1966, Ser. No. 547,381

U.S. Cl. 317—234 **12 Claims**

Int. Cl. H01l *3/00, 5/02*

A semiconductive device includes a semiconductive wafer over which lies an insulating layer apertured to permit electrical connection to the wafer and electrical connection is made to the wafer by a plurality of multilayer beam lead assemblies, each of which comprises a contact portion overlying the insulating layer and an aperture therein to contact the wafer and a cantilevered terminal portion integral with the contact portion and of sufficient strength to provide mechanical support for the wafer.



3,426,253

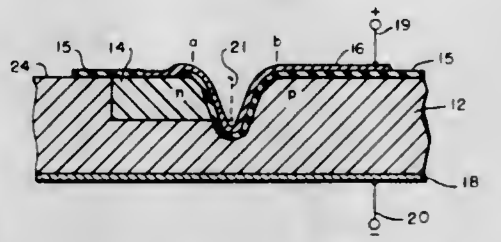
SOLID STATE DEVICE WITH REDUCED LEAKAGE CURRENT AT N-P JUNCTIONS OVER WHICH ELECTRODES PASS

Armand P. La Rocque, New Shrewsbury, and Gordon McNeil, Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed May 26, 1966, Ser. No. 553,603

U.S. Cl. 317—234 **5 Claims**

Int. Cl. H01l *3/00, 7/02*



An improved semiconductor device wherein current leakage at an n-p junction in the region thereof over which an electrode passes is minimized by etching to remove the most heavily doped material in said region.

3,426,254

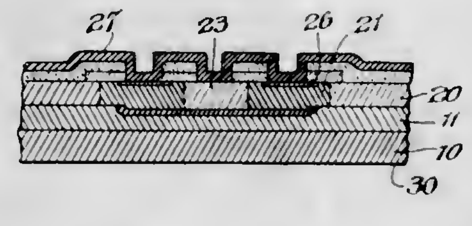
TRANSISTORS AND METHOD OF MANUFACTURING THE SAME

Joseph G. F. Bouchard, Manchester, N.H., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed June 21, 1965, Ser. No. 465,372

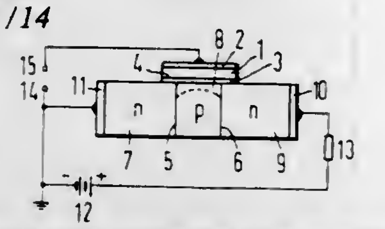
U.S. Cl. 317—235 **17 Claims**

Int. Cl. H01l *11/00, 3/00, 7/00*



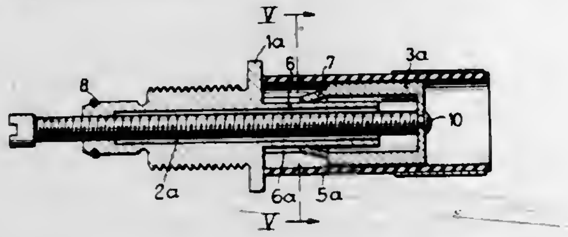
The transistor includes an upper base region of low conductivity overlying a lower base region of high conductivity with an emitter disposed within the upper region in contact with the lower region so that base width and base density of the unit are substantially determined by the lower region and are not substantially dependent upon the emitter-base junction intercept. An isolating region of high resistivity and the conductivity of the collector and emitter is also employed around the base in contact with the perimeter of its upper region.

3,426,255
FIELD EFFECT TRANSISTOR WITH A FERROELECTRIC CONTROL GATE LAYER
Walter Heywang, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich and Berlin, Germany, a German corporation
Filed June 29, 1966, Ser. No. 561,650
Claims priority, application Germany, July 1, 1965, S 97,929
U.S. Cl. 317—235 **23 Claims**
Int. Cl. H01l *11/14*



A single crystal semiconductor has a source and drain with an interconnecting channel between them. A crystal ferroelectric layer crystallographically connects with the channel so that both crystal bodies form a single crystal structure. Electrode means are connected to the source, drain and gate.

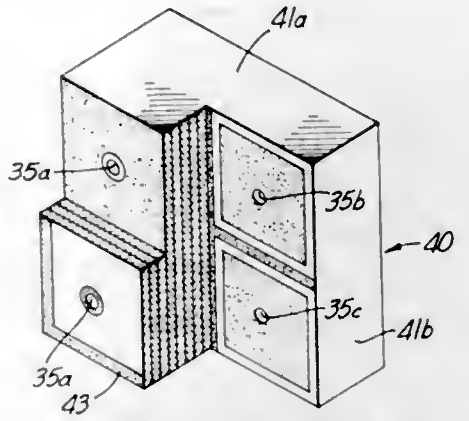
3,426,256
TUBULAR CONDENSER OF VARIABLE CAPACITY
Ottmar Vinz, Landshut, Germany, assignor to Jenaer Glaswerk Schott & Gen., Mainz, Germany, a corporation of Germany
Continuation of application Ser. No. 561,521, June 29, 1966. This application Dec. 14, 1967, Ser. No. 690,685
Claims priority, application Germany, July 14, 1965, J 28,576
U.S. Cl. 317—249 **3 Claims**
Int. Cl. H01g *5/00;* **F16h** *1/20*



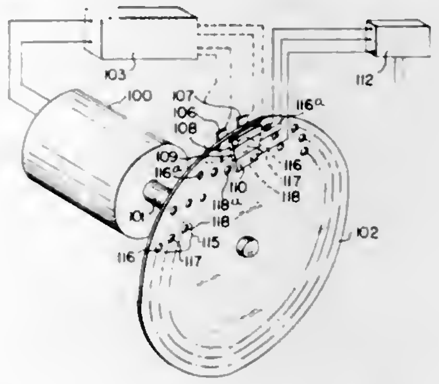
A tubular condenser of variable capacity comprising a tubular dielectric member on the outer periphery of which a stationary electrode is arranged, while an inner electrode consisting of a conductive tubular member is slidable along the inner periphery of the tubular dielectric member and forms a slidable electrical connection with a fixed tubular conductive member extending axially into the inner conductive tubular member. This electrical connection comprises a plurality of contact tongues on one of said tubular conductive members engaging axial grooves in the other one of said tubular conductive members.

3,426,257
MULTIPLE CAPACITOR AND METHOD OF MAKING THE SAME
David Youngquist, Newhall, Calif., assignor, by mesne assignments, to David Youngquist, doing business as Dave Youngquist & Company, Burbank, Calif., a sole proprietorship
Filed Oct. 19, 1967, Ser. No. 676,592
U.S. Cl. 317—256 **5 Claims**
Int. Cl. H01g *13/00*

Electrical capacitor structure comprising an integral structure having alternating sets of thin conductive elements each encircled by a coplanar thin guard circuit conductor, and single thin conductive elements each spaced from sets of the guarded conductors by a thin portion of a monolithic dielectric ceramic structure, all forming sets of stacks of pairs of capacitor plates each separated from others by portions of a monolithic ceramic dielectric and all mounted to a grounded metal structure serving as a bulkhead disposed to magnetically and electrostatically isolate elements of a multielement filter; single lead-through conductors each interconnecting like-polarity capacitor conductive elements of a respective capacitor and passing through the bulkhead and serving as capacitor terminals and for transmission of low-frequency information-signals through the bulkhead while permitting the bulkhead to form a barrier opaque to radio frequency (RF) energy. The ground (and guard-circuit conductors) of the capacitive stacks completely surround the capacitors, whereby no RF energy can pass from one capacitor section to another.



3,426,258
CONTROL MECHANISM ACTUATING MOTOR IN INCREMENTAL MANNER
Richard W. Van Pelt, 1400 College Ave., Houghton, Mich. 49931
Filed Jan. 18, 1965, Ser. No. 426,144
U.S. Cl. 318—18 **19 Claims**
Int. Cl. H02p *5/48*



A control mechanism controls the output member of a motor in an incremental manner. A binary device transmits an input signal to energize the motor and a control member moves with the output member. After a predetermined distance, the control member interrupts the energizing signal. Means are provided for sequentially actuating the binary control devices to incrementally step the motor. An electric motor utilizing binary devices responsive to light responsive means 15 utilized in one embodiment. A fluid motor utilizing binary devices in the form of valves 15 utilized in another embodiment.

3,426,259
ELECTRIC CONTROL CIRCUITS FOR SEQUENTIAL OPERATION OF MOTIVE MEANS
Richard T. Ziehm, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 1, 1966, Ser. No. 591,176
U.S. Cl. 318—102 **3 Claims**
Int. Cl. H02p *1/58*

1. A circuit for controlling a plurality of sequential motive operations comprising:

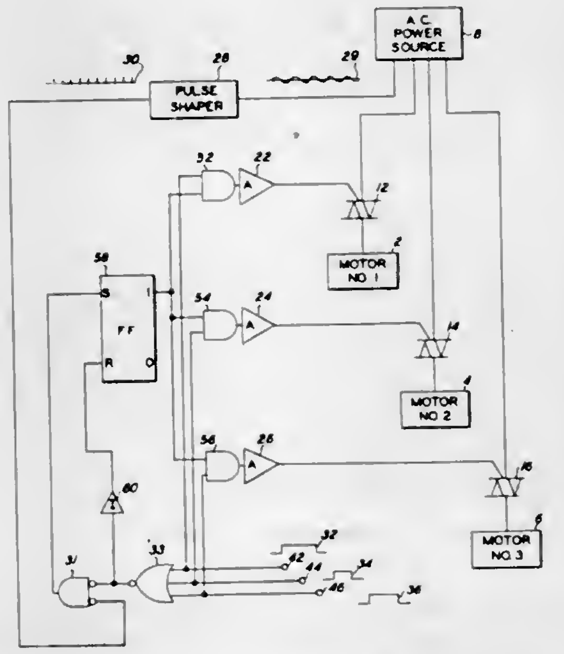
(a) a plurality of input terminals adapted to be individually coupled to a like plurality of sequential control signals, respectively;

(b) a power terminal adapted to be coupled to a source of alternating current;

(c) pulse shaping means coupled to said power terminal for generating pulses in substantial phase synchronism with the zero cross-over points of said alternating current;

(d) bilateral current conducting solid state means having a current threshold value and at least two electrodes and a gate electrode for translating current applied at said power terminal above said threshold value in response to a gating signal at said gate electrode;

(e) alternating current motive means coupled to said solid state means for receiving energizing current therefrom;



(f) bistable means having an output terminal, a first and second stable state and responsive to a first and second signal for going from said first stable state to said second stable state and from said second to said first stable state, respectively;

(g) first signal means for generating said first signal upon the first coincidence of one of said pulses and one of said sequential signals, and

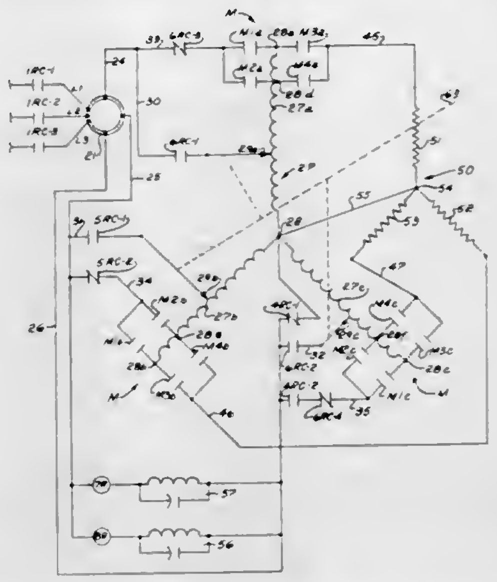
(h) second signal means for generating said second signal upon the termination of said one of said sequential control signals;

(i) a plurality of gating means each individually coupled to a respective one of said input terminals and to said output terminal of said bistable means for generating a gating signal upon the coincidence of one of said sequential control signals and said second stable state in said bistable means; and,

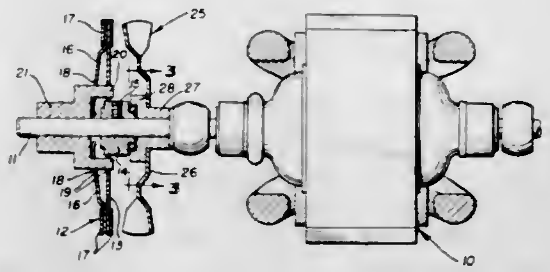
(j) means coupled between said plurality of gating means and said gate electrode for coupling said gating signal to said gate electrode.

3,426,260
CONTROL FOR PRINTING PRESS DRIVE UTILIZING SECONDARY CONTROL CIRCUIT FOR A WOUND ROTOR INDUCTION MOTOR
William H. Lee, Lakewood, and Alan W. Richards, Lyndhurst, Ohio, assignors to Harris Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,267
U.S. Cl. 318—240 **17 Claims**
Int. Cl. H02p *7/56*

A drive for a printing press including a wound rotor induction motor having a speed control circuit connected to the secondary winding. The speed control circuit includes an adjustable transformer for adjustment of motor speed under running condition without affecting the setting of a speed which is established for operation under other conditions.



3,426,261
CONVERTIBLE POWER MIXER AND OTHER APPLIANCES
Gus W. Wallin, Chicago, Ill., and John W. Bessent, Wauwatosa, Wis., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 19, 1966, Ser. No. 580,356
U.S. Cl. 318—290 **8 Claims**
Int. Cl. H02p *1/22, 1/40;* **H02k** *7/10*



1. A food mixer or other motor driven mechanism which derives its power from a high voltage source or a low voltage source, comprising

(a) a housing,

(b) a motor having a rotated shaft in the housing,

(c) an electrical circuit interchangeably connecting the motor to a high voltage source or a low voltage source,

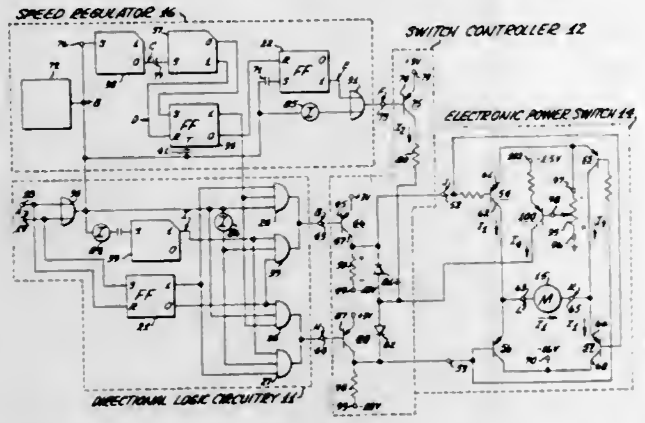
(d) means in the circuit for reversing the direction of rotation of the motor shaft when the motor is changed from high to low voltage operation or from low to high voltage operation,

(e) a motor ventilating fan on the motor shaft, and

(f) clutch means between the fan and shaft responsive to the reversal of direction of rotation of the motor shaft for clutching the fan to the shaft during operation of the motor on the high voltage source and for declutching the fan and causing the fan to idle on the shaft during operation of the motor on the low voltage source.

3,426,262
SYSTEM FOR CONTROLLING INTERMITTENT AND BIDIRECTIONAL OPERATION OF MOTORS
Gene J. Colter, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Apr. 13, 1966, Ser. No. 542,333
U.S. Cl. 318—313 **6 Claims**
Int. Cl. H02p *5/00, 7/00;* **G05b** *5/01*

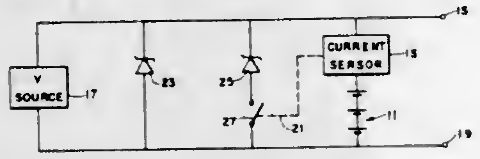
The system for controlling operation of motors employs a tachometer to generate pulses having a frequency which is determined by motor speed. A standard signal is com-



pared with the pulses from the tachometer and a voltage is applied to the motor to regulate the motor speed.

3,426,263
METHOD AND APPARATUS FOR BATTERY CHARGE CONTROL

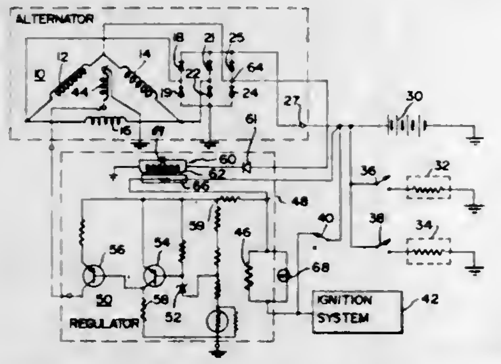
Thomas J. Hennigan, West Hyattsville, Nelson H. Potter, Berwyn Heights, and Kenneth O. Sizemore, District Heights, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 13, 1966, Ser. No. 549,860
U.S. Cl. 320—23 **4 Claims**
Int. Cl. H02j *7/04;* **H01m** *45/04*



A battery charging system capable of maintaining cell-to-cell voltage balance by first limiting the charging voltage to a first predetermined level and thereafter, through the performance of a control circuit cooperating with the battery, limiting the charging voltage to a second predetermined lower level. The magnitude of the second predetermined level voltage is chosen to be sufficient to keep the battery charged yet insufficient to keep the battery charged yet insufficient to cause any damage to the battery.

3,426,264
REED SWITCH CONTROLLED INDICATOR FOR VEHICLE GENERATING SYSTEM

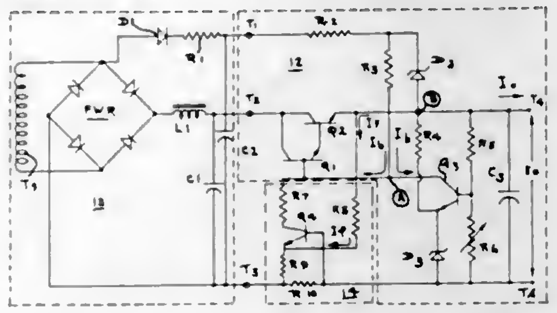
Jerome P. Frysztak, Glendale Heights, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 7, 1966, Ser. No. 563,608
U.S. Cl. 320—48 **3 Claims**
Int. Cl. H02j *7/04, 7/14*



A reed switch which is actuated by an output from an alternator connects the battery of a vehicular electrical system to a voltage regulator circuit for providing direct current to energize the field of the alternator to control the output thereof. The reed switch is potted within its actuating coil and mounted within the regulator housing together with the regulator circuit. The regulator housing is filled with an encapsulant which hardens to secure the reed switch and regulator circuit therewithin.

3,426,265
OVER-CURRENT SHORT CIRCUIT PROTECTION CIRCUIT

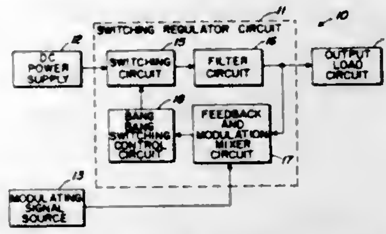
James Peter Till, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 29, 1965, Ser. No. 505,612
U.S. Cl. 323—9 **4 Claims**
Int. Cl. G05f *1/08*



An overload protective circuit for solid state devices which utilizes a transistor held normally off by an emitter bias supplied through a feedback current developed from current supplied to a load. The transistor is switched on to shunt supply current away from solid state devices of the circuit only during an overload condition. Overload current is cased to develop a drop across the base-emitter circuit of the transistor countering the hold off bias developed from the feedback current.

3,426,266
SIGNAL MODULATED SELF-REGULATED SWITCHING VOLTAGE REGULATOR-AMPLIFIER

Willis E. Day and Donald E. Phillips, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 22, 1966, Ser. No. 536,465
U.S. Cl. 323—22 **17 Claims**
Int. Cl. G05f *1/40;* **H03k** *1/12*

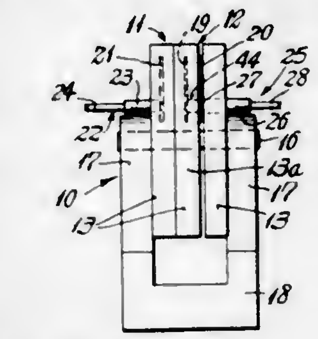


A signal modulated self-regulated voltage regulator-amplifier utilizing self-oscillation with feedback to a "bang-bang" control circuit with a discontinuous amplitude action feedback loop. It provides amplification action of considerable gain particularly with a modulating input signal across a relatively high impedance and the output across relatively low impedance. Further, a low power AC signal modulated embodiment is provided developing a relatively high AC power output with an extremely high gain factor.

3,426,267
VARIABLE RESISTOR-CAPACITOR UNIT

Barton L. Weller, Monroe, Conn., assignor to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware
Continuation of application Ser. No. 411,258, Nov. 16, 1964. This application Jan. 18, 1968, Ser. No. 698,988
U.S. Cl. 323—74 **7 Claims**
Int. Cl. H02p *13/00;* **H02m** *3/04, 5/06*

A variable resistor-capacitor unit to selectively adjust an electrical circuit. Capacitor plates are embedded within dielectric materials while a resistive path is disposed on a surface of the dielectric. Both the resistor and

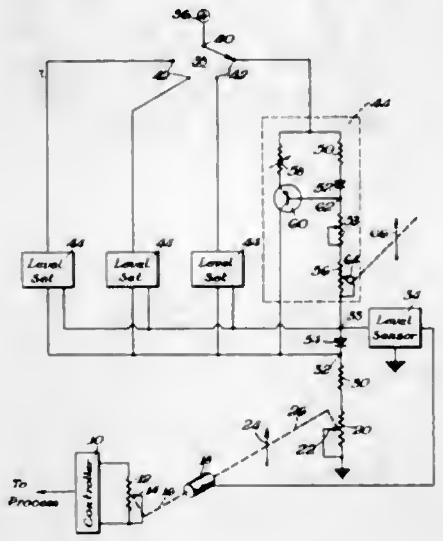


capacitor are variable and can be connected in series or in parallel with each other.

3,426,268
PROCESS PARAMETER LEVEL SENSING DEVICE

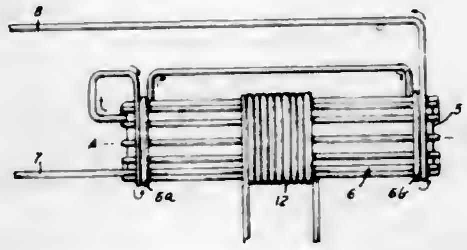
Joseph J. Codichini, Kennett Square, Pa., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 3, 1967, Ser. No. 606,679
U.S. Cl. 323—100 **7 Claims**
Int. Cl. H02p *13/14*

A process parameter level sensor includes (1) a second potentiometer ganged to the set point potentiometer of an automatic controller to denote the value of the process parameter and (2) a third potentiometer to sense when the pressure parameter has achieved a selected value. Differences in the resistance-displacement characteristics of the several potentiometers are compensated for by an adjustable constant current source which modifies the voltage developed across the second potentiometer by a constant factor related to such difference.



3,426,269
MAGNETIC FIELD SENSOR INCLUDING MEANS TO MINIMIZE PERMANENT MAGNETIZATION

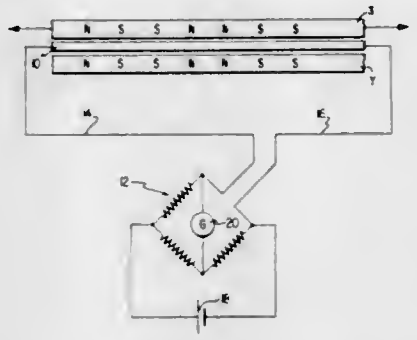
Erick O. Schonstedt, 9170 Brookville Road, Silver Spring, Md. 20910
Filed Nov. 12, 1965, Ser. No. 507,325
U.S. Cl. 324—43 **4 Claims**
Int. Cl. G01r *33/02;* **H01f** *27/28*



Means for applying additional cyclical magnetizing fields to the ends of a magnetic field sensor of the type having a toroidal winding through which the cyclical magnetizing current is passed. The additional cyclical magnetic fields applied to the ends of the core reduce the susceptibility of the core to become permanently magnetized.

3,426,270
METHOD FOR DETERMINING MAGNETIC TAPE CORRELATION

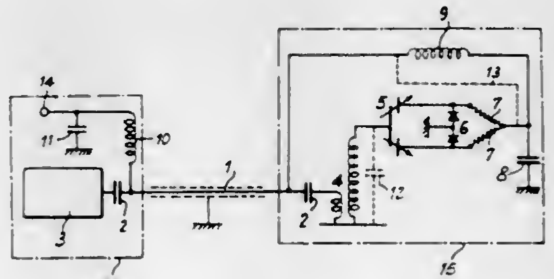
Albert C. Reid, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,970
U.S. Cl. 324—46 **5 Claims**
Int. Cl. G01r *33/02*



A method for and apparatus for determining correlation between the signal trains recorded on two magnetic tapes. The two tapes are arranged in closely spaced face-to-face relationship on opposite sides of a resistive ribbon of a material which exhibits a change in resistance when transgressed by magnetic flux. One of the tapes is moved relative to the other, and the change of resistance in the ribbon is measured as the recording is moved. The point of maximum correlation between the signal trains is the point at which the lowest resistance is measured.

3,426,271
DISPLACEMENT MEASURING SYSTEM WITH HIGH FREQUENCY SOURCE AND LOW FREQUENCY OUTPUT TERMINAL CONNECTED BY COAXIAL CABLE TO MEASUREMENT AND DETECTION CIRCUIT

Pierre Alais, 148 Rue Boucicaut, Fontenay-aux-Roses, Hauts-de-Seine, France
Filed Aug. 6, 1965, Ser. No. 477,907
Claims priority, application France, Aug. 14, 1964, 985,218; Nov. 23, 1964, 995,929
U.S. Cl. 324—61 **5 Claims**
Int. Cl. G01r *27/26;* **G08c** *19/10*



Apparatus for measuring rectilinear and angular displacements and vibrations includes a pick-up unit and a supply and information unit interconnected by a single coaxial cable which may be any desired length. The pick-up unit includes condenser means providing an output signal in accordance with the direction and magnitude of a displacement, and a supply and information unit includes a source of high frequency potential and an information output terminal. Separating filter means are provided whereby the coaxial cable may simultaneously transmit high frequency potential to the pick-up unit and signal potential to the information terminal.

3,426,272

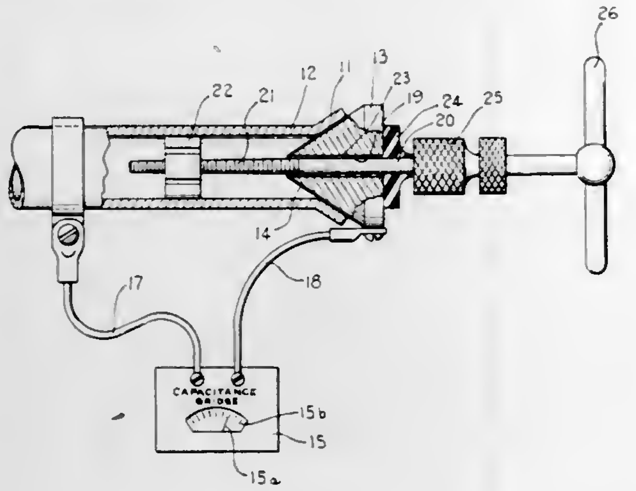
DEVICE FOR DETERMINING THE ACCURACY OF THE FLARE ON A FLARED TUBE

Francis D. Griffin, Merritt Island, Fla., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 17, 1966, Ser. No. 559,351

U.S. Cl. 324—61 **4 Claims**

Int. Cl. G01r ***27/26;*** **G01n** ***27/22***



A device with a cone-shaped portion that fits into the flare of a flared tube. Means are provided for measuring the capacitance between the tube and the cone-shaped portion. This capacitance measurement is an indication of the accuracy and uniformity of the flare.

3,426,273

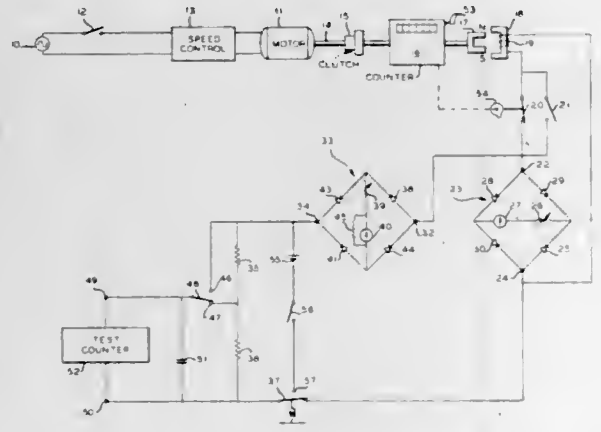
SIGNAL GENERATOR FOR PRODUCING A PREDETERMINED NUMBER OF ELECTRICAL PULSES

Louis E. Kuntz, William C. Hahn, and Merle C. Rhoades, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,562

U.S. Cl. 324—68 **5 Claims**

Int. Cl. G01r ***11/00;*** **G06f** ***15/18***



1. An electrical testing apparatus comprising a motor having a drive shaft, a magnet, means connecting said magnet to said drive shaft so as to be rotated thereby, a coil positioned adjacent said magnet so that rotation of said magnet induces an alternating voltage across said coil, output circuit means connected to said coil to establish an alternating electrical signal of frequency which is proportional to the speed of rotation of said motor, switch means in said output circuit means, and counter means connected to said drive shaft and to said switch means so as to open said switch means when said drive shaft makes a predetermined number of revolutions.

3,426,274

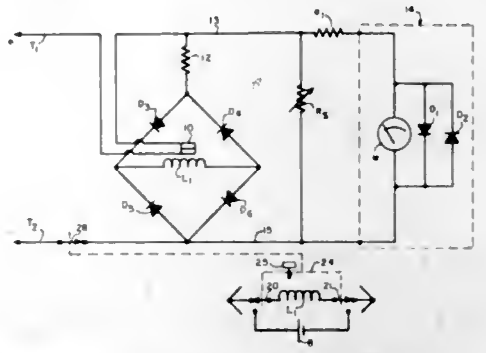
DIODE BRIDGE PROTECTION CIRCUITS FOR ELECTRICAL MEASURING INSTRUMENTS EMPLOYING THE DIODE FORWARD DROP THRESHOLD VOLTAGE

David S. Wise, Warrensville Heights, Ohio, assignor to Western Reserve Electronics Inc., Cleveland, Ohio, a corporation of Ohio

Filed Nov. 19, 1964, Ser. No. 412,362

U.S. Cl. 324—110 **16 Claims**

Int. Cl. G01r ***1/36***



An apparatus of protection of a load employing a diode bridge placed in shunt across supply lines. The output of the bridge is applied to a relay coil to open a switch in the supply lines when the forward threshold voltage of the diodes is exceeded.

3,426,275

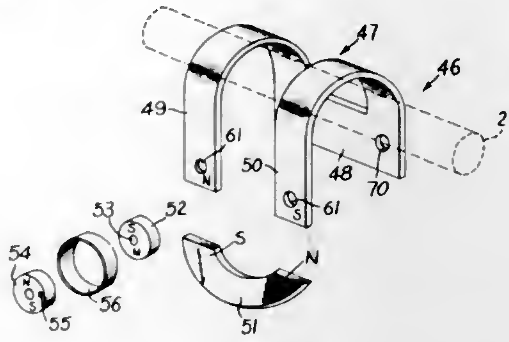
MEANS FOR MEASURING CURRENT FLOW IN A CONDUCTOR BY REDUCTION IN MAGNETIZATION OF A LOW COERCIVITY MAGNETIC MEMBER

Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062

Continuation-in-part of applications Ser. No. 124,858, July 18, 1961, Ser. No. 243,113, Dec. 7, 1962, Ser. No. 301,412, Aug. 12, 1963, Ser. No. 302,295, Aug. 15, 1963, and Ser. No. 329,820, Dec. 11, 1963. This application Sept. 28, 1965, Ser. No. 491,000

U.S. Cl. 324—127 **24 Claims**

Int. Cl. G01r ***7/02***



For measuring maximum flow of current in a conductor a U-shaped magnetic member having low coercivity is magnetized to have opposite poles at the ends of the arms which are positioned adjacent the conductor in the magnetic field generated by the maximum current flow to reduce the unidirectional magnetic flux from the poles at the ends of the arms as a function of the magnitude of the current flow and an indicator is responsive to the reduced unidirectional flux.

3,426,276

ELECTRIC CURRENT MEASURING MEANS USING DEMAGNETIZABLE YOKE

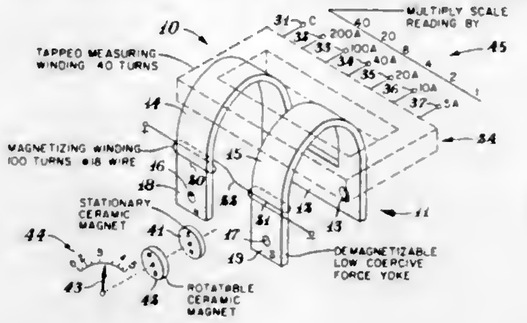
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062

Filed Oct. 30, 1964, Ser. No. 407,719

U.S. Cl. 324—127 **20 Claims**

Int. Cl. G01r ***29/00***

A current responsive device employs a demagnetizable bifurcated yoke of magnetic material having a tapped measuring winding surrounding both of its arms for connection in a circuit in which alternating current flow is to be measured. A magnetizing winding surrounds each arm for energization from a direct current source. A stationary permanent magnet is adjacent the distal ends of the arms and its poles are related to the poles of the arms to produce a resultant magnetic field. A rotatable permanent magnet adjacent the stationary permanent magnet takes up a position according to the position of the resultant magnetic field.


10
TAPPED MEASURING WINDING 40 TURNS
MULTIPLY SCALE READING BY
200A
100A
40A
20A
10A
5A
45
34
MAGNETIZING WINDING 100 TURNS #18 WIRE
STATIONARY CERAMIC MAGNET
DEMAGNETIZABLE LOW COERCIVE FORCE YOKE
ROTATABLE CERAMIC MAGNET
44
43

3,426,277

METHOD OF DETERMINING THE CURRENT HANDLING CAPACITY OF A THYRISTOR

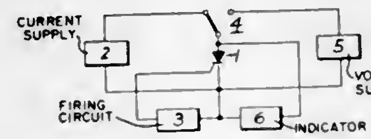
Heinz Carl, Obertshausen-Offenbach am Main, and August Christian Stumpe, Frankfurt am Main, Germany, assignors to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany

Filed Apr. 19, 1965, Ser. No. 449,043

Claims priority, application Germany, Apr. 17, 1964, L 47,619

U.S. Cl. 324—158 **3 Claims**

Int. Cl. G01r ***19/06***



A method of determining the current-handling capacity of a thyristor in the forward direction as well as the thermal internal resistance thereof. The method of testing the current handling capacity includes the steps of alternately applying a forward current and a forward blocking voltage to the thyristor and increasing the amplitude of either this current or voltage until the thyristor no longer blocks the voltage. The other current or voltage is held constant. The current-handling capacity of the thyristor is given by the value of the amplitude of the current or voltage which has been increased at the point just prior to the point at which the thyristor no longer blocks the blocking voltage. At all times during the test the peak amplitude of the blocking voltage is maintained below a value which would produce destructive field strengths within the thyristor.

3,426,278

COMMUNICATION SYSTEM WITH SYNCHRONOUS COMMUNICATION BETWEEN STATIONS VIA REPEATER

Kees van der Valk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

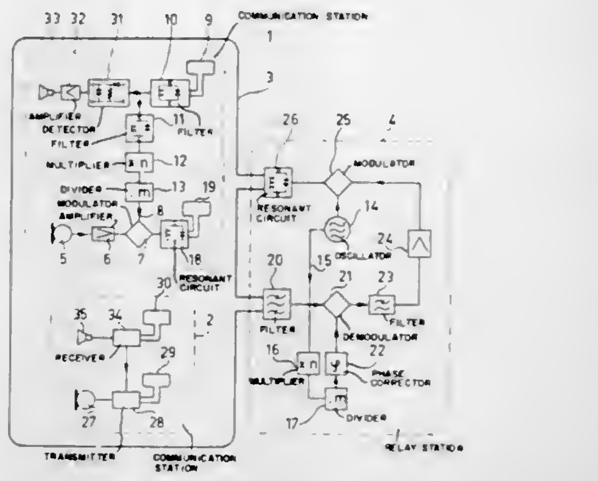
Filed Apr. 1, 1966, Ser. No. 539,566

Claims priority, application Netherlands, Apr. 8, 1965, 6504462

U.S. Cl. 325—10 **6 Claims**

Int. Cl. H04b ***7/14***

A communication system has a plurality of communication stations each adapted to transmit suppressed carrier signals at a first frequency and the receive signals at a second frequency. The carrier signals for modulation are derived from the carrier of the received signals. A relay station is provided that includes a source of oscillations of the first and second frequencies, which have a predetermined ratio. The relay station receives and synchronously demodulates the suppressed carrier signals, and remodulates the demodulated signals on the second carrier frequency for transmission without suppressed carrier.



3,426,279

AUTOMATIC FREQUENCY SCANNING IN A TWO-WAY RADIO COMMUNICATION SYSTEM

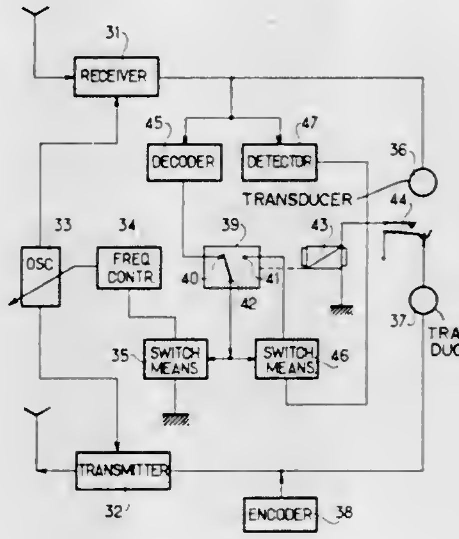
Leon Berman, Asnieres, France, assignor to C.I.T.—Compagnie Industrielle des Telecommunications, Paris, France

Filed Sept. 20, 1966, Ser. No. 580,747

Claims priority, application France, Sept. 21, 1965, 32,119

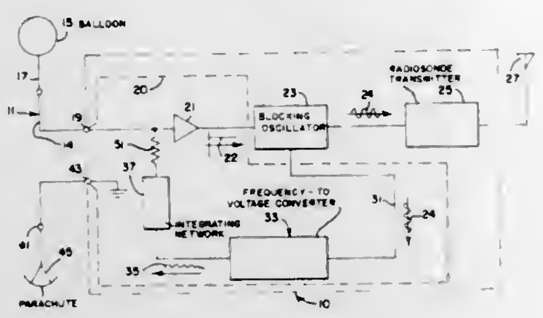
U.S. Cl. 325—21 **11 Claims**

Int. Cl. H04b ***1/40, 1/44;*** **H04l** ***5/00***



A transmitter-receiver system for two-way communication on a modulated carrier frequency selected for each communication from a range of frequencies wherein a transmitter and receiver are connected to a common variable frequency oscillator determining the carrier frequency of both transmission and reception, a scanner connected to the oscillator for varying the frequency thereof, a decoder connected to the receiver for detecting a signal having a given code, control means for de-activating said scanner in response to said decoder, a threshold detector for maintaining said scanner in the de-activated condition, and a coder connected to said transmitter for applying a code to the signal generated thereby.

3,426,280
APPARATUS FOR MEASURING THE POTENTIAL GRADIENT IN THE ATMOSPHERE
Lothar H. Ruhnke, Minneapolis, Minn., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Oct. 9, 1964, Ser. No. 402,902
U.S. Cl. 325—113 **6 Claims**
Int. Cl. H04b *1/02, 1/04;* **H03f** *1/30*

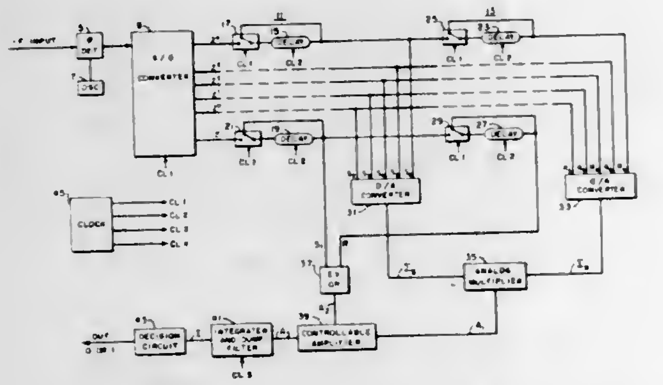


The invention relates to an instrument for measuring atmospheric current density which is adapted for atmospheric flight and has a dipole antenna for collecting currents across the terminals thereof which are indicative of atmospheric currents.

The instrument includes amplifier means for generating a D.C. voltage proportional to the current developed across the antenna terminals, a blocking oscillator which generates A.C. voltages having frequencies dependent upon input D.C. voltages, and a radiosonde transmitter for telemetering the signals of the blocking oscillator to a remote location.

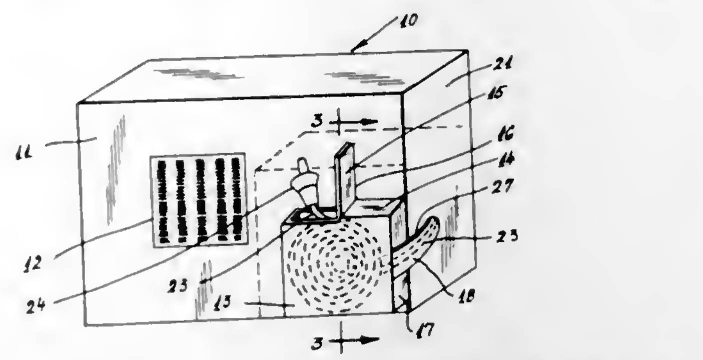
The instrument also includes, as a novel feature, a feedback circuit between the blocking oscillator and the antenna terminals to provide a differential input voltage for the amplifier to lower the effective input impedance of the instrument and provide linearity and stability.

3,426,281
RECEPTION OF TIME DISPERSED SIGNALS UTILIZING IMPULSE RESPONSE STORAGE IN RECIRCULATING DELAY LINES
Theodore J. Klein, Atlantic Highlands, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 28, 1966, Ser. No. 532,542
U.S. Cl. 325—324 **7 Claims**
Int. Cl. H04b *1/10;* **H04l** *27/24*



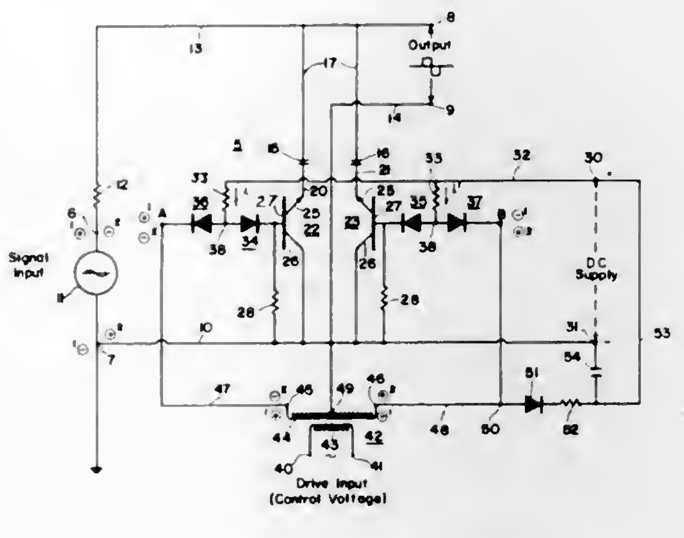
A receiver for eliminating distoration due to multipath reflections in the transmission of high speed pulse data via a high frequency modulated carrier wave. The received data signal is demodulated, sampled, digitized, and stored in time compressed form in an array of recirculating delay lines. This received data signal is then correlated with a previously received, digitized, time compressed and stored impulse response of the transmission medium.

3,426,282
PORTABLE RADIO RECEIVER CABINET
Peter Brady, Bronx, N.Y.
(90—10 34th Ave., Jackson Heights, N.Y. 11372)
Filed July 12, 1965, Ser. No. 471,325
U.S. Cl. 325—353 **11 Claims**
Int. Cl. H04b *1/08;* **H04m** *1/00*



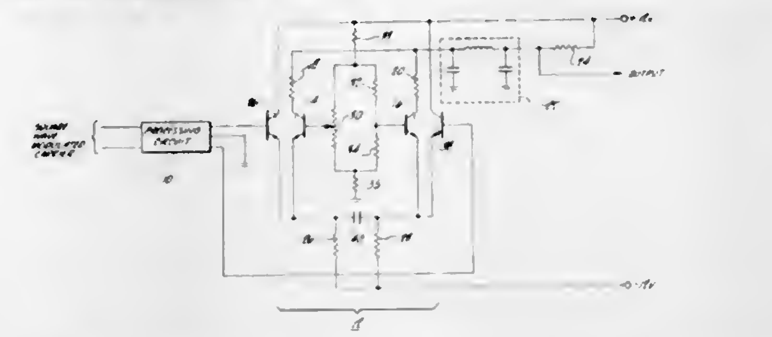
A portable radio receiver cabinet having an easily removable earphone listening device consisting of an ear plug and conductor cord. The plug and cord are stored in a dust free slim removable compartment in the cabinet. The compartment has an openable cover and the cord is wound on a take up reel in the compartment. Upon opening the cover, the ear plug and cord ate adapted to be pulled out in a straight line fashion. Afterwards the ear plug is adapted to be retracted into the compartment by the take up reel.

3,426,283
QUADRATURE SIGNAL SUPPRESSION CIRCUIT
Dexter J. Thor, Jr., Troy, Mich., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 10, 1965, Ser. No. 486,576
U.S. Cl. 328—166 **3 Claims**
Int. Cl. H03b *1/04;* **H04b** *15/00, 1/10*



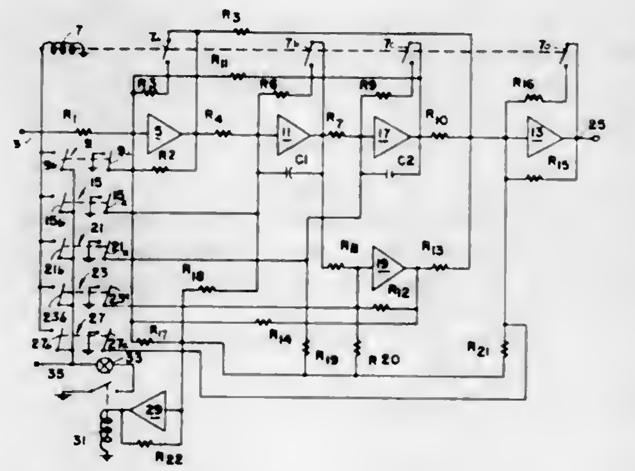
A pair of filter capacitors are connected alternately in shunt relation across a signal translating circuit each through the emitter-collector path of a transistor switching device under control of an applied alternating-current voltage which is coupled to each transistor base element for out of phase operation therewith. A bias current control circuit for each transistor device includes a bias resistor connected with each base to the low side of the translating circuit and the transistor collector elements, two pairs of series-connected diodes in back-to-back relation through which the alternating current control voltage is applied to the transistor base elements, and a bias current supply connection to the junction between each diode pair through a current controlling resistor from the alternating-current control voltage source.

3,426,284
TRANSISTORIZED DEMODULATOR CIRCUIT FOR TIME MODULATED SIGNALS
Bert H. Dann, Altadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1966, Ser. No. 570,886
U.S. Cl. 329—101 **2 Claims**
Int. Cl. H03d *1/18*



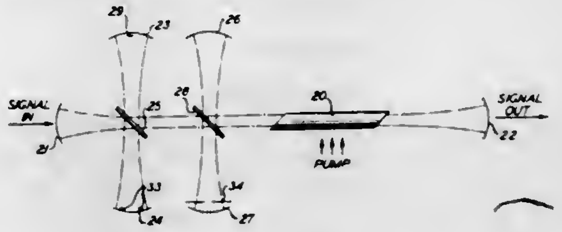
1. A demodulator for a time modulated input signal comprising first and second transistors, each having an emitter, collector and base, means connecting the collectors through a common load impedance to one end of a potential source, first and second resistors respectively connecting the emitters to the other end of said source, means for applying a bias on the respective bases to bias the transistors to a conductive state, third and fourth transistors each having an emitter, collector and base, the emitter of the third transistor being connected to the emitter of the first transistor and the emitter of the fourth transistor being connected to the emitter of the second transistor, means connecting the collectors of the third and fourth transistors to said one end of the potential source, and means responsive to the time modulated signal for alternately pulsing the bases of the third or fourth transistors into a conductive state, the bias on the first and second transistor bases being such that when one of the third and fourth transistors is conducting the associated one of the first and second transistors is turned off.

3,426,285
AMPLIFIER TESTING APPARATUS
Edward O. Uhrig, Catonsville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Continuation-in-part of application Ser. No. 189,938, Apr. 24, 1962. This application Sept. 7, 1965, Ser. No. 485,648
U.S. Cl. 330—2 **4 Claims**
Int. Cl. G01r *35/00*



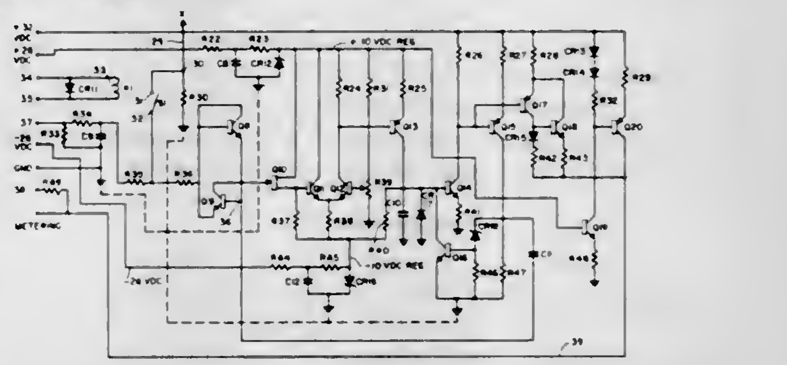
The present invention relates to novel and improved apparatus for detecting improper operation of any of a plurality of high gain amplifier circuits which are commonly used in complex electronic circuitry and which feed energy back to their input circuits to mill the input signal. The improved apparatus includes a fault detector circuit that is energized when a potential is developed on the input circuit of any of the amplifiers and a manually operable switch for each amplifier that selectively grounds the input circuit of its respective amplifier and stabilizes the feedback circuits of each of the amplifiers.

3,426,286
MULTIMODE OPTICAL AMPLIFIER
Stewart E. Miller, Locust, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 27, 1967, Ser. No. 693,910
U.S. Cl. 330—4.3 **8 Claims**
Int. Cl. H01s *3/00;* **H03f** *7/00, 3/60*



A multimode laser amplifier is coupled to a plurality of auxiliary cavities which are adapted to control the gains of a plurality of transverse propagating modes. This arrangement can be adapted to be used either as a linear amplifier or as a mode-locked, phase-locked oscillator. In these arrangements, wave energy converted to higher order modes, due to distortion in the transmission medium need no longer be lost to the system. Sensitive receivers using the above-described amplifiers are also described.

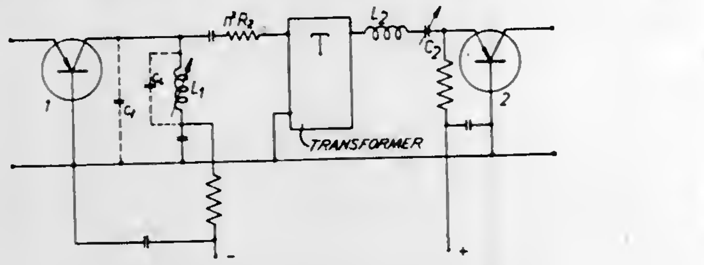
3,426,287
CONTROL AMPLIFIER ADAPTED FOR INTEGRATION OF AN INPUT SIGNAL TO A TRANSLATED OUTPUT SIGNAL
Kenneth E. Nelson, North Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed May 17, 1967, Ser. No. 639,241
U.S. Cl. 330—13 **10 Claims**
Int. Cl. H03f *3/18*



A control amplifier is adapted for use with a computer system interface for controlling output hardware; the amplifier features a special low-leakage input circuit with tracking feedback and output circuits facilitating operation within specifications for linearity, integration error, stability and drift.

3,426,288
COUPLING NETWORK FOR WIDE-BAND IF AMPLIFIERS
Francesco Giorgetti, Milan, Italy, assignor to Società Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy
Filed Feb. 7, 1967, Ser. No. 614,479
Claims priority, application Italy, Feb. 11, 1966, 14,388/66
U.S. Cl. 330—21 **4 Claims**
Int. Cl. H03f *1/42, 3/04*

A coupling between stages of a common base transistor IF amplifier employing a parallel resonant and series resonant circuit coupled by a transformer having a pair of windings wound on toroidal shaped ferrite, the windings

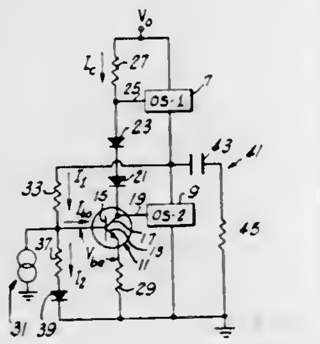


being in bifilar relation. Inductance in the transformer primary circuit is minimized by a damping resistor.

3,426,289

SELF-CENTERING BIAS CIRCUIT FOR DC COUPLED CLASS B TRANSISTOR AMPLIFIER

Iqbal Singh Uppal, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,587
U.S. Cl. 330—22 **11 Claims**
Int. Cl. H03f *3/04*

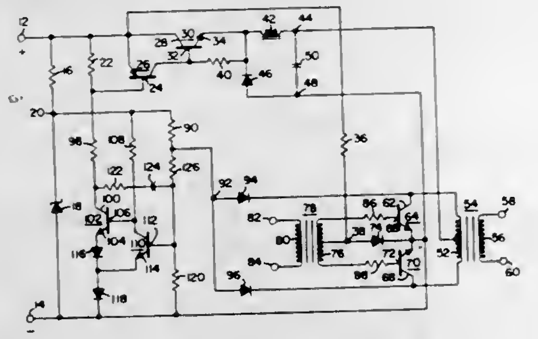


An amplifier stage includes in combination at least one pair of DC coupled Class B amplifier stages connected intermediate a voltage source and a voltage reference level and at least one transistor driver stage having an output electrode coupled to the signal input circuitry of the Class B amplifier stages and via an impedance to the voltage source, an input electrode coupled via an impedance to the voltage reference level, and a control electrode coupled to a signal source, to the junction of the DC coupled Class B amplifier stages, and by way of a uni-directional conduction device to the voltage reference level.

3,426,290

AMPLIFIER HAVING SERIES REGULATED VOLTAGE SUPPLY

James Lee Jensen, Frankfurt am Main, Germany, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,515
U.S. Cl. 330—40 **11 Claims**
Int. Cl. H03f *3/04*

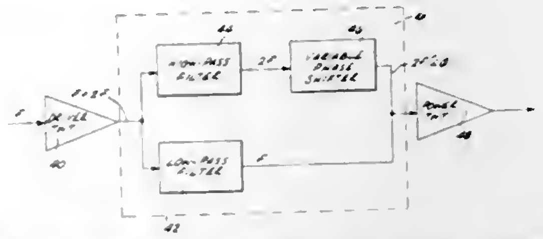


A high efficiency amplifier circuit with circuitry for controlling the voltage supplied to the output stage to a level slightly more than that necessary for an undistorted output signal.

3,426,291

ARRANGEMENT UTILIZING PHASE CONDITIONED HARMONICALLY RELATED SIGNALS TO IMPROVE TRAVELING-WAVE AMPLIFIER EFFICIENCY

Rolf D. Weglein, Los Angeles, and Delos T. Kittoe, San Pedro, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of California
Filed Mar. 31, 1965, Ser. No. 444,313
U.S. Cl. 330—43 **20 Claims**
Int. Cl. H03f *3/58, 3/68, 1/00*

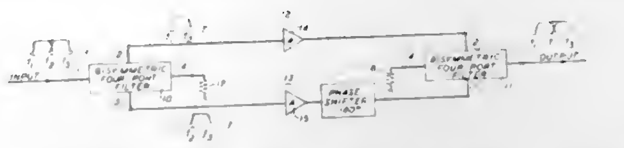


In the disclosed system, the harmonic content of the output from a traveling-wave amplifier capable of amplifying signals at both a fundamental frequency and a harmonic frequency is reduced by applying to the amplifier a fundamental frequency input and a preconditioned phase related harmonic frequency input. The phase conditioning is such that the amplifier develops a harmonic output component due to its harmonic input which substantially cancels the harmonic output component developed by the amplifier due to its fundamental input.

3,426,292

PHASE-COHERENT BAND-SPLITTING AND RECOMBINATION NETWORK

Harold Seidel, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 18, 1965, Ser. No. 508,497
U.S. Cl. 330—126 **10 Claims**
Int. Cl. H03f *3/68*

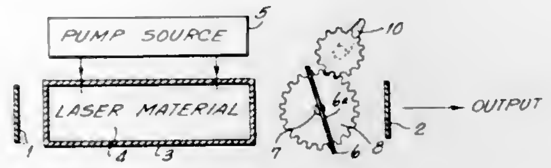


This application treats the practical problem of how to process a signal whose bandwidth exceeds that of the available equipment. As described herein, the input signal is successively divided into pairs of partially overlapping subbands which share frequency components in common. In order that the subbands, upon recombining, preserve the proper phase coherency necessary to reproduce the original signal, the phase shift through the network is adjusted such that the relative phase shift experienced by the frequency components common to pairs of subbands is zero.

3,426,293

DIAPHRAGM TUNING OF GAS LASER

Elias Snitzer, Sturbridge, Mass., assignor, by mesne assignments, to American Optical Corporation, a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,166
U.S. Cl. 331—94.5 **3 Claims**
Int. Cl. H01s *3/00;* **G02f** *1/30*

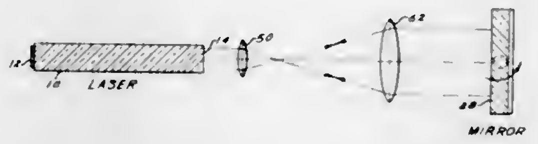


A method of controlling the frequency of operation of a gas laser device by positioning an apertured diaphragm within the laser cavity transversely to the axis of the cavity. Varying the area of the aperture in the apertured diaphragm controls the frequency of operation of the laser.

3,426,294

LASER Q-SWITCHING

Charles J. Koester, South Woodstock, Conn., assignor to American Optical Corporation, a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,573
U.S. Cl. 331—94.5 **20 Claims**
Int. Cl. H01s *3/00;* **G02b** *17/00;* **G02f** *1/30*

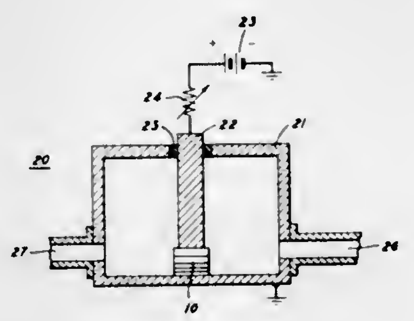


A laser generator with a laser component provided as part of a wave-energy propagation path terminated at one end by a reflecting surface which is rotatable into another position for reflectively terminating the propagation path. A telescope system is disposed between the rotatable reflecting surface and the laser component. The telescope system increases the effective Q-switching speed by decreasing the amount of rotation necessary in order to change the reflecting angle of the rotatable reflecting surface sufficiently to effect the angular relation to the wave-energy propagation path.

3,426,295

NEGATIVE RESISTANCE MICROWAVE DEVICE

Bernard C. De Loach, Jr., Murray Hill, Hermann K. Gummel, North Plainfield, and Donald L. Scharfetter, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 16, 1966, Ser. No. 550,547
U.S. Cl. 331—107 **6 Claims**
Int. Cl. H03b *5/12, 5/24, 7/06*



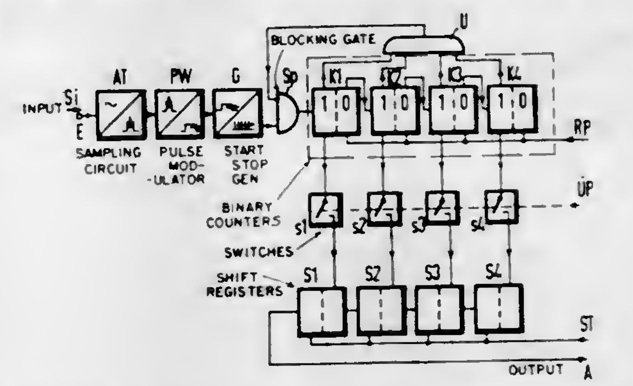
A PININ or NIPIP semiconductive wafer is included in a cavity and used as an impact ionization avalanche transit time diode to provide a dynamic negative resistance at the resonant frequency of the cavity.

3,426,296

PULSE MODULATED COUNTING CIRCUIT WITH AUTOMATIC STOP MEANS

Hans-Martin Christiansen, Munich-Solln, and Manfred Hannl, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Oct. 22, 1965, Ser. No. 501,756
U.S. Cl. 332—9 **6 Claims**
Int. Cl. H03k *7/02*

A pulse modulated and counting circuit including a sampling circuit for receiving signal information to be evaluated, a pulse modulator connected to the sampling circuit, a start-stop generator connected to the pulse modulator, a binary counter circuit connected to the start-stop generator, and circuit means connected between

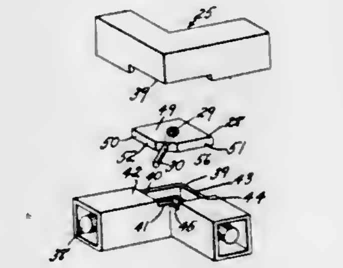


the output of the binary counter and controllably connected to the start-stop generator for stopping the generator when the binary counter has reached its maximum count.

3,426,297

NON-RECIPROCAL DIRECTIONAL FILTER

Morris Cohen, Oceanside, N.Y., assignor to Loral Corporation, Bronx, N.Y.
Filed Feb. 25, 1966, Ser. No. 538,134
U.S. Cl. 333—1.1 **3 Claims**
Int. Cl. H01p *1/32;* **H03h** *7/10*

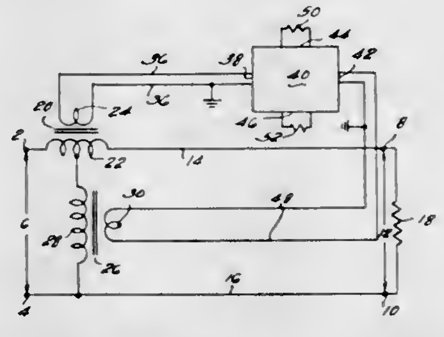


An electronically tunable non-reciprocal directional filter using a gyromagnetic element including at least one coaxial conductor having an inner and an outer conductor member, portions of which are interconnected at a substantial angle, said inner and outer conductors being free of interconnection with each other, said sphere being positioned in the interstice between said inner and outer conductors in the area of the apex of said angle.

3,426,298

BROADBAND DIRECTIONAL COUPLER

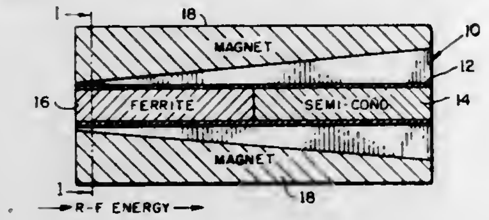
Carl G. Sontheimer, Weston, and Raymond E. Fredrick, Jr., Rowayton, Conn., assignors to Anzac Electronics, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Apr. 19, 1966, Ser. No. 543,750
U.S. Cl. 333—10 **6 Claims**
Int. Cl. H01p *5/14*



A directional coupler having a substantially flat output over a very wide frequency band which is formed of more or less standard circuit elements, such as transmission lines, transformers and 180-degree hybrid junctions, the circuit elements being connected to one another in a fashion particularly well adapted for ready fabrication.

3,426,299
MICROWAVE POWER LIMITER COMPRISING ABUTTING SEMICONDUCTOR AND FERRITE ELEMENTS

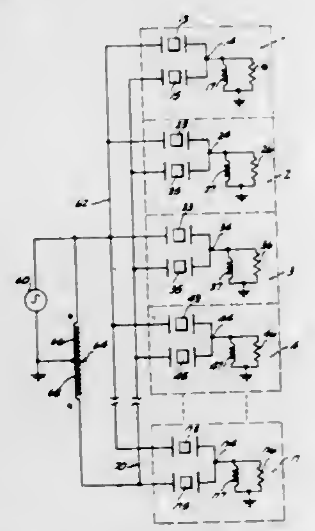
Samuel Dixon, Jr., Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed June 1, 1967, Ser. No. 643,336
U.S. Cl. 333—17 **4 Claims**
Int. Cl. H04b *3/56*



A microwave power limiter which includes respective blocks of semiconductor and ferrite materials mounted in a ridged waveguide structure through which microwave energy is propagated. A magnetic bias is provided to interact with the ferrite material.

3,426,300
CRYSTAL FILTER ARRAY

Er-Chun Ho, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,899
U.S. Cl. 333—72 **7 Claims**
Int. Cl. H01p *1/20*

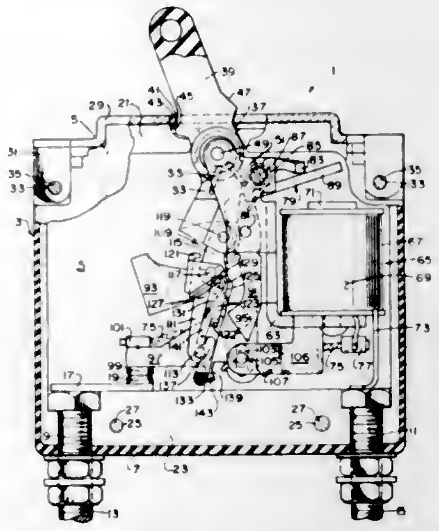


A crystal filter comb is disclosed comprising a plurality of crystal filter channels having respective frequency passbands covering substantially contiguous predetermined frequency ranges. Each channel includes a pair of crystal resonators each having first and second electrodes. A bifilar transformer applies an input signal between the first electrode of each odd numbered resonator and the first electrode of each even numbered resonator in the comb. The second resonator electrodes of each pair of resonators are coupled to a filter channel load terminal. The series resonant frequencies of the pair of resonators in each channel are made to the upper and lower cut-off frequencies, respectively, for the channel.

3,426,301
INTERCONNECTED MULTIPOLE CIRCUIT BREAKER

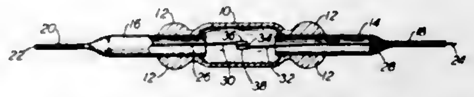
Clifford A. Bodge, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,360
U.S. Cl. 335—8 **3 Claims**
Int. Cl. H01h *75/10, 77/06*

A mechanism for interconnecting the poles of a multipole circuit breaker to disengage the contacts in all of the poles upon disengagement of the contacts in any one of the poles and particularly for circuit breakers of the type wherein each pole is provided with fixed and movable contacts operated by an interconnecting toggle linkage. Each toggle linkage is provided with a latch for tripping it to disengage the contacts in one pole in response to an electromagnetic overload sensing device. A rotary shaft, interconnecting the poles, is provided with means, one for each pole, for tripping all of the toggle linkages in all poles when one is tripped upon overload so as to disengage all of the contacts of the breaker.



3,426,302
SEALED REED SWITCH WITH ADJUSTABLE REED

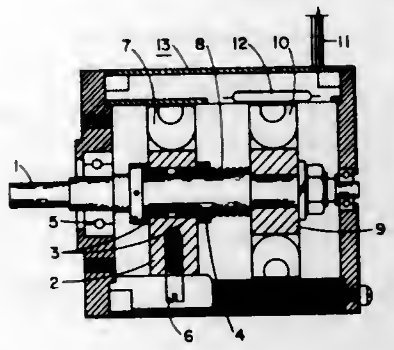
William A. Lindenberger, Glendale, N.Y., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,896
U.S. Cl. 335—154 **8 Claims**
Int. Cl. H01h *1/66*



In a glass-enclosed magnetically-responsive switch the gap between the contact tips of respective cantilevered reeds is made adjustable by supporting the outer ends of the reeds in respective metal sleeves whose extremes are crimped onto the reeds and welded thereto, and by heat sealing the open median ends of the sleeves to a glass tube located between them and surrounding the reeds' contact tips.

3,426,303
DEPTH ENCODER USING MAGNETIC ROTATIONAL CONVERSION

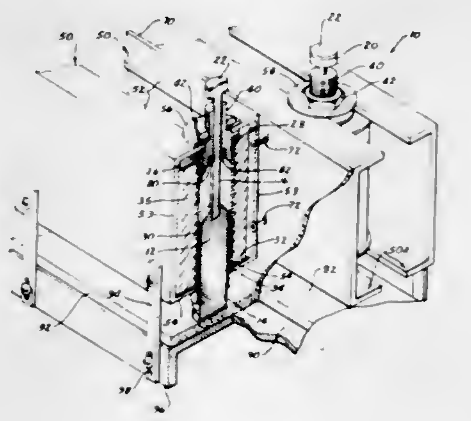
Guy O. Buckner, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,345
U.S. Cl. 335—206 **5 Claims**
Int. Cl. H01h *9/16*



A first drum having ten magnets is mounted on a rotatable shaft. A second drum having a pair of magnets is connected through a slip clutch to the shaft, a pair of stops allowing the second drum limited rotation in either direction. A first reed switch, being responsive to the magnets on the first drum, provides an electrical signal indicative of the amount of shaft rotation. A second reed switch, being responsive to the magnets on the second drum, provides an electrical signal indicative of the direction of shaft rotation.

3,426,304
PLAYER PIANO KEY ACTUATING SOLENOID VALVE ASSEMBLY

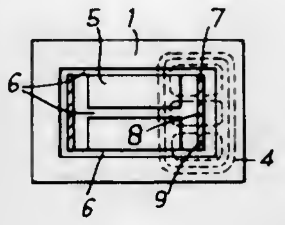
Richard Cannon and Charles M. Morse, Yankton, S. Dak., assignors to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Continuation-in-part of application Ser. No. 503,043, Oct. 23, 1965. This application Oct. 6, 1966, Ser. No. 584,885
U.S. Cl. 335—255 **16 Claims**
Int. Cl. H01f *3/00, 7/08;* **G10f** *3/00*



A device for converting conventional pianos to player pianos including a holding fixture for solenoid key actuating units wherein the solenoid units are arranged in side by side horizontal relationship or in vertical staggered relationship for engaging the piano keys. The fixture for one row of solenoid units includes a pair of oppositely facing channel members having leg portions engaging opposite ends of the solenoid units whereby the holding fixture channels serve as a common magnetic path for the individual solenoid coils and as a heat sink to dissipate heat directly from the coils.

3,426,305
CHOKE HAVING A WINDING OF FOIL

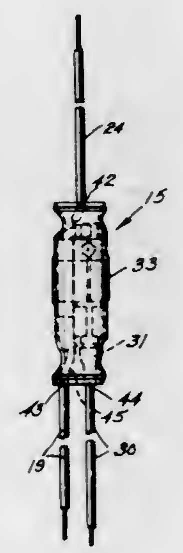
John M. Keble, London, England, assignor to British Lighting Industries Limited, London, England
Filed June 6, 1967, Ser. No. 643,878
Claims priority, application Great Britain, June 13, 1966, 26,199/66
U.S. Cl. 336—178 **5 Claims**
Int. Cl. H01f *17/06, 27/28*



A choke having a laminated core comprising at least one leg with a plurality of evenly disposed air gaps in said leg and having a winding on said core consisting of a strip of metallic foil.

3,426,306
THERMAL SWITCH ASSEMBLY HAVING JUXTAPOSED AUXILIARY HEATER

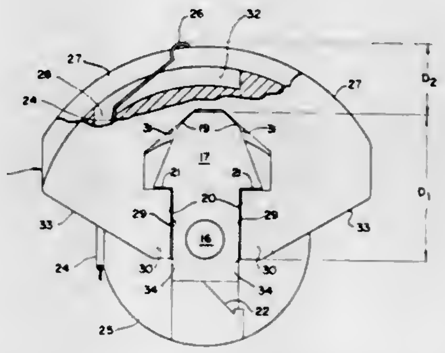
Theodore G. Scheld III and Fredrich C. Schwaneke, Chicago, Ill., assignors to Northern Electric Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 480,025
U.S. Cl. 337—14 **6 Claims**
Int. Cl. H01h *61/00, 71/00, 61/013*



An auxiliary heater externally engages a thermostat casing, the auxiliary heater being jacketed with foil and held in such engagement by shrunken irradiated plastic which plastic also provides strain relief for all wiring by having a heat-seal with its insulation, and which plastic holds internal wiring in non-crossing relation.

3,426,307
CONTACT CARRIER FOR MULTITURN ROTARY POTENTIOMETER

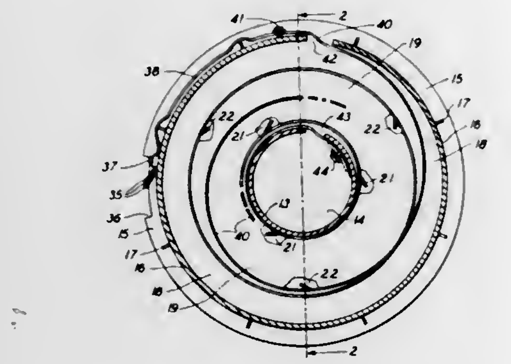
Lloyd E. Hall, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed May 15, 1967, Ser. No. 638,457
U.S. Cl. 338—143 **4 Claims**
Int. Cl. H01c *5/00, 5/02*



A variable resistance device including a helically wound multiturn resistance coil mounted within a case and a rotor, driven by a shaft mounted within the case for rotatably positioning an electrical contact with respect to the resistance coil. The contact is carried on a carrier block which, in turn, traverses a support track on the rotor as the electrical contact moves along successive portions of the helically wound multiturn resistance coil. Support arms of the carrier block straddle the motor and ride against guide surface formed on opposite sides of the rotor to minimize movement of the contact carrier block about the support track during rotation of the rotor.

3,426,308
ROTATABLE CONNECTION

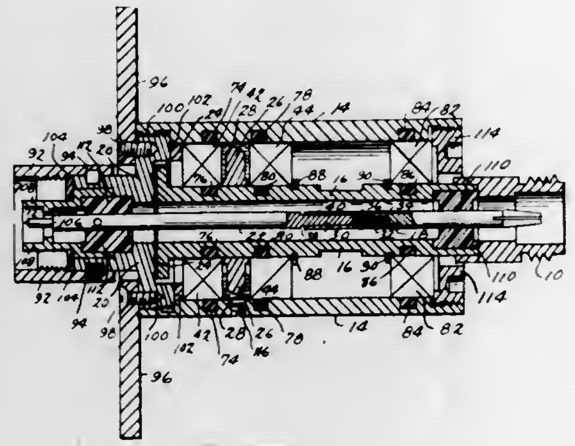
Johan R. Andersen, Bloomingdale, Arnold R. Smith, and Andrew H. Williamson, Jr., Chester, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 29, 1965, Ser. No. 510,461
U.S. Cl. 339—5 **8 Claims**
Int. Cl. H01r *39/02*



An electrical connection between two relatively rotatable coaxial members comprising a flat multi-conductor cable spirally wound about one member and connected inside the other. Spring biased rollers form a clutch which controls rotational movement of the supporting parts. A motor rotates the inner member. The device may be used in various equipment requiring electrical connection between rotating elements.

3,426,309
ROTARY JOINT

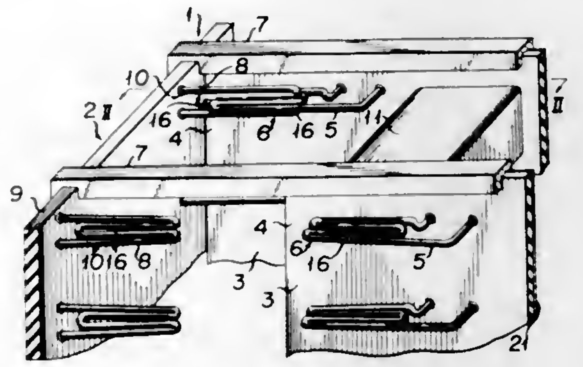
Robert M. Goodman, Jr., Marietta, Ga., assignor to Scientific-Atlanta, Inc., Atlanta, Ga., a corporation of Georgia
Filed Nov. 7, 1966, Ser. No. 592,402
U.S. Cl. 339—8 **15 Claims**
Int. Cl. H01r *39/08, 39/30*



An electrical rotary joint for passing a wide range of frequencies which provides a path for transmision of higher frequencies and a separate path for transmission of lower frequencies and direct current. Preferably, the joint comprises coaxial transmision lines rotatable with respect to each other. Direct current and lower frequencies are transmitted between them through mercury slip ring connectors. Higher frequencies are transmitted by capacitive coupling of the conductors through air gaps between the conductors, the electrical ratio of diameter of the inner and outer conductors of the coaxial transmission lines being kept substantially constant.

3,426,310
ELECTRICAL CONNECTOR

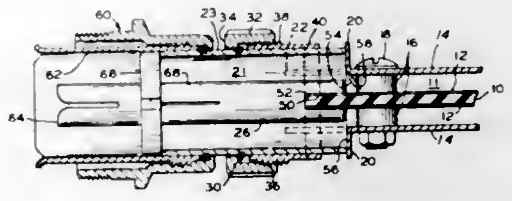
Koichi Takeuchi, Tokyo, Asao Shikama, Kawasaki-shi, and Shozo Takeno, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 26, 1967, Ser. No. 633,978
Claims priority, application Japan, Apr. 30, 1966, 41/39,778
U.S. Cl. 339—17 **2 Claims**
Int. Cl. H05r *25/00;* **H05k** *1/00*



An electrical contact piece is made by tortuously bending a resilient continuous electric conductor of circular cross-section into a letter W configuration having a pair of adjacent coplanar contact portions each including an inner conductor and an outer conductor which are formed by folding back said continuous conductor. A gap smaller than the diameter of the conductor is formed between said contact portions. One contact piece acting as a plug and the other acting as a receptacle are mounted at right angles with respect to each other and to be movable relatively so that said contact pieces are interfitted at said gaps to form a criss-cross.

3,426,311
TRANSITION DEVICE

Ross W. Gifford, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed June 16, 1966, Ser. No. 557,934
U.S. Cl. 339—17 **13 Claims**
Int. Cl. H01r *17/18, 13/54;* **H05k** *1/18*



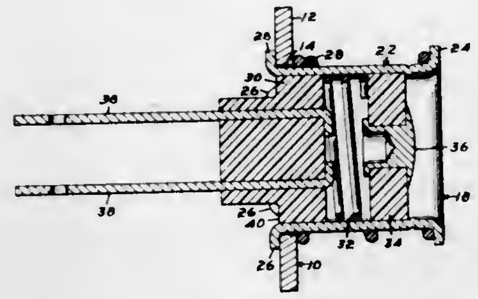
1. A transition device for coupling a coaxial cable to a strip line wherein said coaxial cable includes concentric inner and outer conductors and wherein said strip line comprises a circuit board supportng a center conductor and shield plates on either side of said circuit board in shielding relation to said center conductor, said transition device comprising:

clamping means for removably securing the outer conductor of said coaxial cable in abutting relation to ends of said shield plates with said inner conductor in aligned relation with said center conductor,

said outer conductor of said coaxial cable being provided with means for aligning said circuit board supporting said center conductor so that said center conductor is accurately positioned to space the inner conductor of said coaxial cable at a predetermined position relative to the ends of said shield plates.

3,426,312
FLUORESCENT LAMP HOLDER

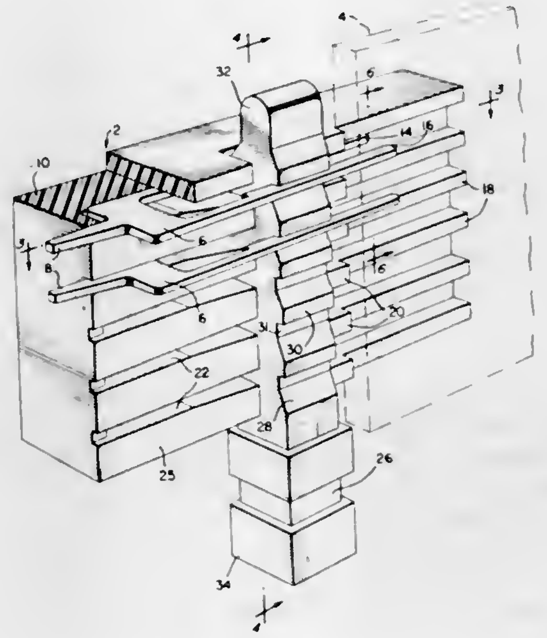
Robert E. Fitz Gerald, Quincy, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Mar. 1, 1966, Ser. No. 530,945
U.S. Cl. 339—56 **3 Claims**
Int. Cl. H01r *33/12*



A support and a socket member for a fluorescent lamp. The socket member being movable in relation to the support and attached to the support through a series of tabs. The socket has an external member butted against the support and an internal spring which allows movement of an inner contact against a pair of terminals.

3,426,313
PRINTED CIRCUIT EDGE CONNECTOR

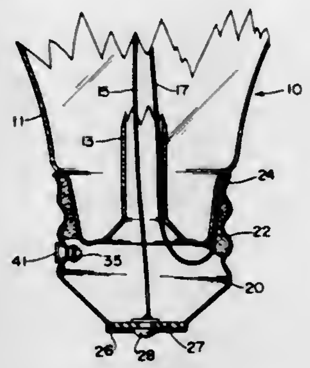
Thomas Henry Wycheck, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 10, 1967, Ser. No. 629,438
U.S. Cl. 339—74 **5 Claims**
Int. Cl. H01r *13/62, 13/50;* **H05k** *1/06*



Printed circuit edge connector has insulating housing containing plurality of side-by-side fork-type contacts which are adapted to engage conductors on opposite sides of printed circuit board. Camming or spreading member extends between, and is straddled by, contacts and has a plurality of spaced-apart spreading portions such that upon axial movement of camming member a distance equal to the spacing between contacts, legs or tines of the contacts are spread apart to permit insertion of board. Upon reverse movement of camming member, tines or legs of contacts move against conductors on the board and establish electrical contact therewith.

3,426,314
SOCKET AND BASE FOR LAMPS

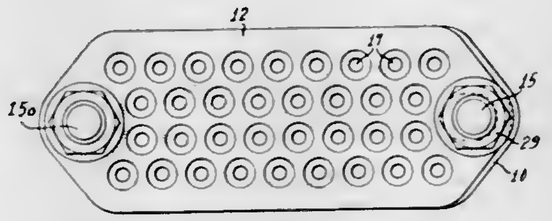
Raymond Peter Fontana, North Bergen, N.J., assignor to Duro-Test Corporation, Fair Lawn, N.J., a corporation of New York
Filed Jan. 27, 1967, Ser. No. 612,114
U.S. Cl. 339—75 **8 Claims**
Int. Cl. H01r *13/54, 33/12*



A base for an electric lamp having a pellet of resilient material protruding therefrom which engages the wall of the surrounding socket under pressure and prevents the lamp from becoming loose in or detaching from the socket. The pellet of resilient material also can be used in the socket instead of the lamp base.

3,426,315
COMPACT ELECTRICAL CONNECTORS

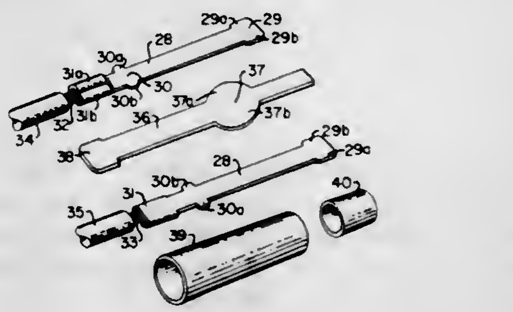
Donald R. De Tar, Stratford, Conn., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed May 16, 1966, Ser. No. 550,235
U.S. Cl. 339—105 **6 Claims**
Int. Cl. H01r *13/58, 13/64*



An electrical connector having a plurality of removable contacts held in place by a retainer plate on the rear face of the connector body, said plate being secured in place by studs or bolts which also serve to polarize the connector.

3,426,316
ELECTRIC LEAD TERMINAL

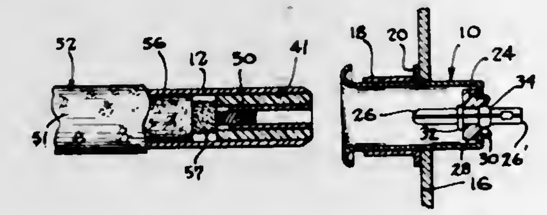
Elwyn H. Olson, St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 15, 1966, Ser. No. 527,588
U.S. Cl. 339—151 **3 Claims**
Int. Cl. H01r *13/50*



An electric lead terminal embodying a pair of metal strips having axially spaced projections on each side thereof, a strip of insulating material of greater width than the metal strips but not as wide as the combined width of a metal strip and each pair of projections on opposite sides thereof, and a heat shrunk sleeve around each pair of projections and adjacent portions of all three strips, for centering, interlocking and insulating the assembly.

3,426,317
ELECTRICAL CONNECTOR

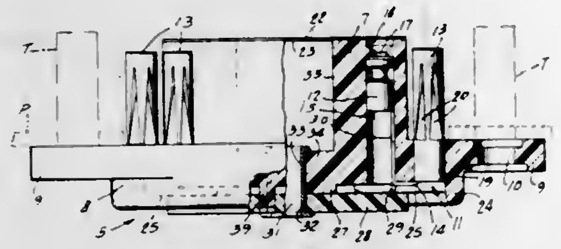
Stanley J. Krol, Chicago, Ill., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,884
U.S. Cl. 339—177 **6 Claims**
Int. Cl. H01r *17/18, 15/12, 43/00*



An electrical connector for use with shielded coaxial cable comprising a male connector element having a contact element received by an insulating washer and held in assembled relationship within a shell, and a female connector element telescopically receivable within the male shell having a shield element electrically engageable with the shield of the cable, an inner tubular contact element engageable with the male contact element and with the central conducting lead of the cable, and an insulating sleeve disposed between the shield element and the female contact element. The shield element has an opening through which a deforming element can be inserted to deform the sleeve without deforming the shield element in order to compress the female contact element against the central conducting lead and to interlock the sleeve with the shield element and with the female contact element to define a unitized assembly.

3,426,318
ELECTRICAL TUBE SOCKET

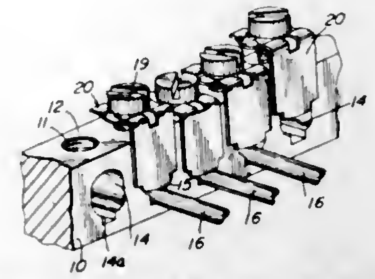
Albert P. De Vito, Niles, Ill., assignor to Alcon Metal Products, Inc., Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 459,159, May 27, 1965. This application Aug. 1, 1966, Ser. No. 569,134
U.S. Cl. 339—193 **7 Claims**
Int. Cl. H01r *13/50, 9/04*



Receptacle terminals of generally U-shape are mounted in a dielectric body having respective annular series of bores for respectively the tube pin receptacles and the lead terminals of the unit. A flat rigid dielectric retainer disk opposes tail pieces on the units provided with lugs projecting toward the disk, and the disk has identification indicia for each of the connector units, with means maintaining the disk in properly indexed orientation of the indicia with the units.

3,426,319
WIRE CONNECTOR

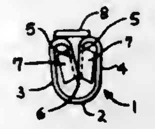
Harold H. Downs and Manuel A. Issa, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Feb. 13, 1967, Ser. No. 615,784
U.S. Cl. 339—242 **1 Claim**
Int. Cl. H01r *13/12, 9/12, 7/14*



A neutral wire connector for electrically interconnecting a plurality of aluminum or copper wires. A bar of aluminum has a plurality of pairs of mutually intersecting wire-receiving and screw-receiving openings. Each of a plurality of U-shaped spring steel pressure-transmitting clips has one leg portion connected adjacent the head to one of the clamping screws and the other leg portion within one of the wire-receiving openings. The leg portion in the opening is concavo-convex with the concave side in engagement with the inner end face of the screw and with the convex side facing a wire.

3,426,320
ELECTRICAL CONNECTOR RECEPTACLE

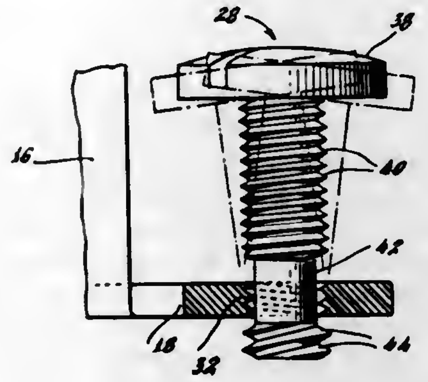
August L. M. Wilm, Amsterdam, Netherlands, assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 30, 1966, Ser. No. 583,237
U.S. Cl. 339—258 **7 Claims**
Int. Cl. H01r *13/12, 11/22*



An electrical connector receptacle comprises contact springs which are re-entrant extensions of side walls of a U-shaped member. Projections of the contact springs extend outwardly from an insertion end of the contact springs to guide a tab between the contact springs. A tongue is stamped out from a side wall and assists in keeping the tab between the contact springs.

3,426,321
ELECTRICAL WIRING DEVICE HAVING IMPROVED CAPTURED SCREW TERMINALS

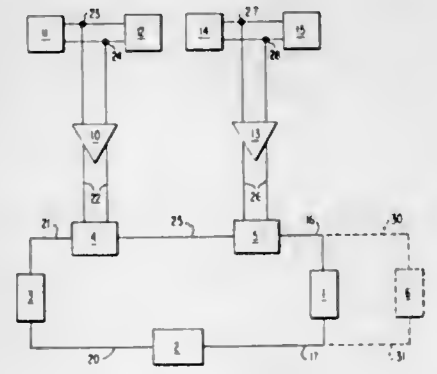
Carl B. Peterson, Jr., Fairfield, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 8, 1965, Ser. No. 493,993
U.S. Cl. 339—263 **7 Claims**
Int. Cl. H01r *7/16, 3/06;* **F16b** *41/00*



A captured binding screw terminal having a terminal plate with a threaded opening and a binding screw having a head on one side of the plate, the screw including a first threaded shank portion located adjacent the head having threads of the same pitch as the threaded opening, an intermediate nonthreaded shank portion of reduced diameter, and a second threaded shank portion located at the end of the screw having a coarser pitch than the first portion.

3,426,322
TURBOJET COMPRESSOR STALL WARNING INDICATOR

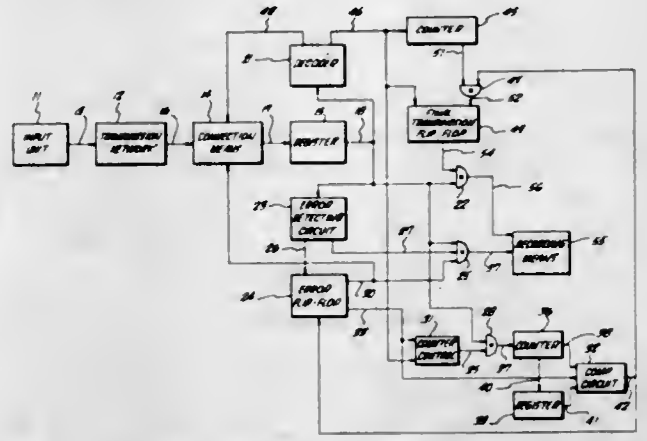
Harold A. Balo, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 28, 1965, Ser. No. 505,478
U.S. Cl. 340—27 **6 Claims**
Int. Cl. G08g *5/00*



1. A compressor stall warning indicator for a turbojet engine comprising:
- (a) engine speed sensing means producing a first output signal between first and second engine speeds;
- (b) engine exhaust gas temperature sensing means producing a second output signal above a predetermined exhaust gas temperature; and
- (c) utilization means coupled to said speed sensing means and temperature sensing means and responsive to sustained, concurrent application of said first and second output signals to produce an indication of compressor stall.

3,426,323
ERROR CORRECTION BY RETRANSMISSION

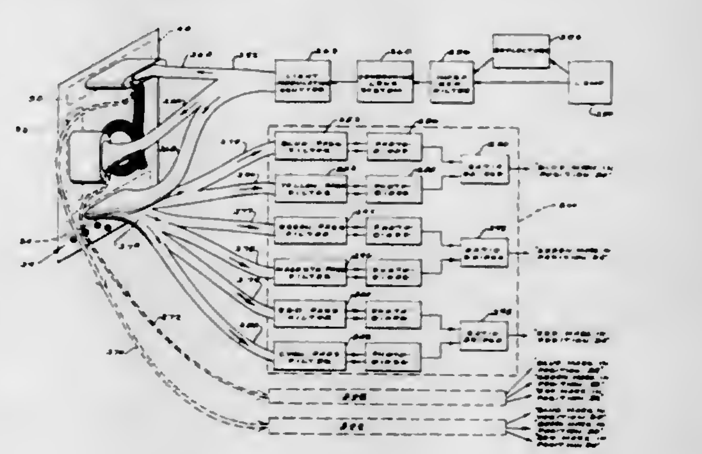
George T. Shimabukuro, Monterey Park, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 8, 1965, Ser. No. 437,777
U.S. Cl. 340—146.1 **9 Claims**
Int. Cl. G08b *29/00*



A data transmission system in which characters of a message being transmitted are checked for error at the receiving end and recorded if no error has occurred. A counter keeps track of the numerical sequence of each recorded character. Upon detection of an error, the counting sequence stops, no further recording takes place and the count value stored in the counter is transferred to a register. During retransmission of the message the counter resumes counting and comparison circuitry compares the contents of the counter with the contents of the register and until these contents are equal none of the characters are recorded. When the point of equality is reached, the characters are again recorded until the end of the message is reached or another error is encountered. Upon encountering another error, the contents of the counter are again transferred to the register and operations proceed in a manner similar to those upon receipt of an error during the original transmission.

3,426,324
AUTOMATIC SIGNAL READER USING COLOR SEPARATION

Ron Manly, P.O. Box 201, Hawthorne, Calif. 90250
Filed Apr. 24, 1963, Ser. No. 275,350
U.S. Cl. 340—146.3 **10 Claims**
Int. Cl. G06k *9/00, 9/02*



2. An electrical-optical signal reader for determining the presence and identity of character and edit signal marks in at least one space on a record medium, light energy emanating from each of said edit signal marks having at least one fluorescent wavelength distribution selected from *n* predetermined distributions where *n* is any integer including one, said signal reader comprising: an illumination system for providing light to said space; at least one wavelength distribution distinguishing network said network including at least *n* fluorescent wavelength distribution identifying means which each comprise a filter and photodetector for passing and detecting the presence of fluorescent light energy emanating from the signal marks and having at least a specific one of said predetermined number *n* of wavelength distributions; at least one light energy spectrum band separator optically coupled to said wavelength distribution identifying means; emanating light receiving means for coupling light emanating from said space to said light energy spectrum band separator; and at least one signal pattern analyzing means coupled to the outputs of said wavelength distribution identifying means for recognizing patterns of said edit marks.

7. An electrical-optical signal reader system for determining the color and location of a signal mark within a space of a possible matrix of spaces on a message medium, there being a first predetermined number, including one, of possible colors and a second predetermined number, including one, of possible matrix spaces, the system comprising: an illuminating system for directing light upon the matrix spaces; at least one color distinguishing network said network including a number, equal to at least the logarithm to the base two of said first predetermined number, of color identifying means which each comprise an in-band color pass filter, a complementary color pass filter, at least one photo-detector,

and an electrical signal amplitude comparison means coupled to said photo-detector to determine the relative intensities of light incident upon said in-band pass filter and that incident upon said complementary pass filter; emanating light receiving means including a light energy spectrum band separator for coupling emanating light from said matrix spaces to each of said filters of said color distinguishing network; and at least one signal pattern analyzing means, coupled to the outputs of said color identifying means for recognizing patterns of said signal marks.

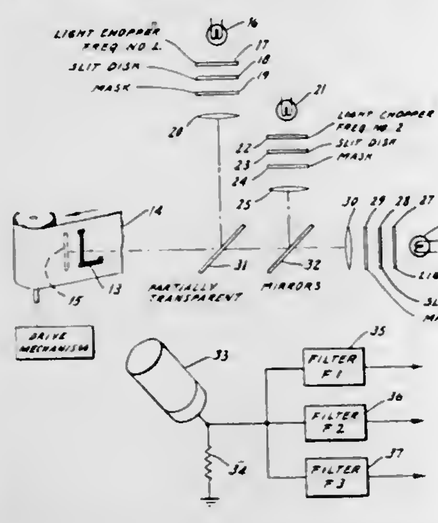
3,426,325
CHARACTER RECOGNITION APPARATUS

Melvin E. Partin, Montgomeryville, Pa., and Allen H. Ett, Bethesda, Md., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 16, 1965, Ser. No. 464,281

U.S. Cl. 340—146.3 **11 Claims**

Int. Cl. G06k *9/08*



1. Character recognition apparatus, comprising means for producing a light image having distinct components representative of light transmissions through masks having different transparency patterns, means for scanning a character with said light image, means for producing from said scanning plural electrical waveforms representative of light reflected by said character as illuminated panoramically through said masks, and means for utilizing said waveforms to determine the identity of said character.

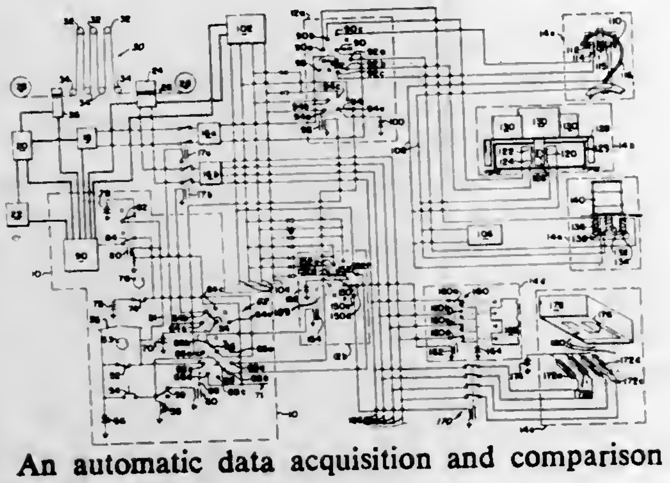
3,426,326
AUTOMATIC INVENTORY DATA ACQUISITION APPARATUS

Robert P. Goldstein, 429 Pacific Ave., Pittsburgh, Pa. 15221

Filed June 21, 1963, Ser. No. 289,560

U.S. Cl. 340—153 **8 Claims**

Int. Cl. H04q *1/22, 3/02, 9/02*



1. An automatic data acquisition and comparison apparatus comprising:

(a) a plurality of different types of sensing elements positioned among an inventory of stock to signal upon interrogation the presence and identity of items of inventory located at a plurality of locations by generating either analogue or digital signals which characterize the items of inventory,

(b) circuit means including a command unit and collector means associated with said sensing elements for periodically and selectively interrogating each of said sensing means,

(c) converter means coupled to said collector means for converting said analogue and digital signals to digital signals,

(d) addressing means in circuit with said command unit and said converter means,

(e) recording means associated with said circuit means, said converter means and said addressing means to record the response and address of each of said sensing elements for each interrogation,

(f) storage means connected to said recording means,

(g) comparator means coupled to said storage means for comparing current and previously recorded responses.

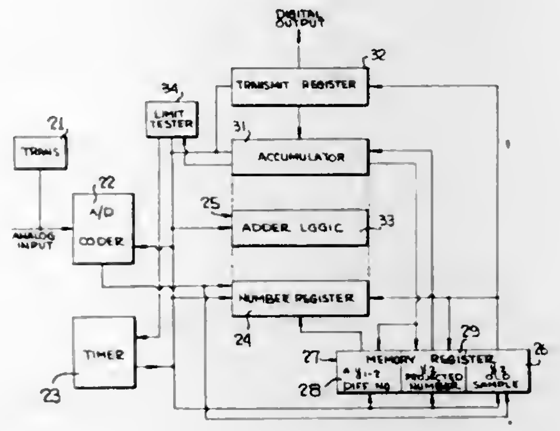
3,426,327
VARIABLE RATE TELEMETRY SYSTEMS

Daniel D. McRae, Melbourne, Edward B. Glover, Melbourne Beach, Leon B. Williamson, Palm City, and Sinclair A. Frederick, Melbourne Beach, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

Filed June 9, 1964, Ser. No. 373,688

U.S. Cl. 340—172 **6 Claims**

Int. Cl. H04q *9/02*



Selection of only non-redundant data for transmission as a means of reducing redundancy in a data transmission system is achieved by deriving data in the form of periodic samples of an analog waveform, comparing the magnitudes of the samples to the magnitudes of respective time-displaced points on a piecewise linear approximation of the waveform, storing the waveform samples, and selection for transmission to a receiving station only that stored sample immediately preceding a sample exceeding a predetermined deviation from the respective point on the piecewise linear approximation, each selectively transmitted sample having its proper position in time relative to the other selectively transmitted samples.

3,426,328
ELECTRONIC DATA PROCESSING SYSTEM

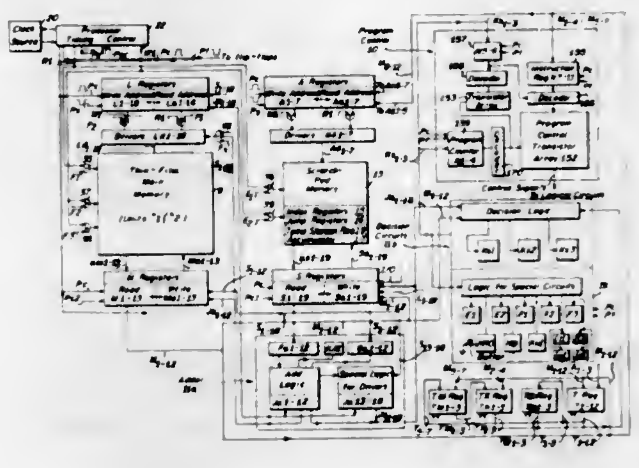
Robert O. Gunderson, Sidney L. Valentine, and Martin H. Jurick, Torrance, and Paul Higashi, Gardena, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Jan. 18, 1965, Ser. No. 426,105

U.S. Cl. 340—172.5 **32 Claims**

Int. Cl. G11b *13/00*

This data processing system provides for execution of commands by performing logical operations upon data in system operating cycles of either short or extended time duration, each of which system cycles provides for one or successive memory accessing cycles respectively, of internal thin-film memories including main and scratch-pad memories operating in parallel. Each system operating cycle provides for performance of any selected group of logical operations and at least one memory cycle whereby a plurality of system operating cycles provides for performance of all logical operations of any desired command in the desired sequence under the selective operation of the program control. The program control further provides for the extending of the time duration of any system operating cycle requiring modification of data in any storage location of the main or scratch-pad memories, and also controls the number of system operating cycles to execute any particular command depending upon the decisions made during the execution of the command.



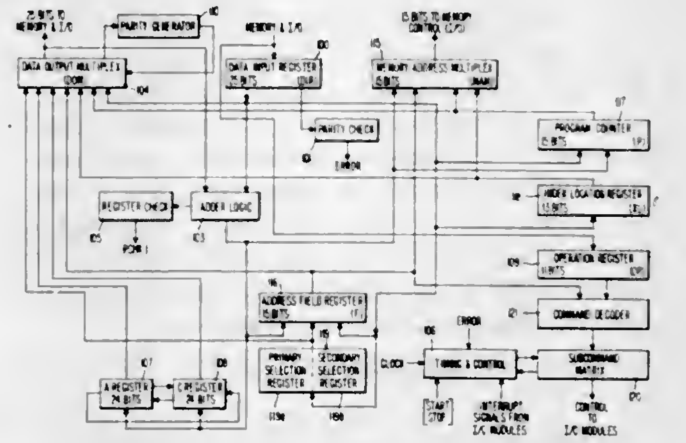
3,426,329
CENTRAL DATA PROCESSOR FOR COMPUTER SYSTEM HAVING A DIVIDED MEMORY

Hans B. Marx, Bromall, Edward W. Moll, King of Prussia, Bruce W. Nutting, West Chester, and Meyer Schilder, Plymouth Meeting, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 14, 1966, Ser. No. 527,123

U.S. Cl. 340—172.5 **20 Claims**

Int. Cl. G11b *13/00;* **G06f** *1/00, 7/00*



A data processor for use in a computer system including a plurality of memory units and incorporating arithmetic and program execution elements and a plurality of memory selection registers responsive to command bits fewer in number than that required to count the memory units, to enable access to a selected one of them.

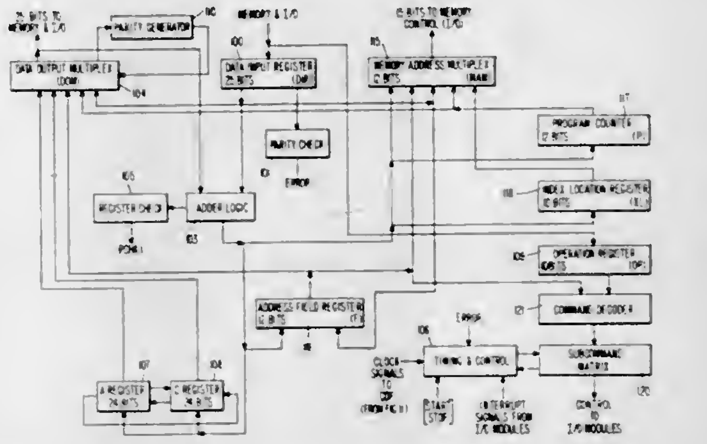
3,426,330
CENTRAL DATA PROCESSOR

Hans B. Marx, Broomall, Edward W. Moll, King of Prussia, Bruce W. Nutting, West Chester, and Meyer Schilder, Plymouth Meeting, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 14, 1966, Ser. No. 527,374

U.S. Cl. 340—172.5 **43 Claims**

Int. Cl. G11b *13/00;* **G06f** *1/00, 7/00*



A data processor for use in a computer system including a memory unit and an input-output unit and incorporating arithmetic and program execution units for synchronously performing parallel arithmetic operations and transfers and output data multiplex means for selectively transmitting data to said memory unit and for transferring information within the processor.

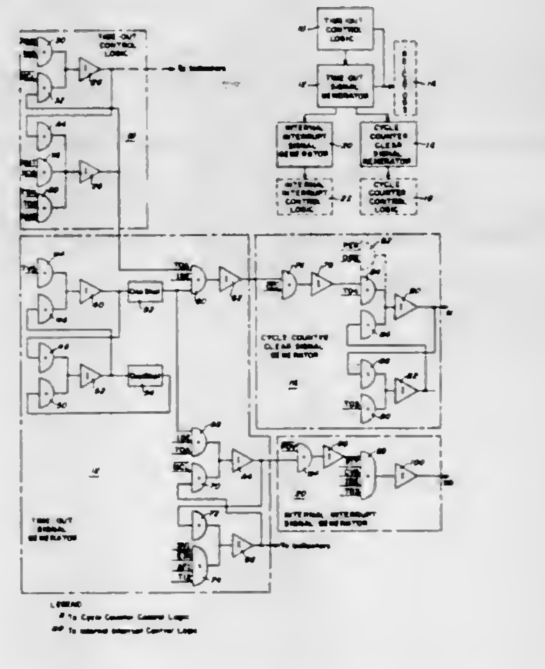
3,426,331
APPARATUS FOR MONITORING THE PROCESSING TIME OF PROGRAM INSTRUCTIONS

Thomas F. Joyce, Melrose, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 600,868

U.S. Cl. 340—172,5 **7 Claims**

Int. Cl. G11b *27/36*



An apparatus for monitoring the time duration of program instructions being processed in an associated data processing system and for terminating the processing thereof whenever a predetermined time limit is exceeded. To accommodate this operation, a timing device, having an operating cycle corresponding to the maximum allowable processing time for any one instruction, is conditioned to be recycled by each new instruction and in the absence of a recycling operation is effective in generating an output signal at the termination of its characteristic operating cycle to terminate the processing of the current instruction.

3,426,332

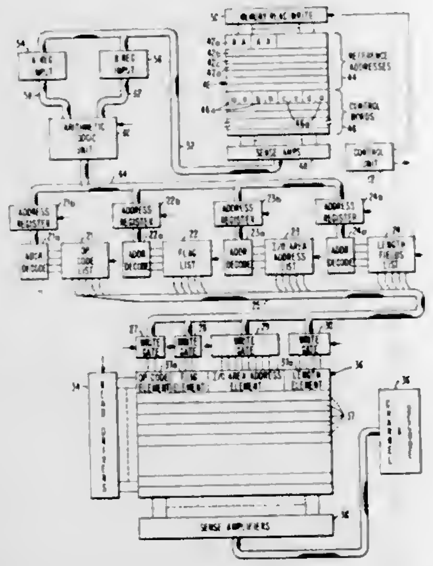
DATA HANDLING APPARATUS WITH RECURRENT ADDRESS MANIPULATION TO ACCESS A PLURALITY OF STORAGE AREAS

Anthony R. Cenfetelli, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 15, 1966, Ser. No. 601,887

U.S. Cl. 340—172.5 **10 Claims**

Int. Cl. G11b *13/00*



The present invention is practiced by a data processing system having a central processing unit, and a plurality of peripheral units organized into logical groups and each group being connected to the CPU by a standardized channel. The improvement of the present disclosure relates to an improved mechanism for constructing a sequence of control signal groups, which signal groups are uniquely suited for performing a desired task or functional use. Universal sets of control elements are available from which the improved mechanism is adapted to select individual control elements and construct a desired sequence of control signal groups.

3,426,333

SYSTEM FOR THE TRANSFER OF ANALOGUE DATA

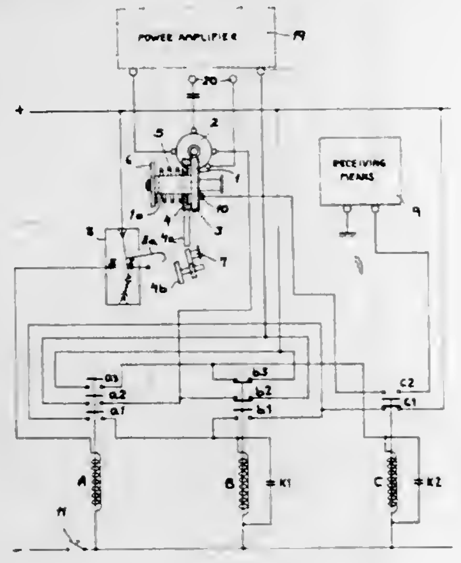
Beniamino Dell'Eugenio, Mantova, Italy, assignor to Montecatini Edison S.p.A.

Filed Oct. 29, 1965, Ser. No. 505,682

Claims priority, application Italy, Oct. 29, 1964, 52,835/64

U.S. Cl. 340—173 **6 Claims**

Int. Cl. G11b *5/02*



A device for the transfer of sequences (or transfer in seriatim) of analogue values representing the maxima of analytical data from a chromatograph, wherein the chromatograph-recorder servomotor (**2**), which drives the recording pen, is constantly connected to a temporary storage device of potentiometric type (**3**), and operates the storage device to generate and then temporarily store an analogue value corresponding to the data, the transfer device including a switch system (A, B, C), e.g., via a slip clutch (**1**, **1***a*, **4**, **4***a*, **4***b*, **5**, **6**, **7**) and a bistable contact (**8**, **8***a*) or a phase discriminator (from **13** to **18**), and two impedance amplifier adapters (A_1, B_1) responding to reversal of the motor (**2**) for initiating a switching sequence in which system two switch means (A, B) control the motor (**2**) and consequently the temporary storage potentiometer (**3**), so that the motor (**2**) stops when upon a slope change in the electric pulses it is detected by the chromatograph, and another switch (C) connects the temporary storage potentiometer (**3**) to a calculator, magnetic memory or other processing system (**9**), the same motor (**2**) being successively restarted to restore the temporary storage potentiometer (**3**) for the receipt of further inputs.

3,426,334

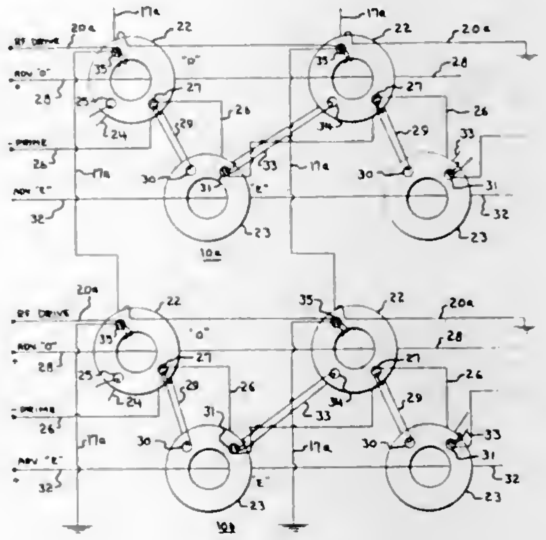
CONTINUOUS SELECTIVE READOUT FOR MAGNETIC CORE SYSTEMS

Edward Camp Dowling, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Dec. 19, 1963, Ser. No. 331,761

U.S. Cl. 340—174 **10 Claims**

Int. Cl. G11b *5/00*



Selective readout for magnetic core systems which comprises at least one row of shift register means each including an arrangement of magnetic core means having even and odd magnetic core members connected in a shifting sequence. Readout circuit means is operatively connected to each of one of the even and odd magnetic core members in each shift register means and utilization circuit means is connected to the readout circuit means. Drive circuit means is operatively connected to each one of the even and odd magnetic core members that contains the readout circuit means. Switch means is connected between the drive circuit means and the shift register means to select one thereof to continuously readout the information therefrom to the utilization circuit means.

3,426,335

THIN FILM ASSOCIATIVE MEMORY

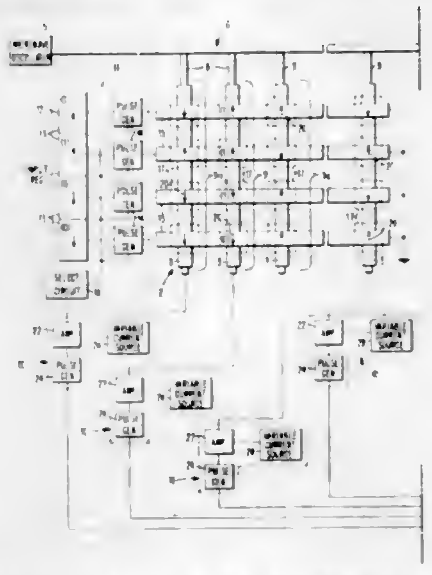
Philip A. Lord, Vestal, and Mitchell P. Marcus, Binghamton, N.Y., assignors to International Business Machines Corp., Armonk, N.Y., a corporation of New York

Filed Aug. 31, 1966, Ser. No. 576,400

U.S. Cl. 340—174 **12 Claims**

Int. Cl. G11b *5/00*

A thin film associative memory in which each thin film element is a microwave absorption element which passes a fixed level of interrogation signal when set to one stable state. The signal levels resulting from interrogation of all bit positions are summed according to words. The highest output corresponds to the word being sought.



3,426,336

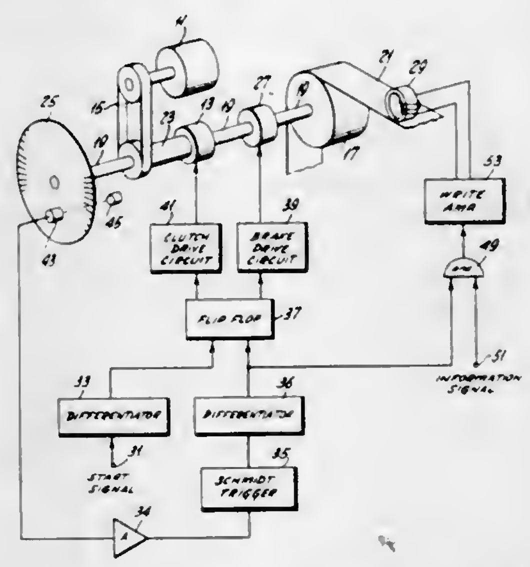
WRITE SYNCHRONIZING SYSTEM IN INCREMENTAL TAPE TRANSPORT

Andrew Gabor, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Sept. 14, 1964, Ser. No. 396,062

U.S. Cl. 340—174.1 **10 Claims**

Int. Cl. G11b *5/00;* **B65h** *23/18*



In this incremental magnetic tape transport, information is recorded while the tape is moving. The position of the recording is synchronized with the tape movement by means of a tone wheel which moves in synchronism with the tape and produces output pulses in response to which the information is recorded.

3,426,337

POSITIONING SYSTEM FOR RANDOM ACCESS DEVICE

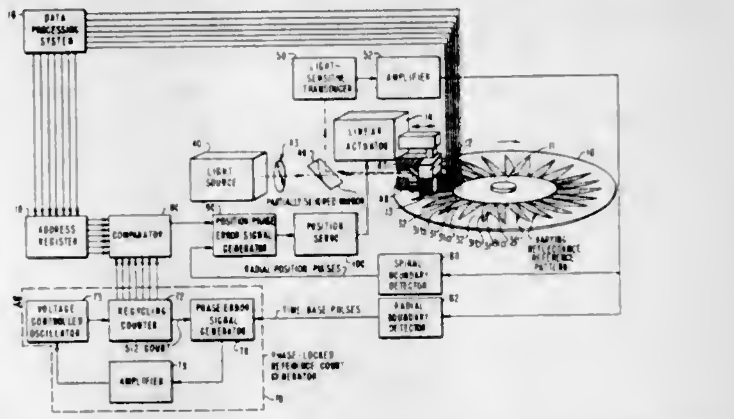
Robert J. Black, Los Gatos, George J. Thaler, Carmel, Peter I. Prentky, Los Gatos, and Richard D. Cordano, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 21, 1964, Ser. No. 420,009

U.S. Cl. 340—174.1 **16 Claims**

Int. Cl. G11b *5/02*

A positioning system in which the radial and spiral edges of a pattern on a movable record member are sensed to provide time base pulses and radial position pulses. A signal at a multiple frequency of the time base pulses and in phase-locked relation therewith is applied to advance a counter until the count therein equals a count representing a desired position of a transducer carrying mechanical element relative to the record member. Pulses generated



upon coincidence of the counts are phase compared with the radial position pulses to position the mechanical element in accordance with the difference therebetween.

3,426,338

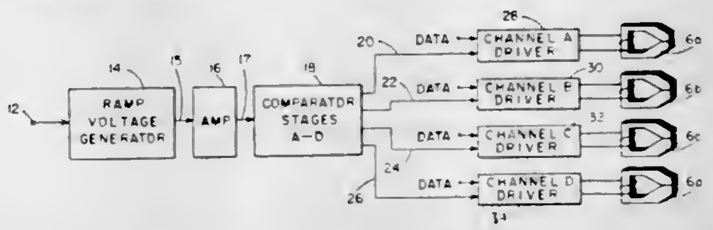
MEANS TO SELECTIVELY ACTIVATE SEPARATE RECORDING CHANNELS

James H. Gerding, Framingham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,641

U.S. Cl. 340—174.1 **14 Claims**

Int. Cl. G11b *5/28*



1. In an alignment system for aligning record marks along parallel record axes across a relatively movable multi-channel record medium, said marks being impressed in response to the occurrence of prescribed starting signals by a plurality of associated recording transducer means, said transducer means each being adapted to impress certain of said marks along a prescribed head-axis in response to receipt of enabling signals, said system comprising:

ramp pulse generating means having input and output terminals, and ramp pulse generating means being adapted to emit reference pulses in response to application of said starting signals on said input terminal, said reference pulses having voltage levels which increase linearly with time; and a plurality of voltage-sensitive switching means, each being connected between said output terminal and one of said transducer means and adapted to impress such enabling signals upon said transducer means to enable the latter, at times determined by a prescribed voltage level of said reference pulses and corresponding to a prescribed delay-time to provide marks which are aligned along said record axes.

3,426,339

INFORMATION STORAGE AND PLAYBACK SYSTEM

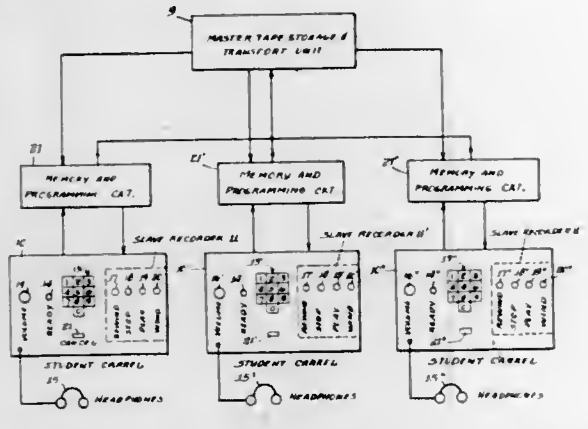
Anthony J. Rich, Villa Park, and John S. Novak, Westchester, Ill., assignors to Rich Engineering Inc., Franklin, Park, Ill., a corporation of Illinois

Filed Oct. 24, 1965, Ser. No. 504,682

U.S. Cl. 340—174.1 **13 Claims**

Int. Cl. G11b *5/00;* **G09b** *21/00*

An instruction system is provided for students situated at a number of student stations each having a magnetic tape recorder with controls for enabling each student to control completely his individual recorder under normal circumstances, and a common lesson storage station in which a multiplicity of lessons are stored on magnetic tape. Each student station includes lesson-identifying controls which, when operated by a student will immediately initiate a high speed transfer of a lesson stored at the common lesson storage station if a lesson transfer operation is not in progress. If a lesson transfer operation is in progress when a student operates his lesson identifying controls, means are provided for memorizing all students calling for a particular lesson and, when the high speed lesson transfer operation involved is terminated, the selected lesson will automatically be transferred to the recorders at the student stations waiting for the transfer of the lesson involved. Student recorder inhibiting means are provided at each student station preventing the operation of a student recorder during the transfer of a lesson to the student recorder involved.


MASTER TAPE STORAGE & TRANSPORT UNIT
MEMORY AND PROGRAMMING CKT.
MEMORY AND PROGRAMMING CKT.
MEMORY AND PROGRAMMING CKT.
SLAVE RECORDER
STUDENT CARREL
HEADPHONES

3,426,340
ARRANGEMENT FOR DIGITALIZING POSITIONS

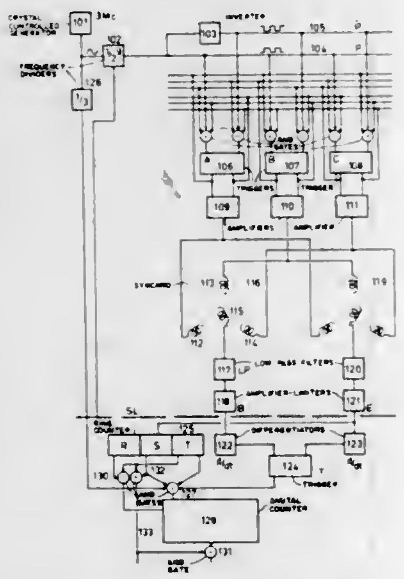
Rienk Pieter Offereins, Hengelo, Overijsel, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo, Overijsel, Netherlands, a firm of the Netherlands

Filed Dec. 21, 1965, Ser. No. 515,321

Claims priority, application Netherlands, Dec. 23, 1964, 6414971

U.S. Cl. 340—198 **6 Claims**

Int. Cl. G08c *9/04, 21/00*



The invention is a system for measuring the rotational displacement of a shaft using a pair of synchronous transformers, a phase detector, and a digital counter triggered by a pulse generator and gated by the phase detector. In order to avoid errors in the count due to variations in the frequency of the pulse generator, the pulses which trigger the counter are converted into a 3-phase reference signal and fed to the polyphase windings of the synchronous transformers.

3,426,341
MOISTURE DETECTION SYSTEM FOR CONDUITS

Harry Hallwood, Niles, Mich., assignor, by mesne assignments, to New England Realty Co., Barberton, Ohio, a corporation of Ohio

Filed Apr. 22, 1966, Ser. No. 544,433

U.S. Cl. 340—235 **8 Claims**

Int. Cl. G08b *21/00;* **H01h** *35/42;* **G01r** *27/02*

In a conduit system including an inner fluid conveying pipe and an outer protective casing, moisture detection probes are mounted between the pipe and casing at various locations and the probes are connected to a control circuit which provides an indication when a probe has absorbed moisture.

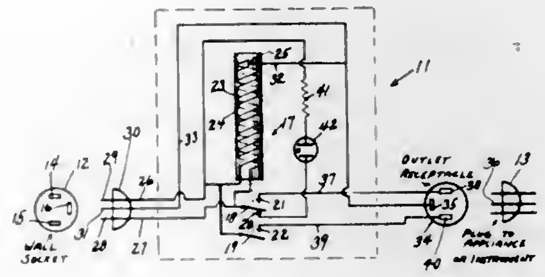
3,426,342
GROUND ABSENCE DETECTOR AND PROTECTIVE DEVICE

Philip A. De Langis, Seattle, Wash., assignor to Physio-Control Corporation, Seattle, Wash., a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,267

U.S. Cl. 340—255 **10 Claims**

Int. Cl. G08b *21/00;* **H02h** *1/02*



1. A ground-absence detection and protective device comprising a three-prong plug engageable in a three-terminal current supply socket of the type having a female ground terminal intended to be internally connected to one of the socket current supply conductors, said plug having a pair of line prongs and a ground prong, balanced circuit means including a relay, means connecting said balanced circuit means across said pair of line prongs, said balanced circuit means having a center junction dividing the balanced circuit means into two substantially symmetrical circuit sections, means connecting said center junction to said ground prong, whereby one of said circuit sections is shunted when there is an internal connection between the socket female ground terminal and one of the socket current supply terminals when the plug is inserted in the socket, means to energize said relay from the line prongs responsive to the shunting of said one of the circuit sections, said relay having a pair of contacts closed when the relay is deenergized and open when the relay is energized, an electrical indicator, and circuit means connecting said indicator to said line prongs through said contacts, whereby the indicator will be energized when the plug is inserted in a three-terminal supply socket whose female ground terminal is not internally connected to one of its current supply conductors.

3,426,343
SELF-CONTAINED SIGNAL LIGHT UNIT

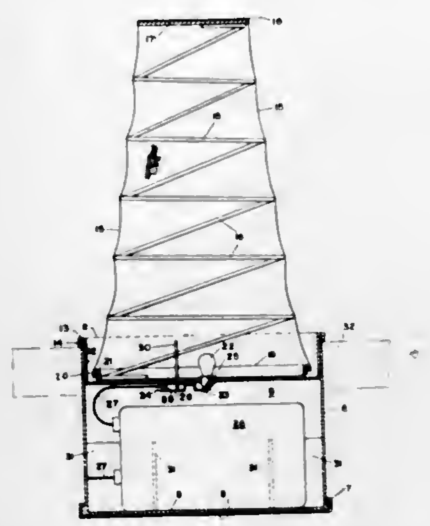
Robert J. Carlson, 477 Foothill Road, Somerville, N.J. 08876

Filed Oct. 22, 1965, Ser. No. 502,745

U.S. Cl. 340—321 **4 Claims**

Int. Cl. G08b *23/00;* **F21l** *7/00*

A self-contained outdoor warning and marking light unit operated by a low-voltage battery of relatively large size and mass providing low center of gravity in the unit and stabilizing means for improved wind resistance. The battery is mounted in the bottom of a short cylindrical outer casing for the unit in the top of which is provided a folded plastic translucent cone and a compressed conical erecting spring therefor which is released by a detachable top cover element to expand and extend the cone in a vertical position above the casing. This action operates a switch for energizing an inner electric lamp from the battery and thereby illuminating the cone. The cone, spring and lamp are provided as a separate pan or tray unit fitting into the top of the casing with a waterproof seal.



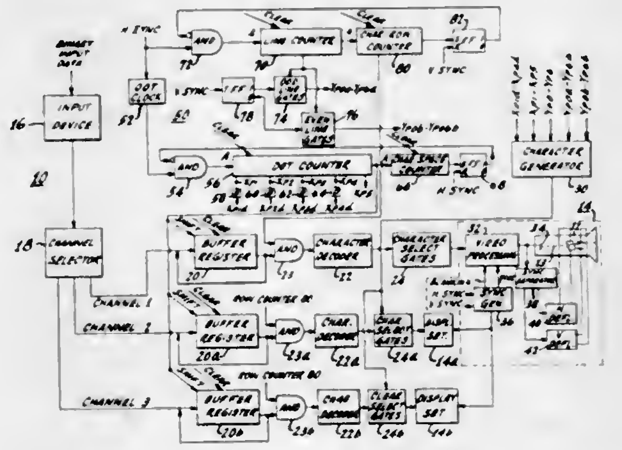
3,426,344
CHARACTER GENERATOR FOR SIMULTANEOUS DISPLAY OF SEPARATE CHARACTER PATTERNS ON A PLURALITY OF DISPLAY DEVICES

Robert John Clark, Dorion, Quebec, Canada, assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 23, 1966, Ser. No. 536,852

U.S. Cl. 340—324 **13 Claims**

Int. Cl. G08h *23/00;* **H01j** *29/70*



A display system is provided that includes a character generator that generates simultaneously the entire alphabet of characters and symbols that are to be displayed on display devices such as television receivers or monitors. The character generator generates a plurality of dot signals for each scanline in a raster type scanning system. Selected groups of dot signals are combined to produce simultaneously a plurality of dot patterns that form portions of a plurality of character patterns. The dot patterns are then combined to form simultaneously all of the character patterns in an alphabet. All of these dynamically formed character patterns are available for display on a plurality of display devices and either the same or different character patterns may be simultaneously displayed on these devices.

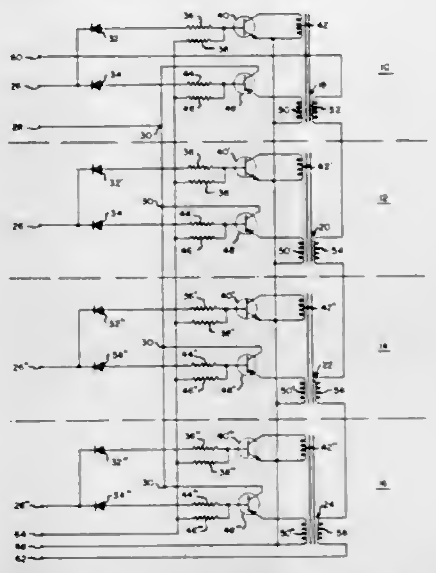
3,426,345
STATIC DIGITAL TO ANALOG CONVERTERS

Schuyler Kase, 224 Sunset Drive, Pittsburgh, Pa. 15235

Continuation-in-part of application Ser. No. 241,331, Nov. 30, 1962. This application Dec. 24, 1964, Ser. No. 420,957

U.S. Cl. 340—347 **4 Claims**

Int. Cl. H04l *3/00;* **H03k** *13/00*



A static digital to analog converter with a plurality of bit circuits converts a digital signal to an AC analog output voltage. An AC voltage is applied to the input of each bit circuit when a digital signal is present at the input and a resulting AC analog output voltage is produced. When the digital signal is absent at the input, the AC impedance of the secondary output winding is removed in the particular bit circuit.

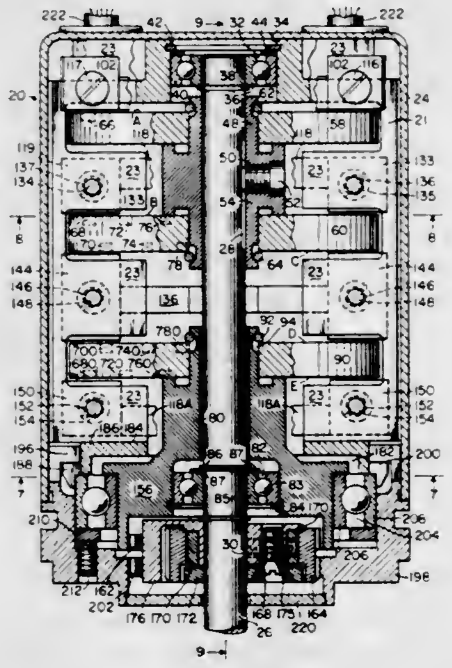
3,426,346
MAGNETIC ENCODER

Norman J. Bose, North Hollywood, Calif., assignor to General Precision Systems Inc., a corporation of Delaware

Filed Jan. 6, 1965, Ser. No. 423,676

U.S. Cl. 340—347 **4 Claims**

Int. Cl. H04l *3/00;* **H03k** *13/00, 13/07*



A size 11 magnetic encoder having three magnetized code discs packaged into a size 11 unit wherein the two outside read head supports are identical, but are mirror imaged face-to-face at opposite ends of the encoder. The two inside faces of the discs that are continuous in the center of the encoder are adjacent to and read by a singular read head assembly. The low speed disc is driven by an epicyclic gear train with a 64 to 1 reduction.

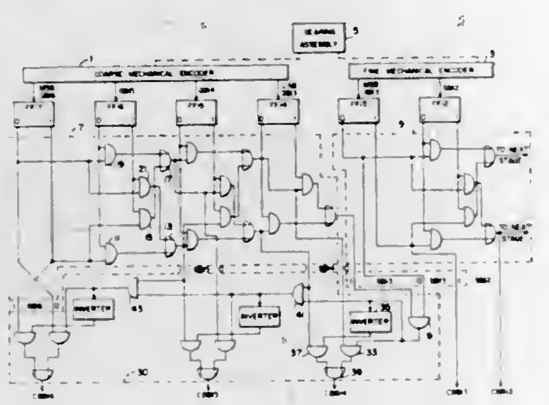
3,426,347
PARALLEL GRAY TO BINARY CONVERTER WITH AMBIGUITY CHECK BETWEEN TWO ENCODERS

Sylvester C. Tabisz, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 24, 1965, Ser. No. 510,163

U.S. Cl. 340—347 **10 Claims**

Int. Cl. H04l *3/00;* **H03k** *13/00;* **G06f** *11/00*



1. A logic system comprising: first and second means each having outputs which represent an information word, said first means having a least significant output which in a normal state will represent the same information as that represented by a most significant output of said second means; correction means connected to the outputs of said first means and to the most significant output of said second means, and said correction means being so constructed as to generate a carry to the information of the least significant output of the first means when the most significant output of the second means represents different information from that of the least significant output of said first means.

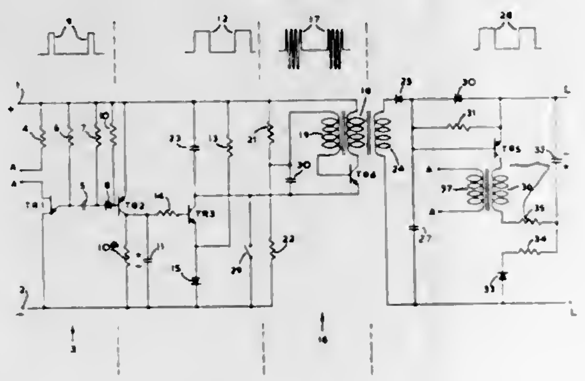
3,426,348
ELECTRICAL PROTECTION SYSTEM

John Alfred Sadler, Rexdale, Ontario, Canada, assignor to Chubb-Mosler and Taylor Safes Ltd., Brampton, Ontario, Canada, a corporation of Canada

Filed Sept. 28, 1965, Ser. No. 490,890

U.S. Cl. 340—408 **19 Claims**

Int. Cl. G08b *25/00, 26/00, 27/00*



In an electrical protection system in which protected premises are connected to supervisory premises by a transmission line, triggering pulses at predetermined regular intervals are transmitted over the line to cause direct current answering pulses from the protected premises at predetermined times. An alarm signalling device at the supervisory premises includes gating means which gates the answering pulses to render an alarm normally inoperative. When the answering pulses are absent, or when simulated answering pulses occur at times other than the predetermined times, the alarm is permitted to operate.

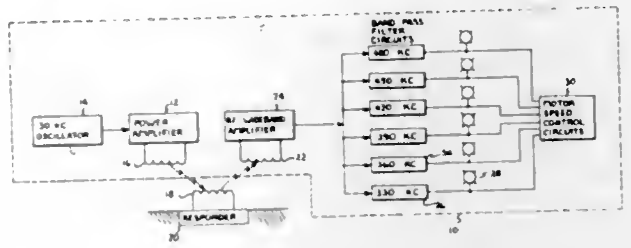
3,426,349
VEHICLE LOCATING SYSTEM

Ronald E. Gareis, Roanoke, Va., assignor to General Electric Company, a corporation of New York

Filed Apr. 4, 1967, Ser. No. 628,493

U.S. Cl. 343—6.5 **1 Claim**

Int. Cl. G01s *9/56*



A series of passive responders spaced along a path traveled by a vehicle are excited by a single frequency signal radiated by a transmitter carried on the vehicle. Each responder produces a different RF frequency signal in response to this excitation and radiates it to a wideband receiver carried on the vehicle. A number of bandpass filter circuits are connected to the receiver to detect incoming signals having frequencies corresponding to frequencies generated at fixed locations on the vehicle path. The magnitude of a frequency being detected is indicative of the location of the vehicle.

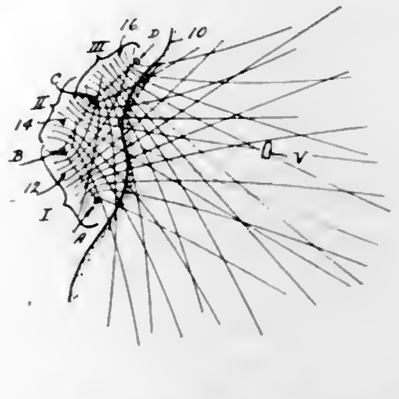
3,426,350
MOBILE CRAFT POSITION DETERMINATION UTILIZING ISO-PHASE RADIO NAVIGATION SYSTEMS

Charles E. Hastings and Robert L. Cayouette, Hampton, Va., assignors, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 607,057

U.S. Cl. 343—105 **6 Claims**

Int. Cl. G01s *1/30*



The following specification discloses a method for determining the position of a mobile craft which employs at least three overlapping radio navigation systems of the iso-phase type. The craft is navigated in such a manner as to determine the phase difference in two of the systems between two points on a common iso-phase line of the third system and the phase change in a different pair of the three systems between two points on a common isophase line of the remaining system, the common iso-phase lines intersecting at a given point. The ratios of the phase changes thus determined, provide information from which the position of the given point can be determined. A chart having indices of known position, including the position of the transmitter of the navigation systems, is provided which also includes two families of intersecting iso-ratio lines of position defined by the locus of points of equal ratio. By determining the value of the ratios of phase changes in the manner above-described, the position of the given point, and consequently the mobile craft, is determined by locating the intersection point of the iso-ratio lines corresponding to the value of the ratios determined.

3,426,351
DUAL BEAM ANTENNA FOR SATELLITES

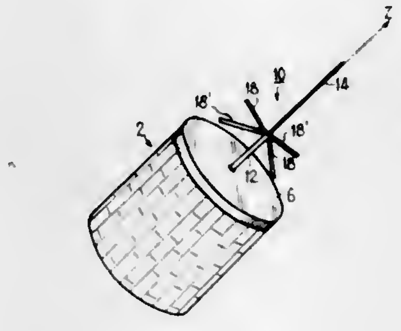
Nhu Bui Hai, Asnieres, and Pierre Sturbois, Puteaux, France, assignors to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France

Filed Nov. 12, 1965, Ser. No. 507,342

Claims priority, application France, Nov. 13, 1964, 994,959

U.S. Cl. 343—705 **5 Claims**

Int. Cl. H01q *1/28*



A pair of radiating elements are arranged, next to each other, on the space craft which forms a chassis, a second one of the elements constituting a ground plane for the first, the first element, taken in conjunction with the ground plane, having a predetermined directional radiation pattern and being connected to data information transmit-receive apparatus, and the second element, having an omnidirectional transmit-receive pattern being connected to telemetering and control channels, so that control of the satellite, regardless of attitude stabilization, can be transmitted by way of the second radiator element, and, upon stabilization in attitude, the directional antenna will provide communication of sensed data, or information relating thereto, with a maximum of antenna gain.

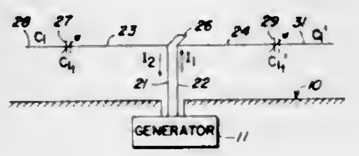
3,426,352
CAPACITIVELY TUNED REFLECTOR ANTENNA

Richard C. Fenwick, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Aug. 26, 1966, Ser. No. 575,934

U.S. Cl. 343—750 **9 Claims**

Int. Cl. H01q *9/12*



1. A broadband antenna comprising a ground plane, a pair of feedlines extending outwardly from the ground plane, a second pair of feedlines connected to the ends of the first pair of feedlines and extending substantially parallel to the ground plane, a first antenna element connected to the second pair of feedlines and comprising first radiating elements, a first pair of variable capacitors connected to the ends of the radiating elements, a first pair of capacitor plates connected to the first pair of variable capacitors, a second antenna element connected to the second pair of feedlines and comprising second radiating elements, a second pair of variable capacitors connected to the ends of the second radiating elements, and a second pair of capacitor plates connected to the second pair of variable capacitors.

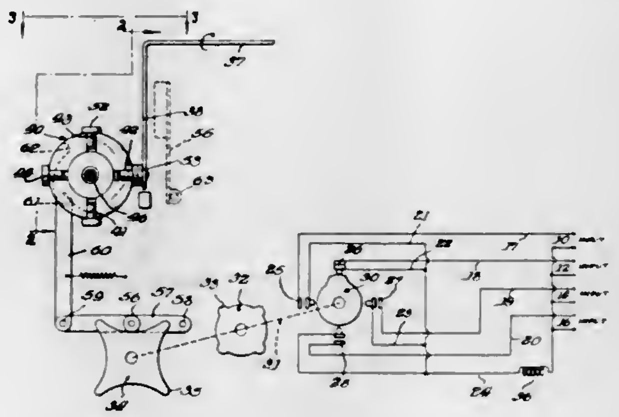
3,426,353
MINIATURE RECORDER RECEIVER

David H. Thorburn, Oak Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois

Filed Aug. 2, 1966, Ser. No. 569,683

U.S. Cl. 346—50 **9 Claims**

Int. Cl. G01d *9/28, 9/36*



1. In a recorder of the character described, the combination with a chart upon which a record is to be made, of a plurality of input variables and a meter movement which is periodically rendered operative by the respective input variables in sequence, a meter pointer having an arm and which is displaced by operation of the meter movement to an extent proportional to the magnitude of the particular input variable, a printing member corresponding to each of the input variables and having an identifying characteristic whereby the printing effected by the member can be related to its respective input variable, and means actuating the printing members individually and in sequence to cause the members to print on the chart, said means effecting actuation of each printing member when the arm of the meter pointer is in said displaced position and at a location on said chart defined by said displaced position of said arm.

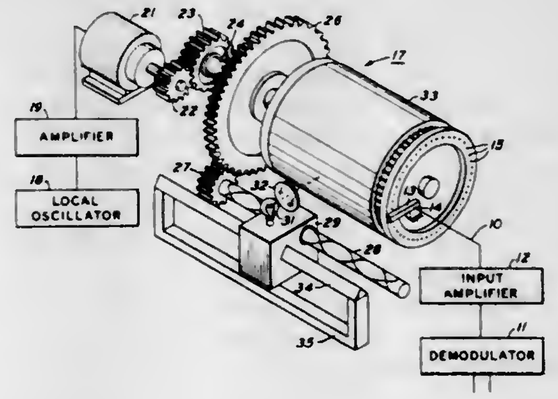
3,426,354
ELECTROSTATIC CHARGE IMAGE RECORDER

Robert W. Gundlach, Victor, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed June 1, 1964, Ser. No. 371,481

U.S. Cl. 346—74 **11 Claims**

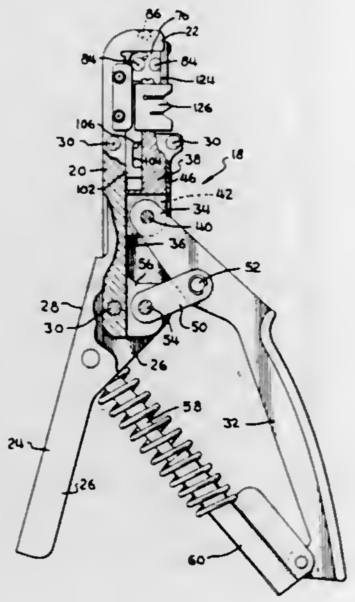
Int. Cl. G01d *15/06*



A xerographic recorder having a drum coated with a photoconductive material and having beneath said photoconductive material a plurality of parallel signal conductors separated from a grounded base conductor by a dielectric material, wherein the signal conductors are closely spaced to each other and extend along the width of the drum and terminate at one end thereof at terminals to which an electrical video signal is applied through a brush positioned to contact each of the individual terminals as the drum rotates, wherein latent electrostatic images are formed on the photoconductive material by scanning the surface of the photoconductive material along lines corresponding to the lengths of the signal conductors with a scanning spot of constant intensity and by applying the video signal through the brush to a signal conductor in the vicinity of the scan, wherein development of the latent image is accomplished by cascading triboelectrically charged toner particles over the photoconductive material with the developed image thereafter being transferred and fused onto a copy sheet, and wherein in another embodiment of the drum structure a dielectric material is mounted beneath the photoconductive material having embedded therein a plurality of parallel conductors, every other one of which is grounded with the remaining conductors being the conductors to which the video signal is applied.

3,426,355
CRIMPING TOOL HAVING WIRE SEVERING MEANS

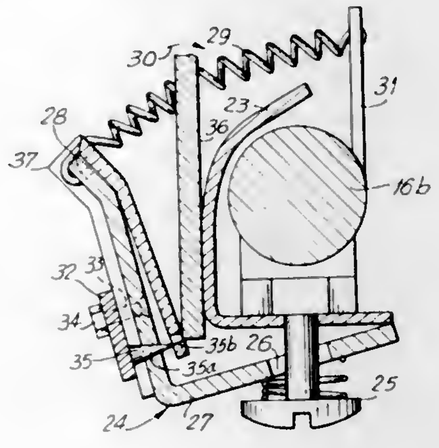
William Roderick Over, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 17, 1966, Ser. No. 573,078
U.S. Cl. 29—203 **8 Claims**
Int. Cl. H01r *5/08;* **B21d** *31/00, 37/12*



1. Apparatus for trimming the ends of a pair of wires extending axially towards each other and crimping an open-U type connecting device onto the trimmed ends, said apparatus comprising, a pair of crimping members normally disposed in parallel spaced-apart relationship, said members being movable relatively towards and away from each other along a predetermined path, said members being adapted to support and crimp an open-U type electrical connector, the end portions of said crimping members defining wire shearing planes, a pair of wire shearing members, one of said shearing members being disposed in each of said planes, said shearing members being normally disposed beside said path at locations between said crimping members, said shearing members being movable parallel to said path and in said planes towards and past a first one of said crimping members to shear said wires, and wire locating means on each of said shearing members, each wire locating means having first and second wire holders, said wire holders of each locating means being arranged on opposite sides of said shearing members with said first wire holders located on the sides of said shearing members adjacent to said second crimping member and said second wire holders being located on the sides of said shearing members adjacent to said first crimping member whereby, each wire can be positioned in a first and second wire holder to locate said wires with their axes extending through a first holder thence between a first shearing member and the second one of said crimping members thence between said crimping members thence between a second shearing member and said first one of said crimping members thence through a second holder, the first holder of the one locating means and the second holder of the other locating means lying in one plane, and the remaining wire holders lying in another plane extending parallel to, and beside, said one plane whereby, said wires will be positioned in side-by-side relationship when held in said wire holders, and during movement of said shearing members towards and past said first one of said crimping members, the end portions of said wires are severed in said shearing planes, and during subsequent movement of said crimping members relatively towards each other, an open-U type connecting device is crimped onto the over-lapping cut ends of said wires, with said wires being in side-by-side parallel relationship in said connecting device.

3,426,356
TYPEWRITER FOR TYPING ON STIFF DOCUMENTS

Max Zolliker, Zurich, Switzerland, assignor to August Baggenstos, Zurich, Switzerland
Filed Dec. 2, 1965, Ser. No. 511,031
Claims priority, application Switzerland, Sept. 28, 1965, 13,380/65
U.S. Cl. 197—135 **2 Claims**
Int. Cl. B41j *13/12, 11/20*

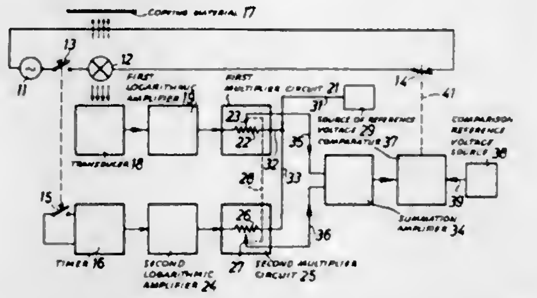


A typewriter for stiff documents having a chassis bearing an adjustable pivotal support and a guide frame mounted in transversely movable carriage on the support and in turn supporting a slide assembly for the documents in front of a counter-pressure platen mounted in the carriage. The support is adjustable to vary the position of the document relative to the types to adjust the force of impact of the types on the document.

3,426,357
EXPOSURE REGULATING CIRCUIT ARRANGEMENT FOR A COPYING MACHINE

Rudolf Paulus, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 2, 1966, Ser. No. 531,237
Claims priority, application Germany, Mar. 10, 1965, A 48,598
U.S. Cl. 355—68 **9 Claims**
Int. Cl. G03b *27/78, 27/02*

A photoelectric transducer produces an electrical signal corresponding to magnitude to the intensity of light applied to copying material. A timer circuit produces an electrical signal as a function of time starting simultaneously with the start of illumination of the copying material. A first and second logarithmic amplifier respectively operate upon the timing signal and the light intensity signal and variable resistors are provided at the respective outputs of the logarithmic amplifiers for allowing multiplication of each output by a coefficient. An adder combines the so multiplied outputs and the exposure time is terminated in accordance with the magnitude of the resultant sum signal.


COPYING MATERIAL 17
11
13
12
FIRST LOGARITHMIC AMPLIFIER 19
FIRST MULTIPLIER CIRCUIT 21
14
41
23
22
31
SOURCE OF REFERENCE VOLTAGE 29
COMPARATOR 37
COMPARISON REFERENCE VOLTAGE SOURCE 38
TRANSDUCER 18
35
32
33
28
15
39
SUMMATION AMPLIFIER 34
26
36
TIMER 16
SECOND LOGARITHMIC AMPLIFIER 24
27
SECOND MULTIPLIER CIRCUIT 25

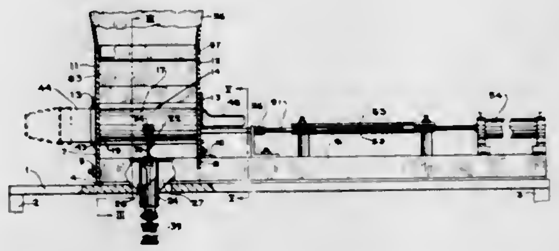
3,426,358
ALKYLATION OF PHENOLS

Hans L. Schlichting, Grand Island, and Anthony D. Barbopoulos and Walter H. Prahl, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 19, 1965, Ser. No. 508,821
U.S. Cl. 260—621 **6 Claims**
Int. Cl. C07c *37/16*

Alkylated phenolic compounds are produced by passing in the vapor phase a mixture of a phenolic compound having at least one reactive position, an alkylating compound, and a small but effective amount of hydrogen halide over an alumina catalyst, and recovering the alkylation product from the reaction mixture. The process is highly selective to the orthoposition.

3,426,359
PACKING MACHINE FOR NURSERY STOCK

Robert J. Broersma, Spring Lake, Mich., assignor to B & B Engineering Company, Grand Haven, Mich., a partnership of Michigan
Continuation-in-part of application Ser. No. 243,044, Dec. 7, 1962. This application Aug. 31, 1966, Ser. No. 576,807
U.S. Cl. 53—124 **15 Claims**
Int. Cl. B65b, *25/02, 37/02*



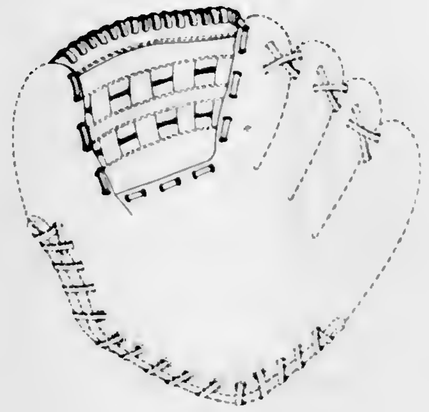
A packing machine having a casing formed by a plurality of sections which are mounted for movement toward and away from each other. The casing sections can be brought together to form a substantially closed zone whereby the item of nursery stock and the packing material previously placed in the casing sections are shaped into a compacted form. A pusher element is provided to push the packing material and the object packed therein out of the casing. A hopper for supplying packing material is disposed above the casing. Intermittent feeding means, such as a reciprocable shuttle, is provided for transporting a measured charge of packing material from the hopper to the casing. A suitable funnel and guide structure is provided between the hopper and the casing to guide the movement of the packing material into the casing sections.

DESIGNS

FEBRUARY 4, 1969

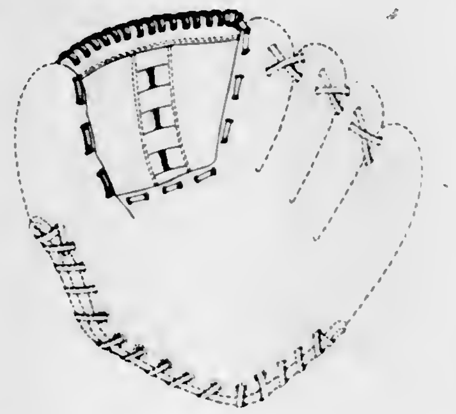
213,284
BASEBALL GLOVE OR SIMILAR ARTICLE

Joseph N. Khazzam, Baldwin, N.Y., assignor to Regent Sports Co., New York, N.Y., a partnership
Filed Aug. 9, 1967, Ser. No. 8,187
Term of patent 14 years
U.S. Cl. D2—361
Int. Cl. D2—*07*



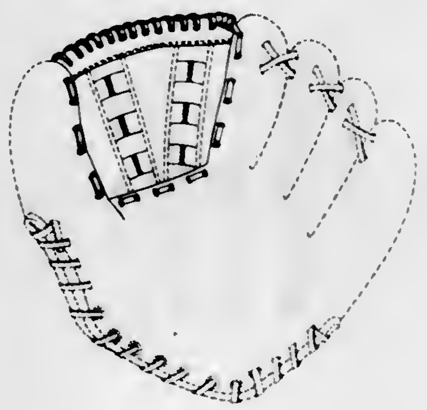
213,285
BASEBALL GLOVE OR SIMILAR ARTICLE

Joseph N. Khazzam, Baldwin, N.Y., assignor to Regent Sports Co., New York, N.Y., a partnership
Filed Aug. 9, 1967, Ser. No. 8,186
Term of patent 14 years
U.S. Cl. D2—361
Int. Cl. D2—*07*



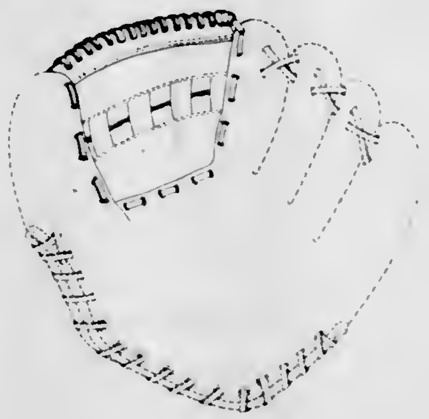
213,286
BASEBALL GLOVE OR SIMILAR ARTICLE

Joseph N. Khazzam, Baldwin, N.Y., assignor to Regent Sports Co., New York, N.Y., a partnership
Filed Aug. 9, 1967, Ser. No. 8,180
Term of patent 14 years
U.S. Cl. D2—361
Int. Cl. D2—*07*



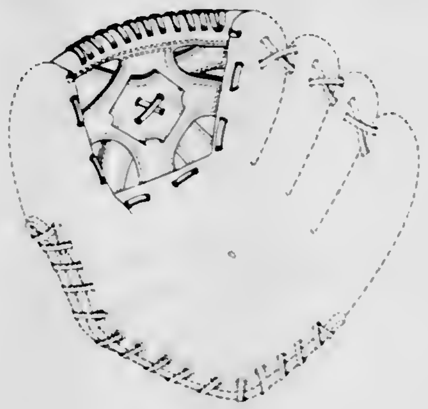
213,287
BASEBALL GLOVE OR SIMILAR ARTICLE

Joseph N. Khazzam, Baldwin, N.Y., assignor to Regent Sports Co., New York, N.Y., a partnership
Filed Aug. 9, 1967, Ser. No. 8,179
Term of patent 14 years
U.S. Cl. D2—361
Int. Cl. D2—*07*



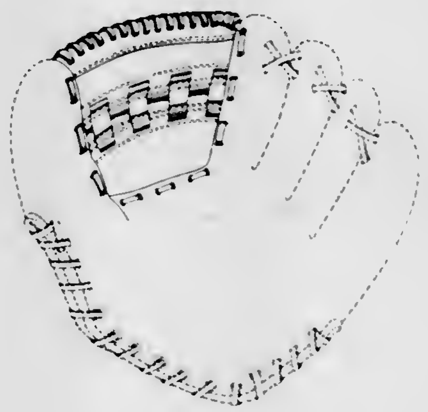
213,288
BASEBALL GLOVE OR SIMILAR ARTICLE

Joseph N. Khazzam, Baldwin, N.Y., assignor to Regent Sports Co., New York, N.Y., a partnership
Filed Aug. 9, 1967, Ser. No. 8,189
Term of patent 14 years
U.S. Cl. D2—361
Int. Cl. D2—*07*



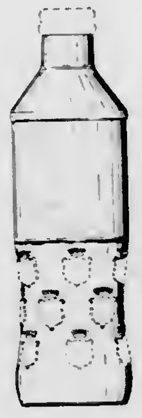
213,289
BASEBALL GLOVE OR SIMILAR ARTICLE

Joseph N. Khazzam, Baldwin, N.Y., assignor to Regent Sports Co., New York, N.Y., a partnership
Filed Aug. 9, 1967, Ser. No. 8,169
Term of patent 14 years
U.S. Cl. D2—361
Int. Cl. D2—*07*



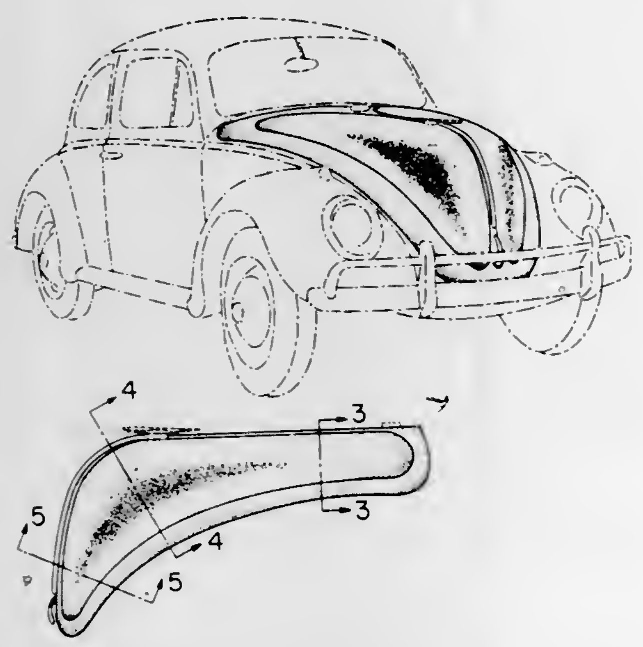
213,290
BOTTLE

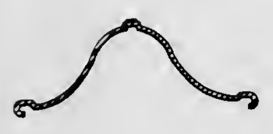
Brooks D. Fuerst, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Apr. 12, 1968, Ser. No. 11,439
Term of patent 14 years
U.S. Cl. D9—119
Int. Cl. D9—*01*



213,291
AUTOMOBILE HOOD

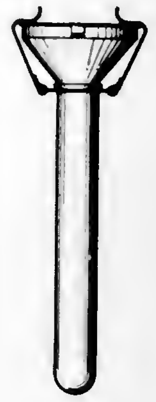
Alvis A. Lee, 1407 Gorrell St., Greensboro, N.C. 27401
Filed Oct. 21, 1965, Ser. No. 87,725
Term of patent 14 years
U.S. Cl. D14—3
Int. Cl. D12—*14*

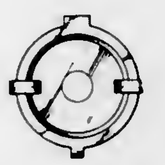




213,292
SPUTUM COLLECTING DEVICE

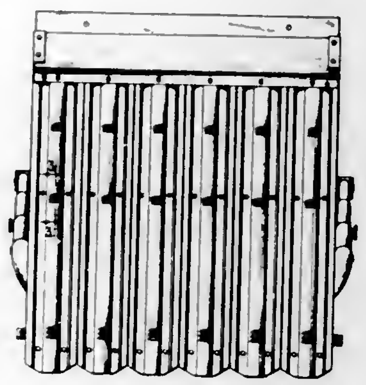
Gerald M. Arsenault, Bayside, and Melvin P. Ehrlich, Roslyn Estates, N.Y., assignors to Nuclear Research Associates, Inc., New Hyde Park, N.Y., a corporation of Delaware
Filed Feb. 21, 1968, Ser. No. 10,668
Term of patent 14 years
U.S. Cl. D16—1
Int. Cl. D24—*05*





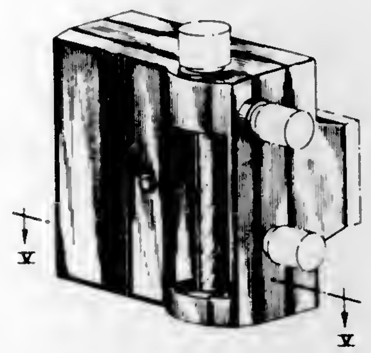
213,293
AWNING

Hercules Economou, Fort Lauderdale, Fla., assignor to Sun Control Industries, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed Feb. 7, 1968, Ser. No. 10,487
Term of patent 14 years
U.S. Cl. D21—6
Int. Cl. D25—*02*



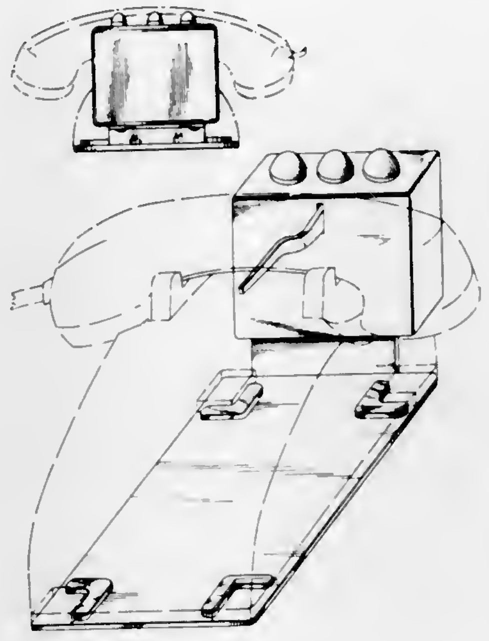
213,294
CHLORINATOR UNIT

Nyyrikki K. Stenberg, Roslyn, Pa., assignor to Capital Controls Co., Inc., Colmar, Pa., a corporation of Pennsylvania
Filed July 3, 1968, Ser. No. 12,621
Term of patent 14 years
U.S. Cl. D23—3
Int. Cl. D23—*01*



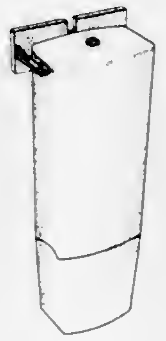
213,295
TELEPHONE CALL TIMER

George Nagrodsky, 85 Shields Ave., Williston Park, N.Y. 11596
Filed Dec. 18, 1967, Ser. No. 9,834
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D10—*03;* D14—*03*



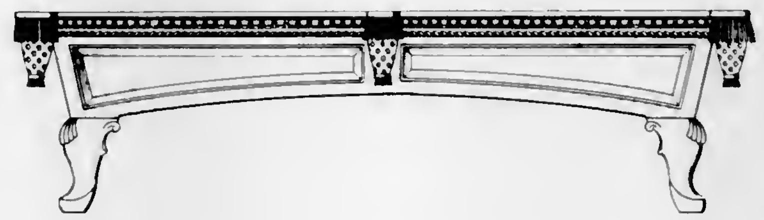
213,296
DISPENSER FOR LIQUID SOAP AND THE LIKE

Jean-Marie Fekete, Garches, France, assignor to Laboratories Lutsia, Rouen, Seine-Maritime, France
Filed Dec. 28, 1967, Ser. No. 9,947
Claims priority, application France Oct. 21, 1967
Term of patent 14 years
U.S. Cl. D33—30
Int. Cl. D6—*01*



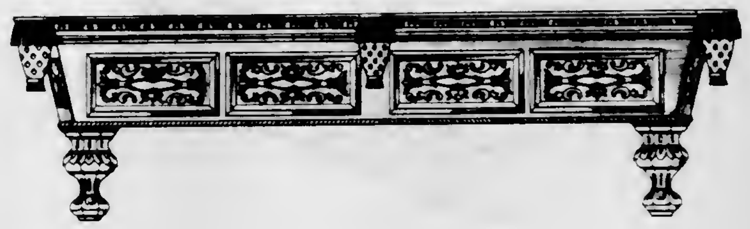
213,297
BILLIARD TABLE OR SIMILAR ARTICLE

Charles A. Porter, 10632 Paloma St., Garden Grove, Calif. 92640
Filed Mar. 11, 1968, Ser. No. 10,914
Term of patent 14 years
U.S. Cl. D34—3
Int. Cl. D21—*04*



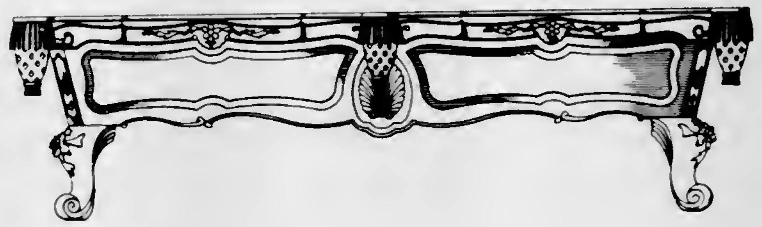
213,298
BILLIARD TABLE OR SIMILAR ARTICLE

Charles A. Porter, 10632 Paloma St., Garden Grove, Calif. 92640
Filed Mar. 11, 1968, Ser. No. 10,915
Term of patent 14 years
U.S. Cl. D34—3
Int. Cl. D21—*04*



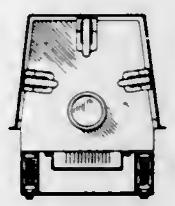
213,299
BILLIARD TABLE OR SIMILAR ARTICLE

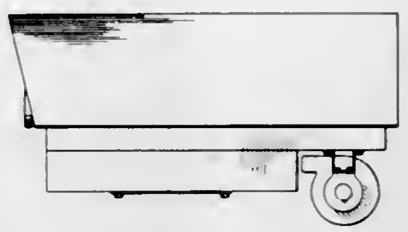
Charles A. Porter, 10632 Paloma St., Garden Grove, Calif. 92640
Filed Mar. 11, 1968, Ser. No. 10,913
Term of patent 14 years
U.S. Cl. D34—3
Int. Cl. D21—*04*



213,300
HEAT EXCHANGER HOUSING FOR TELEVISION CAMERAS AND THE LIKE

Thomas Olaf Buck, 730 Blaney Drive, Dyer, Ind. 46311
Filed Dec. 28, 1967, Ser. No. 9,958
Term of patent 14 years
U.S. Cl. D61—1
Int. Cl. D14—*01*





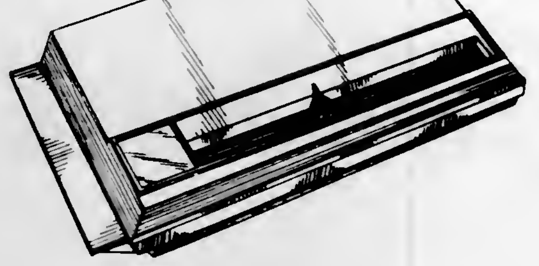
213,301
TELEPHONE INDEX OR THE LIKE

William Macowski, Montclair, N.J., assignor to Ketcham & McDougall, Inc., Roseland, N.J., a corporation of New Jersey

Filed Oct. 2, 1967, Ser. No. 8,814

Term of patent 14 years

U.S. Cl. D74—1
Int. Cl. D19—*02*



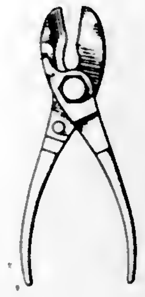
213,302
CABLE SHEARING PLIERS

Leroy E. Lattin, Granada Hills, Calif., assignor to Universal Products Corporation, a corporation of California

Filed Nov. 9, 1967, Ser. No. 9,344

Term of patent 14 years

U.S. Cl. D8—58
Int. Cl. D8—*02*



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 4TH DAY OF FEBRUARY, 1969

Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O. G. 1221. Identification is by serial number of the application.

Bloom, Melvin, S.: *See—*
  Newland, Gordon C., and Bloom. 768,947.

Brooks, Joseph A., to E. I. du Pont de Nemours and Co. Aqueous dye bath containing a high molecular weight quaternary ammonium salt and an ethylene oxide condensate of 8 to 12 carbon aliphatic alcohol and nylon dyeing and electrostatic charge reduction therewith. 661,820, 2-4-69, Cl. 8—17.

Douglas, Ted L.: *See—*
  Eells, Rex, and Douglas. 635,175.

Du Pont de Nemours, E. I., and Co.: *See—*
  Brooks, Joseph A. 661,820.
  Morgan, Paul W. 616,504.

Eastman Kodak Co.: *See—*
  Long, Warner D. 764,025.

Eells, Rex, and T. L. Douglas. Package and process using hot melt curtain coating on substrate attached to preformed lid. 635,175, 2-4-69, Cl. 99—174.

Engleman, John B. Solid state, multipoint, temperature controller. 728,616, 2-4-69, Cl. 219—501.

Gonzalez, Donald E., and D. A. Tenquist. Cellulose ester curtain coating thermoplastic material and process for employing the same. 769,435, 2-4-69, Cl. 106—180.

Hatfield, John R., Jr., and K. E. Morrison. Additive containing tobacco smoke filter. 683,817, 2-4-69, Cl. 131—266.6.

Kociscin, Joseph J. Electric arc furnace operations. 613,819, 2-4-69, Cl. 75—12.

Long, Warner D., to Eastman Kodak Co. Non-fibrillating polyolefin article and method of making. 764,025, 2-4-69, Cl. 24—16.

Morgan, Paul W., to E. I. du Pont de Nemours and Co. Polyesters and polycarbonates prepared from cyano substituted bisphenols. 616,504, 2-4-69, Cl. 260—47.

Morrison, Kyle E.: *See—*
  Hatfield, John R., Jr., and Morrison. 683,817.

Newland, Gordon C., and M. S. Bloom. Phototropic compositions (B). 768,947, 2-4-69, Cl. 106—276.

Quinn, Earl. Curtain coating method for packaging an article. 766,373, 2-4-69, Cl. 264—90.

Sloan, Cephas H.: *See—*
  Touey, George P., and Sloan. 764,017.
  Touey, George P., and Sloan. 768,970.

Tenquist, David A.: *See—*
  Gonzalez, Donald E., and Tenquist. 769,435.

Touey, George P., and C. H. Sloan. Plasticized tobacco smoke filter. 764,017, 2-4-69, Cl. 131—267.

Touey, George P., and C. H. Sloan. Plasticized tobacco smoke filter. 768,970, 2-4-69, Cl. 131—267.

LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF FEBRUARY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Arsenault, Gerald M., and M. P. Ehrlich, to Nuclear Research Associates, Inc. Sputum collecting device. 212,292, 2–4–69, Cl. D16—1.
- Buck, Thomas O. Heat exchange housing for television cameras and the like. 213,300, 2–4–69, Cl. D61—1.
- Capital Controls Co., Inc.: *See*—
  - Stenberg, Nyyvrikki K. 213,294.
- Economou, Hercules, to Sun Control Industries, Inc. Awning. 213,293, 2–4–69, Cl. D21—6.
- Ehrlich, Melvin P.: *See*—
  - Arsenault, Gerald M., and Ehrlich. 213,292.
- Fekete, Jean-Marie, to Laboratories Lutsia. Dispenser for liquid soap and the like. 213,296, 2–4–69, Cl. D33—30.
- Fuerst, Brooks D., to Owens-Illinois, Inc. Bottle. 213,290, 2–4–69, Cl. D9—119.
- Ketcham & McDougall, Inc.: *See*—
  - Macowski, William. 213,301.
- Khazzam, Joseph N., to Regent Sports Co. Baseball glove, or similar article. 213,284, 2–4–69, Cl. D2—361.
- Khazzam, Joseph N., to Regent Sports Co. Baseball glove, or similar article. 213,285, 2–4–69, Cl. D2—361.
- Khazzam Joseph N., to Regent Sports Co. Baseball glove, or similar article. 213,286, 2–4–69, Cl. D2—361.
- Khazzam Joseph N., to Regent Sports Co. Baseball glove, or similar article. 213,287, 2–4–69, Cl. D2—361.
- Khazzam. Joseph N., to Regent Sports Co. Baseball glove, or similar article. 213,288, 2–4–69, Cl. D2—361.
- Khazzam. Joseph N., to Regent Sports Co. Baseball glove, or similar article. 213,289, 2–4–69, Cl. D2—361.
- Laboratories Lutsia: *See*—
  - Fekete, Jean-Marie. 213,296.
- Lattin, Leroy E., to Universal Products Corp. Cable shearing pliers. 213,302, 2–4–69, Cl. D95—5.
- Lee, Alvis A. Automobile hood. 213,291, 2–4–69, Cl. D14—3.
- Macowski, William, to Ketcham & McDougall, Inc. Telephone index or the like. 213 301, 2–4–69, Cl. D74—1.
- Nagrodsky, George. Telephone call timer. 213,295, 2–4–69, Cl. D26—14.
- Nuclear Research Associates, Inc.: *See*—
  - Arsenault, Gerald M., and Ehrlich. 213,292.
- Owens-Illinois, Inc.: *See*—
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- Porter, Charles A. Billiard table or similar article. 213,297, 2–4–69, Cl. D34—3.
- Porter, Charles A. Billiard table or similar article. 213,298, 2–4–69, Cl. D34—3.
- Porter, Charles A. Billiard table or similar article. 213,299, 2–4–69, Cl. D34—3.
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  - Khazzam Joseph N. 213,285.
  - Khazzam, Joseph N. 213,286.
  - Khazzam, Joseph N. 213,287.
  - Khazzam, Joseph N. 213,288.
  - Khazzam, Joseph N. 213,289.
- Stenberg, Nyyrikki K., to Capital Controls Co., Inc. Chlorinator unit. 213,294, 2–4–69, Cl. D23—3.
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- Universal Products Corp.: *See*—
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TO WHOM

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- AMP Inc.: *See*—
  - Dowling, Edward C. 3,426,334.
  - Over, William R. 3,426,355.
  - Till, James P. 3,426,265.
  - Wilm, August L. M. 3,426,320.
  - Wycheck, Thomas H. 3,426,313.
- Abate, Leo: *See*—
  - Anderle, Joseph A., and Abate. 3,425,480.
  - Lorentzen, Hans K., Anderle, and Abate. 3,425,479.
- Abplanalp, Robert H. Pressurized powder dispensing device. 3,425,600, 2–4–69, Cl. 222—193.
- Acree, Elick H., and F. N. Case, to United States of America, Atomic Energy Commission. Method for tagging sand with a gaseous radioactive isotope. 3,426,205, 2–4–69, Cl. 250—106.
- Acushnet Process Co.: *See*—
  - Frig, Gerald E., Heuston, and Thumudo. 3,425,067.
- Adachi, Saburo: *See*—
  - Miyake, Yasuhiko, Adachi, Yamauchi, Hayashi, and Akimoto. 3,426,041.
- Adam, Miloslav: *See*—
  - Chvapil, Milos, Krajicek, and Adam. 3,425,418.
- Adams, George M., and D. Tijunelis, to Union Carbide Corp. Anti-fogging film comprising vinyl chloride polymer, glycerol monostearate and incompatible plasticizer. 3,425,976, 2–4–69, Cl. 260—23.
- Adams, Leonard, Jr., to The Finn Industries, Inc. Cellular carton. 3,425,616, 2–4–69, Cl. 229—28.
- Adams, Max M., to General Electric Co. Electrical thermal flowmeter. 3,425,277, 2–4–69, Cl. 73—204.
- Adams, Ronald F.: *See*—
  - Ruzevick, Peter M., Adams, and Reynolds. 3,425,954.
- Adams, Whitney R.: *See*—
  - McConnell, Albert L., Meisel, and Adams. 3,425,882.
- Adlhart, Otto J., C. D. Keith, and G. R. Pond, to Engelhard Industries, Inc. Method of preparing fuel cell electrode containing fluorocarbon polymer and carbon black-supported platinum group metal. 3,425,875, 2–4–69, Cl. 136—122.
- Advanced Wyrepak Co., Inc., The: *See*—
  - Kovaleski, Joseph J., and Bauer. 3,425,647.
- Agee, Robert L. Apparatus for connecting adjacent mitered members. 3,425,721, 2–4–69, Cl. 287—20.92.
- Agfa-Gevaert Aktiengesellschaft: *See*—
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  - Paulus, Rudolf. 3,426,357.
  - Von Wasielewski, Erwin. 3,425,326.
- Agin, Julius, to Radio Corp. of America. Control circuit for automatically quantizing signals at desired levels. 3,426,210, 2–4–69, Cl. 250—214.
- Ahrens, Harold R.: *See*—
  - Kimball, James L., Tompkins, and Ahrens. 3,426,145.
- Air Products and Chemicals, Inc.: *See*—
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- Airborne Navigation Corp.: *See*—
  - Wipff, Frank P., and Wilson. 3,425,648.
- Aizawa, Tatsuo: *See*—
  - Dohi, Yasusuke, and Aizawa. 3,425,332.
- Ajinomoto Co., Inc.: *See*—
  - Nagao, Masanori, Sato, and Akashi. 3,425,919.
- Akashi, Takekazu: *See*—
  - Nagao, Masanori, Sato, and Akashi. 3,425,919.
- Akimoto, Kiyoshi: *See*—
  - Kawamura, Hiroshi, Mukaihara, Ito, Akimoto, Atsumi, Taniguchi, Takahashi, and Saito. 3,425,359.
- Aktiebolaget Kalle-Regulatorer: *See*—
  - Attebo, Erik G. 3,425,218.
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  - Laakso, Oliver A. 3,425,898.
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- Alco Standard Corp.: *See*—
  - Twine, Charles J. 3,425,675.
- Alcon Metal Products, Inc.: *See*—
  - De Vito, Albert P. 3,426,318.
- Aldrich Chemical Co., Inc.: *See*—
  - Biel, John H., and Hopps. 3,426,036.
  - Biel, John H., and Graeve. 3,426,037.
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  - Beavers, Dorothy J., Wilson, and Allen. 3,426,029.
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  - Handwerk, Reginald L., and Allen. 3,425,841.
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  - Steele, Clarence R., and Allen. 3,425,561.
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  - Wagner, Charles R., Shultz, Allen, and Friedman. 3,426,058.
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  - Oswald, Hendrikus J., Turi, and Lund. 3,425,987.
  - Wagner, Charles R., Shultz, Allen, and Friedman. 3,426,058.
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- Alphamatic Corp.: *See*—
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- Alster, David I.: *See*—
  - Waly, Adnan, Just, Schwartzman, and Alster. 3,426,197.
- Aluminum Co. of America: *See*—
  - De Voe, Harvey B., Jr., and Toms. 3,425,570.
  - Hirsh, William. 3,425,800.
- Aluminium Laboratories Ltd.: *See*—
  - Dewing, Ernest W. 3,425,797.
- Amalgamated Dental Co. Ltd., The: *See*—
  - Stephens, Richard R. 3,425,413.
- Amazonen-Werke H. Dreyer: *See*—
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- Andersen, Dan A. Wheel washer. 3,425,427, 2–4–69, Cl. 134—6.
- Andersen, Johan R., A. R. Smith, and A. H. Williamson, Jr., to Bell Telephone Laboratories, Inc. Rotatable connection. 3,426,308, 2–4–69, Cl. 339—5.

Anderson, Bryce P., to DeSoto Chemical Coatings, Inc. Polymeric material soluble in organic solvent and based on the reaction product of boric acid with a lactam. 3,426,096, 2-4-69, Cl. 260—830.
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Baarson, Robert E., Du Brow, and Ray. 3,425,550.
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Baarson, Robert E., P. L. Du Brow, and C. L. Ray, to Armour Industrial Chemical Co. Flotation separation of metallic sulfide ores. 3,425,550, 2-4-69, Cl. 209—166.
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Baker, Joseph W., to Monsanto Co. 2-oxo-tetrahydrofuranyl compounds in insecticidal compositions and methods. 3,426,127, 2-4-69, Cl. 424—203.
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Barainsky, Rudolf. Paneling arrangement. 3,425,181, 2-4-69, Cl. 52—480.
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- Campbell, Robert E., to British Ropes Ltd. Rope, strand or the like, 3,425,207, 2–4–69, Cl. 57—145.
- Canceill, Bernard J.-J., to International Standard Electric Corp. Magnetic closure and switch for doors and similar devices. 3,426,166, 2–4–69, Cl. 200—61.62.
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- Carlson, Otto K., to J. A. Price, to FMC Corp. Phenoxides as transesterification catalysts. 3,425,997, 2–4–69, Cl. 260—75.
- Carlson, Robert J. Self-contained signal light unit. 3,426,343, 2–4–69, Cl. 340—321.
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- Carter, Ernest P., and R. P. Bell, Jr., to Monsanto Co. Filament supply system. 3,425,460, 2–4–69, Cl. 139—100.
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- Groetschel, Karl M. Mine roof support. 3,425,229, 2–4–69, Cl. 61—45.
- Grooss, Frank A.: *See*—
  - Strabala, Joseph L., and Grooss. 3,425,497.
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  - Bryant, Austin U., and Combes. 3,425,662.
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Haynes Harvey H., to United States of America, Navy. Underwater adjustable apparatus and method. 3,425,230, 2–4–69, Cl. 61—69.

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Ilkka, Gust A., and R. V. Slates, to General Motors Corp. Latent curing agents for epoxide polymers and polyurethanes. 3,426,097, 2-4-69, Cl. 260—830.

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Jaeger, Benjamin E., to Brockway Glass Co., Inc. Rotary screen decorating machine. 3,425,344, 2-4-69, Cl. 101—37.

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Glaser, Peter E., Johnston, and Jolkovski. 3,425,060.

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Jones, Eric H. Continuous application of substances to travelling materials. 3,425,861, 2-4-69, Cl. 117—102.

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Kamm, Lawrence J., to General Electric Co. Measuring and sensing device. 3,425,132, 2-4-69, Cl. 33—172.

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Kanbar, Maurice S., and R. D. Sudarsky. Refillable cryogenic probe for surgical use. 3,425,417, 2-4-69, Cl. 128—303.1.

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Kannegiesser, Herbert, and R. Juraschek, to Kannegiesser Maschinenfabrik Gesellschaft mit beschrankter Haftung. Device for pressing textiles. 3,425,142, 2-4-69, Cl. 38—22.

Kannegiesser Maschinenfabrik Gesellschaft mit beschrankter Haftung : *See*—
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Karkalits, Olin C., Jr., to Petro-Tex Chemical Corp. Preparation of unsaturated compounds. 3,426,094, 2-4-69, Cl. 260—680.

Karmen, Arthur, to United States of America, Health, Education and Welfare. Method and means for detecting a halogen or phosphorus in a gaseous material. 3,425,806, 2-4-69, Cl. 23—232.

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Kawamura, Hiroshi, K. Mukaihara, H. Ito, K. Akimoto, Y. Atsumi, T. Taniguchi, S. Takahashi, and I. Saito, to Nippon Kokuyu Tetsudo and Nippon Sharyo Seizo Kabushiki Kaisha. Apparatus for handling track installations. 3,425,359, 2-4-69, Cl. 104—2.

Kawasaki, Katsuhiro, to Victor Co. of Japan Ltd. Device for guiding a disk in a jukebox. 3,425,702, 2-4-69, Cl. 274—10.

Keasler, Bennett M., to Burlington Industries, Inc. Process for treating glass fabric. 3,425,109, 2-4-69, Cl. 28—74.

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Kilpert, Richard, E. J. Winsor, and R. H. Bauer, to Esso Research and Engineering Co. Sprayed internally insulated pipe. 3,425,455, 2-4-69, Cl. 138—143.

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Kircher, Charles E., and R. J. Jones, to Detrex Chemical Industries, Inc. Process for the production of pure muriatic acid from byproduct hydrogen chloride. 3,425,188, 2-4-69, Cl. 55—20.

Kirkpatrick, William F., to California Texas Oil Corp. Shipboard mounting liquefied gas tanks. 3,425,584, 2-4-69, Cl. 220—15.

Kita, Stanley B. Vehicle guidance apparatus. 3,425,197, 2-4-69, Cl. 56—26.

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Klasing, Wayne G., to Klasing Hand Brake Co. Non-spin hand brake assembly with quick release mechanism therefor. 3,425,294, 2-4-69, Cl. 74—505.

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Klein, Theodore J., to United States of America, Army. Reception of time dispersed signals utilizing impulse response storage in recirculating delay lines. 3,426,281, 2-4-69, Cl. 325—324.

Kletschke, Hans, and H. Macholdt, to Kalle Aktiengesellschaft. Apparatus for the continuous transportation of pulverulent or fibrous material. 3,425,640, 2-4-69, Cl. 241—236.

Klimstra, Paul D., to G. D. Searle & Co. (Optionally 17-alkylated) 17-oxygenated-7-methyl-5α-androst-2-enes. 3,426,048, 2-4-69, Cl. 260—397.3.

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Knerr, Carl J., W. C. Silva, and C. R. Hartley, to Fedders Corp. Fluid control device for automatic laundry machines. 3,425,437, 2-4-69, Cl. 137—119.

Knohl, Herbert, to The Kendall Co. Protuberance covering tubular elastic garments. 3,425,246, 2-4-69, Cl. 66—171.

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Koenig, Peter, and A. Lucian, to Paul Koenig. Device for automatic feeding of size to at least one sizing machine. 3,425,668, 2-4-69, Cl. 259—8.
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Koffskey, John M., Jr., to Union Carbide Corp. Paper mill suction box cover. 3,425,901, 2-4-69, Cl. 162—352.
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Korchmar, Don I., to The Leather Specialty Co. Accessory locking device for carrying case. 3,425,525, 2-4-69, Cl. 190—49.
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Kovaleski, Joseph J., and G. L. Bauer, to The Advanced Wyrepak Co., Inc. Wire take-off device. 3,425,647, 2-4-69, Cl. 242—128.
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Kuhn, Jackson G., and R. M. Talley, to Santa Barbara Research Center. Scanning device having optical derotation means therein. 3,425,768, 2-4-69, Cl. 350—7.
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Marx, Hans B., E. W. Moll, B. W. Nutting, and M. Schilder, to Burroughs Corp. Central data processor. 3,426,330, 2–4–69, Cl. 340—172.5.
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Rosaen, Nils O., to Universal Filters, Inc. Backwash means for dual filter elements. 3,425,558, 2–4–69, Cl. 210—108.
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Design Patents

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 4, 1969 Volume 859 Number 1

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 176,874. (See Reg. No. 636,120.)

Reg. No. 343,957 (LESTOIL), Standard International Corporation, Cleansing composition in liquid form added as an aid to aqueous cleansing compositions used in laundries; **Reg. No. 636,572**, same, Adell Chemical Company, Hand cleaner, detergent for household cleaning and laundering, liquid detergent used in the paper making industry, liquid detergent use in the automotive industry, liquid detergent used in the textile industry, and for maintenance cleaning, **filed** Oct. 29, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1798–CC, *Standard International Corporation* v. *William Bishop Company et al.*

Reg. No. 375,118 (EIMAC), Eitel-McCullough, Inc., Vacuum tubes; **Reg. No. 420,697**, same, Varian Associates, Vacuum condensers wherein electrodes are mounted within an evacuated envelope for use as an electrical capacitor; **Reg. No. 601,596**, same, Eitel-McCullough, Inc., Electronic equipment and parts—namely, electron tube devices, vacuum tubes, vacuum condensers, vacuum switches, gas tubes, rectifiers, negative grid tubes, klystrons, cathode-ray tubes (television picture tubes), sockets, connectors, contacts, grid wire, circuit components, transmitters, amplifiers, and oscillators; **Reg. No. 618,577**, same; **Reg. No. 693,775** (EIMAC AND DESIGN), same, Electronic equipment and parts—namely, electron tube devices, vacuum tubes, vacuum condensers, vacuum switches, gas tubes, rectifiers, negative grid tubes, klystrons, cathode-ray tubes (television picture tubes), sockets, connectors, contacts, grid wire, circuit components, transmitters, amplifiers, oscillators, and traveling wave tubes, **filed** Aug. 5, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1446, *Varian Associates* v. *Imac Corp.* Judgement for plaintiff on Counts I and II. Defendant has infringed and is permanently enjoined, Nov. 8, 1968.

CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 15,322
Date of oldest new application .... September 20, 1967
Date of oldest amended application (filing date) .... July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation **TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION**	Oldest Application	
	New	Amended
(I) **L. J. BETTENDORF**, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-17-68	3-4 -65
(II) **F. H. WETHERBEE**, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-1 -68	3-26-65
(III) **P. S. BALL**, Classes 19, 21, 23, 26, 31, 34, 35, 36	4-4 -68	7-30-64
(IV) **M. E. ABRAMSON**, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-20-67	9-22-65
Renewals (All Classes)	11-25-68	....
Sec. 12(c) Publications (All Classes)	11-27-68	....

For the Quarter October 1, 1968 through December 31, 1968

Applications Filed	7,492
Registrations Issued	5,277
Renewals Issued	1,424
Cancellations under Section 8	1,555

Applications filed during the month of December 1968—2,314

Registrations Issued .... 281—No. 864,418 to No. 864,698
Renewals Issued 55

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 420,697. (See Reg. No. 375,118.)

Reg. No. 421,496 (FORMICA), Formica Corporation, Laminated sheets of wood, fabric, or paper impregnated with synthetic resin and consolidated under heat and pressure, for use on table tops, furniture and wall panelling, **filed** Nov. 12, 1968, D.C. Del. (Wilmington), Doc. 3631, *Formica Corporation* v. *Hyman Reiver & Co.*

Reg. No. 576,289 (DUBBLE DELITE), Fruit Products Corporation, Frozen confections on sticks, and a liquid concentrate for making the same, **filed** Oct. 9, 1968, D.C. Md. (Baltimore), Doc. 19968, *Consolidated Foods Corporation, doing business as Joe Lowe Company* v. *Maryland Cup Corporation.*

Reg. No. 601,596. (See Reg. No. 375,118.)

Reg. No. 618,577. (See Reg. No. 375,118.)

Reg. No. 630,412 (TRADITION), General Time Corporation, Clocks, **filed** Aug. 20, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1548, *General Time Corporation* v. *Seeco, Inc., Haddon Products, Inc., and Allen E. Weinstein.* Dismissal pursuant to Rule 41(a)(I)(i) as to defendant Haddon Products, Inc., Sept. 13, 1968. By agreement dismissed with prejudice, Nov. 8, 1968.

Reg. No. 636,120 (FS AND DESIGN), Illinois Farm Supply Co., Petroleum fuels—namely, gasolenes, tractor fuels, diesel fuels, kerosene, and furnace and stove fuel oils; **Reg. No. 638,282**, same, Fertilizers, including mixed fertilizers, superphosphate and triple superphosphate; **Reg. No. 650,820**, same, Storage batteries; **Reg. No. 659,711**, same, Lubricating oils and greases, and motor fuel additives for dissolving gum and lubricating valves and rings; **Reg. No. 663,313**, same, Dry insecticides and wood preservative; **Reg. No. 843,081**, same, FS Services, Inc., Liquified petroleum gas; **Reg. No. 851,668**, same, Field seed, seed corn, and seed grains; **Reg. No. 854,856**, same, Conducting research concerning farm materials, supplies and operation and distributing results thereof to farmers, and advising farmers as to use of farm materials, supplies and operation (Class 100); and Wholesale and retail distribution of materials and supplies to farmers (Class 101); **Reg. No. 176,874**, same, The Quaker Oats Company, Rolled oats, corn meal, wheat flour, rye flour, hominy, and stock foods, **filed** Nov. 12, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2157, *FS Services Inc.* v. *Custom Farm Services, Inc.*

Reg. No. 636,572. (See Reg. No. 343,957.)

Reg. No. 638,282. (See Reg. No. 636,120.)

Reg. No. 650,820. (See Reg. No. 636,120.)

Reg. No. 659,711. (See Reg. No. 636,120.)

Reg. No. 663,313. (See Reg. No. 636,120.)

Reg. No. 693,775. (See Reg. No. 375,118.)

Reg. No. 717,313 (SNELLING AND SNELLING), Snelling and Snelling, Inc., Executive-Administrative personnel placement service, **filed** Oct. 16, 1968, D.C. Puerto Rico (San Juan), Doc. 674–68, *Snelling and Snelling, Inc. (Pennsylvania corporation)* v. *Snelling and Snelling, Inc. (Puerto Rico corporation)*.

Reg. No. 738,057 (KUF 'N KOLAR AND DESIGN), Norsan Products, Inc., Liquid stain remover, **filed** Sept. 3, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64–C–245, *Norsan Products, Inc.* v. *R. F. Scheule Corp.* Ordered, defendant enjoined; jurisdiction retained for the purpose of giving full effect to this injunction, Sept. 4, 1968.

Reg. No. 747,755 (ISLE ST. GEORGE ETC. AND DESIGN), Meier's Wine Cellars, Inc., Claret wine, **filed** Dec. 19, 1967, D.C.N.J. (Camden), Doc. C–105–67, *Meier's Wine Cellars, Inc.* v. *L. N. Renault & Sons, Inc.* Reg. No. 747,755 is valid and denying cancellation of plaintiff's Reg. No. 747,755, Nov. 2, 1967.

Reg. No. 783,372 (CHUS-A-TREAT), International Flavor Machines, Inc., Arranging with independent dairies for supplying and delivering bulk ice cream and ice cream frozen mix to licensed food establishments; supervising the flavoring of bulk ice cream and frozen mix by others into flavored confections, **filed** Oct. 15, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1913, *Beatrice Foods Co.* v. *Purex Corporation, Ltd.*

Reg. No. 835,608 (HAI KARATE AND DESIGN), Chas. Pfizer & Co., Inc., After shave lotion, **filed** Oct. 22, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–1081, *Chas. Pfizer & Co., Inc.* v. *Louangel Corp. et al.* Consent judgment, Nov. 7, 1968. **Same, filed** Oct. 22, 1968, D.C., S.D.N.Y., Doc. 68–C–4178, *Chas. Pfizer & Co., Inc.* v. *Majestic Jewelery Mfg. Co., Inc.* Final consent judgment, defendant enjoined, Nov. 6, 1968.

Reg. No. 843,081. (See Reg. No. 636,120.)

Reg. No. 851,668. (See Reg. No. 636,120.)

Reg. No. 854,856. (See Reg. No. 636,120.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 238,690. Ajax Magnethermic Corporation, Warren, Ohio. Filed Feb. 14, 1966.

AJAX MAGNETHERMIC

Owner of Reg. Nos. 564,166, 777,761, and others.

Class 12—Construction Materials

For Heat Refractory Materials for Making Furnace Linings (Int. Cl. 19).

Class 21—Electrical Apparatus, Machines, and Supplies

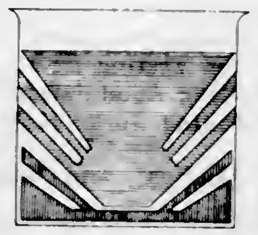
For Induction Heating Transformers and Accessories Therefor (Int. Cl. 9).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Induction Heating and Melting Furnaces, Electric Furnaces for Casting Metals, Induction Heating Equipment—Namely, Heating Coils and Crucibles (Int. Cl. 11).

First use Apr. 5, 1960.

SN 258,813. Industrial Lubricants Co., Inc., San Antonio, Tex. Filed Nov. 16, 1966.



The drawing is lined for the colors red and blue.

Class 5—Adhesives

For Tire and Tube Sealant (Int. Cl. 17).
First use December 1965.

Class 6—Chemicals and Chemical Compositions

For Automobile Radiator Rust Inhibitor, Hydraulic Brake Fluid, and Automobile Radiator Sealant (Int. Cls. 1 and 17).
First use 1951.

Class 15—Oils and Greases

For Motor Oil, Additives for Motor Fuels, Rubber Lubricant, Automatic Transmission Fluid, Automatic Transmission Fluid Additive, Automatic Transmission Fuild Sealant, and Lubricating Grease (Int. Cls. 1, 4, and 17).
First use December 1962.

SN 270,090. Tano, Inc., New York, N.Y. Filed Apr. 26, 1967.

TANO

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags, Wallets, Pursess, and Keycases (Int. Cl. 18).

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Cases (Int. Cl. 34).

Class 26—Measuring and Scientific Appliances

For Eyeglass Cases (Int. Cl. 9).

First use during 1954.

SN 270,262. Nitto Electric Industrial Co. Ltd., Ibaraki, Japan. Filed Apr. 28, 1967.

NITTO

Class 5—Adhesives

For Cloth and Paper-Made Adhesive Tapes (Int. Cl. 17).

Class 12—Construction Materials

For Plastic Adhesive Tapes for Insulation and Adhesive Uses; Cloth-Made Adhesive Friction Tapes for Insulation; Plastic Foam Adhesive Tapes for Sound Absorption, Heat Insulation and Cushioning Uses; Adhesive Rubber Tapes for Insulation (Int. Cl. 17).

First use October 1951; in commerce on or about October 1955.

SN 270,893. Chem-Farm Inc., Evansville, Ind. Filed May 8, 1967.

CHEM-FARM

Class 100—Miscellaneous

For Consulting Service for Farmers and Manufacturers in Connection With Needs for and Use of Chemical Farming Programs, Land Preparation, Irrigation, Material Handling, Farm Chemicals, Fertilizers and Crop Equipment (Int. Cl. 42).

Class 101—Advertising and Business

For Farm Equipment Distributorship Services (Int. Cl. 35).

Class 103—Construction and Repair

For Maintenance and Repair Services for Farm Equipment (Int. Cl. 37).

First use during December 1966.

SN 279,776. Doughboy Industries, Inc., New Richmond, Wis. Filed Sept. 7, 1967.

NEWPORT

Class 12—Construction Materials

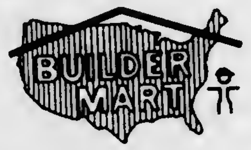
For Above Ground, Outdoor Swimming Pools of the Knock-Down Type (Int. Cl. 19).

Class 22—Games, Toys, and Sporting Goods

For Rather Shallow Wading Pools Primarily for Children's Use (Int. Cl. 28).

First use Dec. 20, 1966

SN 280,908. Builder Marts of America, Inc., Greenville, S.C. Filed Sept. 22, 1967.



The drawing is lined for the color red. Owner of Reg. No. 828,361.

Class 12—Construction Materials

For a General Line of Building Materials, Hardware and Plumbing Supplies, Paints and Coatings, Hose and Fittings—Namely, Paste Wood Fillers, Asphalt Roof Coatings, Doors, Door Framing and Sills, Sliding Glass Patio Doors and Framing, Exterior Casing and Trim Therefor, Windows Including Aluminum Rolling, Awning and Single Hung Windows (Int. Cls. 6 and 19).
First use Apr. 1, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Air Volume Controls, Line Checks, Pressure Regulating Valves, Foot Valves, Well Packer Assemblies and Adapters, Connector Kits and Accessories Therefor (Int. Cl. 6).
First use July 4, 1966.

Class 16—Protective and Decorative Coatings

For Exterior and Interior House Paints, Roof Paints, Primers and Undercoatings, Varnish Stains, Enamels, Wood and Floor Sealers, Traffic Paint, Concrete Paints and Enamels, Asphaltum and Machinery Enamel and Wrought Iron Finish (Int. Cl. 2).
First use July 4, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Pump Motors, Pressure Switches, Lightning Arrestors, Low Water Cut-Off Controls, 2 and 3 Wire Cable, Pressure Switches for Use in Water Systems (Int. Cls. 7 and 9).
First use Mar. 15, 1966.

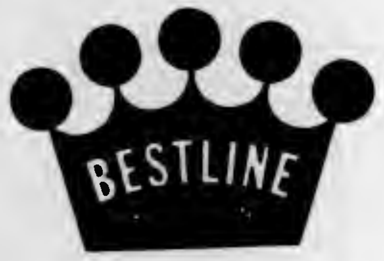
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Gas Engines for Pumps and Lawn Motors, Shallow Well Pumps and Water Systems Including Reciprocating Pumps, Jet Pumps, Tanks, and Pressure Gauges Sold Therewith, Ejectors and Fittings and Accessories Therefor, Single Stage and Multistage Convertible Pumps and Water Systems, Including Pressure Gauges and Tanks Sold Therewith, Ejectors, Submersible Pumps and Water Systems Including Ejectors, Venturi Nozzles Therefor, Reducer Bushings, Couplings and Fittings Therefor, Sump Pumbs and Utility Pumps and Fittings and Accessories Therefor (Int. Cls. 7 and 11).
First use Mar. 15, 1966.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Air Seals, Well Seals, Suction Hose and Fittings Therefor (Int. Cl. 17).
First use Mar. 15, 1966.

SN 283,088. Bestline Products, Inc., San Jose, Calif. Filed Oct. 23, 1967.



The wording "Bestline Products, Inc." is disclaimed apart from the mark as shown.

Class 4—Abrasives and Polishing Materials

For Floor Wax (Int. Cl. 3).

Class 52—Detergents and Soaps

For Powdered Laundry Compound; Liquid Concentrate Detergent for Washing Dishes and Delicate Fabrics; Liquid Detergent Degreasing Concentrate All Purpose Cleaner for Cleaninng Woodwork, Walls, Tile, Porcelain, Refrigerators and Stoves; Hair Champoo; and Car Shampoo (Int. Cl. 3).

First use Aug. 1, 1966.

SN 285,386. The Bates Manufacturing Company, Orange, N.J. Filed Nov. 22, 1967.

PIXIE

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Staples for Use in Desk Type Staplers (Int. Cl. 16).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Desk Type Staplers (Int. Cl. 16)

First use Oct. 20, 1967.

SN 287,099. Propper Manufacturing Company, Inc., Long Island City, N.Y. Filed Dec. 18, 1967.

PROPPER

Owner of Reg. No. 605,851.

Class 26—Measuring and Scientific Appliances

For Testing, Laboratory and Diagnostic Supplies and Equipment—Namely, Sphygmomanometers and Parts Thereof, Thermometers, Microscopes, and Accessories Therefor, Microscope Slides, Sterilization Indicators, Hand Tally Counters, Laboratory Glassware, Blood Testing Equipment, Including Stopcocks Used in Controlling Administration of Fluids Snch as Blood Plasma, and Tuning Forks (Int. Cl. 9).

Class 44—Dental, Medical, and Surgical Appliances

For Medical, Diagnostic and Surgical Equipment—Namely, Tourniquets, Hypodermic Needles and Syringes and Accessories Therefor, Lancets, Forceps, Surgical Scissors, Catheters, Wound Clips, Surgical Blades and Handles, Nasal, Vaginal and Rectal Speculars, Percussion Hammers, Retractors, Trachea Tubes, Surgeons' Gloves and Beads and Bracelets for Maternity Use, and Stethoscopes and Parts Thereof (Int. Cl. 10).

First use Aug. 2, 1945.

SN 288,155. Converse Rubber Corporation, Malden, Mass. Filed Jan. 5, 1968.

CONVERSE

Owner of Reg. No. 131,728.

Class 22—Games, Toys, and Sporting Goods

For Games, Toys, and Sporting Goods—Namely, Golf Shoes, Track Shoes, Wrestling Shoes, Baseball Shoes, Football Shoes, Air Floats and Air Mattresses (Int. Cls. 25 and 28).
First use at least as early as October 1965.

Class 39—Clothing

For Clothing—Namely, Hunting Boots, Fishing Boots, Industrial Boots, Rubber Boots, Tennis Shoes, Basketball Shoes, Boat Shoes, General Purpose Athletic Sneakers, Casual Shoes, Jackets, Trousers, Parkas, Shirts, Overalls, Raincoats and Suspenders (Int. Cl. 25).
First use at least as early as October 1916.

SN 289,264. Bowes Pacific Corporation, d.b.a. Fowler-Pem Co., Riverside, Calif. Filed Jan. 22, 1968.

FOWLER-PEM
PEM
F-P

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Air Water and Tire Valve Service Products and Air and Water Hose Assemblies—Namely, Faucets and Couplings (Int. Cl. 11).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Blow Guns (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Tire Gauges (Int. Cl. 9).

First use Mar. 1, 1936.

SN 294,494. Gunther Wagner Pelikan-Werke, Hannover, Germany. Filed Mar. 29, 1968.

TECHNOS

Class 11—Inks and Inking Materials

For Containers Filled With India Ink (Int. Cl. 16).

Class 37—Paper and Stationery

For Pens for India Inks and Parts Thereof (Int. Cl. 16).

First use February 1967; in commerce Jan. 31, 1968.

SN 294,674. Singer Home Products Corp., New York, N.Y. Filed Apr. 1, 1968.

DECOR

Class 2—Receptacles

For Coasters (Int. Cl. 21).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

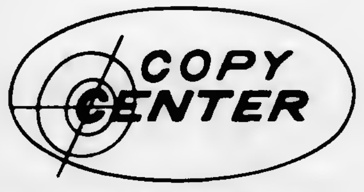
For Tablecloths and Place Mats (Int. Cl. 24).

Class 50—Merchandise Not Otherwise Classified

For Appliance Covers and Foam Back Table Pads (Int. Cl. 21).

First use Feb. 19, 1952.

SN 294,770. Spaulding Company, Inc., Natick, Mass. Filed Apr. 3, 1968.



Owner of Reg. Nos. 791,196 and 802,483.

Class 5—Adhesives

For Rubber Cement, Rubber Cement Thinner, Drafting Tape and Mending Tape (Int. Cls. 1 and 16).
First use August 1961.

Class 6—Chemicals and Chemical Compositions

For Liquid Ammonia and Transparentizers Which Are Applied to the Surface of Original Documents or Original Drawings To Make the Paper More Transparent (Int. Cl. 1).
First use August 1961.

Class 11—Inks and Inking Materials

For Ink, Diazo Typewriter Ribbons and Carbon Paper (Int. Cl. 16).
First use August 1961.

Class 20—Linoleum and Oiled Cloth

For Drawing Board Linoleum (Int. Cl. 16).
First use August 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

For Lamps, Erasing Machines, Telephone Answering and Recording Equipment (Int. Cls. 9, 11, and 16).
First use Sept. 1, 1966,

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Semi-Automatic and Automatic Collators, Jogger Stackers, Electric Staplers and Parts, Diazo Whiteprint Machines, Diazo Machine Parts and Accessories for Diazo Whiteprint Machines, and Anhydrous Ammonia Kits Including Valves and Meter Units Which Are Attached to Diazo Whiteprint Machines for the Purpose of Controlling the Feeding of Ammonia Gas Into the Developing Section (Int. Cl. 7).
First use Apr. 20, 1962.

Class 26—Measuring and Scientific Appliances

For Drawing Instruments, Templates, Straightedges, Triangles, Lettering Guides and Accessories, Metal Braid for Straightedges, Office Copy Equipment and Supplies—Namely, Office Copy Machines and Paper for Use Therewith, Transfer Developers, Platemakers, Developers and Fixers, Diazo Sensitized Paper, Cloth and Film, Drafting Machines, Drafting Furniture—Namely, Drafting Tables, School Drawing Tables, Drawing Files and Accessories, Drafting Stools, Desks and Stands, and Drawing Kits (Int. Cls. 1 and 16).
First use August 1961.

Class 29—Brooms, Brushes, and Dusters

For Cleaning Pads Used To Clean the Surface of Engineering Drawings (Int. Cl. 21).
First use August 1961.

Class 37—Paper and Stationery

For Plastic Bindings, Tracing Paper, Cloth and Film and Tracing Paper Pads, Drafting Forms, Erasers, Pencils, Leads, Lead Holders, Pencil Pointers, Erasing Shields, Pens, Metal and Plastic Labels and Cover Paper (Int. Cl. 16).
First use July 30, 1962.

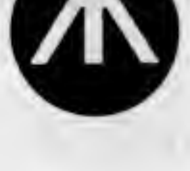
Class 50—Merchandise Not Otherwise Classified

For Offset Plates and Spirit and Offset Masters (Int. Cl. 7).
First use August 1961.

Class 52—Detergents and Soaps

For Pen Cleaner Solution for Dissolving and Removing Drawing Ink From Drafting Pens and Eradicators To Eradicate the Diazo Dye Image on Diazo Type Whiteprints (Int. Cl. 3).
First use August 1961.

SN 295,787. Taiyo Kogyo Co., Ltd., Meguro-ku, Tokyo, Japan. Filed Apr. 17, 1968.



Class 2—Receptacles

For Receptacles of Flexible, Reusable and Collapsible Materials Especially for Bulk Cargo Handling (Int. Cl. 20).

Class 50—Merchandise Not Otherwise Classified

For Custom-Made Circus, Carnival and/or Concessionaire Type of Tents Made of Natural and Synthetic Fibers (Int. Cl. 22).

First use on or about Aug. 10, 1964; in commerce on or about Sept. 15, 1964.

SN 296,372. Codo Manufacturing Corporation, Leetsdale, Pa. Filed Apr. 24, 1968.

codo

Owner of Reg. Nos. 307,647, 717,205, and others.

Class 11—Inks and Inking Materials

For Carbon Papers; Typewriter Ribbons; Adding Machine, Bookkeeping Machine, Cash Register, Data Processing and Other Non-Typewriter Ribbons; and Duplicating Fluid (Int. Cl. 16).

Class 37—Paper and Stationery

For Paper Rolls for Various Machines Such as Adding Machines, Accounting Machines and Tabulating Machines; Carbon Backed Paper Forms, Thermal Copy Paper, Duplicating Masters and Correction Pencils (Int. Cl. 16).

First use Jan. 1, 1928.

SN 296,925. Rolfe Chemical Corporation, Stamford, Conn. Filed Apr. 30, 1968.

ROLFITE

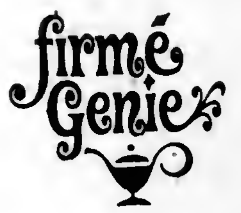
Class 6—Chemicals and Chemical Compositions

For Chemical Preparations To Be Added to Bulk Heating Fuels To Improve Combustion and Reduce Air Pouultion and Chemical Preparations To Be Added to Waste Materials To Reduce Air Pollution During Incineration (Int. Cl. 1).
First use Jan. 17, 1968.

Class 15—Oils and Greases

For Chemical Preparations To Be Added to Gasoline and Diesel Fuels To Improve Combustion and Reduce Air Pollution (Int. Cl. 1).
First use Jan. 23, 1968.

SN 298,671. Buty-Wave Products Co., Inc., Los Angeles, Calif. Filed May 21, 1968.



Owner of Reg. Nos. 817,537 and 825,454.

Class 51—Cosmetics and Toilet Preparations

For Hair Conditioner (Int. Cl. 3).
First use Jan. 5, 1968.

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).
First use prior to May 21, 1968.

SN 302,023. Tieco Products, New York, N.Y. Filed July 5, 1968.

INTERWALL

Class 12—Construction Materials

For Permanent Partitions (Int. Cl. 19).

Class 32—Furniture and Upholstery

For Interior Furnishings and Space Dividing Products, i.e., Movable Partitions, and Storage Cabinets Used Along Walls and as Room Dividers (Int. Cl. 20).

First use on or about Apr. 5, 1968.

SN 306,416. Musher Laboratories, New York, N.Y., assignee of Musher Corporation, New York, N.Y. Filed Sept. 3, 1968.

KAUMA

Class 51—Cosmetics and Toilet Preparations

For Moisturizing Bath Additive in Powder Form (Int. Cl. 3).

Class 52—Detergents and Soaps

For Sudsing Bar for Cleansing and Soothing the Skin (Int. Cl. 3).
First use Aug. 23, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 292,138. Societe des Usines Chimiques Rhone-Poulenc, Paris, France. Filed Feb. 28, 1968.

BIRHOPTIX

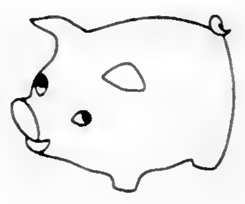
Owner of French Reg. No. 532,561, dated June 11, 1965 (Paris); Natl. Inst. No. 251,469.
For Raw or Partly Prepared Plastic Materials in the Form of Leaves, Sheets, and Slabs (Int. Cl. 17).

SN 294,619. Gold Brand Leather Co., Inc., Cliffside, N.J. Filed Apr. 1, 1968.

ELPHANTO

For Embossed Leathers Used in the Manufacture of Belts, Wallets, Handbags, Brief Cases, Luggage, Shoes, Hats and Jackets (Int. Cl. 18).
First use Feb. 21, 1967.

SN 296,229. Wolverine World Wide, Inc., Rockford, Mich. Filed Apr. 22, 1968.



For Leather (Int. Cl. 18).
First use on or about Oct. 11, 1967.

Class 2—Receptades

SN 293,219. Geo. J. Ball, Inc., West Chicago, Ill. Filed Mar. 14, 1968.

HANDI-PAK

Owner of Reg. No. 843,473.
For Plastic Tray Units for Commercial Growing and Sale of Plants (Int. Cl. 20).
First use during or before October 1967.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 280,891. St. Thomas, Incorporated, Gloversville, N.Y. Filed Sept. 21, 1967.

DETACHÉ

For Leather Pass Cases (Int. Cl. 18).
First use April 1967.

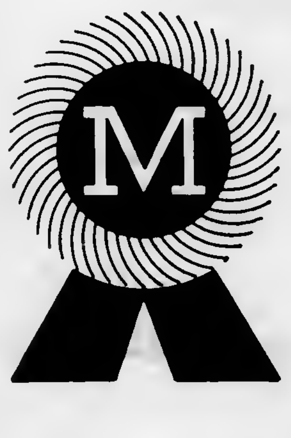
SN 305,517. Karavan Fashions, Inc., New York, N.Y. Filed Aug. 20, 1968.

BACK TO BACK SAC

For Ladies Handbags and Travel Bags (Int. Cl. 18).
First use May 24, 1968.

Class 4—Abrasives and Polishing Materials

SN 273,514. Merit Products, Inc., Los Angeles, Calif. Filed June 9, 1967.



For Abrasive Articles—Namely, Abrasive Wheels, Abrasive Discs, Abrasive Pads, Cartridge Rolls of Abrasive, Abrasive Belts, Abrasive Strips and Loadings for Same (Int. Cl. 3).
First use on or about Oct. 25, 1954.

SN 283,356. Paule Chemical Corp., Charlestown, Mass. Filed Oct. 25, 1967.

PAULCRYLITE-1000

For Shoe Dressing, Cleaning and Polishing Combination (Int. Cl. 3).
First use Sept. 11, 1967.

SN 294,025. DoAll Company, Des Plaines, Ill. Filed Mar. 25, 1968.

DoALL

Owner of Reg. Nos. 339,329, 679,957, and others.
For Abrasive Grinding Wheels, Abrasive Grinding Points, Abrasive Belts, Abrasive Sheets, Abrasive Rolls, Shop Machinery Polish and Polishing Compounds, and Abrasive Stones (Int. Cls. 3 and 7).
First use June 1953 on abrasive grinding wheels.

Class 5—Adhesives

SN 282,732. Shell Oil Company, New York, N.Y. Filed Oct. 17, 1967.

SHELLBOND

For Industrial Adhesives—Namely, Those in Paste, Liquid, Powder or Film Forms (Int. Cl. 1).
First use at least as early as Aug. 16, 1967.

SN 301,563. Wayne Adhesive and Container Co., Detroit, Mich. Filed June 27, 1968.

FABSTIC

For Carpet Seam Cement, Carpet Cement, Carpet Pad Cement, and Strip Cement (Int. Cl. 1).
First use Apr. 27, 1957.

Class 6—Chemicals and Chemical Compositions

SN 257,237. W. T. Cox Company, Camdenton, Mo. Filed Oct. 26, 1966.

HYKIL

For Petroleum Composition Sold as a Weed Killer (Int. Cl. 5).
First use during 1948.

SN 267,613. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 27, 1967.

WASH 'N DRI

Owner of Reg. No. 615,443.
For Insect Repellent Impregnated in a Disposable Applicator Sheet (Int. Cl. 5).
First use Jan. 30, 1967.

SN 267,875. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

THIONOIR

Owner of French Reg. No. 716,811, dated June 16, 1966.
For Dyestuffs (Int. Cl. 2).

SN 268,430. Salviam, Paris, France. Filed Apr. 5, 1967.

BOND-X

Priority claimed under Sec. 44(d) on French Reg. No. 739,032, dated Dec. 13, 1966.
For Additives for Incorporation in Hydrocarbonated Binders Used for the Fabrication of Revetments for Roads, Aerodromes and Soils for Industrial Foundations (Int. Cl. 1).

SN 274,906. United Co-Operatives, Inc., Alliance, Ohio. Filed June 27, 1967.

CROW-DEFEAT

For Seed Treatment Composition Containing an Insecticide and a Bird Repellant (Int. Cl. 5).
First use Feb. 20, 1961.

SN 279,799. Canadian Hoechst Limited, Montreal, Canada. Filed Sept. 7, 1967.

HOSTALUX

Owner of Reg. Nos. 713,343, 830,441, and others.
For Chemical Mordants and Dyes for Use in the Leather and Textile Industries; and Leather Dressings and Tanning Agents (Int. Cls. 1 and 2).
First use Feb. 4, 1966; in commerce Feb. 4, 1966.

SN 279,800. Canadian Hoechst Limited, Montreal, Canada. Filed Sept. 7, 1967.

OFNA-PON

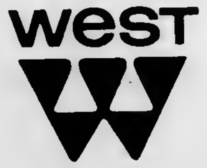
Owner of Reg. No. 738,085.
For Chemical Compositions for Use in the Textile Industry—Namely, Dyestuffs, Pigments, Bleaching Agents, Starch and Sizing Agents; and Leather Dressings and Tanning Agents (Int. Cls. 1 and 2).
First use Apr. 13, 1963; in commerce Apr. 13, 1963.

SN 279,801. Canadian Hoechst Limited, Montreal, Canada. Filed Sept. 7, 1967.

REMARON

For Chemical Compositions for Use in the Textile Industry—Namely, Dyestuffs and Pigments (Int. Cl. 2).
First use Mar. 21, 1967; in commerce Mar. 21, 1967.

SN 280,284. West Chemical Products, Inc., Long Island City, N.Y. Filed Sept. 13, 1967.



Owner of Reg. Nos. 257,156, 379,308, and 723,244.
For Disinfectants and Deodorants for Industrial and Institutional Use: Insecticides; Air Fresheners; and Concrete Curing Compounds (Int. Cls. 1 and 5).
First use Feb. 13, 1967.

SN 289,927. Simplex Wire and Cable Company, Cambridge, Mass. Filed Jan. 30, 1968.

HIBOND-B

For Silicone-Fluorocarbon Coating for Treating the Outer Surface of Polytetrafluoroethylene Insulation on Wire To Facilitate Potting and Marking Procedures(Int. Cl. 1).
First use Nov. 29, 1967.

SN 289,929. Simplex Wire and Cable Company, Cambridge, Mass. Filed Jan. 30, 1968.

ADBOND

For Polyolefin Base Coating for Treating Polytetrafluoroethylene Insulation on Electric Wire To Facilitate Potting and Marking Procedures (Int. Cl. 1).
First use Nov. 13, 1967.

SN 297,408. Fred F. Horne, d.b.a. Airrigation Engineering Company, Carmel Valley, Calif. Filed May 6, 1968.

VAPOROOTER

For Foaming Fumigant for Ridding Sewer Lines of Roots (Int. Cl. 5).
First use on or about Mar. 25, 1968.

Class 8 — Smokers' Articles, Not Including Tobacco Products

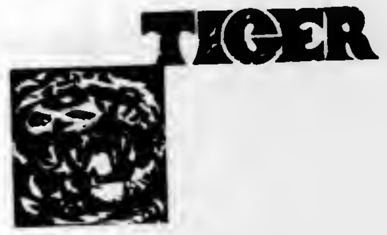
SN 293,591. Shields, Inc. of Attleboro, Mass., d.b.a. Dante, New York, N.Y. Filed Mar. 18, 1968.

DEAUVILLE

For Cigarette and Cigar Lighters (Int. Cl. 34).
First use Feb. 16, 1968.

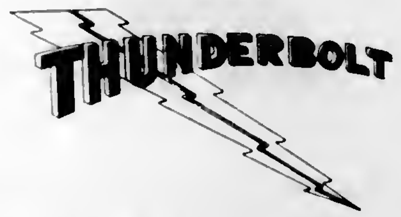
Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 286,318. Sierra Pyrotechnic Corporation, Lynwood, Calif. Filed Dec. 6, 1967.



For Fireworks (Int. Cl. 13).
First use on or about June 1, 1966.

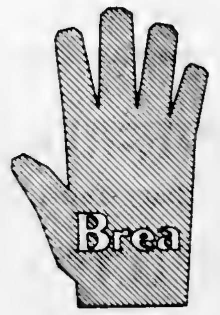
SN 286,319. Sierra Pyrotechnic Corporation, Lynwood, Calif. Filed Dec. 6, 1967.



For Fireworks (Int. Cl. 13).
First use on or about Mar. 1, 1966.

Class 10 — Fertilizers

SN 298,430. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed May 17, 1968.



The drawing is lined for the color green, but no claim is made as to color. Owner of Reg. Nos. 603,175, 805,334, and others.
For Chemical Fertilizers (Int. Cl. 1).
First use April 1964.

Class 11 — Inks and Inking Materials

SN 280,482. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1967.

HYDRO-LINE

For Printing Ink (Int. Cl. 2).
First use on or about Dec. 17, 1959.

SN 280,483. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1967.

FIBER-JET

For Printing Ink (Int. Cl. 2).
First use on or about Aug. 18, 1964.

SN 280,485. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1967.

SNAP JET

For Printing Ink (Int. Cl. 2).
First use on or about Sept. 14, 1965.

SN 280,486. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1967.

CAL-SET

For Printing Ink (Int. Cl. 2).
First use on or about Apr. 14, 1965.

SN 280,487. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1967.

DYNA-FLEX

For Printing Ink (Int. Cl. 2).
First use on or about Nov. 23, 1965.

SN 280,488. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1967.

NEO-FLEX

For Printing Ink (Int. Cl. 2).
First use on or about Jan. 17, 1966.

SN 286,196. Sun Chemical Corporation, New York, N.Y. Filed Dec. 4, 1967.

TRANSLITE

Owner of Reg. No. 689,713.
For Printing Inks (Int. Cl. 2).
First use Oct. 26, 1967.

SN 292,629. Sun Chemical Corporation, New York, N.Y. Filed Mar. 6, 1968.

FOIL SHEEN

Owner of Reg. No. 689,718.
For Printing Inks (Int. Cl. 2).
First use Nov. 13, 1967.

SN 296,213. Sun Chemical Corporation, New York, N.Y. Filed Apr. 22, 1968.

VELVOPAKE

For Printing Inks (Int. Cl. 2).
First use Mar. 6, 1968.

SN 296,825. Graphic Controls Corporation, Buffalo, N.Y. Filed Apr. 29, 1968.

TRANSFAST

For Printing and Recording Inks (Int. Cl. 2).
First use Mar. 8, 1968.

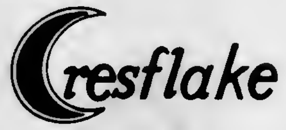
Class 12 — Construction Materials

SN 263,313. Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. Filed Jan. 25, 1967.

FLEX-O-FLASH

For Plain Plastic Sheet Material and Metal, Fiber or Synthetic Filament Reinforced Plastic Sheet Material for Use as a Flashing Material and Other Uses in the Construction Industry (Int. Cl. 19).
First use Jan. 9, 1967.

SN 267,422. Hambro Forest Products, Inc., Crescent City, Calif. Filed Mar. 23, 1967.



For Particle Board (Int. Cl. 19).
First use Feb. 11, 1966.

SN 271,035. Ekco Products, Inc., Wheeling, Ill. Filed May 9, 1967.

FLUORO-PLUS

For Metallic Foil Having a Friction-Resistant Coating on One Side Thereof for Use as a Facing Material for Walls and Various Other Surfaces (Int. Cl. 6).
First use on or about Sept. 28, 1966.

SN 274,783. Tapco Products Company, Inc., Detroit, Mich. Filed June 26, 1967.

MURAL STONE

Applicant disclaims the word "Stone" apart from the mark as shown.
For Artificial Building Stone (Int. Cl. 19).
First use on or about February 1963.

SN 302,072. W. R. Grace & Co., Cambridge, Mass. Filed July 5, 1968.

BITUTHENE

For Waterproof and/or Adhesive Sheet Material for Application to Concrete Surfaces (Int. Cl. 19).
First use Jan. 3, 1968.

SN 303,637. Wetsel Enterprises, Sacramento, Calif. Filed July 25, 1968.

BIG BEAR

For Particle Board and Lumber (Int. Cl. 19).
First use May 1, 1968.

SN 304,011. North Pacific Lumber Co., Portland, Oreg. Filed July 31, 1968.

NOR PAC

For Lumber, Plywood, Shakes, Shingles, Doors, Wood Fencing, and Wood Panelling (Int. Cl. 19).
First use in 1958.

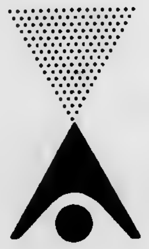
SN 305,052. Lehigh Portland Cement Company, Allentown, Pa. Filed Aug. 13, 1968.

LEHIGH

Owner of Reg. Nos. 311,725, 500,827, and others.
For Portland Cement and Concrete Aggregate (Int. Cl. 19).
First use July 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 280,291. Valve Corporation of America, Forest Park, Ill. Filed Sept. 14, 1967.



For Valves and Fittings (Int. Cl. 6).
First use at least as early as September 1955.

SN 290,512. The National Screw & Manufacturing Company, Cleveland, Ohio. Filed Feb. 7, 1968.

BAND LOK

For Threaded Fasteners—Namely, Bolts and Metal Screws (Int. Cl. 6).
First use Oct. 4, 1967.

SN 292,406. National Lock Co., Rockford, Ill. Filed Mar. 4, 1968.

CAPE COD CLASSIC

Owner of Reg. No. 744,284.
For Cabinet Hardware—Namely, Pulls, Handles, Knobs and Hinges (Int. Cl. 6).
First use Jan. 23, 1968.

SN 294,974. Rusco Industries, Inc., Bedford Heights, Ohio. Filed Apr. 4, 1968.

ROCK 'N' ROLLER

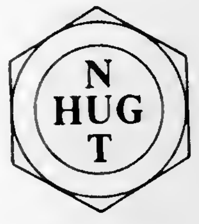
For Casters (Int. Cl. 6).
First use Nov. 27, 1956.

SN 296,849. Lehman Specialty Company, Philadelphia, Pa. Filed Apr. 29, 1968.

MOR-ROOM

For Combination Auxiliary Towel Rod and Shelf Assembly (Int. Cl. 21).
First use July 8, 1963.

SN 299,421. Applied Technology Inc., Vermilion, Ohio. Filed May 31, 1968.



Claim to the term "Nut" is made only in association with applicant's composite mark.
For Lock Nuts (Int. Cl. 6).
First use Jan. 18, 1968.

SN 303,861. Dixon Valve & Coupling Company, Philadelphia, Pa. Filed July 30, 1968.

TUFF-LITE

For Nylon Fittings for Hose and Hose Connections (Int. Cl. 17).
First use November 1960.

SN 305,190. Acorn Engineering Company, City of Industry, Calif. Filed Aug. 15, 1968.

FLO-CLOZ

For Control Valves (Int. Cl. 6).
First use Sept. 1, 1960.

SN 305,386. Acorn Engineering Company, City of Industry, Calif. Filed Aug. 19, 1968.

AUTO-CLOZ

For Control Valves (Int. Cl. 6).
First use Aug. 1, 1960.

SN 307,194. Danfoss Manufacturing Company Limited, Port Credit, Ontario, Canada. Filed Aug. 12, 1968.

TEMPRESS

Owner of Canadian Reg. No. 152,390, dated Aug. 4, 1967.
For Water Mixing Valves (Int. Cl. 6).
First use July 14, 1967; in commerce Oct. 25, 1967.

SN 307,669. Preformed Line Products Company, Cleveland, Ohio. Filed Sept. 18, 1968.

GLAS-GRIP

Owner of Reg. No. 744,683.
For Terminal Fittings, Dead Ends and the Like on Mechanical Strands (Int. Cl. 6).
First use about Apr. 19, 1968.

SN 308,173. David Diperstein, d.b.a. United States Casting Repair Co., Glenside, Pa. Filed Sept. 25, 1968.

SEAL-LOCK

Owner of Reg. No. 674,345.
For Metallic Locking Slugs, Lock Jigs, Metal Strips, Metal Spacers, and Punchers, for the Repair of Metal Castings (Int. Cl. 6).
First use May 1, 1957.

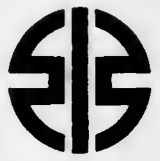
SN 308,850. Fairchild Hiller Corporation, Germantown, Md. Filed Oct. 4, 1968.

FAIRCHILD HILLER

Owner of Reg. Nos. 559,860, 761,868, and others.
For Pressure Regulators for Fluids (Int. Cl. 6).
First use March 1965.

Class 14—Metals and Metal Castings and Forgings

SN 282,901. Kawasaki Steel Corporation, Fukiai-ku, Kobe, Japan. Filed Oct. 19, 1967.



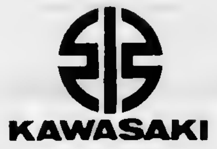
For Semi-Manufactured Steel—Namely, Pig Iron, Ingot, Slab, Billet, Bloom, Wire Rod, Steel Tube, Steel Bar, Shape Steel, Steel Castings, Steel Plate, Steel Sheet, Steel Coil, Hoop, Steel Pipe, Steel Forgings, Iron Castings, Rolls, Iron Powder, Head Plate, Corrugated Pipes, Corrugated Pipe Cells (Int. Cl. 6).
First use at least as early as Sept. 30, 1918; in commerce at least as early as Dec. 31, 1953.

SN 282,902. Kawasaki Steel Corporation, Fukiai-ku, Kobe, Japan. Filed Oct. 19, 1967.

RIVER

For Semi-Manufactured Steel—Namely, Pig Iron, Ingot, Slab, Billet, Bloom, Wire Rod, Steel Tube, Steel Bar, Shape Steel, Steel Castings, Steel Plate, Steel Sheet, Steel Coil, Hoop, Steel Pipe, Steel Forgings, Iron Castings, Rolls, Iron Powder, Head Plate, Corrugated Pipes, Corrugated Pipe Cells (Int. Cl. 6).
First use at least as early as Sept. 30, 1918; in commerce at least as early as Dec. 31, 1953.

SN 282,903. Kawasaki Steel Corporation, Fukiai-ku, Kobe, Japan. Filed Oct. 19, 1967.



For Semi-Manufactured Steel—Namely, Pig Iron, Ingot, Slab, Billet, Bloom, Wire Rod, Steel Tube, Steel Bar, Shape Steel, Steel Castings, Steel Plate, Steel Sheet, Steel Coil, Hoop, Steel Pipe, Steel Forgings, Iron Castings, Rolls, Iron Powder, Head Plate, Corrugated Pipes, Corrugated Pipe Cells (Int. Cl. 6).
First use at least as early as Sept. 30, 1918; in commerce at least as early as Dec. 31, 1953.

Class 18—Medicines and Pharmaceutical Preparations

SN 293,927. Honeggers' & Co., Inc., Fairbury, Ill. Filed Mar. 22, 1968.

ALKAFLUSH

For Laxative and Anti-Acid Preparation for Swine (Int. Cl. 5).
First use June 5, 1961.

SN 293,963. The Upjohn Company, Kalamazoo, Mich. Filed Mar. 22, 1968.

DRYGARD

For Antibiotic Preparation for Veterinary Use (Int. Cl. 5).
First use Jan. 15, 1968.

SN 294,003. Armour Pharmaceutical Company, Chicago, Ill. Filed Mar. 25, 1968.

TYROLIN

For Pharmaceutical Preparation for the Treatment of Thyroid Deficiencies (Int. Cl. 5).
First use on or prior to Mar. 13, 1968.

SN 294,258. Bristol-Myers Company, New York, N.Y. Filed Mar. 27, 1968.

CONTEND

For Cold Tablet and an Antacid (Int. Cl. 5).
First use Mar. 7, 1968.

SN 294,321. Smith, Miller & Patch, Inc., New York, N.Y. Filed Mar. 27, 1968.

SKELMA

For Muscle Relaxant (Int. Cl. 5).
First use Mar. 21, 1968.

SN 307,916. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

V IMMUNE

For Feminine Cleansing Douche (Int. Cl. 5).
First use Aug. 6, 1968.

SN 307,945. Rucker Pharmacal Co., Inc., Shreveport, La. Filed Sept. 23, 1968.

RU-EST

For Oral Estrogen Preparation (Int. Cl. 5).
First use Feb. 26, 1959.

SN 307,947. Rucker Pharmacal Co., Inc., Shreveport, La. Filed Sept. 23, 1968.

RU-VERT

For Vertigo Preparation (Int. Cl. 5).
First use Mar. 21, 1960.

SN 307,948. Rucker Pharmacal Co., Inc., Shreveport, La. Filed Sept. 23, 1968.

SUL-V

For Sulfonamide Preparation in Liquid and Tablet Form, for Use in Treatment of All Infections in Humans Susceptible to Sulfonamide Therapy (Int. Cl. 5).
First use Jan. 8, 1964.

Class 26 — Measuring and Scientific Appliances

SN 271,860. Tokai Sangyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed May 18, 1967.

PEAK

Owner of Japanese Reg. No. 303,682, dated June 24, 1938.
For Optical Instruments for Measuring Angles and Distances; Plain Magnifying Glasses and Magnifying Loops Containing Marked Measuring Graduations Thereon or Therein (Int. Cl. 9).

SN 276,203. Plaubel Feinmechanik und Optik, Frankfurt am Main, Germany. Filed July 13, 1967.

PECO-PROFIA

Owner of German Reg. No. 831,540, dated Apr. 6, 1967.
For Photographic Still and Movie Cameras, and Parts Thereof (Int. Cl. 9).

SN 283,175. Systematics, Inc., St. Paul, Minn. Filed Oct. 23, 1967.

AUTOSTART

For Electronic Temperature Control for Automatically Starting and Stopping Automobile Engines (Int. Cl. 9).
First use Nov. 1, 1961.

SN 288,773. Brittain Industries, Inc., Torrance, Calif. Filed Jan. 15, 1968.

LEVEL-MATIC

For Aircraft Stabilizer System for Laterally Controlling an Aircraft, Including a Gyroscopic Roll and Turn Rate Indicator and a Servo Mechanism for Controlling the Aircraft Control Surfaces (Int. Cl. 9).
First use Dec. 14, 1967.

SN 297,204. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka Prefecture, Japan. Filed May 2, 1968.

PANASONIC

Owner of Japanese Reg. No. 619,509, dated June 28, 1963; and U.S. Reg. Nos. 724,764, 800,220, and others.
For Electronic Voltmeters, Signal Generators, Color Service Generators, Audio Oscillators, Cathode Ray Oscilloscopes, and Electronic Counters (Int. Cl. 9).

SN 300,145. Watchemoket Optical Co., Inc., Providence, R.I. Filed June 10, 1968.

WATCHEMOKET
eye
SAVERS

Applicant disclaims the words "Eye Savers" in the mark, reserving all common-law rights to such words.
For Safety Glasses and Goggles and Sunglasses (Int. Cl. 9).
First use in or about January 1943.

Class 28 — Jewelry and Precious-Metal Ware

SN 286,928. Guertin Bros. Mfg. Corp., Hyannis, Mass. Filed Dec. 14, 1967.

The
Mother's
Ring

Applicant disclaims the words "The" and "Ring" apart from the mark as shown. Owner of Reg. No. 681,459.
For Rings (Int. Cl. 14).
First use at least as early as Nov. 21, 1957.

SN 295,109. Carla Jewelry Corp., Providence, R.I. Filed Apr. 8, 1968.

CARLA

For Jewelry Made of Precious Metals, Including Earrings, Bracelets, and Pins (Int. Cl. 14).
First use on or about Oct. 1, 1965.

SN 295,917. Cecil Cope, d.b.a. C & G Jewelers, Phoenix, Ariz. Filed Apr. 18, 1968.

INSTA-FIT

For Adjusters for Use on Rings and Finger-Mounted Jewelry (Int. Cl. 14).
First use Oct. 15, 1967.

SN 295,964. David G. Steven, Inc., New York, N.Y. Filed Apr. 18, 1968.

MARC AUREL

"Marc Aurel" is fanciful and not the name of any known individual.
For Jewelry (Int. Cl. 14).
First use Sept. 22, 1967.

SN 302,354. Union Carbide Corporation, New York, N.Y. Filed July 9, 1968.

UC

For Jewelry (Int. Cl. 14).
First use on or about July 18, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 288,287. The Drackett Company, Cincinnati, Ohio. Filed Jan. 8, 1968.

WITH THE POWER STRIP

Applicant disclaims the word "Strip" apart from the mark as shown.
For Sponge Mops and Sponge Refills (Int. Cl. 21).
First use Dec. 18, 1967.

SN 295,236. Import-Export Management Service, Inc., Dallas, Tex. Filed Apr. 9, 1968.

Swedish
Shamboy

Applicant disclaims sole ownership of the term "Swedish."
For Synthetic Sponge With Characteristics of a Chamois in Block Form for Domestic and Commercial Uses (Int. Cl. 21).
First use Dec. 1, 1967.

SN 300,797. Baker Brush Co., Inc., New York, N.Y. Filed June 19, 1968.

BAK-O-NEL

Owner of Reg. Nos. 508,508, 556,290, and 575,885.
For Paint Roller Sleeves (Int. Cl. 16).
First use at least as early as Jan. 1, 1960.

Class 31 — Filters and Refrigerators

SN 273,430. UMC Industries, Inc., St. Louis, Mo. Filed June 8, 1967.

SL

For Refrigerated Cabinets for Commercial Use, Used for the Storing and/or Merchandising of Food Products, and Refrigerated Soda Fountains (Int. Cl. 11).
First use Nov. 2, 1966.

SN 274,904. UMC Industries, Inc., St. Louis, Mo. Filed June 27, 1967.

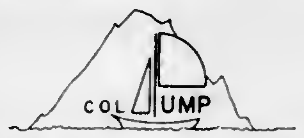
The mark consists of a stylized design of the letters "UMC."
For Refrigerated Cabinets for Commercial Use, Used for the Storing and/or Merchandising of Food Products, and Refrigerated Soda Fountains (Int. Cl. 11).
First use about October 1966.

SN 287,020. King Coffee Filter Co. Inc., Rochester, N.Y. Filed Dec. 15, 1967.

QUEEN

For Coffee Filters (Int. Cl. 11).
First use Dec. 7, 1967.

SN 289,755. Adler & Barbour Yacht Services, Inc., Bronxville, N.Y., assignee of R. (Ralph) Michael Adler, New York, N.Y. Filed Jan. 29, 1968.



For Refrigerators, Freezers, and Cold-Storage Units, Suitable for Use on Boats and Capable of in Transit Ice Cube Making (Int. Cl. 11).
First use Nov. 2, 1967.

SN 291,595. Dollinger Corporation, Rochester, N.Y. Filed Feb. 21, 1968.

✱DOLLINGER

The drawing is lined for red, but no claim is made to color.
For Liquid, Air, and Other Gas Filters (Int. Cl. 11).
First use September 1966.

SN 298,006. Hupp, Inc., Cleveland, Ohio. Filed May 13, 1968.

FOODMASTER

For Refrigerators and Freezers (Int. Cl. 11).
First use Sept. 15, 1962.

SN 298,686. Borg-Warner Corporation, Chicago, Ill. Filed May 21, 1968.

VHQ

Owner of Reg. No. 836,272.
For Refrigerators and Parts Thereof for Replacement and Repair (Int. Cl. 11).
First use on or prior to Jan. 15, 1968.

SN 300,222. Cambridge Filter Corporation, Syracuse, N.Y. Filed June 12, 1968.

PURECEL

For Air Filters (Int. Cl. 11).
First use May 24, 1968.

Class 32 — Furniture and Upholstery

SN 293,398. O'Sullivan Industries, Inc., Lamar, Mo. Filed Mar. 15, 1968.

RECORD KAROUSEL

The word "Record" is disclaimed apart from the mark as shown.
For Phonograph Record Racks (Int. Cl. 20).
First use Dec. 27, 1967.

Class 33 — Glassware

SN 294,799. Asahi Glass Company Limited, Chiyoda-ku, Tokyo, Japan. Filed Apr. 3, 1968.

LAMISAFE

For Safety Glass Used in Vehicles, Such as Automobiles and Trains, and Used in the Construction Industry (Int. Cl. 19).
First use May 1959; in commerce in or about January 1965.

SN 297,406. Hillstrom Enterprises, Inc., Chicago, Ill. Filed May 6, 1968.

RED GARTER

For Glass Tableware (Int. Cl. 21).
First use May 1, 1968.

SN 302,97[illegible]. Saftee Glass Company, Inc., Philadelphia, Pa. Filed July 17, 1968.

GEMGUARD

For Burglar Resistant Window Glass (Int. Cl. 19).
First use Apr. 14, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 274,800. Charles K. Williams, Ottawa, Ontario, Canada. Filed June 26, 1967.

ELEKTRO-SAUNA

Owner of Canadian Reg. No. 149,102, dated Jan. 27, 1967.
For Heaters for Hot Air Baths and for Steam Baths (Int. Cl. 11).

SN 274,812. Malleable Iron Range Company, Beaver Dam, Wis. Filed June 26, 1967.

STA-KLEAN

For Electric Range Components—Namely, Ovens (Int. Cl. 11).
First use Jan. 3, 1964.

SN 276,950. Poloron Products, Inc., New Rochelle, N.Y. Filed July 27, 1967.

WOODLAND

For Outdoor Grills (Int. Cl. 11).
First use at least as early as January 1947.

SN 283,178. United States Register Company, d.b.a. United States Register Co., Battle Creek, Mich. Filed Oct. 23, 1967.

AIRFLEX

For Air Deflectors (Int. Cl. 11).
First use July 1965.

SN 290,303. The Lau Blower Company, Dayton, Ohio. Filed Feb. 5, 1968.

DYNA-DRIVE

For Humidifiers and Parts Thereof for Use With Warm Air Furnaces (Int. Cl. 11).
First use Sept. 1, 1967.

SN 291,616. Loren Cook Company, Berea, Ohio. Filed Feb. 21, 1968.

UNI-DOME

For Ventilating Equipment—Namely, Ventilators Suitable for Installation on Building Roofs (Int. Cl. 11).
First use July 1963.

SN 292,130. Raypak Company, Inc., South El Monte, Calif. Filed Feb. 28, 1968.

INSTANT-PAK

For Direct Fired Water Heater Units for Domestic, Commercial, and Institutional Use (Int. Cl. 11).
First use May 1966.

SN 292,131. Raypak Company, Inc., South El Monte, Calif. Filed Feb. 28, 1968.

RESTAURANT-PAK

For Water Heating Units for Commercial Use (Int. Cl. 11).
First use June 1967.

SN 296,694. Jenn-Air Corporation, Indianapolis, Ind. Filed Apr. 26, 1968.

JENN-AIR

Owner of Reg. No. 599,333.
For Electric Cooking Stoves and Electric Cooking Stove Units—Namely, Ovens, Ranges, Broilers, Grills, Griddles, and Motor Driven Rotisseries; and Including Replacement Parts Thereof (Int. Cl. 11).
First use Nov. 18, 1966.

SN 298,688. Borg-Warner Corporation, Chicago, Ill. Filed May 21, 1968.

VHQ

Owner of Reg. No. 836,272.
For Cooking Ranges, Air Conditioners, and Water Heaters, and Parts Thereof for Replacement and Repair (Int. Cl. 11).
First use on or prior to Jan. 19, 1968.

SN 307,583. The Kemode Mfg. Co. Inc., Westbury, N.Y. Filed Sept. 17, 1968.

QUIK-SHOT

For Soldering Irons and Cartridges Therefor (Int. Cl. 9).
First use on or about July 15, 1948.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 299,948. Crane Packing Company, Morton Grove, Ill. Filed June 7, 1968.

MINI-T-PAK

For Machinery Packing (Int. Cl. 17).
First use Oct. 11, 1967.

SN 304,450. Corduroy Rubber Company, Grand Rapids, Mich. Filed Aug. 6, 1968.

GOLDEN FIFTY

For Pneumatic Rubber Tires (Int. Cl. 12).
First use June 27, 1968.

SN 305,066. Remaco, Incorporated, Northvale, N.J. Filed Aug. 13, 1968.

ANCHOR-SEAL

For Rubber Plug for the Repair of Punctures in Tubeless Tires (Int. Cl. 12).
First use July 2, 1968.

SN 307,025. The Hercules Tire & Rubber Company, Findlay, Ohio. Filed Sept. 10, 1968.

COOL CAT

For Pneumatic Tires and Tubes (Int. Cl. 12).
First use Aug. 14, 1968.

Class 36 — Musical Instruments and Supplies

SN 289,992. Kimball Piano & Organ Co., Jasper, Ind. Filed Jan. 31, 1968.

SWINGER

For Electronic Organs (Int. Cl. 15).
First use Nov. 14, 1967.

SN 298,038. Franklin J. Petzke, d.b.a. Frank Petzke Company, Phoenix, Ariz. Filed May 13, 1968.

For Cane Reeds for Musical Instruments (Int. Cl. 15).
First use Apr. 1, 1967.

Class 37 — Paper and Stationery

SN 253,381. W. & R. Balston, Limited, Maidstone, Kent, England. Filed Aug. 29, 1966.

Owner of British Reg. No. 886,934, dated Nov. 15, 1965; and U.S. Reg. No. 507,638.
For Paper for Use in the Laboratory, Excluding Chemical Test Papers (Int. Cl. 16).

SN 284,784. Jeffco Industries, Inc., Somerville, N.J. Filed Nov. 14, 1967.

POLYALISON

For Polymer Plastic Material Sold as a Component of File Pockets, File Folders, and Expanding Wallets (Int. Cl. 16).
First use June 15, 1967.

SN 291,593. The Dexter Corporation, Windsor Locks, Conn. Filed Feb. 21, 1968.

1234

For Heat Sealable, Infusible Paper for Making Teabags and the Like (Int. Cl. 16).
First use on or before Oct. 2, 1967.

Class 38 — Prints and Publications

SN 263,270. Robert I. Gordon, d.b.a. Homemakers Research Institute, Evanston, Ill. Filed Jan. 25, 1967.

The drawing is lined for red, but no color is claimed as a feature of the mark.
For Cook Books and Pamphlets Published From Time to Time (Int. Cl. 16).
First use prior to 1958.

SN 272,349. Buffalo Courier-Express, Inc., Buffalo, N.Y. Filed May 25, 1967.

COURIER ACTION

Owner of Reg. Nos. 506,305, 788,300, and 794,826.
For Newspaper Feature (Int. Cl. 16).
First use May 1, 1967.

SN 272,350. Buffalo Courier-Express, Inc., Buffalo, N.Y. Filed May 25, 1967.

Courier ACTION

Owner of Reg. Nos. 506,305, 788,300, and 794,826.
For Newspaper Feature (Int. Cl. 16).
First use May 1, 1967.

SN 275,293. The C. M. Paula Company, Cincinnati, Ohio. Filed July 3, 1967.

PAULA'S

For Greeting Cards, Printed Signs, Printed Mottos, Comic Calling Cards, Printed Note Pads, and Printed Post Cards (Int. Cl. 16).
First use Aug. 1, 1958.

SN 278,342. The Nature Conservancy, Washington, D.C. Filed July 21, 1967.

THE NATURE CONSERVANCY NEWS

For Magazine in the Field of Conservation of Nature (Int. Cl. 16).
First use October 1960.

SN 278,714. Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, New York, N.Y. Filed Aug. 21, 1967.

MAN'S WORLD

For Magazine Published Periodically (Int. Cl. 16).
First use on or about July 15, 1955.

SN 278,843. Fred Karl Scheibe, Oneonta, N.Y. Filed Aug. 21, 1967.

IDIOPLASMIC PRECIPITATE

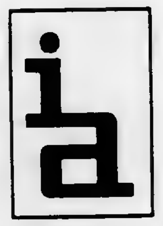
For Abstract Paintings (Int. Cl. 16).
First use Sept. 1, 1964.

SN 278,890. Bernard J. Garber, d.b.a. Biograf Books, Blauvelt, N.Y. Filed Aug. 23, 1967.

BIOGRAF

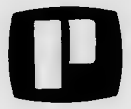
For Combination Travel Guide and Scrapbook Album (Int. Cl. 16).
First use on or about Mar. 10, 1967.

SN 279,653. Industrial Atlas Corporation, New York, N.Y. Filed Sept. 5, 1967.



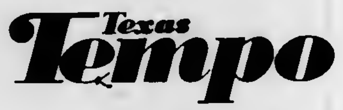
For Mining Guide Books (Int. Cl. 16).
First use June 10, 1967.

SN 282,001. Geo. A. Pflaum, Publisher, Inc., Dayton, Ohio. Filed Oct. 6, 1967.



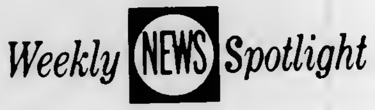
For Educational Publications for Both Adults and Children—Namely, Books, Booklets, Pamphlets, Greeting Cards, and Visual Aids Consisting of Film Strips With Accompanying Pamphlets and Teachers' Guide Books (Int. Cls. 9 and 16).
First use June 1, 1967, on booklets.
Subj. to Intf. with SN 292,168.

SN 282,371. The Houston Post Company, Houston, Tex. Filed Oct. 12, 1967.



The word "Texas" is disclaimed apart from the mark as shown. Owner of Reg. No. 831,838.
For Newspaper Supplement (Int. Cl. 16).
First use Oct. 2, 1967.

SN 282,990. A. B. Dick Company, Niles, Ill. Filed Oct. 20, 1967.



For Current Events Leaflets Published Periodically (Int. Cl. 16).
First use on or about Sept. 22, 1967.

SN 288,097. International Latex Corporation, Dover, Del. Filed Jan. 4, 1968.

"YOU AND EVERY MAN IN BUSINESS ARE TRUSTEES OF THIS NATION AND THE WORLD"

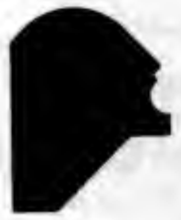
For Newspaper Column in the Nature of a Public Service (Int. Cl. 16).
First use 1948.

SN 289,030. Robert T. Paul and Fay L. Paul (partnership), Fort Myers, Fla. Filed Jan. 17, 1968.

TEL-A-CARD

For Cards Encouraging a Telephone Call to the Sender Thereof (Int. Cl. 16).
First use Sept. 25, 1967.

SN 289,215. Seven Bridges Publishing Company, Chicago, Ill. Filed Jan. 19, 1968.



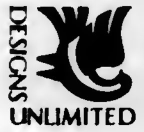
For Journal of Existential Psychiatry (Int. Cl. 16).
First use at least as early as May 25, 1966.

SN 289,886. Famous Artists Schools, Inc., Westport, Conn. Filed Jan. 30, 1968.

FAMOUS ARTISTS PAINTING COURSE

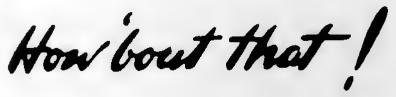
Owner of Reg. Nos. 748,914, 797,917, and others.
For Instructional Material in Printed Serial Form (Int. Cl. 16).
First use August 1953.

SN 290,726. Designs Unlimited, Maple Heights, Ohio. Filed Feb. 9, 1968.



For Original Artwork—Namely, Original Paintings, Greeting Cards, and Advertising Brochures for Others (Int. Cl. 16).
First use Jan. 1, 1966.

SN 290,735. Abraham R. Kamm Kaminsky, Scottsdale, Ariz. Filed Feb. 9, 1968.



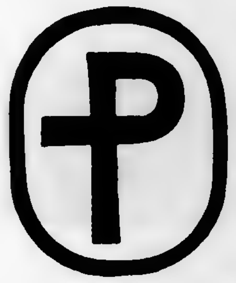
For Leaflets (Int. Cl. 16).
First use June 1949.

SN 291,392. Hichcock Publishing Company, Wheaton, Ill. Filed Feb. 19, 1968.

WOODWORKING DIGEST

Owner of Reg. No. 626,234.
For Trade Magazine (Int. Cl. 16).
First use 1943.

SN 292,168. Associated Educational Services Corporation, New York, N.Y. Filed Feb. 29, 1968.



For Educational Books and Pamphlets in Bound and Loose Leaf Form in Binders (Int. Cl. 16).
First use Sept. 7, 1966.
Subj. to Intf. with SN 282,001.

SN 292,442. Textron Inc., Cheshire, Conn. Filed Mar. 4, 1968.

CRYSTALITE

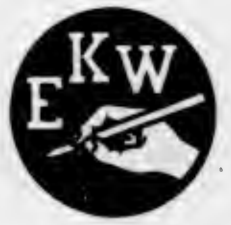
For Charts for Optical Comparator Machines (Int. Cl. 16).
First use Dec. 21, 1962.

SN 293,034. Guido Evangelistic Association, Inc., Metter, Ga. Filed Mar. 12, 1968.

SOWING AND REAPING

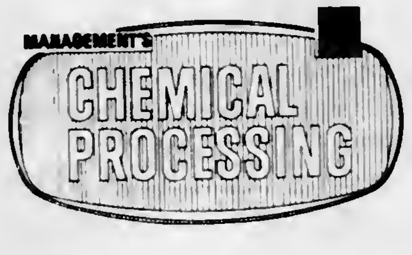
For Monthly Religious Newsletters and Pamphlets (Int. Cl. 16).
First use Jan. 1, 1961.

SN 296,226. Edwin K. Williams & Co., Santa Barbara, Calif. Filed Apr. 22, 1968.



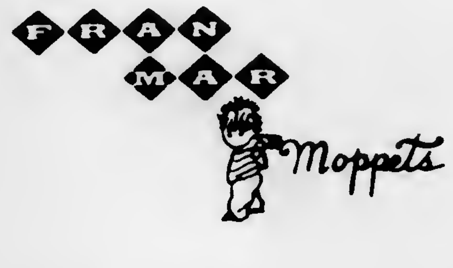
Owner of Reg. No. 787,188.
For Bookkeeping and Business Management Forms (Int. Cl. 16).
First use Sept. 1, 1965.

SN 296,577. Putman Publishing Company, Chicago, Ill. Filed Apr. 25, 1968.



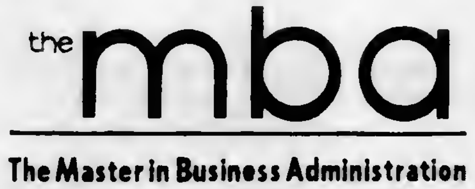
The drawing is lined for red, but color is not an essential feature of the mark. Owner of Reg. Nos. 647,859, 778,783, and 797,253.
For Magazine (Int. Cl. 16).
First use Jan. 26, 1968.

SN 299,554. Fran Mar Greeting Cards Ltd., Mount Vernon, N.Y. Filed June 3, 1968.



For Greeting Cards (Int. Cl. 16).
First use Feb. 15, 1964.

SN 310,521. MBA Enterprises, Inc., New York, N.Y. Filed Oct. 25, 1968.



For Magazine for Students of Business Administration (Int. Cl. 16).
First use Oct. 15, 1966.

SN 310,523. National Periodical Publications, Inc., New York, N.Y. Filed Oct. 25, 1968.

ADVENTURE COMICS

For Comic Magazines (Int. Cl. 16).
First use Oct. 10, 1938.

Class 39 — Clothing

SN 278,553. Catalina, Inc., Los Angeles, Calif. Filed Aug. 17, 1967.

CATALINA MARTIN

Owner of Reg. Nos. 236,068, 815,510, and others.
For Men's and Boys' Swimsuits, Cabana Sets Consisting of Jackets and Shorts, Beach Robes, Beach Jackets, Shirts, T-Shirts, Slacks, Shorts, Sweaters, Jackets, Hats, Suburban Coats, Sport Coats, and Raincoats.
First use June 6, 1967.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 302,682. Marley Hodgson, Ltd., Chicago, Ill. Filed July 15, 1968.

TRAFALGAR

For Blazer Buttons (Int. Cl. 26).
First use on or about May 29, 1968.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 303,231. Riegel Textile Corporation, New York, N.Y. Filed July 22, 1968.

SWIRLDOWN

For Non-Woven Fabrics for Use in the Manufacture of Products To Be Applied to the Body To Absorb Body Fluids, Such as Sanitary Napkins, Surgical Dressings, Disposable Diapers, and the Like (Int. Cl. 24).
First use June 28, 1968.

SN 303,233. Riegel Textile Corporation, New York, N.Y. Filed July 22, 1968.

FLOCEL

For Non-Woven Fabrics for Use in the Manufacture of Products To Be Applied to the Body To Absorb Body Fluids, Such as Sanitary Napkins, Surgical Dressings, Disposable Diapers, and the Like (Int. Cl. 24).
First use May 20, 1968.

Class 46 — Foods and Ingredients of Foods

SN 278,290. International Minerals & Chemical Corporation, Skokie, Ill., assignee of Evangeline Pepper & Food Products, Inc., St. Martinville, La. Filed Aug. 15, 1967.

Owner of Reg. Nos. 515,311, 736,512, and others.

For Canned Foods—Namely, Cut and Whole Yams, Whole Yams, Cut Green Beans, Whole Okra, Cut Okra, Cut Okra and Tomatoes, Cut Okra, Tomatoes and Corn, and Okra Gumbo (Int. Cl. 29).

First use Nov. 15, 1966; Dec. 1, 1912, as to "Evangeline."

SN 294,836. W. R. Grace & Co., New York, N.Y. Filed Apr. 3, 1968.

SHRIMP FRYS

The word "Shrimp" is disclaimed apart from the mark as shown.

For Frozen Uncooked Breaded Shrimp (Int. Cl. 29).

First use Jan. 5, 1968.

SN 296,624. Gussie B. Yasgur, Philadelphia, Pa. Filed Apr. 26, 1968.

The portrait is that of a fanciful figure. Applicant disclaims the words "Brand," "Quality Fountain Products," "Fruits," and "Syrups," separate and apart from the mark as shown.

For Food Flavoring Extracts and Syrups and Toppings for Ice Cream—Namely, Fruit, Nut and Flavored Syrups (Int. Cl. 30).

First use 1950.

SN 296,950. Federal Sweets & Biscuit Co., Clifton, N.J. Filed Apr. 30, 1968.

ROYAL crunch

For Cookie Wafers (Int. Cl. 30).

First use Apr. 3, 1968.

SN 296,952. Federal Sweets & Biscuit Co., Clifton, N.J. Filed Apr. 30, 1968.

ROYAL munchy

For Cookie Wafers (Int. Cl. 30).

First use Apr. 3, 1968.

SN 298,761. Stauffer & Sons, Inc., Blue Mounds, Wis. Filed May 21, 1968.

SHARPY

For Pasteurized Process Cheese, Cheese Food and Cheese Spread (Int. Cl. 29).

First use in 1951.

SN 298,820. Mark G. Gehlar, d.b.a. Oregon Fruit Products Co., Salem, Oreg. Filed May 22, 1968.

Kitchen Konvenient

For Canned Fruits (Int. Cl. 29).

First use Apr. 17, 1968.

SN 298,888. Yohay Baking Co., Inc., Brooklyn, N.Y. Filed May 22, 1968.

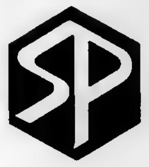
JOLLY CUPS

Applicant, without waiving its common law rights, disclaims the word "Cups" apart from the mark as a whole.

For Edible Pastry Cups (Int. Cl. 30).

First use at least as early as Mar. 26, 1968.

SN 299,869. A. H. Robins Company, Incorporated, Richmond, Va. Filed June 6, 1968.



For Snack Foods—Namely, Candies, Potato Chips, Pork Rinds, Corn Cheese Puffs, Crackers, Corn Chips, Cookie Sandwiches, Salted Peanuts, Soup Crackers, Popcorn, Pies and Cakes (Int. Cls. 29 and 30).

First use June 16, 1967.

SN 299,936. Armour and Company, Chicago, Ill. Filed June 7, 1968.

TOUGH tex

Owner of Reg. Nos. 523,384 and 758,518.

For Shortening Prepared From Animal Fats (Int. Cl. 29).

First use in or prior to February 1967.

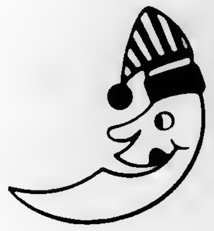
SN 299,946. Claridge Food Co. Inc., Flushing, N.Y. Filed June 7, 1968.

Claridge

For Canned Corned Beef Hash, All-Beef Burgers in Brown Gravy and Tomato Sauce, Meatballs in Brown Bravy and Tomato Sauce, and Beef Patties and Beans in Tomato Sauce (Int. Cl. 29).

First use Oct. 9, 1963.

SN 299,987. Kellogg Company, Battle Creek, Mich. Filed June 7, 1968.



For Cereal-Derived Food Product To Be Used as a Breakfast Food, Snack Food and Confection (Int. Cl. 30).

First use Nov. 16, 1967.

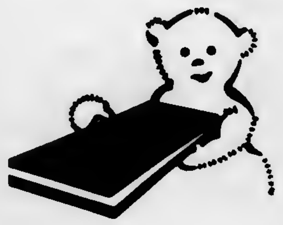
SN 300,214. Stauffer & Sons, Inc., Blue Mounds, Wis. Filed June 11, 1968.

BLUE MOUNDS SMOKY

For Smoked Pasteurized Process Cheddar and Swiss Cheese (Int. Cl. 29).

First use 1954.

SN 300,392. Andes Candies Inc., Chicago, Ill. Filed June 14, 1968.



No exclusive trademark rights are claimed in the representation of a rectangular piece of candy apart from the mark.

For Candies (Int. Cl. 30).

First use October 1967.

SN 300,436. Duffy-Mott Company, Inc., New York, N.Y. Filed June 14, 1968.

TOMCLAMO

For Clam and Tomato Flavored Cocktail (Int. Cl. 32).

First use June 3, 1968.

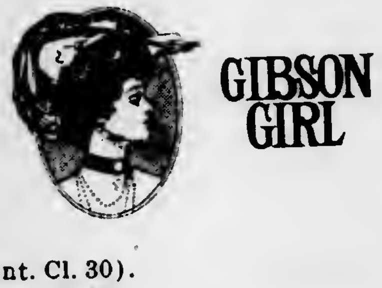
SN 307,167. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed Sept. 12, 1968.

HEARTLAND

For Canned Fruit (Int. Cl. 29).

First use Aug. 20, 1968.

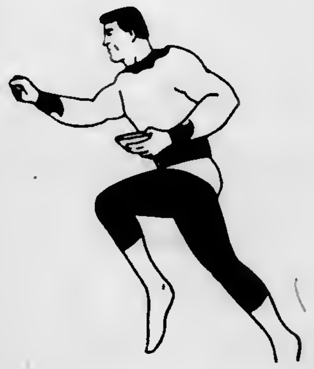
SN 307,712. King Candy Company, d.b.a. Southern Candy Co., Fort Worth, Tex. Filed Sept. 19, 1968.



For Candy (Int. Cl. 30).

First use Sept. 4, 1968.

SN 307,811. Ralston Purina Company, St. Louis, Mo. Filed Sept. 20, 1968.



For Dry Breakfast Cereal (Int. Cl. 30).

First use July 26, 1968.

SN 307,925. Desert Produce, Inc., Holtville, Calif. Filed Sept. 23, 1968.

HIGH CHAPARRAL

For Fresh Vegetables (Int. Cl. 31).

First use July 30, 1968.

SN 307,937. The Quaker Oats Company, Chicago, Ill. Filed Sept. 23, 1968.

SNAPJACKS

For Pancake Mix (Int. Cl. 30).

First use at least as early as Aug. 1, 1968.

SN 307,952. Sunset Packing Company of Oregon, d.b.a. Sunset Packing Company, Forest Grove, Oreg. Filed Sept. 23, 1968.

Owner of Reg. No. 736,515.

For Frozen Fruits, Berries and Vegetables; and Dried Fruits and Berries (Int. Cl. 29).

First use Apr. 21, 1961.

Class 49 — Distilled Alcoholic Liquors

SN 297,594. Renfield Importers, Ltd., Union, N.J. Filed May 7, 1968.

TEQUI

For Tequila (Int. Cl. 33).

First use Apr. 26, 1968.

SN 297,689. Medley Distilling Co., d.b.a. Wild Peccary Distilling Co., Owensboro, Ky. Filed May 8, 1968.

WILD PECCARY

For Whiskey (Int. Cl. 33).

First use June 1, 1965.

SN 298,047. Schieffelin & Co., New York, N.Y. Filed May 13, 1968.

HENNESSY

Owner of Reg. Nos. 347,763 and 808,175.

For Cognac Brandy (Int. Cl. 33).

First use 1861.

Class 51 — Cosmetics and Toilet Preparations

SN 247,263. Sea & Ski Corporation, Millbrae, Calif. Filed June 3, 1966.

LIFE GUARD

For Suntan Lotion (Int. Cl. 3).
First use May 26, 1966.

SN 289,821. MEM Company, Inc., Northvale, N.J. Filed Jan. 29, 1968.

TIMBERLINE

For Eau de Cologne and After-Shave Lotion (Int. Cl. 3).
First use Nov. 7, 1967, on eau de cologne.

SN 290,247. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Feb. 5, 1968.

LIFE-GLO

Owner of Reg. No. 392,260.
For Hair Conditioner (Int. Cl. 3).
First use Jan. 17, 1968.

SN 291,956. Amway Corporation, Ada, Mich. Filed Feb. 27, 1968.

REASONS

For Colognes, Fragrant Hand and Body Lotions and Bath Oils (Int. Cl. 3).
First use on or about May 23, 1966.

SN 292,758. Calgon Corporation, Pittsburgh, Pa. Filed Mar. 8, 1968.

CALGON BOUQUET

Owner of Reg. No. 358,518.
For Perfumed Water Softening Chemical for Use in the Bath and for Laundering Delicate Fabrics (Int. Cl. 3).
First use July 8, 1937.

SN 294,124. Alberto-Culver Company, Melrose Park, Ill. Filed Mar. 26, 1968.

ONID

For Personal Deodorants (Int. Cl. 5).
First use Nov. 22, 1967.

SN 294,159. Beecham Products Inc., Clifton, N.J. Filed Mar. 26, 1968.

MISTRAL

For Personal Deodorant (Int. Cl. 5).
First use Feb. 7, 1968.

SN 294,498. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

WAR HOOPS

For Cologne (Int. Cl. 3).
First use on or about Mar. 8, 1968.

SN 294,499. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

OUTRAGEOUS

For Hair Coloring Preparation (Int. Cl. 3).
First use on or about Mar. 8, 1968.

SN 294,500. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

HOMEWORK KIT

For Liquid Make Up (Int. Cl. 3).
First use on or about Mar. 8, 1968.

SN 294,502. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

H-EYE EXPLOSIVES

For Eye Shadow (Int. Cl. 3).
First use on or about Mar. 8, 1968.

SN 294,503. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

CLAWS

For Nail Enamel (Int. Cl. 3).
First use on or about Mar. 8, 1968.

SN 296,105. Carley, Inc., Haddonfield, N.J. Filed Apr. 22, 1968.

SPORTS CENTER CELEBRITY

Owner of Reg. No. 819,256.
For Hand and Body Lotion (Int. Cl. 3).
First use Dec. 29, 1967.

SN 296,654. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

MUCH

For Liquid Make-Up (Int. Cl. 3).
First use on or about Mar. 13, 1968.

SN 296,668. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

DERMA-DRI

For Bath Oil (Int. Cl. 3).
First use on or about Mar. 13, 1968.

SN 297,941. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

CORDUROY

For After Shave Lotion, and Talcum Powder (Int. Cl. 3).
First use Apr. 23, 1968.

SN 297,942. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

ENLIGHTENED

For Hair Coloring Preparation (Int. Cl. 3).
First use Apr. 23, 1968.

SN 297,945. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

DAFFYDILLY

For Dusting Powder, Cream Sachet, Hand Cream, Lip Pomade, Cologne, Talcum Powder, and Bubble Bath (Int. Cl. 3).
First use Apr. 23, 1968.

SN 298,666. Colgate-Palmolive Company, New York, N.Y. Filed May 16, 1968.

PALMOLIVE

Owner of Reg. Nos. 111,460, 210,594, 286,437, and others.
For After Shave Lotion (Int. Cl. 3).
First use 1942.

SN 299,846. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed June 6, 1968.

BAGATELLE

For Cologne (Int. Cl. 3).
First use Dec. 4, 1967.

SN 302,183. Alberto-Culver Company, Melrose Park, Ill. Filed July 8, 1968.

ELEGANT TOUCH

For Cosmetic Cleansing Lotion (Int. Cl. 3).
First use Apr. 16, 1968.

SN 302,186. Alberto-Culver Company, Melrose Park, Ill. Filed July 8, 1968.

HONEY BEAR HAIR

Applicant disclaims the word "Hair" apart from the mark as shown.
For Hair Color Preparation (Int. Cl. 3).
First use Mar. 15, 1968.

SN 302,190. Alberto-Culver Company, Melrose Park, Ill. Filed July 8, 1968.

BOSSA NOVA BROWNS

Applicant disclaims the word "Browns" apart from the mark as shown.
For Hair Color Preparation (Int. Cl. 3).
First use Apr. 18, 1968.

SN 304,543. Gem, Incorporated, Byhalia, Miss. Filed Aug. 7, 1968.

crystal
·lac

Owner of Reg. No. 857,185.
For Aerosol Hair Spray (Int. Cl. 3).
First use June 17, 1968.

SN 305,677. Radiator Specialty Company, Charlotte, N.C. Filed Aug. 21, 1968.

HAND·MATE

For Hand Masking Cream (Int. Cl. 3).
First use February 1967.

SN 309,331. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Oct. 10, 1968.

LIQUI-SCREEN

Owner of Reg. Nos. 544,818 and 840,164.
For Foundation Cream (Int. Cl. 3).
First use Sept. 6, 1968.

SN 310,284. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Oct. 23, 1968.

JUVENESCENCE

Owner of Reg. Nos. 365,361, 632,844, and 842,579.
For Skin Cream (Int. Cl. 3).
First use Oct. 2, 1968.

Class 52 — Detergents and Soaps

SN 273,763. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed June 13, 1967.

HOSEMASTER

For Detergent Concentrates for Washing Cars, Boats, Trailers, Glassware, Aluminum Doors and Sidings, Ceramic Tile, and Vinyl Surfaces (Int. Cl. 3).
First use Jan. 29, 1965.

SN 287,467. Texize Chemicals, Inc., Greenville, S.C. Filed Dec. 22, 1967.

BREAK-THRU

For Liquid Drain Opener for Household Use (Int. Cl. 3).
First use Dec. 11, 1967.

SN 289,588. General Foods Corporation, White Plains, N.Y. Filed Jan. 25, 1968.

PAIR

For Laundry Detergent (Int. Cl. 3).
First use Jan. 5, 1967.

SN 297,946. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

DAFFYDILLY

For Toilet Soap (Int. Cl. 3).
First use Apr. 23, 1968.

SN 297,949. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

CORDUROY

For Toilet Soap (Int. Cl. 3).
First use Apr. 23, 1968.

SN 298,192. Avon Products, Inc., New York, N.Y. Filed May 15, 1968.

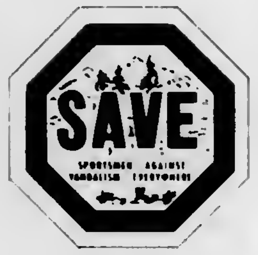
INTERMISSION

For Toilet Soap (Int. Cl. 3).
First use May 1, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 264,497. Arizona Varmint Callers Association, Inc., Phoenix, Ariz. Filed Feb. 13, 1967.

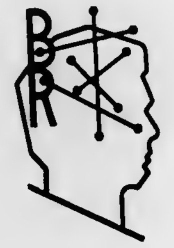


Applicant disclaims the term "Sportsmen Against Vandalism Everywhere."

For Association Services—Namely, Advising and Protecting the Interests of Hunters and Fishermen by Advising Them How To Prevent and Control Acts of Vandalism in Fish and Game Areas, and Distributing Rules, Regulations, and Other Material To Prevent Vandalism and Educate the Members in Regard to the Results of Vandalism (Int. Cl. 42).

First use June 1, 1963.

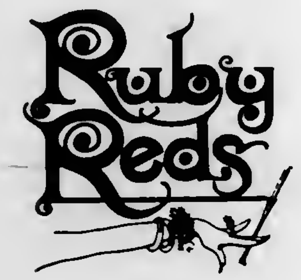
SN 275,509. Brain Research Foundation, Chicago, Ill. Filed July 7, 1967.



For Association Services—Namely, Promoting Research on the Brain, Furthering Public, Professional and Scientific Education on the Brain, and Fostering Improved Care of Persons Afflicted With Brain-Related Illness and the Creation of Brain Research Institutes (Int. Cl. 42).

First use in about January 1960.

SN 279,682. Ruby Red's, Inc., New Orleans, La. Filed Sept. 5, 1967.

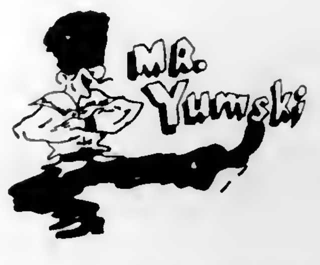


"Ruby Reds" is a fictitious person.

For Restaurant and Bar Services Featuring Food and Drink (Int. Cl. 42).

First use December 1962.

SN 280,787. William J. Kurchak, Jr., Thorold, Ontario, Canada. Filed Sept. 20, 1967.



Priority claimed under Sec. 44(d) on Canadian application filed Apr. 22, 1967; Reg. No. 155,431, dated Feb. 9, 1968.

For Restaurant, Catering, and Take-Out Services (Int. Cl. 42).

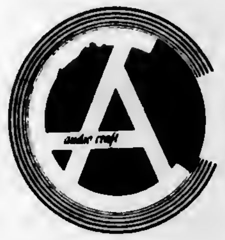
SN 283,610. Audio Craft Company, Inc., Cleveland, Ohio. Filed Oct. 30, 1967.

AUDIO CRAFT

For Consulting, Planning, Designing, and Engineering Services in Connection With High Fidelity and Stereophonic Music Systems, Public Address and Sound Reinforcement Systems, Tape Recorders, Electronic Learning Laboratory Systems, and Educational Audio Equipment (Int. Cl. 42).

First use as early as 1954.

SN 283,611. Audio Craft Company, Inc., Cleveland, Ohio. Filed Oct. 30, 1967.



Owner of Reg. No. 855,891.

For Consulting, Planning, Designing, and Engineering Services in Connection With High Fidelity and Stereophonic Music Systems, Public Address and Sound Reinforcement Systems, Tape Recorders, Electronic Learning Laboratory Systems, and Educational Audio Equipment (Int. Cl. 42).

First use as early as 1957.

SN 286,181. Zerebaz, Inc., McKee City, N.J. Filed Dec. 4, 1967.

ZABERIZE

For Restaurant and Bar Services (Int. Cl. 42).

First use June 12, 1960.

SN 289,295. Vincent A. Gesumaria, Washington, D.C. Filed Jan. 22, 1968.

Vincent et Vincent

For Beauty Parlor Services (Int. Cl. 42).

First use January 1950.

SN 293,249. Firebird Inns, Inc., Mobile, Ala. Filed Mar. 14, 1968.

FIREBIRD INN

The word "Inn" is disclaimed apart from the mark as shown.

For Motel Services and Restaurant Services (Int. Cl. 42).

First use May 31, 1967.

SN 295,802. Robert M. Blackford, Inc., Norfolk, Va. Filed Apr. 17, 1968.

LONDON, LTD.

For Carry Out Food Services, Including the Preparation and Vending of Sandwiches, Beverages, and Related Items (Int. Cl. 42).

First use Apr. 1, 1968.

Class 101 — Advertising and Business

SN 307,279. Paint and Wallpaper Association of America, Inc., St. Louis, Mo. Filed Sept. 13, 1968.

THE 26 DECORATION DAYS OF SPRING

For Promoting the Sale of Goods of Others Through the Media of Publicity Releases, Promotional Advertising, Merchandising Kits, Newspaper Ad Mats, Radio and Television Scripts, and the Like (Int. Cl. 35).

First use Apr. 10, 1968.

Class 102 — Insurance and Financial

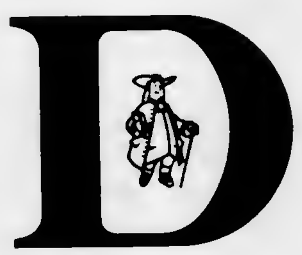
SN 278,880. Delaware Management Company, Inc., Philadelphia, Pa. Filed Aug. 23, 1967.

D

For Mutual Fund Investment Services (Int. Cl. 36).

First use Oct. 10, 1965.

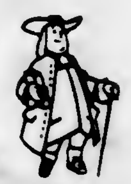
SN 278,881. Delaware Management Company, Inc., Philadelphia, Pa. Filed Aug. 23, 1967.



For Mutual Fund Investment Services (Int. Cl. 36).

First use Feb. 10, 1966.

SN 278,882. Delaware Management Company, Inc., Philadelphia, Pa. Filed Aug. 23, 1967.



For Mutual Fund Investment Services (Int. Cl. 36).

First use Jan. 30, 1953.

SN 281,999. Pacific National Bank of San Francisco, San Francisco, Calif. Filed Oct. 6, 1967.

BANKMANSHIP

For Banking Services (Int. Cl. 36).

First use about Jan. 6, 1967.

SN 282,565. Foodland, Inc., Cleveland, Ohio. Filed Oct. 16, 1967.

FOODLAND

Owner of Reg. Nos. 326,478, 817,965, and others.

For Group Life, Accidental Death and Dismemberment, Weekly Disability, Hospital, Surgical and Poliomyelitis Insurance Underwriting and Claims Services (Int. Cl. 36).

First use Sept. 1, 1950.

SN 282,828. Security Life and Trust Company, Winston-Salem, N.C. Filed Oct. 18, 1967.

the Listener

For Underwriting Insurance Risks—Namely, Life, Accident, and Sickness, Fire and Casualty, and Business Insurance (Int. Cl. 36).

First use Sept. 29, 1967.

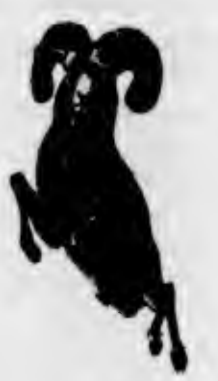
SN 286,502. City Products Corporation, d.b.a. Barker Bros., Des Plaines, Ill. Filed Dec. 8, 1967.

FLEXACCOUNT

For Providing Charge Account Services to Customers (Int. Cl. 36).

First use May 14, 1967.

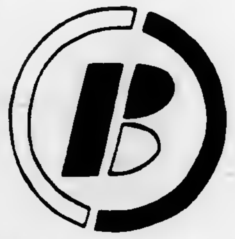
SN 291,992. MidAmerica Mutual Fund, Inc., Cedar Rapids, Iowa. Filed Feb. 27, 1968.



For Operation of a Mutual Investment Fund for Others (Int. Cl. 36).

First use on or about Dec. 21, 1967.

SN 299,786. Peoples Bank of Bloomington, Bloomington, Ill. Filed June 5, 1968.



The mark includes a fanciful showing of the letters "PB."
For Banking Services (Int. Cl. 36).
First use Jan. 5, 1968.

SN 301,020. John T. Trefry Insurance Agency, Inc., Boston, Mass. Filed June 21, 1968.

Tootin' for
Trefry

Owner of Reg. No. 559,154.
For Insurance Brokerage Services (Int. Cl. 36).
First use in or about January 1949.

SN 306,981. Herald Life Insurance Company, Jacksonville, Fla. Filed Sept. 9, 1968.

HERALD LIFE

No claim is made to the word "Life" apart from the mark as shown.
For Underwriting Life, Health, and Accident Insurance (Int. Cl. 36).
First use July or August 1960.

Class 103 — Construction and Repair

SN 248,772. Capvac Industries, Inc., Freeport, Tex. Filed June 23, 1966.

CAPVAC

For High Pressure Abrasive Cleaning of Storage Tanks, Ships, Barges, Interior and Exterior Surfaces (Int. Cl. 37).
First use June 18, 1965.

SN 276,548. Detrex Chemical Industries, Inc., Detroit, Mich. Filed July 21, 1967.

BETTY BRITE

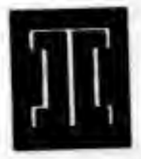
Owner of Reg. No. 730,058.
For Dry Cleaning Services (Int. Cl. 37).
First use Jan. 6, 1961.

SN 277,095. Wil-Kin, Inc., Atlanta, Ga. Filed July 28, 1967.

ULTRA-VISION

For Designing and Installing Motion Picture Systems (Int. Cl. 37).
First use on or about May 22, 1967.

SN 292,849. Industrial Insulators International Corporation, d.b.a. Industrial Insulators International, Plattsmouth, Nebr. Filed Mar. 11, 1968.



The mark comprises a fanciful representation of the letters "III."
For Building Insulation Services (Int. Cl. 37).
First use during or before December 1967.

Class 104 — Communication

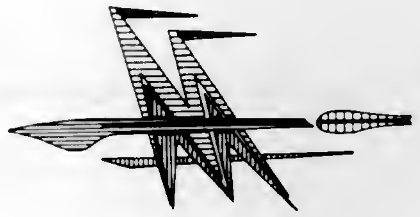
SN 290,781. Visual Information Systems, Inc., New York, N.Y. Filed Feb. 9, 1968.

HOTELEVISION

For Closed Circuit Television Broadcasting (Int. Cl. 38).
First use Oct. 1, 1965.

Class 105 — Transportation and Storage

SN 277,954. Wimbish Aviation, Incorporated, Greensboro, N.C. Filed Aug. 9, 1967.



The mark consists of a fanciful design of the letters "MAA." The drawing is lined for the colors red and blue, but no claim is made to the use of color with the mark.
For Transportation of Passengers and Freight by Air (Int. Cl. 39).
First use on or about Nov. 1, 1958.

Class 107 — Education and Entertainment

SN 253,191. Thomas M. Wearing, Roseville, Mich. Filed Aug. 23, 1966.

THE TIDAL WAVES

For Popular Musical Entertainment Service Performed by a Group (Int. Cl. 41).
First use January 1965.
Subj. to Intf. with SN 247,040.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

864,418. WITHDRAWN.

864,419. PHILLIPS 66 AND SHIELD DESIGN. Phillips Petroleum Company. SN 286,057. Pub. 11–19–68. Filed 12–4–67.

864,420. SAFCO SAF-T-BED AND DESIGN. Saf-T-Bed Corporation. SN 287,834. Pub. 11–19–68. Filed 12–29–67.

864,421. THERMA-PUFF. West Coast Quilting Co. SN 287,848. Pub. 11–19–68. Filed 12–29–67.

Class 2 — Receptacles

864,422. REEFMASTER. Gerald S. Vinarcik. SN 282,641. Pub. 11–19–68. Filed 10–16–67.

864,423. P (DESIGN). Paramount Packaging Corporation. MULTIPLE CLASS (Classes 2 and 37). SN 283,963. Pub. 11–19–68. Filed 11–2–67.

864,424. XLO-PAK. Ex-Cell-O Corporation. SN 298,325. Pub. 11–12–68. Filed 5–16–68.

864,425. UCAR. Union Carbide Corporation. SN 299,599. Pub. 11–19–68. Filed 6–3–68.

864,426. TT-PAC. Arch-Bilt Container Corporation. SN 300,674. Pub. 11–19–68. Filed 6–18–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

864,427. DOMINIQUE FRANCE. Dominique France, Inc. MULTIPLE CLASS (Classes 3, 28, 41, 51, and 52). SN 284,175. Pub. 11–19–68. Filed 11–6–67.

864,428. BUCKETBOOK. Doncy Toleware. SN 297,194. Pub. 11–19–68. Filed 4–22–68.

Class 4 — Abrasives and Polishing Materials

864,429. SSK AND DESIGN. S. S. Kresge Company. SN 296,025. Pub. 11–19–68. Filed 4–19–68.

Class 6 — Chemicals and Chemical Compositions

864,430. FISK. Uniroyal, Inc., by change of name from United States Rubber Company. MULTIPLE CLASS (Classes 6 and 21). SN 246,421. Pub. 11–19–68. Filed 5–24–66.

864,431. DEL-DEFEND. Del Chemical Corporation. SN 284,627. Pub. 11–19–68. Filed 11–13–67.

864,432. BRITE-N WHITE. Jack H. Sickel, d.b.a. Brite-N White Company. SN 293,952. Pub. 11–19–68. Filed 3–22–68.

864,433. ANTISOL. Herron Bros. & Meyer Inc. SN 294,839. Pub. 11–19–68. Filed 4–3–68.

864,434. "MT. FRESHMOR." Marlenn Products Company, Inc. SN 295,540. Pub. 11–19–68. Filed 4–12–68.

864,435. "FRESHMOR." Marlenn Products Company, Inc. SN 295,541. Pub. 11–19–68. Filed 4–12–68.

864,436. TYCAL. Tycal Corporation. SN 295,571. Pub. 11–19–68. Filed 4–12–68.

864,437. SUDZ-GO. C. A. Leggett. SN 295,654. Pub. 11–19–68. Filed 4–15–68.

864,438. STERIGARD. Merck & Co., Inc. SN 295,754. Pub. 11–19–68. Filed 4–16–68.

864,439. BELADOR. Geigy Chemical Corporation. SN 295,821. Pub. 11–19–68. Filed 4–17–68.

864,440. IRGALEV. Geigy Chemical Corporation. SN 295,822. Pub. 11–19–68. Filed 4–17–68.

864,441. MOON GLOW. Alberto-Culver Company. SN 302,266. Pub. 11–19–68. Filed 7–9–68.

864,442. RISTON. E. I. du Pont de Nemours and Company. SN 302,889. Pub. 11–19–68. Filed 7–17–68.

864,443. HELINDON. GAF Corporation. SN 303,863. Pub. 11–19–68. Filed 7–30–68.

Class 8 — Smokers' Articles, Not Including Tobacco Products

864,444. DANISH QUAINT. Peterson's Ltd., Inc. SN 283,148. Pub. 11–19–68. Filed 10–23–67.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

864,445. TOVAN. E. I. du Pont de Nemours and Company. SN 304,188. Pub. 11–19–68. Filed 8–2–68.

Class 11 — Inks and Inking Materials

864,446. MISCELLANEOUS DESIGN. Hunt Manufacturing Co. MULTIPLE CLASS (Classes 11 and 23). SN 248,277. Pub. 11–19–68. Filed 6–17–66.

Class 12 — Construction Materials

864,447. DC (DESIGN). Dallas Ceramic Company. SN 266,743. Pub. 11–19–68. Filed 3–15–67.

864,448. MAGNAMIX 363. Dresser Industries, Inc., assignee of Harbison-Walker Refractories Company. SN 268,182. Pub. 11–19–68. Filed 4–3–67.

864,449. NU-C-MENT. Allied Compositions Co., Inc. SN 271,328. Pub. 11–19–68. Filed 5–12–67.

864,450. IDEAL QUALITYBILT WOODWORK AND DESIGN. Certain-Teed Products Corporation. SN 273,853. Pub. 11–19–68. Filed 6–14–67.

864,451. PARAPAIR. Kyowa Gas Chemical Industry Co., Ltd., assignee of Marubeni-Iida (America), Inc. SN 278,808. Pub. 11–19–68. Filed 8–22–67.

864,452. STRATODOME. William H. Engle. SN 281,565. Pub. 11–19–68. Filed 10–2–67.

864,453. MAC PLY. Matsushita Lumber Co., Ltd. SN 287,441. Pub. 11–19–68. Filed 12–22–67.

864,454. FERROCRETE. The Associated Portland Cement Manufacturers, Limited. SN 263,157. Pub. 11–19–68. Filed 1–24–67.

864,455. UCAR. Union Carbide Corporation. SN 294,546. Pub. 11–19–68. Filed 3–29–68.

864,456. DIS-PENS-RITE. Dis-Pens-Rite Plastics, Inc. SN 295,626. Pub. 11–19–68. Filed 4–15–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

864,457. PARKER. Parker-Hannifin Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 258,717. Pub. 11–19–68. Filed 11–15–66.

864,458. KSB IN CIRCLE. Klein, Schanzlin & Becker Aktiengesellschaft. MULTIPLE CLASS (Classes 13 and 23). SN 262,040. Pub. 11–19–68. Filed 1–6–67.

864,459. MAXON AND DESIGN. Maxon Premix Burner Company, Inc. MULTIPLE CLASS (Classes 13 and 34). SN 269,910. Pub. 11–12–68. Filed 4–24–67.

864,460. GILMOUR. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co. SN 273,767. Pub. 11–19–68. Filed 6–13–67.

864,461. PILOT. American Cyanamid Company. SN 291,573. Pub. 11–19–68. Filed 2–21–68.

864,462. MISCELLANEOUS DESIGN. Sage Fabricating, Inc., d.b.a. Sage Engineering and Valve Company. MULTIPLE CLASS (Classes 13 and 23). SN 292,651. Pub. 11–19–68. Filed 3–7–68.

864,463. E-Z GLIDE. The Engineered Products Company. SN 292,683. Pub. 11–19–68. Filed 3–7–68.

864,464. CIRCLE (DESIGN). Amerock Corporation. SN 293,098. Pub. 11–19–68. Filed 3–13–68.

864,465. SERENATA. Amerock Corporation. SN 293,100. Pub. 11–19–68. Filed 3–13–68.

864,466. BEND-AWAY. The Pollak Steel Company. SN 293,171. Pub. 11–19–68. Filed 3–13–68.

Class 14 — Metals and Metal Castings and Forgings

864,467. DYNAC. Dynac Corporation. SN 291,252. Pub. 11–19–68. Filed 2–16–68.

864,468. TI-PLATE AND DESIGN. Texas Instruments Incorporated. SN 295,980. Pub. 11–19–68. Filed 4–18–68.

Class 15 — Oils and Greases

864,469. MARAGREASE. Marathon Oil Company. SN 293,731. Pub. 11–19–68. Filed 3–20–68.

864,470. A–9. Relton Corporation. SN 294,080. Pub. 11–19–68. Filed 3–25–68.

864,471. INDY. Consumers Petroleum Company, Incorporated. SN 295,119. Pub. 11–19–68. Filed 4–8–68.

Class 18 — Medicines and Pharmaceutical Preparations

864,472. PARVO. American Cyanamid Company. SN 284,289. Pub. 11–19–68. Filed 11–7–67.

864,473. FERO-FOLIC-500. Abbott Laboratories. SN 287,409. Pub. 11–19–68. Filed 12–22–67.

Class 19 — Vehicles

864,474. STOWBOAT. Benjamin Stansbury, d.b.a. Product Specialists. SN 270,968. Pub. 11–19–68. Filed 5–8–67.

864,475. WC (DESIGN). North and Judd Manufacturing Company. SN 275,162. Pub. 11–19–68. Filed 6–30–67.

864,476. CO-CART. Frank B. Coe and Irschel E. McGinnis (joint owners). SN 285,307. Pub. 11–19–68. Filed 11–21–67.

864,477. HYDRO-MITE I. Hydroglas Industries, Inc. SN 294,629. Pub. 11–19–68. Filed 4–1–68.

864,478. HYDRO-SHARK. Hydroglas Industries, Inc. SN 294,630. Pub. 11–19–68. Filed 4–1–68.

Class 20 — Linoleum and Oiled Cloth

864,479. LONDONAIRE. New London Mills, Inc. SN 292,119. Pub. 11–19–68. Filed 2–28–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

864,430. (See Class 6 for this trademark.

864,480. LOXARMOR. The Okonite Company. SN 257,072. Pub. 11–19–68. Filed 10–24–66.

864,481. BIG INCH. Haydon Switch & Instrument, Inc. SN 276,554. Pub. 11–19–68. Filed 7–21–67.

864,482. MAGNA-SHIELD AND DESIGN. Consolidated Products Corp., assignee of B & B Electronics Corp. SN 276,632. Pub. 10–1–68. Filed 7–24–67.

864,483. CENTRALIZER. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 277,724. Pub. 11–19–68. Filed 8–7–67.

864,484. PRESTIGE. Mulberry Metal Products, Inc. SN 283,267. Pub. 11–19–68. Filed 10–24–67.

864,485. TERMI-PLATE. AMP Incorporated. SN 283,407. Pub. 11–19–68. Filed 10–26–67.

864,486. HI RD. Ormat Turbines (1965) Ltd. SN 283,815. Pub. 11–19–68. Filed 10–31–67.

864,487. CLINIC-AIRE. Aqua-Mist Incorporated. SN 285,382. Pub. 11–19–68. Filed 11–22–67.

864,488. LEUCI. S.p.A., F.I.L.E., Fabbrica Italiana Lampadine Elettriche. SN 292,305. Pub. 11–19–68. Filed 3–1–68.

864,489. TRI-FORMER. Jefferson Electric Company. SN 292,385. Pub. 11–19–68. Filed 3–4–68.

864,490. CARDINAL AND DESIGN. Television Manufacturers of America Co. SN 296,932. Pub. 11–19–68. Filed 4–30–68.

Class 22 — Games, Toys, and Sporting Goods

864,491. ALL-AMERICAN SPORTS CITY. Thomas Carvel. SN 274,408. Pub. 11–19–68. Filed 6–21–67.

864,492. WITHDRAWN.

864,493. DISAPERO. Toys by Boys, Inc. SN 283,471. Pub. 11–19–68. Filed 10–26–67.

864,494. CANNIBAL ANIMALS! Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 283,794. Pub. 9–24–68. Filed 10–31–67.

864,495. FUNNY FRECKLES AND DESIGN. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 283,796. Pub. 11–19–68. Filed 10–31–67.

864,496. BABY TRUE. De Luxe Topper Corporation. SN 287,154. Pub. 11–19–68. Filed 12–18–67.

864,497. BUTLER BASS AND DESIGN. Butler Bass Inc. SN 288,492. Pub. 11–19–68. Filed 1–10–68.

864,498. HOLE HOG. Robert Stennett Roach. SN 289,425. Pub. 11–19–68. Filed 1–23–68.

864,499. UNEEK FREEK. Mattel, Inc. SN 292,052. Pub. 11–19–68. Filed 2–28–68.

864,500. YAKITTY YAK. Mattel, Inc. SN 292,851. Pub. 11–19–68. Filed 3–11–68.

864,501. MISCELLANEOUS DESIGN. Cragstan Industries, Inc. SN 295,422. Pub. 11–19–68. Filed 4–11–68.

864,502. P-O-P. United Silver & Cutlery Company. SN 296,221. Pub. 11–19–68. Filed 4–22–68.

864,503. AMERACE. Amerace Corporation. SN 301,298. Pub. 11–19–68. Filed 6–25–68.

864,504. BABETTE. Mattel, Inc. SN 303,577. Pub. 11–19–68. Filed 7–25–68.

864,505. WALKABOUT. Mattel, Inc. SN 303,647. Pub. 11–19–68. Filed 7–26–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

864,446. (See Class 11 for this trademark.)

864,457. (See Class 13 for this trademark.)

864,458. (See Class 13 for this trademark.)

864,462. (See Class 13 for this trademark.)

864,506. VARICAM AND DESIGN. John R. Cribbs, d.b.a. Engineering Associates. SN 263,751. Pub. 11–19–68. Filed 2–1–67.

864,507. LN AND DESIGN. Lee-Norse Company. SN 269,191. Pub. 11–19–68. Filed 4–14–67.

864,508. ZIMMER AND DESIGN. Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen. SN 269,8[illegible]. Pub. 11–19–68. Filed 4–21–67.

864,509. ZENITH. Zenith Radio Corporation. SN 271,004. Pub. 11–19–68. Filed 5–8–67.

864,510. SIGNA STITCH. Harris-Intertype Corporation. SN 272,380. Pub. 11–19–68. Filed 5–25–67.

864,511. MULTISTEP-PREMATIC. Pressluftwerkzeug und Maschinenbau Premag, GmbH. SN 276,783. Pub. 11–19–68. Filed 6–7–67.

864,512. OMEGA. General Consolidated, Ltd. SN 279,547. Pub. 11–19–68. Filed 9–1–67.

864,513. PLATE-O-MATIC. Clinton Supply Co. SN 282,439. Pub. 11–19–68. Filed 10–13–67.

864,514. SOUTHERN CHEF. Superior Moulding Co. SN 283,188. Pub. 11–19–68. Filed 10–25–67.

864,515. CLARK EQUIPMENT AND DESIGN. Clark Equipment Company (Delaware corporation), by merger from Clark Equipment Company (Michigan corporation). SN 283,227. Pub. 11–19–68. Filed 10–24–67.

864,516. CLARK. Clark Equipment Company (Delaware corporation), by merger from Clark Equipment Company (Michigan corporation). SN 283,228. Pub. 11–19–68. Filed 10–24–67.

864,517. PERFECTALOY. Perfection American, Inc. SN 283,924. Pub. 11–19–68. Filed 11–1–67.

864,518. WHIRLEY. Whirley Industries, Inc. SN 284,771. Pub. 11–19–68. Filed 11–13–67.

864,519. CLEVELAND TRAMRAIL. McNeil Corporation. SN 285,839. Pub. 11–19–68. Filed 11–29–67.

864,520. SHELBY AND DESIGN. Shelby American, Inc. SN 285,860. Pub. 11–19–68. Filed 11–29–67.

864,521. CARRIAGE HOUSE AND DESIGN. Washington Forge, Incorporated. SN 286,393. Pub. 11–19–68. Filed 12–6–67.

864,522. MF AND DESIGN. MacLean-Fogg Lock Nut Company. SN 293,288. Pub. 11–19–68. Filed 3–14–68.

864,523. TRANS-SEAL. Stone Container Corporation. SN 293,318. Pub. 11–19–68. Filed 3–14–68.

Class 26 — Measuring and Scientific Appliances

864,524. GARRETT AND DESIGN. The Garrett Corporation. SN 270,123. Pub. 11–19–68. Filed 4–27–67.

864,525. SPECTRAPAN. Camera Corporation of America. SN 271,339. Pub. 11–19–68. Filed 5–12–67.

864,526. MONITOR-PAK AND DESIGN. Carrier Corporation. SN 274,407. Pub. 11–19–68. Filed 6–21–67.

864,527. MONITOR-PAK. Carrier Corporation. SN 274,587. Pub. 11–19–68. Filed 6–23–67.

864,528. MOTORMASTER. Carrier Corporation. SN 279,342. Pub. 11–19–68. Filed 8–29–67.

864,529. VARI-PET. Greiner Scientific Corp. SN 284,655. Pub. 11–19–68. Filed 11–13–67.

864,530. UNISCAN. American Instrument Company, Inc. SN 292,463. Pub. 11–19–68. Filed 3–5–68.

864,531. CYCLO/PHRAM. Yarway Corporation. SN 305,106. Pub. 11–19–68. Filed 8–14–68.

Class 27 — Horological Instruments

864,532. DATATREX. United States Sales Corp. SN 295,573. Pub. 11–19–68. Filed 4–12–68.

864,533. MINI LASS. Benrus Watch Company, Inc. SN 296,098. Pub. 11–19–68. Filed 4–22–68.

Class 28 — Jewelry and Precious-Metal Ware

864,427. (See Class 3 for this trademark.)

864,534. OSTRELLA. International Purchasing Agents, Inc. SN 294,631. Pub. 11–19–68. Filed 4–1–68.

864,535. TWISTER. Textron Inc. SN 296,215. Pub. 11–19–68. Filed 4–22–68.

Class 31 — Filters and Refrigerators

864,536. DRI TOWER. The Marley Company. SN 264,946. Pub. 11–19–68. Filed 2–17–67.

864,537. ELECTRO-AIR AND DESIGN. Emerson Electric Co. SN 268,039. Pub. 11–19–68. Filed 3–31–67.

864,538. HYPERFLOW. Elgin Softener, Inc. SN 276,742. Pub. 11–19–68. Filed 7–25–67.

Class 32 — Furniture and Upholstery

864,539. PORTA-RACK. John E. Zeller, d.b.a. Bonanza Products. SN 260,620. Pub. 11–19–68. Filed 12–12–66.

864,540. TREE (DESIGN). Howard Goldman Interiors, Inc. MULTIPLE CLASS (Classes 32 and 50). SN 280,314. Pub. 11–19–68. Filed 9–14–67.

864,541. STONELY COURT. Congoleum Industries, Inc., assignee of Congoleum-Nairn Inc. SN 292,352. Pub. 11–19–68. Filed 3–4–68.

864,542. MINI-BLIND. Eastern Products Corporation. SN 293,365. Pub. 11–19–68. Filed 3–15–68.

864,543. TRAY-SAFE. Sperry Rand Corporation. SN 293,409. Pub. 11–19–68. Filed 3–15–68.

864,544. AUTUMN GLOW. H. J. Scheirich Company. SN 293,856. Pub. 11–19–68. Filed 3–21–68.

Class 33 — Glassware

864,545. S AND CROWN DESIGN. Kristallglasfabrik Spiegelau G.m.b.H. SN 295,744. Pub. 11–19–68. Filed 4–16–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

864,459. (See Class 13 for this trademark.)

864,546. UNITEM. International Telephone and Telegraph Corporation (Delaware corporation), by merger and change of name from International Telephone and Telegraph Corporation (Maryland corporation). SN 268,740. Pub. 11–19–68. Filed 4–10–67.

864,547. CONSTELLATION. Fuel Firing Limited. SN 268,838. Pub. 11–19–68. Filed 2–16–67.

864,548. VOLCANO (DESIGN). Vesuvius Crucible Company. SN 276,196. Pub. 11–19–68. Filed 7–17–67.

864,549. BULLFINCH. Bullfinch (Gas Equipment) Limited. SN 277,142. Pub. 11–19–68. Filed 7–31–67.

864,550. AMPILLUME. AMP Incorporated. SN 278,268. Pub. 11–19–68. Filed 8–15–67.

864,551. AIR X TANK. Raypak Company, Inc. SN 287,459. Pub. 11–19–68. Filed 12–22–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

864,552. PINTO. J. C. Penney Company. SN 296,571. Pub. 11–19–68. Filed 4–25–68.

864,553. MARK 70 JET-TRED. Thompson Aircraft Tire Corporation. SN 296,891. Pub. 11–19–68. Filed 4–29–68.

864,554. JET-TRED. Thompson Aircraft Tire Corporation. SN 296,892. Pub. 11–19–68. Filed 4–29–68.

Class 36 — Musical Instruments and Supplies

864,555. AB MAGAZINE MATIC AND DESIGN. Sony Corporation. SN 280,819. Pub. 11–19–68. Filed 9–20–67.

864,556. MINDMASTER. Mind Inc. SN 284,096. Pub. 11–19–68. Filed 11–3–67.

864,557. A SPOKEN LESSON AND DESIGN. Dance Records, Inc. SN 299,731. Pub. 11–19–68. Filed 6–5–68.

Class 37 — Paper and Stationery

864,423. (See Class 2 for this trademark.)

864,558. POLYBONIC. Tachikawa Research Institute. SN 277,807. Pub. 11–19–68. Filed 8–8–67.

864,559. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 280,413. Pub. 11–19–68. Filed 9–15–67.

864,560. CON-O-NOTE. Continental Oil Company. SN 280,857. Pub. 11–19–68. Filed 9–21–67.

864,561. MISCELLANEOUS DESIGN. Nationwide Papers Incorporated. SN 282,295. Pub. 11–19–68. Filed 10–11–67.

864,562. PANCAKE. The Brown-Bridge Mills, Inc. SN 284,988. Pub. 11–19–68. Filed 11–16–67.

864,563. ZW AND DESIGN. Zellstofffabrik Waldhof. SN 289,853. Pub. 11–19–68. Filed 1–29–68.

864,564. ELM. Elm Industry Company, Limited. SN 294,728. Pub. 11–19–68. Filed 4–2–68.

Class 38 — Prints and Publications

864,565. JOURNAL OF COLLEGE STUDENT PERSONNEL. American Personnel and Guidance Association. SN 243,279. Pub. 11–19–68. Filed 12–16–65.

864,566. REHABILITATION COUNSELING BULLETIN. American Personnel and Guidance Association. SN 243,280. Pub. 11–19–68. Filed 12–16–65.

864,567. COUNSELOR EDUCATION AND SUPERVISION. American Personnel and Guidance Association. SN 243,281. Pub. 11–19–68. Filed 12–22–65.

864,568. THE VOCATIONAL GUIDANCE QUARTERLY. American Personnel and Guidance Association. SN 243,282. Pub. 11–19–68. Filed 12–22–65.

864,569. THE SCHOOL COUNSELOR. American Personnel and Guidance Association. SN 243,283. Pub. 11–19–68. Filed 12–22–65.

864,570. PANDEX AND DESIGN. Pandex Corp. SN 272,399. Pub. 11–19–68. Filed 5–25–67.

864,571. CHRISTMAS FESTIVAL. Metropolitan Greetings, Inc. SN 286,022. Pub. 11–19–68. Filed 12–1–67.

864,572. AGRIWEEK. Century Publishing Ltd. SN 291,493. Pub. 11–19–68. Filed 2–20–68.

864,573. GOOD HANDS. Allstate Insurance Company. SN 294,445. Pub. 11–19–68. Filed 3–29–68.

864,574. WARNER ARTEX. Warner Woven Label Company, Inc. SN 295,577. Pub. 11–19–68. Filed 4–12–68.

864,575. MISCELLANEOUS DESIGN. The Hearst Corporation. SN 304,651. Pub. 11–19–68. Filed 8–8–68.

864,576. TIME OUT! Field Enterprises, Inc. SN 305,184. Pub. 11–19–68. Filed 8–15–68.

864,577. CARBON BLACK CORRELATOR. Ashland Oil & Refining Company. SN 305,513. Pub. 11–19–68. Filed 8–20–68.

864,578. THE YACHTSMAN'S WIFE. Richard Manning, d.b.a. Richard Manning Associates. SN 305,519. Pub. 11–19–68. Filed 8–20–68.

Class 39 — Clothing

864,579. THE SIMPLI-FIT SLIP. Maidenform, Inc. SN 294,890. Pub. 11–19–68. Filed 4–4–68.

864,580. AIRONETTE. Dutchess Underwear Corporation. SN 295,517. Pub. 11–19–68. Filed 4–12–68.

864,581. JULI JR. OF SLUMBERTOGS. Slumbertogs, Inc. SN 296,877. Pub. 11–19–68. Filed 4–29–68.

864,582. BREEZY WYNN. Wynn, Inc. SN 296,908. Pub. 11–19–68. Filed 4–29–68.

864,583. GOLD CIRCLE GC. Federated Department Stores, Inc. SN 298,818. Pub. 11–19–68. Filed 5–22–68.

864,584. PRETTY GIRL. True Form Foundations, Inc. SN 303,582. Pub. 11–19–68. Filed 7–25–68.

Class 40 — Fancy Goods, Furnishings, and Notions

864,585. CAP D'ANTIBES. Fashion Tress, Inc. SN 281,368. Pub. 11–19–68. Filed 9–28–67.

864,586. FABRI-FIX AND DESIGN. Fabri-Fix, Inc. SN 289,391. Pub. 11–19–68. Filed 1–23–68.

864,587. WITHDRAWN.

864,588. AMERACE. Amerace Corporation. SN 301,302. Pub. 11–19–68. Filed 6–25–68.

Class 41 — Canes, Parasols, and Umbrellas

864,427. (See Class 3 for this trademark.)

864,589. SUNSHUN AND DESIGN. Ernst Ehrman. SN 295,726. Pub. 11–19–68. Filed 4–16–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

864,590. SHALIMAR. James Thompson & Co., Inc. SN 248,749. Pub. 11–19–68. Filed 6–22–66.

864,591. TAPIS FLOTEX. Societe Besnier Flotex. SN 263,121. Pub. 11–19–68. Filed 1–23–67.

864,592. POLYBONIC. Tachikawa Research Institute. SN 283,827. Pub. 11–19–68. Filed 10–31–67.

864,593. KOSSET. Kosset Carpets Limited. SN 293,932. Pub. 11–19–68. Filed 3–22–68.

864,594. BONEGUARD. W. R. Grace & Co. SN 295,226. Pub. 11–19–68. Filed 4–9–68.

864,595. HIGHTSTOWN. Kentile Floors Inc. SN 295,533. Pub. 11–19–68. Filed 4–12–68.

864,596. GREAT AMERICAN FLOWERS. Cannon Mills Company. SN 297,031. Pub. 11–19–68. Filed 5–1–68.

864,597. DISPO LAM AND DESIGN. Hy-Sil Manufacturing Company. SN 297,065. Pub. 11–19–68. Filed 5–1–68.

864,598. MARABEAU. Fieldcrest Mills, Inc. SN 297,182. Pub. 11–19–68. Filed 5–2–68.

864,599. FUTURISTIC. Ozite Corporation. SN 297,209. Pub. 11–19–68. Filed 5–2–68.

864,600. CELABOND. Celanese Corporation. SN 297,272. Pub. 11–19–68. Filed 5–3–68.

864,601. VINYLOC. Universal Carpets, Inc. SN 297,323. Pub. 11–19–68. Filed 5–3–68.

864,602. MATINEAU. Fieldcrest Mills, Inc. SN 297,396. Pub. 11–19–68. Filed 5–6–68.

864,603. ALLUROLON. Inwood Knitting Mills, Inc. SN 297,413. Pub. 11–19–68. Filed 5–6–68.

864,604. LAWNAIRE. The Jaunty Fabric Corporation. SN 297,417. Pub. 11–19–68. Filed 5–6–68.

864,605. FANCYTEX. Miyuki Keori Kabushiki Kaisha (Miyuki Woollen Textile Co., Ltd.). SN 297,583. Pub. 11–19–68. Filed 5–7–68.

864,606. FLOWER POWER. Lever Brothers Company. SN 304,652. Pub. 11–19–68. Filed 8–8–68.

864,607. FASHION BRIGHT. Lever Brothers Company. SN 304,653. Pub. 11–19–68. Filed 8–8–68.

Class 43 — Thread and Yarn

864,608. FESTONS. Filatures Prouvost Masurel & Cie. La Lainière de Roubaix. SN 294,608. Pub. 11–19–68. Filed 4–1–68.

864,609. NICIE. Danville Industries, Inc. SN 296,948. Pub. 11–19–68. Filed 4–30–68.

Class 44 — Dental, Medical, and Surgical Appliances

864,610. MEDI-CO. Donita L. Mitchell, d.b.a. The Medico Nurser Enterprise. SN 296,076. Pub. 11–19–68. Filed 4–22–68.

864,611. V. MUELLER. American Hospital Supply Corporation. SN 297,936. Pub. 11–19–68. Filed 5–13–68.

864,612. SWIRLDOWN. Riegel Textile Corporation. SN 303,232. Pub. 11–19–68. Filed 7–22–68.

Class 45 — Soft Drinks and Carbonated Waters

864,613. ICE PALACE. J. F. Lazier Manufacturing Co. SN 284,484. Pub. 11–19–68. Filed 11–9–67.

864,614. WILD WEST SARSAPARILLA AND DESIGN. World Trade, Inc. SN 291,215. Pub. 11–19–68. Filed 2–15–68.

864,615. FOR GOODNESS SAKE AND DESIGN. S. Twitchell Company. SN 304,875. Pub. 11–19–68. Filed 8–12–68.

Class 46 — Foods and Ingredients of Foods

864,616. ZIPCODE. U.S. Health Club, Inc. SN 246,114. Pub. 11–19–68. Filed 5–19–66.

864,617. PELE. Industrias de Chocolate Lacta S/A. SN 246,692. Pub. 11–19–68. Filed 5–26–66.

864,618. CROWN (DESIGN). American Whipped Products, Inc. SN 259,793. Pub. 11–19–68. Filed 12–1–66.

864,619. JUDSON CANDIES AND DESIGN. Judson Candies, Inc., assignee of Judson, Inc. SN 273,077. Pub. 11–19–68. Filed 6–5–67.

864,620. PILLSBURY MUNCHUMS ETC. AND DESIGN. The Pillsbury Company. SN 283,154. Pub. 9–24–68. Filed 10–23–67.

864,621. HERSHEY'S MILK CHOCOLATE KISSES AND DESIGN. Hershey Foods Corporation, by change of name from Hershey Chocolate Corporation. SN 284,821. Pub. 11–19–68. Filed 11–14–67.

864,622. DESIGN OF TUDOR PRINCE. Antony Worham Limited. SN 286,227. Pub. 11–19–68. Filed 12–4–67.

864,623. DESIGN OF TUDOR QUEEN. Antony Worham Limited. SN 286,230. Pub. 11–19–68. Filed 12–4–67.

864,624. CAP'T NICK'S. Cap't Nick's Kitchens, Inc. SN 289,273. Pub. 11–19–68. Filed 1–22–68.

864,625. CLOVIS GOLD. Clovis Citrus Company. SN 289,481. Pub. 11–19–68. Filed 1–24–68.

864,626. GODBOLD'S. Godbold, Inc. SN 290,095. Pub. 11–19–68. Filed 2–1–68.

864,627. TIME OUT. H. C. Brill Company, Inc. SN 290,711. Pub. 11–19–68. Filed 2–9–68.

864,628. FLYING SAUCES. Duffy-Mott Company, Inc. SN 293,700. Pub. 11–19–68. Filed 3–20–68.

864,629. GRAD. Hunt-Wesson Foods, Inc. SN 296,163. Pub. 11–19–68. Filed 4–22–68.

864,630. SOL. Hunt-Wesson Foods, Inc. SN 296,164. Pub. 11–19–68. Filed 4–22–68.

864,631. WESPOUR. Hunt-Wesson Foods, Inc. SN 296,166. Pub. 11–19–68. Filed 4–22–68.

864,632. COVINGTON KENNELS. General Foods Corporation. SN 296,418. Pub. 11–19–68. Filed 4–24–68.

864,633. CLOVER. Custom Pet Food Packers, Inc. SN 296,947. Pub. 11–19–68. Filed 4–30–68.

864,634. POMPEII. Williams Food Products Inc. SN 296,998. Pub. 11–19–68. Filed 4–30–68.

864,635. SAUER'S AND DESIGN. The C. F. Sauer Company. SN 299,252. Pub. 11–19–68. Filed 5–28–68.

864,636. BUSTELO. Beech-Nut, Inc. SN 299,320. Pub. 11–19–68. Filed 5–29–68.

864,637. ZIA. S. W. Burr & Son, Incorporated. SN 299,828. Pub. 11–19–68. Filed 6–6–68.

864,638. HARVEST PRIDE. Lynden Frosted Foods, Inc. SN 300,090. Pub. 11–19–68. Filed 6–10–68.

864,639. VALLEY GOLD AND DESIGN. The Coca-Cola Company. SN 303,469. Pub. 11–19–68. Filed 7–24–68.

864,640. DOLE-DEX AND DESIGN. Castle & Cooke, Inc., d.b.a. Dole Company. SN 305,095. Pub. 11–19–68. Filed 8–14–68.

864,641. S AND DESIGN. Safeway Stores, Incorporated. SN 305,100. Pub. 11–19–68. Filed 8–14–68.

Class 47 — Wines

864,642. KIKKOMAN. Kikkoman Shoyu Co., Ltd. MULTIPLE CLASS (Classes 47 and 48). SN 278,598. Pub. 11–19–68. Filed 8–18–67.

864,643. MISCELLANEOUS DESIGN. Kikkoman Shoyu Co., Ltd. MULTIPLE CLASS (Classes 47 and 48). SN 278,599. Pub. 11–19–68. Filed 8–18–67.

864,644. MANJO. Kikkoman Shoyu Co., Ltd. MULTIPLE CLASS (Classes 47 and 48). SN 278,600. Pub. 11–19–68. Filed 8–18–67.

864,645. DESIGN OF CHINESE CHARACTER. Kikkoman Shoyu Co., Ltd. MULTIPLE CLASS (Classes 47 and 48). SN 278,602. Pub. 11–19–68. Filed 8–18–67.

Class 48 — Malt Beverages and Liquors

864,642. (See Class 47 for this trademark.)

864,643. (See Class 47 for this trademark.)

864,644. (See Class 47 for this trademark.)

864,645. (See Class 47 for this trademark.)

864,646. KNICK. Rheingold Breweries, Inc. SN 303,967. Pub. 11–19–68. Filed 7–31–68.

Class 50 — Merchandise Not Otherwise Classified

864,540. (See Class 32 for this trademark.)

864,647. SCROLL ART. General Crafts Corporation. SN 296,143. Pub. 11–19–68. Filed 4–22–68.

Class 51 — Cosmetics and Toilet Preparations

864,427. (See Class 3 for this trademark.)

864,648. KEY (DESIGN). Mary S. Kelly, d.b.a. Golden Key Cosmetics. SN 190,809. Pub. 11–19–68. Filed 4–10–64.

864,649. MOMENT OF TRUTH. Colgate-Palmolive Company. MULTIPLE CLASS (Classes 51 and 52). SN 277,404. Pub. 11–19–68. Filed 8–3–67.

864,650. LADY DE CASTILLO. Societe Nouvelle de Diffusion de Parfumerie. SN 279,008. Pub. 11–19–68. Filed 8–24–67.

864,651. EXTRA POINTS. Chattem Drug & Chemical Company. SN 283,319. Pub. 11–19–68. Filed 10–25–67.

864,652. FIGHTER. Clairol Incorporated. SN 286,096. Pub. 11–19–68. Filed 12–1–67.

864,653. KLEER-PLEX. Loesch Laboratory Consultants, Inc. SN 288,404. Pub. 11–19–68. Filed 1–5–68.

864,654. HAIR MAGIC. John H. Breck, Inc. SN 292,073. Pub. 11–19–68. Filed 2–28–68.

864,655. LOVESTICKS. Menley & James Laboratories, Ltd. SN 298,904. Pub. 10–8–68. Filed 5–23–68.

864,656. THE KNACK. The Gillette Company, d.b.a. The Toni Company. SN 302,892. Pub. 11–19–68. Filed 7–17–68.

864,657. POWER PLAY. The Gillette Company. SN 303,743. Pub. 11–19–68. Filed 7–29–68.

864,658. DUNE. The Gillette Company. SN 303,746. Pub. 11–19–68. Filed 7–29–68.

864,659. SUN ISLAND AND DESIGN. Pan American Suntan Oil Corp. SN 303,871. Pub. 11–19–68. Filed 7–30–68.

864,660. ILE DE SOLEIL AND DESIGN. Pan American Suntan Oil Corp. SN 303,873. Pub. 11–19–68. Filed 7–30–68.

864,661. BIG GEYSER. Chesebrough-Pond's Inc. SN 304,183. Pub. 11–19–68. Filed 8–2–68.

864,662. INTENSIVE CARE. Chesebrough-Pond's Inc. SN 304,184. Pub. 11–19–68. Filed 8–2–68.

864,663. THIRST AID. Chesebrough-Pond's Inc. SN 304,185. Pub. 11–19–68. Filed 8–2–68.

864,664. MARIAN BIALAC. Marian Bialac, Inc. SN 304,275. Pub. 11–19–68. Filed 8–6–68.

864,665. MARIAN BIALAC (FACSIMILE SIGNATURE). Marian Bialac, Inc. SN 304,276. Pub. 11–19–68. Filed 8–6–68.

864,666. BARRIER. Colgate-Palmolive Company. SN 304,648. Pub. 11–19–68. Filed 8–8–68.

Class 52 — Detergents and Soaps

864,427. (See Class 3 for this trademark.)

864,649. (See Class 51 for this trademark.)

864,667. CONTROL. Constantine W. Colburn, d.b.a. Con Surfboards. SN 280,696. Pub. 11–19–68. Filed 9–19–67.

864,668. SKIF. General Foods Corporation. SN 293,716. Pub. 11–19–68. Filed 3–20–68.

864,669. NANNA'S GOLDMINE. Anderson Products Company, Inc. SN 294,364. Pub. 11–19–68. Filed 3–28–68.

Service Marks

Class 100 — Miscellaneous

864,670. WITHDRAWN.

864,671. M AND DESIGN. Moody's Investors Service, Inc. SN 272,737. Pub. 11–19–68. Filed 5–31–67.

864,672. DOLLAR MARK (DESIGN). Puritan Leasing Company. SN 285,851. Pub. 11–19–68. Filed 11–29–67.

864,673. TALL TALE LOUNGE AND DESIGN. American Motor Inns, Incorporated. SN 290,458. Pub. 11–19–68. Filed 2–7–68.

864,674. COME AS YOU ARE . . . HUNGRY. Sandy's Franchise, Inc. SN 294,081. Pub. 11–19–68. Filed 3–25–68.

864,675. HOME OF THE PLAID BERET. Sandy's Franchise, Inc. SN 294,082. Pub. 11–19–68. Filed 3–25–68.

864,676. TELEGROWTH. Babson's Reports Incorporated. SN 299,825. Pub. 11–19–68. Filed 6–6–68.

864,677. WHITE SPOT AND DESIGN. White Spots, Inc. SN 300,162. Pub. 11–19–68. Filed 6–11–68.

864,678. RA (DESIGN). Restaurant Associates Industries, Inc. SN 304,560. Pub. 11–19–68. Filed 8–7–68.

Class 101 — Advertising and Business

864,679. NAN MILLER. Nan Miller & Associates, Inc. SN 236,620. Pub. 11–19–68. Filed 1–17–66.

864,680. TRANS-POWER. Trans-Power, Inc. SN 264,616. Pub. 11–19–68. Filed 2–13–67.

864,681. ATOMFAIR. Atomic Industrial Forum, Inc. SN 266,994. Pub. 11–19–68. Filed 3–17–67.

864,682. BUY-RITE. Associated Buy Liquors Rite Merchants Inc. SN 267,117. Pub. 11–19–68. Filed 3–20–67.

864,683. MYSTERY CASH BINGO. J & H International Corporation. SN 271,478. Pub. 11–19–68. Filed 5–15–67.

864,684. LUCKY BINGO. J & H International Corporation. SN 271,479. Pub. 11–19–68. Filed 5–15–67.

864,685. DOUBLE SWEEPSTAKES BINGO. J & H International Corporation. SN 271,482. Pub. 11–19–68. Filed 5–15–67.

864,686. DOUBLE MONEY BINGO. J & H International Corporation. SN 271,801. Pub. 11–19–68. Filed 5–18–67.

864,687. TRY SOMETHING NEW AND DESIGN. National Association for the Specialty Food Trade, Inc. SN 278,726. Pub. 11–19–68. Filed 8–21–67.

864,688. DOCKTOR. Docktor Pet Centers, Inc., d.b.a. Docktor Pet Centers Inc., and Docktor's. SN 281,180. Pub. 11–19–68. Filed 9–26–67.

864,689. RABBIT HEAD (DESIGN). HMH Publishing Co. Inc. SN 294,934. Pub. 11–19–68. Filed 4–4–68.

864,690. PLAN. Castle & Cooke, Inc., d.b.a. Plan. SN 297,242. Pub. 11–19–68. Filed 5–3–68.

Class 102 — Insurance and Financial

864,691. FIRST WISCONSIN. First Wisconsin Bankshares Corporation. SN 287,163. Pub. 11–19–68. Filed 12–18–67.

Class 103 — Construction and Repair

864,692. MAGIC RAIN ETC. AND DESIGN. Magic Rain, Inc. SN 282,287. Pub. 11–19–68. Filed 10–11–67.

Class 105 — Transportation and Storage

864,693. WESTERN AIRLINES INTERNATIONAL. Western Air Lines, Inc. SN 300,161. Pub. 11–19–68. Filed 6–11–68.

Class 107 — Education and Entertainment

864,694. ? (QUESTION MARK) & THE MYSTERIANS. Joseph H. and Lillie A. Gonzalez (joint owners). SN 261,728. Pub. 11–19–68. Filed 12–30–66.

864,695. SHOW-OFFS. Robert Graham Prince. SN 282,298. Pub. 11–19–68. Filed 10–11–67.

864,696. ARGOSY FILM SERVICE. Film Center. SN 283,514. Pub. 11–19–68. Filed 10–27–67.

864,697. THE U.S. MALES. Bankers Management & Services, Inc. SN 286,497. Pub. 11–19–68. Filed 12–8–67.

Collective Membership Mark

Class 200

864,698. WITHDRAWN.

TRADEMARK REGISTRATIONS RENEWED

32,258. "STORK BRAND" ETC. AND REPRESENTATION OF STORK. Cl. 46 (Int. Cl. 29). 12–20–1898.

69,713. BLUE BELL. Cl. 46 (Int. Cl. 29). 6–30–08.

71,232. GOLOFINA. Cl. 17 (Int. Cl. 34). 11–10–08.

71,585. MONITOR. Cl. 7 (Int. Cl. 6). 12–1–08.

72,031. "S" AND ARROW DESIGN. Cl. 6 (Int. Cl. 1). 12–29–08.

72,228. "J. & F. MARTELL" ETC. AND DESIGN. Cl. 49 (Int. Cl. 33). 1–12–09.

73,561. COLLATERAL. Cl. 37 (Int. Cl. 16). 4–27–09.

239,511. TRUE TEMPER. Cl. 22 (Int. Cl. 28). 3–6–28.

249,472. "CRAFTSMAN" ETC. AND DESIGN. Cl. 26 (Int. Cl. 9). 11–13–28.

249,558. CORR-O-PEDIC. Cl. 39 (Int. Cl. 25). 11–20–28.

249,994. SAWING MAN. Cl. 40 (Int. Cl. 21). 11–27–28.

249,997. JEWEL. Cl. 21 (Int. Cl. 11). 11–27–28.

250,953. MHCO KING" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 12–18–28.

252,085. ARIDIZE. Cl. 12 (Int. Cl. 19). 1–22–29.

253,633. "JO-CUR" AND DESIGN. Cl. 51 (Int. Cl. 3). 3–5–29.

254,485. SPICER'S. Cl. 51 (Int. Cls. 3 and 5). 3–26–29.

254,766. "FLAVOUR" AND LABEL DESIGN. Cl. 46 (Int. Cl. 30). 4–2–29.

254,957. REPRESENTATION OF FLYING FISH. Cl. 39 (Int. Cl. 25). 4–2–29.

255,454. MASTERIB. Cl. 12 (Int. Cl. 6). 4–23–29.

255,562. "MILLERS FALLS TOOLS" ETC. AND LABEL DESIGN. Cl. 21 (Int. Cl. 7). 4–23–29.

255,631. SENTRY. Cl. 35 (Int. Cl. 12). 4–30–29.

255,687. "THE TOY HOUSE" AND DESIGN. Cl. 22 (Int. Cl. 28). 4–30–29.

256,340. "GOOD LUCK CHOCOLATE PIE & PUDDING" AND DESIGN. Cl. 46 (Int. Cl. 30). 5–14–29.

440,565. HURCULES. Cl. 22 (Int. Cl. 28). 9–14–48.

440,768. MARLBORO IN THE GREAT AMERICAN TRADITION. Cl. 39 (Int. Cl. 25). 9–28–48.

440,851. ARISTOCRAT. Cl. 22 (Int. Cl. 28). 10–5–48.

441,559. TRIMIT. Cl. 13 (Int. Cl. 6). 12–7–48.

441,654. VITABEX-B. Cl. 18 (Int. Cl. 5). 12–21–48.

441,703. DAN MAR AND DESIGN. Cl. 39 (Int. Cl. 25). 12–28–48.

441,743. STEINETTES CONTAIN IODINE & ASPIRIN. Cl. 18 (Int. Cl. 5). 1–4–49.

441,994. PERFEKTUM. Cl. 44 (Int. Cls. 9 and 10). 2–8–49.

442,217. VAPO-KLEEN AND DESIGN. (Cl. 23 (Int. Cl. 7). 3–15–49.

442,236. RICELAND. Cl. 46 (Int. Cl. 30). 3–15–49.

442,447. VALITE. Cl. 1 (Int. Cl. 1). 4–12–49.

442,533. AHK. Cl. 33 (Int. Cl. 21). 4–26–49.

502,484. EVANS AND DESIGN. Cl. 8 (Int. Cl. 34). 9–28–48.

503,200. CARGO. Cl. 6 (Int. Cl. 1). 10–19–48.

503,528. CONSTANT. Cl. 11 (Int. Cl. 2). 10–26–48.

504,063. VIGNY. Cl. 6 (Int. Cl. 3). 11–23–48.

504,124. LONDONDERRY. Cl. 39 (Int. Cl. 25). 11–23–48.

504,173. J5V. Cl. 22 (Int. Cl. 28). 11–23–48.

504,175. CASH IN. Cl. 22 (Int. Cl. 28). 11–23–48.

504,180. PRIZE CUP. Cl. 22 (Int. Cl. 28). 11–23–48.

504,573. PIXOL. Cl. 6 (Int. Cl. 2). 12–7–48.

504,820. SUNLOVER. Cl. 42 (Int. Cl. 24). 12–14–48.

505,056. PIPE CLUB AND DESIGN. Cl. 17 (Int. Cl. 34). 12–21–48.

505,208. REVOLUTE. Cl. 26 (Int. Cl. 9). 12–28–48.

505,322. NOTURN. Cl. 35 (Int. Cl. 17). 12–28–48.

505,795. SPRASTEEL. Cl. 14 (Int. Cl. 6). 1–18–49.

505,892. FRESHPACK AND DESIGN. Cl. 1 (Int. Cl. 31). 1–18–49.

508,185. CLARK. Cl. 2 (Int. Cl. 19). 4–5–49.

509,127. MANGANEND. Cl. 34 (Int. Cl. 9). 4–26–49.

509,128. NICKEND. Cl. 34 (Int. Cl. 9). 4–26–49.

509,563. SOLID COMFORT. Cl. 44 (Int. Cl. 10). 5–10–49.

509,690. CRYSTALLITE. Cl. 37 (Int. Cl. 16). 5–10–49.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

168,952. RAILWAY PURCHASES & STORES AND DESIGN. Cl. 38. 5–29–23.

798,042. ATEROID. Cl. 18. 10–26–65.

798,576. ELASFIT. Cls. 39 and 42. 11–9–65.

Section 8

The following registrations issued Dec. 18, 1962

742,152. FIBEROID. Cl. 1.

742,153. ROULETTE. Cl. 1.

742,157. HANDI-ANTI-SKID. Cl. 1.

742,158. FIRE CAN. Cl. 1.

742,159. FORM-A-MAT. Cl. 1.

742,165. GALAXY. Cl. 2.

742,166. WONDERCOAT. Cl. 2.

742,167. BRITE-PAK. Cl. 2.

742,170. BRITE-PAK W/V AND DESIGN. Cl. 2.

742,171. TIC TAC TOE. Cl. 3.

742,173. POLI-BLENDER. Cl. 4.

742,177. BTC PRODUCT AND DESIGN. Cl. 5.

742,181. TAPEMARK. Cl. 5.

742,182. DERNIER CRI. Cl. 5.

742,196. HERCO. Cl. 6.

742,199. ARMOSOL. Cl. 6.

742,211. GULF KALTROGEN. Cl. 10.

742,214.	HARD-KOTE. Cl. 12.
742,217.	MAJOR. Cl. 12.
742,183.	KLOZE FRESH. Cl. 6.
742,218.	FLASH GLAZE. Cl. 12.
742,220.	JOY HOMES AND DESIGN. Cl. 12.
742,226.	VISTA. Cl. 12.
742,231.	E-Z KLEEN. Cl. 13.
742,235.	NYLARK BY ZIPCO AND DESIGN. Cl. 13.
742,236.	NYGRIP BY ZIPCO AND DESIGN. Cl. 13.
742,237.	NYGLIDE BY ZIPCO AND DESIGN. Cl. 13.
742,241.	TRW AND DESIGN. Cl. 14.
742,249.	HISTAQUAR. Cl. 18.
742,250.	QUINIGEN. Cl. 18.
742,251.	GUMBLES. Cl. 18.
742,252.	WELLCONAL. Cl. 18.
742,255.	EAT-O-MINE. Cl. 18.
742,256.	ANAFUNG. Cl. 18.
742,264.	DUO-MATIC. Cl. 19.
742,266.	DESIGN OF THE LETTER H HAVING AN ARROW AS THE CROSS BAR. Cl. 19.
742,270.	INTENNA TV. Cl. 21.
742,272.	SANSUI. Cl. 21.
742,273.	BS AND DESIGN. Cl. 21.
742,275.	ELECTRO-MATE AND DESIGN. Cl. 21.
742,277.	MELROC. Cl. 21.
742,283.	SHOP-VOLT. Cl. 21.
742,287.	HOLIDAY. Cl. 22.
742,289.	LINCOLNWOOD. Cl. 22.
742,290.	STRIKE LUCK O' THE IRISH AND DESIGN. Cl. 22.
742,295.	PERSONAL. Cl. 22.
742,296.	SHRIEKING SONIC SATELLITE. Cl. 22.
742,297.	MARDI GRAS. Cl. 22.
742,300.	CERAMIZED. Cl. 23.
742,303.	JACQUELINE. Cl. 23.
742,308.	DINE-O-MAT. Cl. 23.
742,309.	ZERATE. Cl. 23.
742,315.	BORG & BECK BORG-WARNER BW AND DESIGN. Cl. 23.
742,318.	PLASTI-MATIC. Cl. 23.
742,323.	EPODUR. Cl. 26.
742,328.	ANAVAC. Cl. 26.
742,332.	FLO NO FLO. Cl. 26.
742,333.	METROLUX. Cl. 26.
742,334.	CHRONOFRAC. Cl. 26.
742,335.	MILICHEX. Cl. 26.
742,338.	LP AND DESIGN. Cl. 26.
742,339.	INFO-PUNCH. Cl. 26.
742,340.	CEPEGOR. Cl. 26.
742,343.	TI AND DESIGN. Cl. 27.
742,344.	DUO-LARM. Cl. 27.
742,345.	TYROS. Cl. 27.
742,347.	SEXTANT. Cl. 27.
742,348.	SOUTHERN CROSS. Cl. 27.
742,349.	MONVIL. Cl. 27.
742,350.	505. Cl. 27.
742,351.	ARCTURUS. Cl. 27.
742,365.	MIKADO. Cl. 28.
742,366.	S & C. Cl. 28.
742,373.	TOUCH O'WOOD. Cl. 32.
742,374.	THE "GOLDEN" TOUCH. Cl. 32.
742,379.	HALO EXECLINER AND DESIGN. Cl. 32.
742,380.	HALO SECLINER AND DESIGN. Cl. 32.
742,381.	TRW AND DESIGN. Cl. 32.
742,382.	KUMFORT KING. Cl. 32.
742,387.	SOLARTEK. Cl. 34.
742,389.	BLUE LINE. Cl. 34.
742,396.	JET FLIGHT. Cl. 35.
742,397.	BELLA. Cl. 36.
742,398.	HI ! ETC. AND DESIGN. Cl. 36.
742,399.	FLEXIFILM. Cl. 37.
742,404.	AN ELISE CREATION. Cl. 39.
742,406.	MISS DEMI TASSE AND DESIGN. Cl. 39.
742,408.	PENDLETOWNER. Cl. 39.
742,410.	MISS BONWIT. Cl. 39.
742,411.	DERNIER CRI. Cl. 39.
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742,494.	TOWN HOSTESS ETC. AND DESIGN. Cl. 101.
742,501.	EBAUCHES AND CARTOUCHE SYMBOLS (DESIGN). Cl. 27.
742,502.	CARTOUCHE SYMBOLS (DESIGN). Cl. 27.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 15 — Oils and Greases

167,769. May 8, 1923. The American Oil Company, Chicago, Ill. Pub. by registrant.

AMOCO

For Gasoline, Motor Fuels, and Lubricating Oils.

Class 18 — Medicines and Pharmaceutical Preparations

250,241. Dec. 4, 1928. "Gets-It" Inc., Chicago, Ill. Pub. by Plough, Inc., Memphis, Tenn.

GETS-IT

For Preparation for Corns, Calli, Warts, Bunions, and for Allaying Inflammation of the Skin

Class 21 — Electrical Apparatus, Machines, and Supplies

345,457. Apr. 27, 1937. Century Lighting, Inc., Clifton, N.J. Pub. by registrant.

LEKOLITE

For Electrically Operated Light Projectors for Indoor and Outdoor Illumination.

345,922. May 11, 1937. Century Lighting, Inc., Clifton, N.J. Pub. by registrant.

FRESNELITE

For Electrically Operated Light Projectors for Indoor and Outdoor Illumination.

349,632. Aug. 31, 1937. Century Lighting, Inc., Clifton, N.J. Pub. by registrant.

WIZARDLITE

For Electrically Operated Light Projectors and Devices for Indoor and Outdoor Illumination.

394,584. Apr. 14, 1942. Century Lighting, Inc., Clifton, N.Y. Pub. by registrant.

DRAMALITE

For Electric Lighting Projectors and Electric Lighting Fixtures for Stage, Store, and Display Lighting.

Class 26 — Measuring and Scientific Appliances

440,818. Sept. 28, 1948. Leeds & Northrop Company, North Wales, Pa. Pub. by registrant.

ELECTROMAX

For Automatic, Electrically Operated Controlling, Indicating and Signalling Apparatus Functioning Responsively to the Fluctuations of a Varying Magnitude of a Condition Such as Temperature, Pressure, Electrical Conductivity, Electrical Impedance, Electric Current, Electric Voltage, or the Like, for Use in Connection With Industrial Equipment and Apparatus Such as Driers, Ovens, Furnaces, Heaters, Baths, Pots, Kettles, Stills, Dies, Platens, Presses or the Like, for the Purpose of Increasing, Decreasing, and Maintaining at a Predetermined Magnitude the Variable Condition Encountered in Carrying Out of Industrial Processes Where the Variable Magnitude of the Condition Is To Be Maintained Within Predetermined Operating Limits, and for Parts of and Accessories for Such Apparatus, Controllers, and Controllers Combined With Signaling Means (Int. Cl. 9).

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

32,059. Oct. 18, 1898. Eureka Fire Hose Company, New York, N.Y. Pub. by Uniroyal, Inc., New York, N.Y.

TRUMPET

For Rubber-Lined Cotton Hose (Int. Cl. 17).

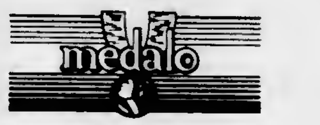
32,062. Oct. 18, 1898. Eureka Fire Hose Company, New York, N.Y. Pub. by Uniroyal, Inc., New York, N.Y.

RED BALL

For Hydraulic Hose (Int. Cl. 17).

Class 40 — Fancy Goods, Furnishings, and Notions

441,765. Jan. 4, 1949. Gold Medal Hair Products, Brooklyn, N.Y. Pub. by Gold Medal Hair Products, Inc., Inwood, N.Y.



For Non-Electrical Curling Irons, etc. (Int. Cl. 8).

Class 45 — Soft Drinks and Carbonated Waters

189,066. Sept. 9, 1924. The Moxie Company, Needham Heights, Mass. Pub. by registrant.

MOXIE

For Non-Alcoholic, Maltless, Carbonated Beverage and Syrup for Making the Same.

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(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AMP Inc., Harrisburg, Pa. 864,485, pub. 11–19–68. Cl. 21.
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Abbott Laboratories, North Chicago, Ill. 864,473, pub. 11–19–68. Cl. 18.
Acorn Chemical Co., Cleveland, Ohio. 742,487, canc. Cl. 52.
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  Paragon-Revolute Corp.
Alberto-Culver Co., Melrose Park, Ill. 864,441, pub. 11–19–68. Cl. 6.
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Allstate Insurance Co., Northbrook, Ill. 864,573, pub. 11–19–68. Cl. 38.
Amerace Corp., New York, N.Y. 864,503, pub. 11–19–68. Cl. 22.
Amerace Corp., New York, N.Y. 864,588, pub. 11–19–68. Cl. 40.
American Aniline Products, Inc., New York, N.Y., to American Aniline Products, Inc., Paterson, N.J. 504,573, ren. 2–4–69. Cl. 6.
American Cyanamid Co., Wayne, N.J. 864,461, pub. 11–19–68. Cl. 13.
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American Instrument Co., Inc., Silver Spring, Md. 864,530, pub. 11–19–68. Cl. 26.
American Motor Inns, Inc., Roanoke, Va. 864,673, pub. 11–19–68. Cl. 100.
American Oil Co., The, Chicago, Ill. 167,769, 12(c) pub. 2–4–69. Cl. 15.
American Personnel & Guidance Association, Washington, D.C. 864,565–9, pub. 11–19–68. Cl. 38.
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Ashland Oil & Refining Co., Ashland, Ky. 864,577, pub. 11–19–68. Cl. 38.
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Century Lighting, Inc., New York, N.Y., by Century Lighting, Inc., Clifton, N.J. 394,584, 12(c) pub. 2–4–69. Cl. 21.
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Clinton Supply Co., Chicago, Ill. 864,513, pub. 11–19–68. Cl. 23.
Clovis Citrus Co., Clovis, Calif. 864,625, pub. 11–19–68. Cl. 46.
Coca-Cola Co., The, Atlanta, Ga. 864,639, pub. 11–19–68. Cl. 46.
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Colburn, Constantine W., d.b.a. Con Surfboards, Santa Monica, Calif. 864,667, pub. 11–19–68. Cl. 52.
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Consolidated Products Corp., from B & B Electronics Corp., Gardena, Calif. 864,482, pub. 10–1–68. Cl. 21.
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Consumers Petroleum Co., Inc., Indianapolis, Ind. 864,471, pub. 11–19–68. Cl. 15.
Continental Oil Co., Ponca City, Okla. 864,560, pub. 11–19–68. Cl. 37.
Cragstan Industries, Inc., New York, N.Y. 864,501, pub. 11–19–68. Cl. 22.
Cribbs, John R., d.b.a. Engineering Associates, La Jolla, Calif. 864,506, pub. 11–19–68. Cl. 23.
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Custom Pet Food Packers, Inc., Princess Anne, Md. 864,633, pub. 11–19–68. Cl. 46.
Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 441,654, ren. 2–4–69. Cl. 18.
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Dallas Ceramic Co., Dallas, Tex. 864,447, pub. 11–19–68. Cl. 12.
Dance Records, Inc., New York, N.Y. 864,557, pub. 11–19–68. Cl. 36.
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Del Chemical Corp., Menomonee Falls, Wis. 864,431, pub. 11–19–68. Cl. 6.
De Luxe Topper Corp., Elizabeth, N.J. 864,496, pub. 11–19–68. Cl. 22.
Desitin Chemical Co., Inc., Providence, R.I. 742,256, canc. Cl. 18.
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Docktor Pet Centers, Inc., d.b.a. Docktor Pet Centers Inc., and Docktor's, Philadelphia, Pa. 864,688, pub. 11–19–68. Cl. 101.
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Dominique France, Inc., New York, N.Y. 864,427, pub. 11–19–68. Multiple Class (Classes 3, 28, 41, 51, and 52).
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Kelly, Mary S.
Goldman, Howard, Interiors, Inc., Dallas, Tex. 864,540, pub. 11–19–68. Multiple Class (Classes 32 and 50).
Gonzalez, Joseph H. and Lillie A., Saginaw, Mich. 864,694, pub. 11–19–68. Cl, 107.
Good Luck Food Co., Inc., Rochester, to Lever Bros. Co., New York, N.Y. 256,340, ren. 2–4–69. Cl. 46.
Goodrich, B. F., Co., The, New York, N.Y., to Western Auto Supply Co., Kansas City, Mo. 255,631, ren. 2–4–69. Cl. 35.
Grace, W. R., & Co., Duncan, S.C. 864,594, pub. 11–19–68. Cl. 42.
Greiner Scientific Corp., New York, N.Y. 864,529, pub. 11–19–68. Cl. 26.
Greystone Knitwear Corp., New York, N.Y. 742,404, canc. Cl. 39.
Grimes Co., Inc., The, Dallas, Tex. 742,159, canc. Cl. 1.
Gulf Fertilizer Co., The, Tampa, Fla. 742,211, canc. Cl. 10.
HMH Publishing Co. Inc., Chicago, Ill. 864,689, pub. 11–19–68. Cl. 101.
Hamilton Watch Co., Lancaster, Pa. 742,350, canc. Cl. 27.
Harbison-Walker Refractories Co. : *See*—
Dresser Industries, Inc.
Harris-Intertype Corp., Cleveland, Ohio. 864,510, pub. 11–19–68. Cl. 23.
Harvard Coated Products Co., Inc., Roxbury, Mass. 742,152, canc. Cl. 1.
Hasbro Industries, Inc., from Hassenfeld Bros. Inc., Pawtucket, R.I. 864,494–5, pub. 9–24–68. Cl. 22.

Hassenfeld Bros. Inc. : *See*—
Hasbro Industries, Inc.
Haydon Switch & Instrument, Inc., Waterbury, Conn. 864,481, pub. 11–19–68. Cl. 21.
Hearst Corp., The, New York, N.Y. 864,575, pub. 11–19–68. Cl. 38.
Henryson, L. P., & Co. Inc., New York, N.Y. 742,413, canc. Cl. 41.
Hercules Powder Co., Wilmington, Del. 742,196, canc. Cl. 6.
Herron Bros. & Meyer Inc., New York, N.Y. 864,433, pub. 11–19–68. Cl. 6.
Hershey Chocolate Corp. : *See*—
Hershey Foods Corp.
Hershey Foods Corp., from Hershey Chocolate Corp., Hershey, Pa. 864,621, pub. 11–19–68. Cl. 46.
Hi Record Co. : *See*—
Edwards, M. E.
Hilsinger Corp., The : *See*—
Evans Case Co.
Hoffman, Robert C., to York Bar Bell Co., Inc., York, Pa. 440,565, ren. 2–4–69. Cl. 22.
Hoffman, Robert C., to York Bar Bell Co., Inc., York, Pa. 440,851, ren. 2–4–69. Cl. 22.
Holiday Inns of America, Inc., Memphis, Tenn. 742,490, canc. Cl. 100.
Horlicks Ltd., Slough, England. 742,251, canc. Cl. 18.
Horst, E. Clemens, Co., to E. Clemens Horst Co., San Francisco. Calif. 505,892, ren. 2–4–69. Cl. 1.
Hunt Mfg. Co., Philadelphia, Pa. 864,446, pub. 11–19–68. Multiple Class (Classes 11 and 23).
Hunt-Wesson Foods, Inc., Fullerton, Calif. 864,629–31, pub. 11–19–68. Cl. 46.
Hydroglas Industries, Inc., Detroit, Mich. 864,477–8, pub. 11–19–68. Cl. 19.
Hy-Sil Mfg. Co., Revere, Mass. 864,597, pub. 11–19–68. Cl. 42.
Imperial Knife Associated Companies, Inc., Providence, R.I. 742,303, canc. Cl. 23.
Industrias de Chocolate Lacta S/A, Sao Paulo, Brazil. 864,617, pub. 11–19–68. Cl. 46.
International Mutoscope Corp., Long Island City, N.Y. 742,318, canc. Cl. 23.
International Purchasing Agents, Inc., East Orange, N.J. 864,534, pub. 11–19–68. Cl. 28.
International Telephone & Telegraph Corp., Wilmington, Del., from International Telephone & Telegraph Corp., New York, N.Y. 864,546, pub. 11–19–68. Cl. 34.
Inwood Knitting Mills, Inc., New York, N.Y. 864,603, pub. 11–19–68. Cl. 42.
J & H International Corp., Chicago, Ill. 864,683–6, pub. 11–19–68. Cl. 101.
Jamaica Tobacco Co., New York, N.Y., and Kingston, Jamaica, to B. & J. B. Machado Tobacco Co., Kingston, Jamaica. 71,232, ren. 2–4–69. Cl. 17.
Jaunty Fabric Corp., The, New York, N.Y. 864,604, pub. 11–19–68. Cl. 42.
Jefferson Electric Co., Bellwood, Ill. 864,489, pub. 11–19–68. Cl. 21.
Joy Homes, Inc., Mobile, Ala. 742,220, canc. Cl. 12.
Judson Candies, Inc., from Judson Inc., San Antonio, Tex. 864,619, pub. 11–19–68. Cl. 46.
Judson Inc. : *See*—
Judson Candies, Inc.
Keene Corp. : *See*—
Penn Metal Co.
Kelly, Mary S., d.b.a. Golden Key Cosmetics, Eldorado, Ill. 864,648, pub. 11–19–68. Cl. 51.
Kentile Floors Inc., Brooklyn, N.Y. 864,595, pub. 11–19–68. Cl. 42.
Kenwood Laboratories, Inc., Brooklyn, N.Y. 742,250, canc. Cl. 18.
Kerr, Alexander H., & Co., Inc., to Kerr Glass Mfg. Corp., Los Angeles, Calif. 442,533, ren. 2–4–69. Cl. 33.
Kerr Glass Mfg. Corp. : *See*—
Kerr, Alexander H., & Co., Inc.
Keystone Consolidated Industries, Inc. : *See*—
National Lock Co.
Kikkoman Shoyu Co., Ltd., Chiba Prefecture, Japan. 864,642–5, pub. 11–19–68. Multiple Class (Classes 47 and 48).
Kimberly-Clark Corp. : *See*—
Neenah Paper Co.
King-Seeley Thermos Co., Ann Arbor, Mich., from The American Thermos Products Co., Norwich, Conn. 742,287, canc. Cl. 22.
Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal/Pfalz, Germany. 864,458, pub. 11–19–68. Multiple Class (Classes 13 and 23).
Kosset Carpets Ltd., Yorkshire, England. 864,593, pub. 11–19–68. Cl. 42.
Kramer Brandeis, Inc., New York, N.Y. 504,124, ren. 2–4–69. Cl. 39.
Kresge, S. S., Co., Detroit, Mich. 864,429, pub. 11–19–68. Cl. 4.
Kristallglasfabrik Spiegelau, G.m.b.H., Spiegelau (Bayer. Wald), Germany. 864,545, pub. 11–19–68. Cl. 33.
Kumfort King, Inc., Los Angeles, Calif. 742,382, canc. Cl. 32.
Kyowa Gas Chemical Industry Co., Ltd., Tokyo, Japan, from Marubeni-Iida (America), Inc., Los Angeles, Calif. 864,451, pub. 11–19–68. Cl. 12.
La Bora, Inc. : *See*—
Lora Laboratories.
Lannan Industries, Inc., Santa Barbara, Calif. 742,332, canc. Cl. 26.
Laquar Pharmaceuticals, Inc., Nutley, N.J. 742,249, canc. Cl. 18.
Layton Co., Inc., Cudahy, Wis. 742,295, canc. Cl. 22.
Lazier, J. F., Mfg. Co., St. Louis, Mo. 864,613, pub. 11–19–68. Cl. 45.
Leeds & Northrop Co., North Wales, Pa. 440,818, 12(c) pub. 2–4–69. Cl. 26.
Lee-Norse Co., Charleroi, Pa. 864,507, pub. 11–19–68. Cl. 23.
Leggett, C. A., St. Louis, Mo. 864,437, pub. 11–19–68. Cl. 6.
Leigh, Douglas, Inc. : *See*—
New York Condensed Milk Co.
Le Lis Naamloze Vennottschap, Hamme, Belgium. 742,426, canc. Cl. 42.
Lever Brothers Co. : *See*—
Good Luck Food Co., Inc.
Lever Brothers Co., New York, N.Y. 864,606–7, pub. 11–19–68. Cl. 42.
Lionel Corp., The, Hillside, N.J. 742,338, canc. Cl. 26.
Loesch Laboratory Consultants, Inc., Houston, Tex. 864,653, pub. 11–19–68, Cl. 51.
Lora Laboratories, from La Bora, Inc., Chicago, Ill. 742,183, canc. Cl. 6.
L'Oreal, from Societe Monsavon-L'Oreal, Paris, France. 742,480, canc. Cl. 51.
Lynden Frosted Foods, Inc., Lynden, Wash. 864,638, pub. 11–19–68. Cl. 46.
Machado, B. & J. B., Tobacco Co. : *See*—
Jamaica Tobacco Co.
Maclean-Fogg Lock Nut Co., Mundelein, Ill. 864,522, pub. 11–19–68. Cl. 23.
Macy, R. H., & Co., Inc., New York, N.Y. 249,558, ren. 2–4–69. Cl. 39.
Magic Rain, Inc., Omaha, Nebr. 864,692, pub. 11–19–68. Cl. 103.
Maidenform, Inc., New York, N.Y. 864,579, pub. 11–19–68. Cl. 39.
Major Engineered Homes, Inc., from Major Realty Corp., Rosemont, Pa. 742,217, canc. Cl. 12.
Major Realty Corp. : *See*—
Major Engineered Homes, Inc.
Mangels-Herold Co., Inc., Baltimore, Md. 250,953, ren. 2–4–69. Cl. 46.
Manning, Richard, d.b.a. Richard Manning Associates, New Canaan, Conn. 864,578, pub. 11–19–68. Cl. 38.
Manning, Richard, Associates : *See*—
Manning, Richard.
Marathon Oil Co., Findlay, Ohio. 864,469, pub. 11–19–68. Cl. 15.
Marlboro Shirt Co., Inc., Baltimore, Md., to Marlboro Shirt Co., Inc., New York, N.Y. 440,768, ren. 2–4–69. Cl. 39.
Marlenn Products Co., Inc., Baltimore, Md. 864,434–5, pub. 11–19–68. Cl. 6.
Marley Co., The, Kansas City, Mo. 864,536, pub. 11–19–68. Cl. 31.
Martell & Co., Cognac, France, to J. & F. Martell, Inc., New York, N.Y. 72,228, ren. 2–4–69. Cl. 49.
Martell, J. & F., Inc. : *See*—
Martell & Co.
Marubeni-Iida (America), Inc. : *See*—
Kyowa Gas Chemical Industry Co., Ltd.
Mathis, J. K., & Son Plumbing, Pomona, Calif. 742,231, canc. Cl. 13.
Matsushita Lumber Co., Ltd., Hokkaido, Japan. 864,453, pub. 11–19–68. Cl. 12.
Mattel, Inc., Hawthorne, Calif. 864,499–500, pub. 11–19–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 864,504–5, pub. 11–19–68. Cl. 22.
Maxon Premix Burner Co., Inc., Muncie, Ind. 864,459, pub. 11–12–68. Multiple Class (Classes 13 and 34).
McNeil Corp., Akron, Ohio. 864,519, pub. 11–19–68. Cl. 23.
Medico Nurser Enterprise, The : *See*—
Mitchell, Donita L.
Melman, Howard, d.b.a. Pasta Cheese Co., Philadelphia, Pa. 742,446, canc. Cl. 46.
Menley & James Laboratories, Ltd., Philadelphia, Pa. 864,655, pub. 10–8–68. Cl. 51.
Merck & Co., Inc., Rahway, N.J. 864,438, pub. 11–19–68. Cl. 6.
Metallizing Engineering Co. Inc., Long Island City, to Metco Inc., Westbury, N.Y. 505,795, ren. 2–4–69. Cl. 14.
Metco Inc. : *See*—
Metallizing Engineering Co. Inc.
Metropolitan Greetings, Inc., Everett, Mass. 864,571, pub. 11–19–68. Cl. 38.
Michals Jewel Shop, Inc., Chicago, Ill. 742,365, canc. Cl. 28.
Michigan Tool Co., Detroit, Mich. 742,335, canc. Cl. 26.
Mid States Supplies, Inc., Dayton, Ohio. 742,488, canc. Cl. 52.
Milko Products Inc., Chicago, Ill. 742,469, canc. Cl. 46.
Miller, Nan, & Associates, Inc., Chicago, Ill. 864,679, pub. 11–19–68. Cl. 101.
Millers Falls Co., to Millers Falls Co., Greenfield, Mass. 255,562, ren. 2–4–69. Cl. 21.
Mind Inc., Greenwich, Conn. 864,556, pub. 11–19–68. Cl. 36.
Mitchell, Donita L., d.b.a. The Medico Nurser Enterprise, Omaha, Nebr. 864,610, pub. 11–19–68. Cl. 44.
Miyuki Keori Kabushiki Kaisha (Miyuki Woollen Textile Co., Ltd.), Aichi Prefecture, Japan. 864,605, pub. 11–19–68. Cl. 42.
Modern Spacemaster Products, Inc., Great Neck, N.Y. 742,373–4, canc. Cl. 32.
Monsanto Chemical Co., St. Louis, Mo., from The Chemstrand Corp., New York, N.Y. 742,423–4, canc. Cl. 42.
Moody's Investors Service, Inc., New York, N.Y. 864,671, pub. 11–19–68. Cl. 100.
Morris, Philip, Inc. : *See*—
Benson & Hedges.

Moxie Co., The, Portland, Maine and Boston, Mass., by The Moxie Co., Needham Heights, Mass. 189,066, 12(c) pub. 2–4–69. Cl. 45.

Moxley Massage Equipment Co., Inc., Los Angeles, Calif. 742,439, canc. Cl. 44.

Mulberry Metal Products, Inc., Union, N.J. 864,484, pub. 11–19–68. Cl. 21.

National Assn. for the Specialty Food Trade, Inc., New York, N.Y. 864,687, pub. 11–19–68. Cl. 101.

National Die Casting Co., Chicago, Ill. 742,289, canc. Cl. 22.

National Lock Co., Rockford, to Keystone Consolidated Industries, Inc., Peoria, Ill. 441,559, ren. 2–4–69. Cl. 13.

Nationwide Downtowner Motor Inns, Inc.: *See—*
Downtowner Corp., The.

Nationwide Papers Inc., Hamilton, Ohio. 864,561, pub. 11–19–68. Cl. 37.

Neenah Paper Co., to Kimberly-Clark Corp., Neenah, Wis. 509,690, ren. 2–4–69. Cl. 37.

New London Mills, Inc., New London, Conn. 864,479, pub. 11–19–68. Cl. 20.

New York Condensed Milk Co., to Douglas Leigh, Inc., New York, N.Y. 32,258, ren. 2–4–69. Cl. 46.

North & Judd Mfg. Co., New Britain, Conn. 864,475, pub. 11–19–68. Cl. 19.

North Woods Coffee Co., Chicago, Ill. 742,486, canc. Cl. 52.

O.K. Rubber Welders, Inc., Littleton, Colo. 742,396, canc. Cl. 35.

O'Donnell, J. J., Woolens, Inc., Farnumsville, Mass. 742,418, canc. Cl. 42.

O'Hanlon, Wm., & Co. Ltd., Manchester, England. 504,820, ren. 2–4–69. Cl. 42.

Ohio Truss Co., The, now by change of name Surgical Appliance Industries, to Surgical Appliance Industries, Inc., Cincinnati, Ohio. 509,563, ren. 2–4–69. Cl. 44.

Okonite Co., The, Passaic, N.J. 864,480, pub. 11–19–68. Cl. 21.

Ormat Turbines (1965) Ltd., Yavne, Israel. 864,486, pub. 11–19–68. Cl. 21.

Ozite Corp., Chicago, Ill. 864,599, pub. 11–19–68. Cl. 42.

Pacific Knitting Mills, Inc., to Catalina, Inc., Los Angeles, Calif. 254,957, ren. 2–4–69. Cl. 39.

Packard-Bell Electronics Corp., Los Angeles, Calif. 742,270, canc. Cl. 21.

Pan American Suntan Oil Corp., New York, N.Y. 864,659–60, pub. 11–19–68. Cl. 51.

Pandex Corp., New York, N.Y. 864,570, pub. 11–19–68. Cl. 38.

Paragon-Revolute Corp., Rochester, N.Y., to Addressograph-Multigraph Corp., Mount Prospect, Ill. 505,208, ren. 2–4–69. Cl. 26.

Paramount Packaging Corp., Chalfont, Pa. 864,423, pub. 11–19–68. Multiple Class (Classes 2 and 37).

Parker-Hannifin Corp., Cleveland, Ohio. 864,457, pub. 11–19–68. Multiple Class (Classes 13 and 23).

Pascal Co., Inc., Seattle, Wash. 742,437, canc. Cl. 44.

Pasta Cheese Co.: *See—*
Melman, Howard.

Pelvo Medicine Co., The: *See—*
Spicer, Charles R.

Pendleton Woolen Mills, Portland, Oreg. 742,408, canc. Cl. 39.

Penn Metal Co., Cambridge, Mass., to Keene Corp., New York, N.Y. 255,454, ren. 2–4–69. Cl. 12.

Penney, J. C., Co., New York, N.Y. 864,552, pub. 11–19–68. Cl. 35.

Perfection American, Inc., Harvey, Ill. 864,517, pub. 11–19–68. Cl. 23.

Perfektum Products Co.: *See—*
Popper & Klein, Inc.

Peterson's Ltd., Inc., New York, N.Y. 864,444, pub. 11–19–68. Cl. 8.

Phillips Mfg. Co., Chicago, Ill. 442,217, ren. 2–4–69. Cl. 23.

Phillips Petroleum Co., Bartlesville, Okla. 864,419, pub. 11–19–68. Cl. 1.

Pillsbury Co., The, Minneapolis, Minn. 864,620, pub. 9–24–68. Cl. 46.

Plan: *See—*
Castle & Cooke, Inc.

Plough, Inc.: *See—*
Gets-It Inc.

Poli-Blender Co., Inc., Chattanooga, Tenn. 742,173, canc. Cl. 4.

Pollak Steel Co., The, Evendale, Cincinnati, Ohio. 864,466, pub. 11–19–68. Cl. 13.

Popper Industries, Inc., New York, N.Y. 742,349, canc. Cl. 27.

Popper & Klein, Inc., d.b.a. Perfektum Products Co., to Popper & Sons, Inc., New York, N.Y. 441,994, ren. 2–4–69. Cl. 44.

Popper & Sons, Inc.: *See—*
Popper & Klein, Inc.

Precision Scientific Co., Chicago, Ill. 742,334, canc. Cl. 26.

Pressluftwerkzeug und Maschinenbau Premag, G.m.b.H. Industriestrasse, Geisenheim (Rhine), Germany. 864,511, pub. 11–19–68. Cl. 23.

Prince, Robert G., Detroit, Mich. 864,695, pub. 11–19–68. Cl. 107.

Product Specialists: *See—*
Stransbury, Benjamin.

Puritan Leasing Co., Santa Barbara, Calif. 864,672, pub. 11–19–68. Cl. 100.

Purity Stores, Inc., Burlingame, Calif. 742,460, canc. Cl. 46.

Raypak Co., Inc., South El Monte, Calif. 864,551, pub. 11–19–68. Cl. 34.

Relton Corp., Arcadia, Calif. 864,470, pub. 11–19–68. Cl. 15.

Restaurant Associates Industries, Inc., New York, N.Y. 864,678, pub. 11–19–68. Cl. 100.

Rheingold Breweries, Inc., Brooklyn, N.Y. 864,646, pub. 11–19–68. Cl. 48.

Riegel Textile Corp., New York, N.Y. 864,612, pub. 11–19–68. Cl. 44.

Rinshed-Mason Co., Detroit, Mich. 742,218, canc. Cl. 12.

Roach, Robert S., Springfield, Ill. 864,498, pub. 11–19–68. Cl. 22.

Robinson Brick & Tile Co., The, Denver, Colo. 742,226, canc. Cl. 12.

Rolls, Cecil J., Maitland, Fla. 742,264, canc. Cl. 19.

Ross Products, Inc., New York, N.Y. 742,171, canc. Cl. 3.

S.p.A., F.I.L.E., Fabbrica Italiana Lampadine Elettriche, Lecco, Italy. 864,488, pub. 11–19–68. Cl. 21.

Safeway Stores, Inc., Oakland, Calif. 864,641, pub. 11–19–68. Cl. 46.

Saf-T-Bed Corp., Fort Lauderdale, Fla. 864,420, pub. 11–19–68. Cl. 1.

Sage Engineering & Valve Co.: *See—*
Sage Fabricating, Inc.

Sage Fabricating, Inc., d.b.a. Sage Engineering & Valve Co., Houston, Tex. 864,462, pub. 11–19–68. Multiple Class (Classes 13 and 23).

Sandy's Franchise, Inc., Kewanee, Ill. 864,674–5, pub. 11–19–68. Cl. 100.

Sansui Electric Co., Ltd. Suginami-ku, Tokyo, Japan. 742,272, canc. Cl. 21.

Sauer, C. F., Co., The, Richmond, Va. 864,635, pub. 11–19–68. Cl. 46.

Scheirich, H. J., Co., Louisville, Ky. 864,544, pub. 11–19–68. Cl. 32.

Scully Rubber Mfg. Co., Baltimore, Md. 505,322, ren. 2–4–69. Cl. 35.

Serio Boat Yard: *See—*
Serio, Vincent J., Sr.

Serio, Vincent J., Sr., d.b.a. Serio Boat Yard, Hampton, Va. 742,266, canc. Cl. 19.

721 Corp., New York, N.Y. 742,410, canc. Cl. 39.

Shelby American, Inc., Los Angeles, Calif. 864,520, pub. 11–19–68. Cl. 23.

Sheskin, Miron J., New York, N.Y. 742,308, canc. Cl. 23.

Shved & Cohen, New York, N.Y. 742,366, canc. Cl. 28.

Sickel, Jack H., d.b.a. Brite-N White Co., Los Angeles, Calif. 864,432, pub. 11–19–68. Cl. 6.

Silver, Wm. E., Sales Co. Inc.: *See—*
Strasbaugh, Silver & Co.

Singagliese Nazzareno: *See—*
Bella Record Co.

Slumbertogs, Inc., New York, N.Y. 864,581, pub. 11–19–68. Cl. 39.

Societe Besnier Flotex, Paris, France. 864,591, pub. 11–19–68. Cl. 42.

Societe Monsavon-L'Oreal: *See—*
L'Oreal.

Societe Nouvelle de Diffusion de Parfumerie, Paris, France. 864,650, pub. 11–19–68. Cl. 51.

Solar Products Corp., Opa Locka, Fla. 742,387, canc. Cl. 34.

Solvay & Cie, Brussels, Belgium. 72,031, ren. 2–4–69. Cl. 6.

Sony Corp., Shinagawa-ku, Tokyo, Japan. 864,555, pub. 11–19–68. Cl. 36.

Spalding, A. G., & Bros. Inc., Chicopee, Mass. 504,173, ren. 2–4–69. Cl. 22.

Spalding, A. G., & Bros. Inc., Chicopee, Mass. 504,175, ren. 2–4–69. Cl. 22.

Spalding, A. G., & Bros. Inc., Chicopee, Mass. 504,180, ren. 2–4–69. Cl. 22.

Sperry Rand Corp., New York, N.Y. 864,543, pub. 11–19–68. Cl. 32.

Spicer, Charles R., d.b.a. The Pelvo Medicine Co., to The Charles R. Spicer Co., Memphis, Tenn. 254,485, ren. 2–4–69. Cl. 51.

Spicer Charles R., Co., The: *See—*
Spicer, Charles R.

Sprague Electric Co., North Adams, Mass. 742,277, canc. Cl. 21.

Stanley, Budd, Co., Inc., Syosset, N.Y. 742,273, canc. Cl. 21.

Stansbury, Benjamin, d.b.a. Product Specialists, Santa Monica, Calif. 864,474, pub. 11–19–68. Cl. 19.

Stauble's Potato Chips, Inc., Hamilton, Ohio. 742,462, canc. Cl. 46.

Stein, Morris, Philadelphia, Pa. 441,743, ren. 2–4–69. Cl. 18.

Stevens, C. Turney, d.b.a. Athens Products Co., Nashville, Tenn. 742,255, canc. Cl. 18.

Stone Container Corp., Chicago, Ill. 864,523, pub. 11–19–68. Cl. 23.

Strasbaugh, Silver & Co., Aberdeen, to Wm. E. Silver Sales Co. Inc., Darlington, Md. 69,713, ren. 2–4–69. Cl. 46.

Sturken, Eleanor T.: *See—*
Traun, Dr. Heinr., & Sohne, vormals Harburger Gummi-Kamm-Compagnie.

Sun Chemical Corp., New York, N.Y. 503,528, ren. 2–4–69. Cl. 11.

Superior Cable Corp.: *See—*
Superior Continental Corp.

Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 864,483, pub. 11–19–68. Cl. 21.

Superior Moulding Co., Troy, Ala. 864,514, pub. 11–19–68. Cl. 23.

Surgical Appliance Industries: *See—*
Ohio Truss Co., The.

Surgical Appliance Industries, Inc.: *See—*
Ohio Truss Co., The.

Tachikawa Research Institute, Higashiyama-ku, Kyoto, Japan. 864,558, pub. 11–19–68. Cl. 37.

Tachikawa Research Institute, Kyoto, Japan. 864,592, pub. 11–19–68. Cl. 42.

Tapemark Co., The, St. Paul, Minn. 742,181, canc. Cl. 5.

Television Mfrs. of America Co., Wheeling, Ill. 864,490, pub. 11–19–68. Cl. 21.

Telmont Corp.: *See—*
Blackinton, Pauline M.

Texas Instruments Inc., Dallas, Tex. 742,343, canc. Cl. 27.

Texas Instruments Inc., Dallas, Tex. 864,468, pub. 11–19–68. Cl. 14.

Textron Inc., Providence, R.I. 864,535, pub. 11–19–68. Cl. 28.

Thompson Aircraft Tire Corp., South San Francisco, Calif. 864,553–4, pub. 11–19–68. Cl. 35.

Thompson, James, & Co., Inc., New York, N.Y. 864,590, pub. 11–19–68. Cl. 42.

Thompson Ramo Wooldridge Inc., Canoga Park, Calif. 742,241, canc. Cl. 14.

Thompson Ramo Wooldridge Inc., Canoga Park, Calif. 742,381, canc. Cl. 32.

Tisch Hotels, Inc., Atlantic City, N.J. 742,449, canc. Cl. 46.

Toledo Scale Corp., Toledo, Ohio. 742,333, canc. Cl. 26.

Toni Co., The: *See—*
Gillette Co., The.

Town Hostess, Phoenix, Ariz. 742,494, canc. Cl. 101.

Toy House, The: *See—*
Blackinton, Pauline M.

Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. 798,576, canc. Multiple Class (Classes 39 and 42).

Toys by Boys, Inc., Albuquerque, N. Mex. 864,493, pub. 11–19–68. Cl. 22.

Trans-power, Inc., Fort Wayne, Ind. 864,680, pub. 11–19–68. Cl. 101.

Traun, Dr. Heinr., & Sohne, vormals Harburger Gummi-Kamm-Compagnie, Hamburg, Germany, to E. T. Sturken, Mendham, N.J. 249,994, ren. 2–4–69. Cl. 40.

True Form Foundations, Inc., Darby, Pa. 864,584, pub. 11–19–68. Cl. 39.

True Temper Corp.: *See—*
American Fork & Hoe Co., The.

Tucker Mfg. Corp., Leominster, Mass. 742,165, canc. Cl. 2.

Turtle Wax, Inc., Chicago, Ill. 742,158, canc. Cl. 1.

Twitchell, S., Co., Camden, N.J. 864,615, pub. 11–19–68. Cl. 45.

Tycal Corp., Hartford, Conn. 864,436, pub. 11–19–68. Cl. 6.

Union Carbide Corp., New York, N.Y. 864,425, pub. 11–19–68. Cl. 2.

Union Carbide Corp., New York, N.Y. 864,455, pub. 11–19–68. Cl. 12.

Uniroyal, Inc.: *See—*
Eureka Fire Hose Co.

Uniroyal, Inc., from U.S. Rubber Co., New York, N.Y. 864,430, pub. 11–19–68. Multiple Class (Classes 6 and 21).

United Silver & Cutlery Co., Los Angeles, Calif. 864,502, pub. 11–19–68. Cl. 22.

United States Gypsum Co., to United States Gypsum Co., Chicago, Ill. 252,085, ren. 2–4–69. Cl. 12.

U.S. Health Club, Inc., Yonkers, N.Y. 864,616, pub. 11–19–68. Cl. 46.

U.S. Rubber Co.: *See—*
Uniroyal, Inc.

U.S. Sales Corp., North Hollywood, Calif. 864,532, pub. 11–19–68. Cl. 27.

United States Steel Corp.: *See—*
American Steel & Wire Co. of New Jersey, The.

Universal Carpets, Inc., Ellijay, Ga. 864,601, pub. 11–19–68. Cl. 42.

Valentine Sugars, Inc.: *See—*
Valite Corp.

Valite Corp., New Orleans and Lockport, to Valentine Sugars, Inc., New Orleans, La. 442,447, ren. 2–4–69. Cl. 1.

Vesuvius Crucible Co., Pittsburgh, Pa. 864,548, pub. 11–19–68. Cl. 34.

Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen, Frankfurt am Main, Germany. 864,508, pub. 11–19–68. Cl. 23.

Vigny, Inc., New York, N.Y. 504,063, ren. 2–4–69. Cl. 6.

Vinarcik, Gerald S., Seven Hills, Ohio. 864,422, pub. 11–19–68. Cl. 2.

Warner Woven Label Co., Inc., Paterson, N.J. 864,574, pub. 11–19–68. Cl. 38.

Washington Forge, Inc., Englishtown, N.J. 864,521, pub. 11–19–68. Cl. 23.

Wellcome Foundation, Ltd., The, London, England. 742,252, canc. Cl. 18.

West Coast Quilting Co., Los Angeles, Calif. 864,421, pub. 11–19–68. Cl. 1.

West Texas Office Supply: *See—*
Chancellor, Charles W., Jr.

West Virginia Pulp & Paper Co., New York, N.Y. 742,166–7, canc. Cl. 2.

West Virginia Pulp & Paper Co., New York, N.Y. 742,170, canc. Cl. 2.

Western Air Lines, Inc., Los Angeles, Calif. 864,693, pub. 11–19–68. Cl. 105.

Western Auto Supply Co.: *See—*
Goodrich, B. F., Co., The.

Westinghouse Electric Corp., Pittsburgh, Pa. 742,323, canc. Cl. 26.

Whirley Industries, Inc., Warren, Pa. 864,518, pub. 11–19–68. Cl. 23.

White Spots, Inc., Denver, Colo. 864,677, pub. 11–19–68. Cl. 100.

Williams Food Products Inc., Newark, N.J. 864,634, pub. 11–19–68. Cl. 46.

Worham, Antony, Ltd., London, England. 864,622–3, pub. 11–19–68. Cl. 46.

World Trade, Inc., Lorain, Ohio. 864,614, pub. 11–19–68. Cl. 45.

Wray, Edward, Chicago, Ill., from Simmons-Boardman Publishing Corp., New York, N.Y. 168,952, canc. Cl. 38.

Wyandotte Worsted Co., Waterville, Maine. 742,422, canc. Cl. 42.

Wynn, Inc., Knoxville, Tenn. 864,582, pub. 11–19–68. Cl. 39.

Wyoming Music Co.: *See—*
Edwards, M. E.

Yarway Corp., Blue Bell, Pa. 864,531, pub. 11–19–68. Cl. 26.

York Bar Bell Co., Inc.: *See—*
Hoffman, Robert C.

Zeller, John E., d.b.a. Bonanza Products, Portland, Oreg. 864,539, pub. 11–19–68. Cl. 32.

Zellstoffabrik Waldhof, Mannheim, Germany. 864,563, pub. 11–19–68. Cl. 37.

Zenith Radio Corp., Chicago, Ill. 864,509, pub. 11–19–68. Cl. 23.

Zipco Inc., Uncasville, Conn. 742,235–7, canc. Cl. 13.

U.S. GOVERNMENT PRINTING OFFICE: 0——1969

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 11, 1969 Volume 859 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of December 1968

Examiner affirmed	82
Examiner affirmed in part	14
Examiner reversed	36
Total	132

Certificates of Correction for the Week of Feb. 11, 1969

3,283,896
3,289,401
3,304,305
3,321,531
3,325,416
3,329,190
3,329,597
3,336,283
3,336,328
3,340,984
3,342,831
3,344,353
3,345,220
3,345,809
3,347,422
3,347,663
3,349,126
3,350,183
3,350,357
3,350,599
3,351,622
3,351,917
3,352,774
3,353,669
3,353,794
3,354,116
3,354,194
3,354,297
3,355,504
3,355,805
3,356,785
3,356,852
3,357,978
3,358,049
3,358,289
3,358,472
3,358,488
3,358,574
3,358,601
3,358,771
3,358,837
3,358,929
3,359,177
3,359,329
3,359,368
3,359,499
3,359,665
3,359,827
3,360,425
3,360,435
3,361,042
3,361,065
3,361,699
3,362,017
3,362,049
3,362,100
3,362,246
3,362,353
3,362,457
3,362,558
3,362,801
3,362,845
3,387,773

Supplemental Notice Regarding the Patent Office Study of Computer Program Protection

Extension of Time for Submitting Comments

The deadline set in the Federal Register notice of October 19, 1968 (33 F.R. 15562) for submitting comments in connection with the Patent Office Study on Computer Program Protection is extended from December 15, 1968, to March 15, 1969.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 1332; Jan. 28, 1969

Commissioner's Annual Report

The "Commissioner of Patents Annual Report, Fiscal Year 1968" is now available to the public from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, price 25 cents.

Rules of Practice in Patent Cases

[37 CFR Part 1]

Requirements for Amendments to Applications After Allowance

The Patent Office proposes to revise its rules relating to amendments after allowance. The proposed revision is intended to effect the orderly process of preparing applications, on which issue fees have been paid, for the printing thereof.

Therefore, under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6), notice is hereby given that the Patent Office proposes to amend Part 1 of Title 37 of the Code of Federal Regulations as follows:

By revising § 1.312 to read as follows:

§ 1.312 *Amendments after allowance.*

Amendments after the notice of allowance of an application will not be permitted as a matter of right. However, such amendments may be made if filed not later than the date the issue fee is paid, on the recommendation of the primary examiner, approved by the Commissioner, without withdrawing the case from issue.

All persons who desire to submit witten arguments, views, objections, recommendations, or suggestions in connection with the proposed revision are invited to do so by forwarding the same to the Commissioner of Patents, Washington, D.C. 20231, on or before February 12, 1969. An oral hearing will not be scheduled.

EDWARD J. BRENNER,
Commissioner of Patents.

Jan. 3, 1969.
Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

[F.R. Doc. 69-251; Filed, Jan. 8, 1969; 8:45 a.m.]

Pub. 34 F.R. 324; Jan. 9, 1969

Germany: New Requirement for Submission of Copy of Original Application in Convention Cases

Under Section 27 of the German Patent Law which came into effect October 1, 1968, all applicants submitting a claim of priority in Germany under the Paris Union will be required to submit a copy of the application upon which the claim for priority is based. The U.S. Patent Office has been advised by the German Office that the copy need *not* be certified correct by the Office in which the application was originally filed.

Accordingly, for U.S. applicants, one method of complying with the new law would be to accompany the German filing with a copy of the prior U.S. application as filed. This copy can be produced by the applicant himself.

If the applicant does not submit the copy at the time of filing, the German Office will issue, within two months after the German filing, a request to submit the copy. Failure to

New Applications Received During November 1968

Patents	7821
Designs	468
Plant Patents	3
Reissues	8
Total	8300

Issue—February 11, 1969

Patents	1300	No. 3,426,360 to No. 3,427,659, incl.
Reissues	8	No. 26,521 to No. 26,528, incl.
Total	1308	

submit the required copy within two months after notification results in loss of the priority claim.

With respect to applications on file in Germany prior to October 1, 1968, the following applies:

Copies of the original application will not be required for those applications already on file if the serial number of the application on which the priority claim is based had been communicated to the German Patent Office prior to October 1, 1968.

With regard to applications on file prior to October 1, 1968, for which the U.S. serial number is communicated after October 1, 1968, the request for the copy of the U.S. application will be made together with the notice preceding the laying open to public inspection of the file of the German application.

GERALD D. O'BRIEN,
Assistant Commissioner.

Jan. 13, 1968.

Adjudicated Patents

(D.C. Wis.) Welles, Jr. Patent No. Re. 24,572 (10—152), for FLUTELESS SWAGING TAP, *Held* valid and infringed. *Besley-Welles Corp.* v. *Balax*, 291 F. Supp. 328; — USPQ —.

(D.C. Ohio) Miller Patent No. 2,450,152 (214—83.1), for FRUIT PICKER'S CRANE, *Held* valid and infringed. *Miller* v. *Daybrook-Ottawa Corp.*, 291 F. Supp. 896; — USPQ —.

(D.C.D.C.) Beatty et al. Patent No. 2,783,337 (200—148), for FLUID BLAST CIRCUIT INTERRUPTER. Claim 3 *Held* invalid. *Blair* v. *Westinghouse Electric Corp.*, 291 F. Supp. 664; — USPQ —.

(C.A. Ill.) Payton et al. Patent No. 2,906,627 (99—171), for METHOD OF HEAT SHRINKING WRAPPERS ON FOOD, *Held* invalid. *Great Lakes Stamp and Mfg. Co.* v. *Reese Finer Foods, Inc.*, 402 F.2d 346; 159 USPQ 67.

(D.C. Wis.) Welles, Jr. Patent No. 3,050,755 (10—152), for METHOD OF FORMING THREADS BY APPLYING SLIDING PRESSURE, *Held* invalid and infringed. *Besley-Welles Corp.* v. *Balax, Inc.*, 291 F. Supp. 328; — USPQ —.

(D.C. Oreg.) Gould Patent No. 3,067,816 (162—374), for APPARATUS AND PROCESS FOR THE MANUFACTURE OF PAPER, *Held* invalid. *Carborundum Co.* v. *Wilbanks, Inc.*, 291 F. Supp. 414; — USPQ —.

(C.A. Iowa) Isbell Patent No. 3,210,767 (343—792.5), for FREQUENCY INDEPENDENT UNIDIRECTIONAL ANTENNAS, *Held* invalid. *University of Illinois Foundation* v. *Winegard Co.*, 402 F.2d 125; 159 USPQ 129.

Date for Response Due on Washington's Birthday

Since Washington's Birthday (February 22) falls this year on a Saturday, the preceding day, Friday, February 21, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day (5 U.S.C. 6103). Accordingly, any action due on February 21, or February 22, 1969, is to be considered timely if taken on February 24, 1969.

By direction of the Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Guidelines for Incorporation by Reference in Patent Applications

An application for a patent may incorporate essential material by reference to a United States patent, or an allowed U.S. application, subject to the conditions set out below. Essential material* is defined as that which is necessary (1) to support the claims, or (2) for adequate disclosure of the invention (35 USC 112). Material which is essential to the referencing application may not be incorporated by reference to patents issued by foreign countries or to non-patent publications. Essential material may not be incorporated by reference to a patent or application which itself incorporates essential material by reference.

The referencing application must include (1) an abstract, (2) a brief summary of the invention, (3) an identification of the referenced patent or application, (4) at least one view in the drawing in those applications admitting of a drawing, and (5) one or more claims. Where appropriate it would be advisable to direct particular attention to specific portions of the referenced patent or application.

If an application is filed with a complete disclosure, essential material may be cancelled by amendment and the *same* material substituted by reference to a patent or a pending and commonly owned allowed application in which the issue fee has been paid. The amendment must be accompanied by an affidavit executed by the applicant or his attorney or agent of record stating that the material cancelled from the application is the *same* material that has been incorporated by reference.

If an application incorporates essential material by reference to a U.S. patent or a pending and commonly owned allowed U.S. application for which the issue fee has been paid, applicant will be required prior to examination to furnish the Patent Office with a copy of the referenced material together with an affidavit executed by the applicant or his attorney or agent of record stating that the copy consists of the *same* material incorporated by reference in the referencing application.

If an application incorporates essential material by reference to a U.S. patent or a pending and commonly owned application other than one in issue with the fee paid, applicant will be required prior to examination to amend the disclosure of the referencing application to include the material incorporated by reference. The amendment must be accompanied by an affidavit executed by the applicant or his attorney or agent of record stating that the amendatory material consists of the *same* material incorporated by reference in the referencing application.

EDWARD J. BRENNER,
Commissioner.

Approved: Jan. 15, 1969.
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 883; Jan. 18, 1969

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*Non-essential subject matter may be incorporated by reference to patents issued by the United States or foreign countries, prior filed commonly owned patent applications filed in the United States, and non-patent publications for purposes of indicating the background of the invention or illustrating the state of the art.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 27, 1969

PATENT EXAMINING OPERATIONS AND GROUPS • Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-67	5-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66	7-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-31-66	3-27-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	•4-29-66	•7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-20-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-30-67	4-20-64
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	11-06-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	•3-04-66	•11-21-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-20-66	12-23-63
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-06-67	7-01-65
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	4-25-68	8-24-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-22-67	2-04-66
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	•4-03-67	5-07-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-03-67	•1-28-65
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-20-67	1-16-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-15-67	7-19-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	4-28-67	4-13-65

Total number of pending applications (excluding Designs)	157, 418
Total number of Design applications pending	3, 107

Expiration of patents: The patents within the range of numbers indicated below expire during February 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,584,102 to 2,587,575, inclusive
Plant Patents	Numbers 1,071 to 1,076, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ROY W. DIKE

No. 7941. Decided May 16, 1968

[55 CCPA —; 394 F.2d 584; 157 USPQ 581]

1. PATENTABILITY—PRODUCT—PROCESS LIMITATIONS.

"* * * this is a case where the product itself is not patentably distinguished over the prior art, and process limitations cannot impart patentability to it. *In re Stephens*, 52 CCPA 1409, 345 F.2d 1020, 145 USPQ 656; *In re Dilnot*, 49 CCPA 1015, 300 F.2d 945, 133 USPQ 289."

2. CLAIM—CONSTRUCTION—WORDS AND PHRASES—INTEGRAL.

In connection with a reference to Harris who discloses a rubber water bottle of "the usual formation" having "its vulcanized connections for its rubber components," *Held* that "* * * the [claimed] term 'integral' may be construed as relatively broad and does not imply any characteristic lacking in Harris is shown, for example, by *Henderson* v. *Grable*, 52 CCPA 920, 339 F.2d 465, 144 USPQ 91, and *In re Larson*, 52 CCPA 930, 340 F.2d 965, 144 USPQ 347."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"INTEGRAL PLASTIC CONTAINER AND CARRYING HANDLE."

The refusal of certain claims in an application entitled "Integral Plastic Container and Carrying Handle," as unpatentable over the prior art, is reversed as to some of the claims and affirmed as to the others.

APPEAL from the Patent Office. Serial No. 250,058.

MODIFIED.

Mason, Porter, Diller & Brown, Charles J. Diller, Vincent L. Ramik for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the rejection of claims 1–7 and 10–17 of Dike's application [2] for "Integral Plastic Container and Carrying Handle."

Illustrative of one form of appellant's container and the process of making it are FIGS. 3 (reproduced in part) and 4 of the application:

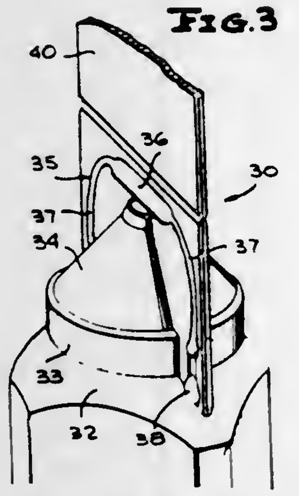
FIG. 3

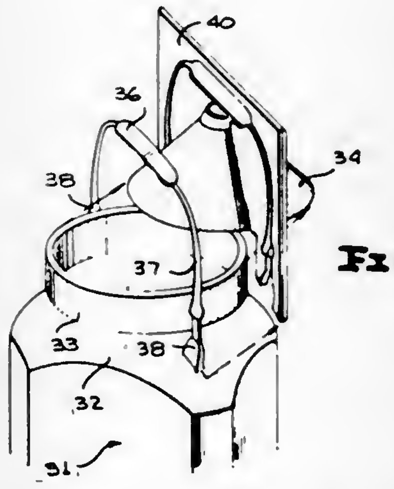
FIG. 4

The illustrated container includes a body 31 with an integral shoulder 32, an upstanding neck 33 and a conical end closure 34. A bail

or U-shaped handle 35, including a grip portion 36 and a pair of depending legs 37, is joined to the shoulder 32 by a pair of flexible hinge joints 38. The hinge joints each include a first bulbous body portion extending from the shoulder 32 and tapering upwardly therefrom, a thin flexible hinge portion immediately adjoining the first bulbous body portion, and a second bulbous portion connecting the other end of the thin flexible portion to the leg 37 of the bail.

The specification describes the procedure for making the container as follows:

> The container body 31 and the carrying handle 35 of the integral container and carrying handle 30 are simultaneously formed from a tubular piece of plastic material 40 by blow-molding. The tubular piece of plastic material 40 is first inserted into a cavity of a split-mold (not shown) of a blow-molding machine (also not shown). The cavity in each portion of the split-mold is concavely contoured to the semi-cylindrical configuration of the container body 31 and the conical end closure portion 34. A carrying handle portion is formed in each split-mold portion, with a plane through abutting surfaces of the mold portions of the split-mold passing axially through the container body 31, the container end closure portion 34 and the carrying handle 35. Thus, the portions of the split-mold cooperate to form a cavity which is a mirror image of the container and carrying handle 30.
>
> The piece of plastic material 40, originally in its tubular form, is inserted between the portions of the split-mold at which time the split-mold is closed and air under pressure is simultaneously injected into the split-mold in a known manner to cause the plastic tubular portion 40 to conform to the configuration of the split-mold cavity. The split-mold is open [opened ?] and the container and carrying handle 30 of FIGURE 3 is withdrawn therefrom.
>
> As is clearly shown in FIGURE 4 of the drawing, the conical end closure portion 34 and the plastic material 40 surrounding and enclosing the carrying handle 35 is removed by a cutting or severing operation. Upon the removal of the conical end closure portion 34 and the portion of the material surrounding the carrying handle 35, an integral container and carrying handle having an open mouth is formed, as is shown in FIGURE 4.

Claims 1, 3 and 4 are representative:

> 1. An integral plastic container and carrying handle, said container comprising a body having an upper portion including an annular shoulder terminating in an upstanding neck, a handle of a generally inverted U-shaped configuration, said handle being secured at its respective ends to diametrically spaced portions of the body by a flexible joint, a line of flash material on said body and handle, said flexible joints being coplanar and in plane taken through the axis of the body and the line of flash material.
>
> 3. An integral one-piece, blow molded plastic container and carrying handle, said container comprising a body having an upper portion including an annular shoulder terminating in an upstanding neck, an integral bail of a generally inverted U-shaped configuration, said bail being secured at its respective ends to diametrically spaced portions of the annular shoulder by a flexible joint, said flexible joints being thin as compared to the thickness of the bail whereby flexure of the joints is enhanced, said flexible joints being coplanar and in a plane taken through the axis of the body, said last-mentioned plane being identical to a plane passing through abutting portions of a split-mold from which the container and carrying handle is blow-molded.
>
> 4. The integral container and handle as defined in claim 1 wherein each of said flexible joints includes an upper and a lower bulbous portion for integrally reinforcing and forming each of the flexible joints at its integral juncture with a respective handle and the annular shoulder.

The references are: [3]

Harris (British), 11,637, Aug. 13, 1888.
Galloni (Italian), 553,016, Dec. 17, 1956.

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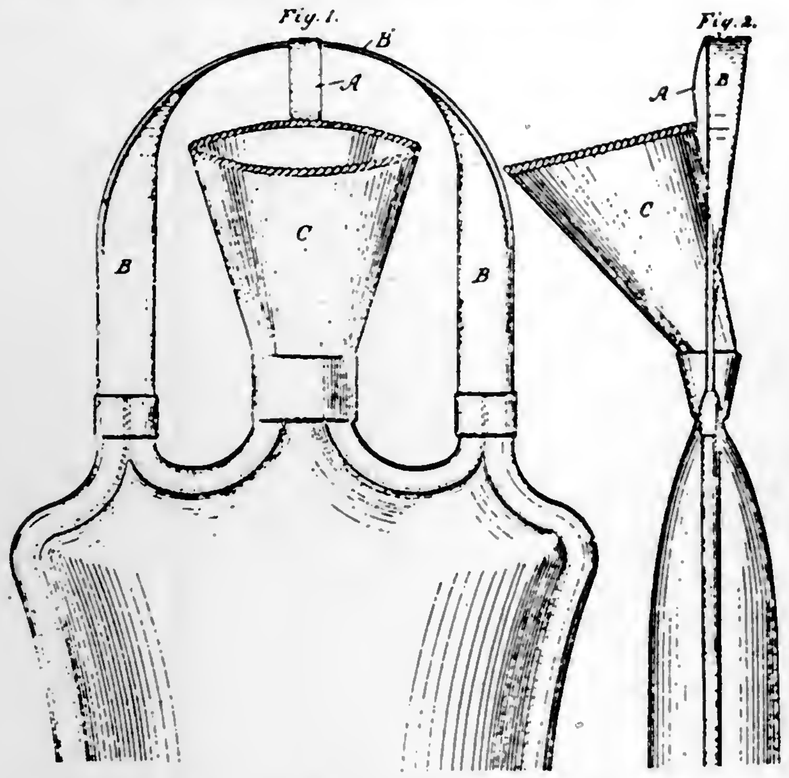
[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 250,058, filed January 8, 1963.

[3] U.S. Patent No. 3,010,552, issued November 28, 1961, and U.S. Patent No. 2,982,434, issued May 2, 1961, were relied on in the rejection of two dependent claims, 6 and 7. However, consideration of those patents is unnecessary because appellant admitted before the Board that claims 6 and 7 stand or fall with claims 4 and 5 on which they depend.

Harris relates to a rubber water bottle adequately illustrated in the upper portions of FIGS. 1 and 2 reproduced below:



The bottle is of "the usual formation" and provided with "a usual suspension band" or handle B, B′, B. It "may be obviously made of various materials and in various ways as for example of cloth coated with India-rubber attached and vulcanised" onto the bottle.

Galloni discloses a collapsible fruit basket, shown in its FIG. 2:

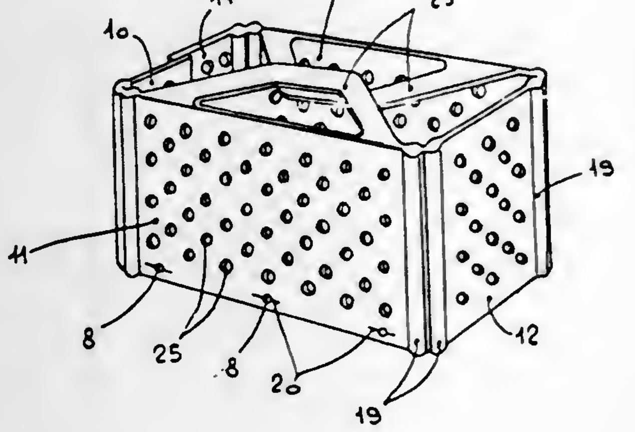


FIG. 2

The basket is formed from a pre-shaped, flat blank of plastic material folded as shown to provide a bottom (not shown), four sides 11, 12, 13 and 14 and two handles 23. The feature of interest here is the provision of two thickened portions 19 on opposite sides of a strip of reduced thickness at the four corners where the sides are folded at right angles to each other.

The Board affirmed the Examiner's rejection of all the claims as unpatentable over Harris in view of Galloni under § 103. It also affirmed the rejection of claims 1, 2, 11–15 and 17 as "containing new matter as to the recital of the flash material being on the body."

The rejection on "new matter" pertains to recitations of which the term "a line of flash material on said body and handle" in claim 1 is illustrative. The Examiner conceded that the middle line shown along the vertical edge of the portion 40 outlying the *handle* in FIGS. 3 and 4 constitutes a line of flash material produced by blow-molding. However, he pointed out that the line is not shown in the drawing as continuing onto the *body* and that the specification nowhere refers to a "line of flash." Both the Examiner and the Board were unconvinced that blow-molding the container in a split-mold would inherently provide a line of flash on the *body* of the container.

Appellant urges that it is a "clear *fact*" that "*every* container which is blow-molded in a split-mold must necessarily include and, in fact, does include a line of flash or a flash line on the body thereof." He states that the body of the present container would include a line of flash forming a continuation of the flash line illustrated on the handle portion in FIG. 3 because the specification and original claim 3 [4] disclose that the container is formed in a split-mold having common abutting surfaces in the plane passing through the handle and hinge means. Appellant also states that the reason the flash line on the handle portion in FIG. 3 was not shown extending down the body of the container is "that it [the line of flash] is normally minute to the degree that it is visible only upon close inspection, although it does exist *in all instances.*"

We are satisfied from the facts here that a line of flash, although it may be "minute" and "visible only upon close inspection," will necessarily and inherently be produced on the body portion of appellant's container as well as on the handle portion. The rejection of claims 1, 2, 11–15 and 17 as containing "new matter" therefore is reversed.

In affirming the prior art rejection, the Board stated:

> The limitations in some of the claims and most of the arguments presented have overtones of a method or process subject matter whereas the claims before us are all directed to an article of manufacture. Considering claim 1, for example, this claim is directed to a container having a carrying handle and includes in the combination a line of flash material on the container body and handle. The significance in a patentable sense of the flash is not apparent because a flash is, in normal parlance, a small or thin extruded piece of material that imparts no significance to the article itself and is conventionally removed by a simple trimming or cutting operation. It is recognized that claims may be allowed for a blank or for an intermediate product, such as that shown in FIGURE 3 of this application for example. However, where as here the flash is not described as to the specifics of its shape, shown attached in FIGURE 3 and removed in FIGURE 4, it is our opinion that the broad recital of a flash in the claims adds nothing unobvious over the Harris patent.
>
> The identification of the article as "blow-molded" in some of the claims, claim 3 for example, and the reference to a "split-mold," in claims 10, 16 and 17, add nothing of patentable import over the art relied on because, at best, they relate to the process of making the article and are not definitive of the structure of the article, to which the claims are directed.
>
> The upper and lower bulbous portions set forth in claims 4, 5, 6 and 7 are obvious in view of Galloni. As to the remaining claims which do not recite the bulbous portions, the patent to Galloni is not necessary as a secondary teaching to modify the Harris structure. Some of the said remaining claims, claim 2 for example, describe the flexible joint as "being thin as compared to the thickness of the bail." The handle in Harris is flexible and necessarily has a flexible joint. Reducing the thickness at a part of a member to provide greater flexibility thereat is such an old and well known expedient as to be considered obvious by judicial notice.

We find no reversible error in the Board's conclusion that claims 1–3 and 10–17 are unpatentable over the prior art. Those claims are directed to the article rather than to the process disclosed, and the article is defined in the claims by its structure without recourse to the method of making it. We find nothing in the decisions cited on this point by appellant [5] to support patentability of the claims. **[1]** Rather, this is a case where the product itself is not patentably distinguished over the prior art, and process limitations cannot impart patentability to it. *In re Stephens*, 52 CCPA 1409, 345 F.2d 1020, 145 USPQ 656; *In re Dilnot*, 49 CCPA 1015, 300 F.2d 945, 133 USPQ 289.

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[4] Present claim 3 reproduced herein differs from original claim 3 only in the inclusion of the word "plastic" at the beginning thereof.

[5] *In re Bridgeford*, 53 CCPA 1182, 357 F.2d 679, 149 USPQ 55; *Ex parte Painter*, 1891 C.D. 200, 57 O.G. 999, and *Ex parte Fesenmeier*, 1922 C.D. 18, 302 O.G. 199.

Appellant contends that the recitations pertaining to the "line of flash" distinguish structurally over the references. However, appellant concedes that the line of flash is "normally minute to the degree that it is visible only upon close inspection" and does not controvert the finding of the Board that flash is "conventionally removed" from the articles. Thus, the recitation of the line of flash is only significant insofar as it is employed as a reference point for defining the location of the handle parts as in claim 1 set forth above. We are satisfied that the defined location of those parts is obvious from Harris.

Moreover, the "minute" line of flash is basically no more than a slight protrusion along the edge of the article. As such, it does not distinguish unobviously over the rounded edge on the body of the Harris water bottle. The edge of the handle of that bottle also appears rounded in the drawings.

Appellant makes a point of his container being of "*integral, one-piece*" construction. However, that term plainly includes parts of like material fused into a unitary construction, which description is applicable to the water bottle of "the usual formation" referred to by Harris, with its vulcanized connections for its rubber components.[6]

Claim 4, along with 5, 6 and 7 which are each serially dependent on the preceding claim, all raise the issue whether the enlarged portions 19 adjoining the corners of the Galloni basket would make it obvious to provide a water bottle disclosed by Harris with flexible joints made up of spaced bulbous portions at each end of the handle. It is our conclusion that Galloni does not show the construction to be obvious.

As appellant points out, Galloni contemplates stacking filled baskets and provides the enlarged reinforcing portions 19 for the purpose of "stiffening the basket at the corners so as to impart to them considerable resistance to the vertical stress caused by the stacking." The function of the bulbous portions of appellant's hinge, on the other hand, is to "allow stresses to be more evenly distributed across the thin flexible hinge" when the container is being carried by its handle. It is not apparent that the use of relatively wide reinforcing strips in Galloni to provide reinforcement transversely of the joints therein would suggest to one skilled in that art that he provide spaced bulbous members at the jointures of the water bag and handle of Harris to attain uniform distribution stresses in a flexible joint in the relatively narrow handle. Indeed, Galloni himself includes handles 23 which are foldably secured to opposite sides of the basket but makes no suggestion such handles be provided with bulbous portions.

[3] The decision is affirmed as to claims 1–3 and 10–17 and reversed as to claims 4–7.

MODIFIED.

Rich, *J.*, concurring.

While I agree with the affirmance of the rejection of claims 1–3 and 10–17 on the Harris and Galloni references, I cannot agree with the apparent treatment by the Board and the majority of the "line of flash" recitations in certain claims as some kind of process limitation in claims to structure.

Taking claim 1, quoted in the majority opinion, as an example, it seems clear to me that the only significance of the references to the "line of flash" is as a reference point defining the plane in which the handle joints lie. This is a purely structural limitation, notwithstanding a flash line is produced by the method of molding in a split mold.

Since the limitations having reference to line of flash are structural limitations, all discussion of process limitations in this connection and of the insignificance or immateriality of flash per se seems to me to be beside the point. The rejection is proper because the subject matter claimed, including the location limitations of the handle parts defined by reference to the line of flash (or the mark left by the parting line of the mold), is obvious in view of the combined teachings of the references.

U.S. Court of Customs and Patent Appeals

In re Frederick A. Purdy

No. 7860. Decided May 16, 1968

[55 CCPA —; 393 F.2d 1010; 157 USPQ 527]

1. Appeal to the Board of Appeals—Matter Before Board—Terminal Disclaimer After Board Decision.

"Subsequent to the Board's decision the appellant filed a terminal disclaimer to avoid the rejection of his application on double patenting. Upon reconsideration, the Board refused to consider the disclaimer, pointing out that no good cause was shown why the terminal disclaimer was not filed earlier. We agree with the Board in this regard. *In re Heyl*, 54 CCPA 1608, 379 F.2d 1018, 154 USPQ 178 (1967)."

2. Patentability—Double Patenting—Obviousness.

"It is well established that in a double patenting situation, prior art may be considered in order to determine whether the application claims a mere obvious variation of the patented invention but, as pointed out by Judge Rich in a concurring opinion in *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22 (1963), the ground of rejection for double patenting should be kept separate from section 103 as a ground of rejection."

Appeal from the Patent Office. Serial No. 104,769.

AFFIRMED.

Helge C. Dieserud, *James P. Welch* for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, Justice Clark,[1] and Judges Rich, Smith, and Kirkpatrick [2]

Kirkpatrick, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals, affirming the Examiner's rejection of appellant's claims 1–5 in his application entitled "Controls for Door-Operators." [3] The main issue in the case is double patenting. No claim has been allowed.

The invention relates to a motor operated garage door in which a light cell, in the motor control circuit which operates the motor to open or close the garage door, is activated by the headlight of a vehicle approaching or leaving the garage.

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[6] **[2]** That the term "integral" may be construed as relatively broad and does not imply any characteristic lacking in Harris is shown, for example, by *Henderson v. Grable*, 52 CCPA 920, 339 F.2d 465, 144 USPQ 91, and *In re Larson*, 52 CCPA 930, 340 F.2d 965, 144 USPQ 347.

[1] Associate Justice, retired, Supreme Court of the United States, sitting by designation.

[2] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[3] Serial No. 164,769, filed March 3, 1961.

Claim 1 is representative:

> 1. In a door-operator, a motor for driving the door, and controls for the motor, said controls including a filter for restricting passage through it of light rays having frequencies in the visible daylight region of the radiant spectrum, and for admitting passage through it of light rays having frequencies in a selected non-visible region of the spectrum; and a cell for receiving light rays passed by said filter, said cell restricting flow of electric current when said cell is dark and increasing said flow when said cell is lighted.

Claims 2, 3 and 4 are dependent on claim 1 and provide respectively for the addition of a suitable light source, incandescent light specifically and a filter in the form of a lens. Claim 5 (which is directed specifically to the operation of a garage door by the headlights of a vehicle), in addition to duplicating most of claim 1, provides for baffle partitions in the control capsule to prevent light rays other than those on a horizontal plane with the capsule from reaching the light cell.

While the basis of the Examiner's rejection is not entirely clear, the Board's affirmance of the rejection was based upon double patenting.

[1] Subsequent to the Board's decision the appellant filed a terminal disclaimer to avoid the rejection of his application on double patenting. Upon reconsideration, the Board refused to consider the disclaimer, pointing out that no good cause was shown why the terminal disclaimer was not filed earlier. We agree with the Board in this regard. *In re Heyl*, 54 CCPA 1608, 379 F.2d 1018, 154 USPQ 178 (1967).

Purdy, 3,036,256, issued to the appellant, was copending with the application on appeal here. Its claims include a device for opening, closing and controlling the operation of a garage door by means of light rays from an outside source.

In the patent and the application, the objectives are the same. In both, the chief, if not the only, element of novelty is the means by which light rays reaching the light cell are restricted in order to prevent ambient light from the sun in daylight or at night from sources of light other than automobile headlights from reaching the cell. Claim 1 of the application is for substantially the same structure as that of the patent except that instead of a series of opaque horizontal baffles in the housing of the capsule, restriction of light rays is accomplished by a filter which admits infrared light but cuts off most if not all the light of frequencies in the visible region of the radiant spectrum. In claim 5 of the application, the baffles are retained with the filter as an added restricting element.

McIlvaine, 2,807,752, relates to a headlight control device for automatically dimming the headlights of a vehicle by light rays from the headlights of another vehicle approaching from the opposite direction. To minimize the effect of ambient light or light from sources other than the lights of the approaching vehicle on the control system, the patent utilizes a filter, positioned in front of a conventional light-sensitive element, which admits only light rays in the infrared range. Since approximately 90% of the light from automobile headlights is in the infrared range, very little of this light is excluded by the filter, while ambient light, having wave lengths for the most part outside the infrared region, is cut off, if not entirely, at least to a large extent.

The answer to the question of double patenting depends upon whether there is any patentable distinction between the claims of the application and those of the applicant's patent or, put another way, whether the invention claimed in the application is obvious or unobvious over what was claimed in the patent.

Our conclusion is that the claims on appeal are directed to obvious subject matter when considering the invention claimed in the patent in connection with McIlvaine. Having learned from McIlvaine that a device intended to be operated by the headlights of an approaching automobile could be made to work efficiently by utilizing a filter (which cuts off all or most of the light coming to the device from sources other than automobile headlights), the step of including in an apparatus to operate a motorized garage door, a filter in place of or in addition to the baffles of the Purdy patent was a step which must have been obvious to any person of ordinary skill in the art involved. See *In re Simmons*, 50 CCPA 990, 312 F.2d 821, 136 USPQ 450 (1963).

[2] It is well established that in a double patenting situation, prior art may be considered in order to determine whether the application claims a mere obvious variation of the patented invention but, as pointed out by Judge Rich in a concurring opinion in *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22 (1963), the ground of rejection for double patenting should be kept separate from section 103 as a ground of rejection.

We, therefore, affirm the decision of the Board on the ground of double patenting.

AFFIRMED.

SMITH, *J.*, dissenting, with whom RICH, *J.*, joins.

My disagreement with the opinion of the majority starts with my inability to agree that the complex issues presented on this record can be accurately stated as being a "main issue" of "double patenting."

The record shows that the initial rejection under 35 U.S.C. 103, which was made by the Examiner, was affirmed by the Board, and is defended here by the Solicitor as a proper rejection. This rejection cannot be supported.

The application which forms the basis of the present appeal was filed on *March 3, 1961* in the name of Frederick A. Purdy as the sole inventor. The "Purdy" patent which is relied upon to support the rejection under 35 U.S.C. 103 is in the name of the same inventor who is the appellant here. That patent *issued* May 22, 1962 on an application *filed* March 12, 1959. Thus, it was *copending* with the application here on appeal.

The rejection under 35 U.S.C. 103 was specifically set forth by the Examiner under date of December 9, 1963. He stated:

> Claims 1 to 5 are rejected, as understood, as unpatentable over Purdy in view of McIlvaine and McKnight. *Purdy discloses and claims the device as claimed in this application* with the exception of a filter lens in front of the baffle to admit only infrared radiation. McIlvaine teaches the use of a filter in front of a baffle to permit only infrared radiation from reaching the detector. It *would not involve invention* [sic: patentable invention] to use a filter as taught by McIlvaine *in the Purdy device*. In fact, *it would be obvious to anyone experienced in the art to use such a filter* if desired especially since McIlvaine teaches the desirability of using a filter with the baffle. Likewise the use of an optical element selectively transmissive to infrared radiation would not be invention [sic: patentable invention] because McKnight teaches that lenses 18 and 20 are transmissive to infrared radiation. Elements 18 and 20 are opaque to visible radiations. In view of the teachings of McIlvaine and McKnight it would be obvious to anyone experienced in the art to use a lens filter *in the Purdy device*. [Emphasis added.]

Thus, it is clear that the Examiner recognized that the essential difference between Purdy's present application and Purdy's patent was to be found in the use of a filter lens. The applicant initially treated this rejection as being based on obviousness under section 103 and responded to the Examiner's position *as if* the Purdy patent were "prior art" within the meaning of 35 U.S.C. 103. My view is that the Purdy patent is not and cannot become "prior art" under section 103 under the circumstances of this case. See, e.g., *In re Braithwaite*, 54 CCPA 1589, 1599, 379 F.2d 594, 601, 154 USPQ 29, 35 (concurring opinion) (1967); *In re Faust*, 54 CCPA 1459, 378 F.2d 966, 153 USPQ 813 (1967); *In re Walles*, 54 CCPA 710, 366 F.2d 786, 151 USPQ 185 (1966); and *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570 (1966).

The examiner, however, repeated the same error in the final rejection stating that "[c]laims 1 to 5 again are rejected as unpatentable over Purdy in view of McIlvaine and McKnight." He specifically referred to what Purdy "discloses" and concluded that:

> * * * It *would be obvious* to anyone experienced in the art with the teachings of Purdy and McIlvaine before him to use a filter as taught by McIlvaine *in the Purdy device* if desired. Further, the use of a special form of filter recited in claim 4 in the form of a lens would be an obvious expedient if desired because McKnight teaches the use of a lens filter in directing infrared energy to a detector. It *would be obvious* to anyone experienced in the art to apply the teachings of McIlvaine and McKnight *to the Purdy device.* [Emphasis added.]

On the record before the court, it appears that what the majority terms the "main issue" of "double patenting" did not emerge until stated by appellant in his brief on appeal before the Board. There, appellant correctly argued that the specification of his own patent issued on a copending application is not "prior art" as to his later application within the meaning of 35 U.S.C. 103, citing *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474 (1964) and *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 (1964). Specifically the argument was made:

> * * * The principal reference upon which the Examiner relies (Purdy 3,036,256) is, by law, not available as prior art. The sole question then is whether the invention recited in the claims on appeal is taught or suggested by the headlight dimmer switch control of McIlvaine. * * *

In addition to arguments directed to the issues arising under 35 U.S.C. 103, appellant added:

> It is respectfully submitted that the invention recited in the *claims on appeal* is much more than an obvious modification or obvious improvement of the invention *claimed in the copending 3,036,256 patent*. This is the only test which can be properly applied here and the Examiner's rejection of claims 1 to 5 should be reversed. [Emphasis added.]

In order to be safe, should the Board decide to consider the rejection under 103 as being essentially a rejection for "double patenting," appellant proffered a terminal disclaimer, stating:

> Should the Board fail to reverse the Examiner and hold that the *claims on appeal* are obvious modifications or obvious improvements of the *claims* in appellant's copending 3,036,256 patent, appellant will file a terminal disclaimer of the claims on appeal so that the enforceability of these claims will terminate concurrent with the claims of copending Patent 3,036,256. * * * [Emphasis added.]

The Examiner, in his answer, continued to articulate his rejection based on section 103 of the statute, but, in addition, less clearly enunciated his position as to a rejection on "double patenting." As to the former issue, it is sufficient to note that his position was largely a restatement of his earlier rejection. The answer *specifically* twice referred to the rejection as arising "under 35 U.S.C. 103," and referred

to what Purdy "discloses and claims." The following excerpts from the Examiner's answer are significant:

> Claims 1, 2, 3 and 5 are rejected under 35 U.S.C. 103 as unpatentable over Purdy in view of McIlvaine. * * * The Purdy patent *discloses and claims* the combination recited in claims 1, 2, 3 and 5 except for the use of a filter. The use of a filter to limit the wavelengths of light to a part of the spectrum used by Purdy would be an obvious expedient to anyone skilled in the art since McIlvaine teaches the use of a filter transparent only to infrared light and used in a detector control assembly containing a louver panel to limit the direction of radiation reaching the detector. * * * [Emphasis added.]
>
> Claim 4 is rejected under 35 U.S.C. 103 as unpatentable over Purdy in view of McIlvaine and further in view of McKnight who teaches that the use of arsenic trisulphide as a lens which is transparent to infrared radiation is well known in the art. * * *

The Examiner also used terminology which ultimately was viewed as a rejection for "double patenting." However, as will be noted, the Examiner used this argument at best as a make-weight for *rebutting* the appellant's position and did not *assert* it as *another rejection* on that ground. Thus, the Examiner stated:

> Applicant argues that the use of the Purdy patent as prior art is improper * * *. The Purdy patent discloses and claims essentially the same invention urged in this case. There is no mention in the patent of using a filter in front of baffles to restrict the wavelengths of light to infrared radiation. This has been shown to be an obvious expedient in the art. What applicant is now claiming appears to be an obvious expedient or obvious addition to the invention claimed in his patent. The Purdy patent is used for this purpose. The allowance of claims such as claims 1 to 5 in this case would have the effect of extending the monopoly on Patent No. 3,036,256 and granting applicant additional patent coverage for elements well known in the art. Claims 1 to 5 in this case appear to be a mere coloration of the coverage obtained in the earlier patent.

The Board found both a "double patenting" rejection and a statutory rejection under 35 U.S.C. 103 in the Examiner's vague statements. After restating the Examiner's position, the Board noted appellant's argument that the teachings of Purdy "are not prior art with reference to the claims of the copending application," and concluded:

> We have carefully considered appellant's arguments but find no reversible error in the Examiner's rejection of the appealed claims as being unpatentable over the references. * * *

To support this position the Board used language better suited to explaining a "double patenting" rejection than in justifying a rejection under 35 U.S.C. 103.

> It seems to us that a person skilled in the art having appellant's problem as well as the *structure claimed in the Purdy patent before him* would be taught by the McIlvaine patent to use an infrared filter in connection with *subject matter claimed* in the Purdy patent. [Emphasis added.]
>
> It is axiomatic that before two patents are granted there must be two inventions present and the court has held in the decision cited below that claims of a second copending application must patentably define over the claimed subject matter of appellant's patent. *In re Zickendraht et al.*, * * * 50 CCPA 1529 [319 F.2d 225, 138 USPQ 22 (1963)] and decisions cited therein.

In a request for reconsideration, appellant asserted the impropriety of thus utilizing the Purdy patent as "prior art" under 35 U.S.C. 103. The Board responded:

> As pointed out by the Court of Customs and Patent Appeals in *In re Ornitz* [52 CCPA 1467, 347 F.2d 586] 146 USPQ 38 [1965], this question [of "double patenting"] has been ruled on in several cases, including *In re Zickendraht et al.*, 50 CCPA 1529; * * * 319 F.2d 25; 138 USPQ 22 [1963]. Also, as pointed out by the court, the fact that prior art is considered in connection with the patent

claims does not convert a double patenting rejection into a simple section 103 rejection so as to exclude consideration of the claims of appellant's copending patent.

It is our opinion it would be obvious to use the infrared filter of McIlvaine in connection with the subject matter claimed in the Purdy patent. Hence the *appealed claims* do not represent a patentable difference *over the claims* of the patent. [Emphasis added.]

It is clear that the rejection which uses the Purdy patent as "prior art" under 35 U.S.C. 103 may not be sustained since that patent does not enjoy the limited statutory status of "prior art." See *In re Knohl*, 55 CCPA —, 386 F.2d 476, 155 USPQ 586, fn. 2(1967); *In re Braithwaite*, 54 CCPA 1589, 379 F.2d 594, 154 USPQ 29 (1967); *In re Robeson*, supra; *In re Kaye*, 51 CCPA 1465; 332 F.2d 816; 141 USPQ 829 (1964), *In re Sarett*, supra, *In re Zickendraht*, 50 CCPA 1529, 1533, 319 F.2d 225, 229, 138 USPQ 22, 25 (concurring opinion, RICH, *J.*).

The Solicitor apparently acknowledges that the Purdy patent is not "prior art" within the meaning of section 103 of the statute, but still asserts that that rejection is proper because of certain "admissions" as to the prior state of the art which he purports to find in appellant's patent. The Solicitor states:

* * * His patent disclosure includes admissions as to the prior state of the art. Certainly those portions of his patent disclosure are available as evidence of prior art under 35 U.S.C. 103, and should suffice here in conjunction with McIlvaine.

The difficulty with this position, however, is that the Patent Office position has never been so stated. Thus appellant has been given no opportunity to be heard on such a ground of rejection. Minimal considerations of due process require that an applicant be heard on such a rejection. 35 U.S.C. 132. It was the clear intent of Congress that, before an applicant be deprived of his *right* to a patent, 35 U.S.C. 101, requisite notice be given to the end that he might determine the advisability of continuing the prosecution of the application, 35 U.S.C. 132. At the very least, it seems to me, he should have been given the opportunity to contest before the agency itself the position of the agency as so stated.[4] For this reason, and for reasons which will become clear from the following discussion, it seems to me this appeal should be remanded to the Patent Office for proceedings consistent herewith.

With respect to the rejection based upon the judicial doctrine of "double patenting," I do not agree that such a rejection should be affirmed here. It is clear that the *same* invention is not being claimed twice, i.e., once in the Purdy patent and a second time in the Purdy application on appeal. This is clear from the very nature of the statements of the rejection, for despite the confusion in the articulation of the rejection by the Examiner, it admits of only one conclusion, i.e., that the same invention is not being claimed; hence the "double patenting" rejection, if one exists, is what has been termed of the "obviousness-type." Stated more succinctly, the Patent Office position is that the *differences* between *claims* here on appeal and the *claims* in the Purdy patent are such that the invention claimed in the appealed *claims* is obvious in view of the claims of the Purdy patent. It is in this type of situation in which terminal disclaimers may be effective to avoid the rejection. *In re Braithwaite*, supra; *In re Faust*, supra; *In re Kaye*, supra; and *In re Robeson*, supra.

I am unable to understand why neither the majority nor the Board refers to appellant's proffer of a terminal disclaimer made at a time before the decision of the Board but made contingent because, as previously noted, it was doubtful whether the Examiner ever, in fact, intended that rejection as a "double patenting rejection."

Thus, in my view, this appeal should be remanded for consideration of the effect of applicant's proffer of the terminal disclaimer under the present facts. In so remanding the case, I would do so because I believe that this entire matter falls within the purview of our decisions in *In re Tanner*, 52 CCPA 1307, 343 F.2d 1018, 145 USPQ 345 (1965); and *In re Dunn*, 52 CCPA 1760, 349 F.2d 433, 146 USPQ 479 (1965). As noted in *In re Heyl*, 54 CCPA 1608, 379 F.2d 1018, 154 USPQ 178 (1967), those decisions were * * * "exceptional actions, taken in the interest of justice * * *." In my view this appeal requires such an action.

I have noted with interest the recent decision in *Exparte Fertig*, 155 USPQ 475 (P.O. Bd. App. 1967). There, under facts similar to those here, the Board recommended that the claims of the appellant's application there be considered allowable upon the presentation of a proper terminal disclaimer. There, as here, appellant apparently in his principal brief before the Board, offered to execute and file a terminal disclaimer in order to prevent the charge of extending the patent monopoly. There, the Examiner recognized the offer, but refused it on the ground the claims did not amount to a "distinct variation" over the patent claims. The Board disagreed, stating that the appealed claims were "distinct" and "without overlap" and thus made the recommendation.

Since 35 U.S.C. 253 makes no mention of a time limit for filing a terminal disclaimer, and since the proffer of such a disclaimer was before the Board prior to its decision, the above practice seems to me to be particularly appropriate in view of the facts here.

For the foregoing reasons, I would remand the appeal to the Patent Office for further proceedings consistent with this opinion.

U.S. Court of Customs and Patent Appeals

IN RE CHARLES F. BARANAUCKAS AND SAMUEL GELFAND

No. 7945. Decided June 6, 1968

[55 CCPA —; 395 F.2d 805; 158 USPQ 126]

1. PATENTABILITY—REFERENCE—STATE OF THE ART DISCUSSED IN PRIOR ART PATENT—ENABLING DISCLOSURE.

"The essence of the evidentiary question here is what the *disclosure* of a prior art patent *means* to one of ordinary skill in the art. Where a portion of that prior art disclosure refers to the state of the art as it existed at the time that the application for the prior art patent was filed, that disclosure likewise must be tested against a standard of what it means to one of ordinary skill in the art. We think that the criterion to be applied to such questions is whether the statement as to the state of the art, which is contained in a prior art patent, is sufficient to enable one skilled in the art to reduce the subject matter of such statement to practice. See *In re Sheppard*, 52 CCPA 859, 339 F.2d 238, 144 USPQ 42 (1964); *In re LeGrice*, 49 CCPA 1124, 301 F.2d 929, 133 USPQ 365 (1962); see also *In re Borst*, 52 CCPA 1398, 345 F.2d 851, 145 USPQ 554 (1965); *In re Brown*, 51 CCPA 1254, 329 F.2d 1006, 141 USPQ 245 (1964)."

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[4] The pertinent portion of 35 U.S.C. 132 provides:

> Whenever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Commissioner shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application; and if after receiving such notice, the applicant persists in his claim for a patent, with or without amendment, the application shall be reexamined. * * *

As noted above, the final rejection was based on 35 U.S.C. 103. In seeking an appeal, i.e., judging the propriety of continuing the prosecution of his application, the appellant was on a firm base. It seems to me that when the basis for the rejection allegedly shifted to include another ground of rejection, i.e., double patenting, the minimal requirements of this statute were not met.

The comments of this court in *In re Osweiler*, 52 CCPA 1427, 346 F.2d 617, 145 USPQ 691, apply as well to the Solicitor. There, we noted that the general statement that arguments not urged below will not be considered for the first time on appeal is "far too broad." The real question should be, as we there noted, whether the new argument is such as to raise new issues. Notwithstanding the fact that counsel for the Solicitor and the appellant have provided the court with supplemental memoranda directed to the propriety of utilizing "admissions" of the "prior art" in patents which are not "prior art" under the statute, I think that the position taken here by the Solicitor raises a new issue which requires more definite framing below. Only then can this court, in my view, properly consider that argument.

2. SAME—PARTICULAR SUBJECT MATTER—"PROCESS FOR THE OXIDATION OF NON-TERMINALLY DOUBLE-BONDED HALOGENATED OLEFINS."

The refusal of certain claims in an application entitled "Process for the Oxidation of Non-Terminally Double-Bonded Halogenated Olefins," as unpatentable and the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 343,144.

AFFIRMED.

Raymond F. Kramer for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and Judges SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The ultimate issue to be determined in this appeal is whether appellants' claimed invention when made would have been obvious in view of certain prior art within the meaning of 35 U.S.C. 103.

That issue is presented in an appeal from the decision of the Patent Office Board of Appeals,[2] affirming the Examiner's rejection of certain claims of appellants' application.[3]

The Invention

The invention relates to a process for oxidizing a non-terminally double-bonded, halogen-substituted olefinic hydrocarbon. Appellants' specification explains that the double bond of the hydrocarbon is cleaved; the carbon atoms involved in the double bond are converted to structures possessing a carbon-oxygen double bond; and all of the chemical elements of the original olefin are retained in the final product. The oxidation of those compounds is effected by such oxidizing agents as oxygen, air, chlorine dioxide, and other oxides of chlorine, in the presence of chlorine and actinic light to produce oxygen-containing products.

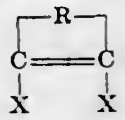
In the specification, the process is generally disclosed by two general reactions wherein the starting material is either a cyclic olefin or an acyclic olefin. As a result of the requirement for election, note 2 supra, only the reaction of the cyclic olefins need be considered in determining this appeal. Thus, appellants' invention is primarily a process for making perhalogenated acyl halides, such as hexafluoroglutaryl chloride, by cleaving and oxidizing the carbon to carbon double bond of a halogenated cyclic olefin, such as 1,2-dichloro-3,3,4,4,5,5-hexafluorocyclopentene, with oxygen in the presence of chlorine and actinic light. In this reaction, the oxygen atoms satisfy the valences of the carbon atoms of the original double bond and the halogens originally attached to the carbons of that double bond are retained thereon in the final product.

The Claims

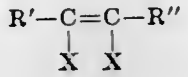
The Board considered claim 1 as illustrative; it reads:

1. The method of cleaving the C═C double bond of a halogenated olefin selected from the group consisting of:

(A)



and (B)



$$R'-\underset{X}{\underset{|}{C}}=\underset{X}{\underset{|}{C}}-R''$$

wherein **R** is a divalent perhalogenated hydrocarbon radical, and wherein R′ and **R″** are monovalent perhalogenated hydrocarbon radicals and wherein the substituents in R, R′ and R″ are selected from the group consisting of chlorine and fluorine and wherein said chlorine comprises from 0 to 50 percent of the total number of the halogen substituents in each R, R′ and R″ radical, and wherein X is selected from the group consisting of chlorine, fluorine and alkoxy, and wherein at least one of the X's of both (A) and (B) is selected from the group consisting of chlorine and fluorine; which comprises oxidizing the selected olefinic starting material in the presence of an oxidizing agent selected from the group consisting of oxygen, air and oxides of chlorine, and under the influence of chlorine and actinic light, wherein oxygen satisfies the valence of the carbon atoms of the original double bond, and all of the X's are retained in the final product.

Appellants consider claims 4 and 23 to be "more typical." They explain that the generic claims, such as claim 1, include reactions of acyclic olefins, which are not specifically the subject of the present appeal, nor were they the subject of the appeal before the Board.

Claim 37 describes "a process for preparing directly acyl halides" which corresponds to the process of claim 1. Claim 4 corresponds to the process of claim 1 and is limited to the cyclic olefins. Claim 3 also depends upon claim 1 and states that the oxidizing agent is oxygen. Claim 6, which depends upon claim 4, describes the halogenated olefin as a dichlorohexafluorocyclopentene while claim 23 depending from claim 6, specifies 1,2-dichlorohexafluorocyclopentene. Claim 39 recites "[a] process according to claim 37" wherein the acyl halide product is hexafluoroglutaryl chloride. All the claims stand or fall together.

The References

To support the rejection, the Examiner, in his answer, and the Board, in its opinion, relied upon the following references:

Miller, 2,712,554, July 5, 1955.
Calfee et al., 2,736,695, Feb. 28, 1956.

Miller's invention relates to the oxidation of halogenated olefinic compounds in the presence of an activator to produce oxygen-containing products. Miller explains that, in "conventional oxidation processes," actinic light or relatively high temperatures are employed to initiate the oxidation reaction which normally will not start unless activated. Miller explains that the use of actinic light or high temperatures is unnecessary in the presence of the activator of his invention for the oxidation of the organic compounds of the type disclosed in that reference. One of the objects of the reference is to provide processes for preparing halogenated acyl halides.

Because of the dispute between the appellants and the Patent Office as to the scope of the factual teachings of Miller, and the factual inferences which may be derived from that reference, it is necessary to consider in some detail the following passage from the Miller patent:

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The board consisted of Messrs. Asp and Magil, Examiners-in-Chief, and Sterman, Acting Examiner-in-Chief. Mr. Magil wrote the opinion of the board.

[3] Claims 1, 3, 4, 6, 23, 37 and 39 of appellants' application Serial No. 343,144, filed February 6, 1964, entitled "Process for the Oxidation of Non-Terminally Double-Bonded Halogenated Olefins" form the subject of this appeal. Claims 2, 5, 7–22, 24–36, 38 and 40–44 stand withdrawn from consideration under Rule 142(b) as not reading on the elected species. No claims were allowed. The application is denominated a "continuation-in part" of Serial No. 699,520, filed November 29, 1957.

> In accordance with the present invention a halogen substituted olefinic compound is oxidized with free oxygen in the presence of added fluorine to produce oxygenated products. The olefinic organic compounds which are oxygenated with free oxygen employing free fluorine as an activator are the olefinic hydrocarbons substituted only with gaseous halogen containing no more than one unsubstituted hydrogen atom per carbon atom and containing a chlorine atom attached to an olefinically bonded carbon atom. * * * It is also preferred that the carbon atoms of the double bond be completely substituted with gaseous halogen.
>
> It has been found that the elemental fluorine which is employed as an activator has the property of causing the formation of free radicals when brought into contact with the olefinic compounds of the above type. These free radicals are formed by the presence of elemental fluorine *without the necessity of the use of actinic light or without the necessity of the use of as high a temperature as would be necessary with the use of other halogens as activators, such as chlorine without actinic light, for the same olefinic compound to be oxidized.* The free radicals so produced are highly reactive with oxygen. The action of fluorine in this respect is particularly valuable in providing a method for reacting halogenated olefins and oxygen of the above type to form halogenated compounds containing the —(CO)— group, such as carbonyl halides, halogen substituted acyl halides and halogenated ketones. * * * [Emphasis added.]

In addition, Miller discloses that both terminally double-bonded and non-terminally double-bonded halogen-substituted olefinic hydrocarbons are oxidized in the presence of free or elemental fluorine as an activator.

Calfee relates to the preparation of trichloroacetyl chloride by oxidizing tetrachloroethylene with an oxygen-containing gas in the presence of actinic radiation and in the absence of a catalyst. According to Calfee:

> Trichloroacetyl chloride has been prepared *in the past* by the liquid phase oxidation in the presence of actinic light of tetrachloroethylene (tetrachloroethylene, perchloroethylene) with an oxygen-containing gas such as air in the presence or absence of chlorine as a catalyst. The above procedure is unsatisfactory in that the time required to complete the reaction is excessively long (4–12 days), especially when carried out in the absence of chlorine and if it is desired to obtain trichloroacetyl chloride free from perchloroethylene, the oxidation is continued until all of the perchloroethylene is oxidized even at the risk of diminished yields through side reactions, since trichloroacetyl chloride and tetrachloroethylene are not readily completely separable by simple distillation techniques.
>
> It is also known that in the presence of chlorine, tetrachloroethylene will react in the vapor phase with oxygen under the influence of actinic radiation to produce trichloroacetyl chloride.

The Rejection

In the Examiner's answer, the rejection of all of the appealed claims is predicated on their being "unpatentable over Miller in view of Calfee et al." This rejection was treated by the Board as a rejection under 35 U.S.C. 103 and we shall so consider it. The Examiner interpreted the discussion of Miller relating to "conventional oxidation processes," described above, to mean that oxidizing in the presence of prior art activators requires an initiator such as actinic light or high temperatures. He also referred to that portion of Miller quoted above where it is stated that an activator such as chlorine would require actinic light or high temperatures as an initiator. He drew further support for his conclusion from that portion of Calfee, also quoted above, as evidence that terminally double bonded halogenated olefins, as in Miller, are oxidized with oxygen in the presence of ultra-violet light and chlorine to produce acetyl or acyl halides.

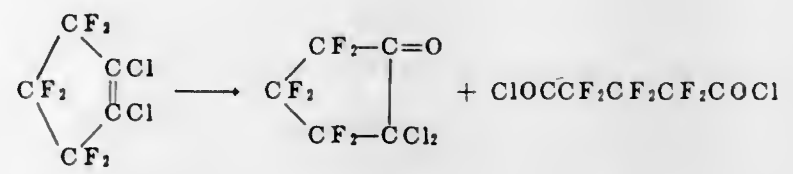
From this discussion of Miller and Calfee, the Examiner thus concluded:

> * * * it would be obvious to substitute ultraviolet light and chlorine for the fluorine activator in the process of Miller with the expectation of cleaving the non-terminal C═C double bond in the halogenated olefins of the formulae of column 2, lines 52 and 61, as in appellants' process, to produce the corresponding acyl or acetyl halide. * * *

The Board affirmed, stating:

> Despite appellants' arguments to the contrary, we believe that Miller adequately discloses that chlorine was used with actinic light in the oxidation of halogenated olefinic compounds. We realize that the patent does not expressly state "chlorine with actinic light," but it is evident from the context as a whole that chlorine was previously initiated or activated with heat or light. * * * Moreover, Calfee et al. * * * refer to the conjoint use of chlorine and actinic light with oxygen in the oxidation of tetrachloroethylene, one of the materials oxidized by Miller. * * *

While the Examiner had referred to four particular reactions specifically disclosed by Miller, the Board narrowed its consideration to the following:



Apparently, this reaction proceeds as does an earlier-listed reaction in Miller, i.e., in the presence of oxygen and fluorine. The Board described this reaction as the treatment of 1,2-dichlorohexafluorocyclopentene with oxygen in the presence of fluorine to produce 2,2-dichloro-3,3,4,4,5,5-hexafluorocyclopentene and hexafluoroglutaryl chloride. The Board noted that the relative amounts of the two products may be controlled by changing the reaction conditions. In this respect, the following disclosure of Miller relating to the listed reactions as a group is pertinent:

> * * * In each case, the principal products which may be obtained are indicated. Their relative amounts may be controlled by changing the reaction conditions, for example, higher temperatures result in the formation of relatively more cleavage products, that is, products formed with cleavage of carbon carbon bonds. * * *

The Board thus concluded that there is "nothing unobvious in carrying out the oxidation process of Equation 26" of Miller "in the presence of chlorine and actinic light in lieu of fluorine if one is willing to accept the limitations discussed in the penultimate paragraph in column 9 of the [Miller] patent."

Insofar as is pertinent here, that paragraph provides:

> * * * The commercial methods for reacting halogen-substituted olefins and oxygen or chlorine have heretofore required difficult operating conditions and complicated equipment. *The conventional reaction conditions rely on activation of the reactants by high temperatures and/or light.* The use of light has been attended with great operating difficulties because of the limited zone of activity around the light source, coating of the light source with reaction products, difficulty of operating with colored mixtures, etc. The high temperature reactions are unsuitable for many compounds because of excessive decomposition. The fluorine-promoted reactions of this invention are rapid, permit great flexibility

> in operating temperatures and other conditions, and require only simple types of equipment. * * *

In summary, the Board added:

> There is certainly nothing unique in the oxidation of non-terminally double bonded acyclic halogenated olefins or alicyclic halogenated olefins, the treatment of these materials being described in the last two paragraphs in column 2 and exemplified in Equations 20 to 29 in columns 8 and 9 of the Miller patent. [Equation 26 is reproduced above.] The fact that the double bond is cleaved and replaced by oxygen on each of the adjacent carbon atoms is also clearly shown in Equations 20 to 29. Although each of these equations also shows the production of ketones, the relative proportions of the two products may be controlled as indicated in column 7, lines 67 to 71.

Opinion

The initial difficulty presented here deals with the inability of the parties to agree upon the scope and content of the prior art. That content must be determined before the mandates of the Supreme Court set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966) may be accurately applied. There it was stated:

> * * * the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. * * *

Here the appellants initially challenge the efficacy of the Miller patent to sustain the rejection. They argue that the only question is whether the Miller reference really discloses as prior art the use of chlorine, oxygen and actinic light in reactions sufficiently close to those of the present invention to require the conclusion that the claims are obvious in the statutory sense.

[1] The essence of the evidentiary question here is what the *disclosure* of a prior art patent *means* to one of ordinary skill in the art. Where a portion of that prior art disclosure refers to the state of the art as it existed at the time that the application for the prior art patent was filed, that disclosure likewise must be tested against a standard of what it means to one of ordinary skill in the art. We think that the criterion to be applied to such questions is whether the statement as to the state of the art, which is contained in a prior art patent, is sufficient to enable one skilled in the art to reduce the subject matter of such statement to practice. See *In re Sheppard*, 52 CCPA 859, 339 F.2d 238, 144 USPQ 42 (1964); *In re LeGrice*, 49 CCPA 1124, 301 F.2d 929, 133 USPQ 365 (1962); see also *In re Borst*, 52 CCPA 1398, 345 F.2d 851, 145 USPQ 554 (1965); *In re Brown*, 51 CCPA 1254, 329 F.2d 1006, 141 USPQ 245 (1964).

Applying that test here, we agree with the Patent Office that it may be fairly concluded from the reference to the prior practice set forth in Miller that the prior practice, with which one of ordinary skill in the art is properly charged, is that the use of chlorine with either actinic light or high temperatures as a catalyst was known. That disclosure, in our view, is sufficiently particular and definite to make its use obvious to one skilled in the art to which it pertains. While Miller's efforts may have been directed to the use of fluorine so that the use of actinic light or higher temperatures would be unnecessary, it may be fairly concluded that it was obvious at the time the present invention was made to a chemist of ordinary skill in this art that either light or heat is necessary with another halogen, such as chlorine. Thus, we agree with the Examiner and the Board that one of ordinary skill in the art upon reviewing the entire disclosure of Miller would reasonably conclude that the prior practice was to use chlorine and actinic light or heat instead of fluorine without either actinic light or heat.

Appellants seek to distinguish the applicability of the disputed disclosure with respect to reactions of cyclic olefinic compounds, urging that the description of the prior practice in Miller refers to acyclic compounds only. It seems clear, however, that Miller's reference to "the olefinic compounds of the above type," when read in the light of the patent as a whole, refers to the halogen substituted compounds of the patent. Those compounds, of course, include both the cyclic and acyclic halogenated olefins.

Appellants further argue that if it is obvious to use the combination of chlorine, oxygen and actinic light to cleave the double bond of the cyclic fluorinated reactant materials of the present invention, the unexpectedly beneficial effect of producing a large proportion of hexafluoroglutaryl chloride with low temperature reactions, especially in view of Miller's teaching of the use of heat, is considered to be sufficiently unobvious to indicate that the present reactions, considering the yields and products obtained, would be "unobvious" from the prior art and therefore would be patentable. We do not think that appellants' proofs are sufficient to support that contention.

In support of this argument, appellants rely upon the affidavits of Dr. Charles F. Baranauckas, one of the appellants here, and Dr. Edward D. Weil. The Baranauckas affidavit is said to establish that, by his reaction, one may produce hexafluoroglutaryl chloride in good yields and yet not obtain the corresponding cyclic ketone. The latter point is in reference to the appellants' argument that their invention differs from Miller's most pertinent reaction in that appellants do not produce a cyclic ketone. The Board thought this affidavit to confirm the statements of Miller that the relative amounts of the resulting products could be controlled by adjusting reaction conditions. We, like the Board, do not think that the Baranauckas affidavit rebuts the facts upon which the prima facie case of obviousness is based by the Patent Office by reliance on the Miller and Calfee references.

The Weil affidavit is said to show that other catalytic agents which might have been suggested by the references as appropriate or which are closely related to the suggested catalysts, were found to be inoperative. From this, they conclude that this operativeness of the oxygen-chlorine-actinic light system cannot be said to have been obvious.

The Board characterized the Weil affidavit as "of little value" to the appellants. We agree, deeming it a sufficient response to appellants' reliance upon the affidavit to refer to our discussion of the Miller reference, supra.

[2] Thus, the decision of the Board is affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,676,706, H. E. Temple, GYRATORY SIFTER; **2,693,205**, C. D. Coulter, APPARATUS FOR CONSTRUCTING SCREENING ELEMENTS; **2,696,302**, Miller, Mathewson and Meinzer, SCREENING MECHANISM; **2,714,961**, same; **2,753,999**, same; **2,777,578**, same; **3,029,946**, Wright and Spencer, CLAMPING MEANS FOR MATERIAL SEPARATORS; **3,035,700**, R. J. McCausland, SHAKING APPARATUS; **3,156,643**, Wright and Racine, TENSIONING MEANS FOR SEPARATOR SCREENS; **3,243,042**, A. K. Moulton, SCREEN SUPPORTING FRAME; **3,291,164**, D. M. Swallow, REMOUNTABLE SEPARATOR SCREEN AND METHOD OF MANUFACTURE, **filed** Mar. 19, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–440–PH, *Separator Engineering, Ltd. et al.* v. *Southwestern Engineering Co.* This was originally filed in New Jersey on May 12, 1967, and transferred to this Central District of California on Mar. 19, 1968.

2,693,205. (See 2,676,706.)

2,696,302. (See 2,676,706.)

2,714,961. (See 2,676,706.)

2,753,999. (See 2,676,706.)

2,777,578. (See 2,676,706.)

2,828,194, Hopkins and Easley, ETCHING, **filed** Mar. 7, 1962, D.C., S.D.N.Y., Doc. 62–C–1073, *The Dow Chemical Company* v. *Prieston Photo Engraving Co. Inc. et al.* Stipulation and order of discontinuance, Oct. 30, 1968.

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2,914,772, J. H. Lemelson, CONSTRUCTIONAL MASK, **filed** Mar. 13, 1964, D.C., S.D.N.Y., Doc. 64–C–818, *Jerome H. Lemelson* v. *Kellogg Co. et al.* Judgment against the plaintiff, Oct. 9, 1968.

2,960,243. (See 3,211,301.)

2,975,495, Wolf and Kaplan, COVERED BACKWASHERS, **filed** Oct. 18, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–1063, *Peter S. Wolf* v. *Albest Metal Stamping Co. Inc.*

3,001,950, Q. R. Hopper, REAGENT FOR DETERMINING THE AMOUNT OF CHOLESTEROL IN SERUM AND METHOD OF PREPARING SAME, **filed** Oct. 7, 1968, D.C., W.D. Tex. (San Antonio), Doc. 68–249–SA, *Hopper Laboratories, Inc.* v. *Stambio Laboratories, Inc. and Charles E. Miles.*

3,019,324, J. P. Sohn, ELECTRIC HEATER, **filed** Oct. 15, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1905, *Arvin Industries, Inc.* v. *Berns Air King Corporation.*

3,029,946. (See 2,676,706.)

3,035,700. (See 2,676,706.)

3,042,051, J. B. Mauldin, AIR-SUPPORTED SHELTERS, **filed** Oct. 16, 1968, D.C., E.D. Ky. (Lexington), Doc. 1904, *Joseph B. Mauldin* v. *Birdair Structures, Inc.*

3,048,485, C. G. Bieber, HIGH STRENGTH CREEP RESISTING ALLOY, **filed** Oct. 24, 1968, D.C., S.D.N.Y., Doc. 68–C–4210, *Cameron Iron Works, Inc.* v. *International Nickel Company, Inc.*

3,083,104, R. F. Celmer, METHODS FOR RECOVERING LIQUIDS FROM VEGETABLE MATERIALS, **filed** Apr. 29, 1964, D.C., W.D.N.Y. (Buffalo), Doc. C–10,909, *The Taylor Wine Company, Inc.* v. *Ralph F. Celmer.* Opinion reversing the judgment of the District Court and remanding action with directions to enter a judgment declaring patent invalid, Sept. 12, 1968; judgment on order of Court of Appeals, Sept. 19, 1968.

3,093,177, J. P. Villo, THREAD LOCK AND METHOD OF MAKING THE SAME, **filed** Oct. 16, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–788, *Standard Pressed Steel Co.* v. *Astoria Plating Corp.*

3,104,212, Rinker and Duva, ELECTROPLATING SMOOTH DUCTILE GOLD, **filed** June 9, 1965, D.C.N.J. (Trenton), Doc. 612–65, *Lea-Ronal Inc.* v. *Sel-Rex Corporation.* Order dismissing complaint and counterclaim, Sept. 11, 1968.

3,115,334. O. Schauss, AERATION APPARATUS, **filed** Sept. 16, 1968, D.C., W.D. Wis. (Madison), Doc. 68–C–145, *Lakeside Engineering Corporation* v. *Beloit-Passavant Corporation (subsidiary of Beloit Corporation).*

3,115,753. (See 3,115,886.)

3,115,886, A. J. Loepsinger, METHOD AND MEANS FOR CONTROLLING A PIPING SYSTEM; **3,115,753**, P. C. Sherburne, same; **3,116,045**, same, RELEASABLE PIPE POSITION CONTROL, **filed** Jan. 2, 1968, Ct. of App., 4th Cir., Va. (Richmond), Doc. 12–018, *Grinnell Corporation* v. *Virginia Electric & Power Company.* Judgment of District Court affirmed, Sept. 11, 1968.

3,116,045. (See 3,115,886.)

3,156,643. (See 2,676,706.)

3,170,727, A. E. Peterson, AUXILIARY SEAT FOR CHILD, **filed** Feb. 15, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–236–HP, *A. E. Peterson Manufacturing Co.* v. *Rose-Derry Company and Rose-Derry Company of Calif.* Stipulation with order dismissing action with prejudice as to past and/or present infringement, June 7, 1968.

3,174,436, W. F. Wanner, RADIAL PUMP, **filed** Oct. 16, 1968, D.C. Minn. (St. Paul), Doc. 3–68–C–270, *Hypro, Inc.* v. *Seeger-Wanner Corporation.*

3,177,871, P. H. Meyers, DISPOSABLE SANITARY CONTAINER FOR RADIOGRAPHIC ENEMAS, **filed** Nov. 22, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2037, *Phillip H. Meyers M.D. and Howard S. Stern* v. *Baxter Laboratories, Inc. and Travenol Laboratories, Inc.* Order dismissing cause with prejudice, Oct. 30, 1968.

3,181,249, J. R. Coffing, FLAT-FACED ATTITUDE INDICATOR; **3,208,426**, same, ATTITUDE INDICATOR, **filed** Aug. 8, 1968, D.C., S.D. Tex. (Corpus Christi), Doc. C.A. 68–C–108, *Coffing Industries, Inc.* v. *Aviation Instrument Mfg. Corp.* Dismissed by plaintiff, Oct. 21, 1968.

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3,208,426. (See 3,181,249.)

3,209,924. (See 3,211,301.)

3,209,931. (See 3,211,301.)

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3,243,042. (See 2,676,706.)

3,291,164. (See 2,676,706.)

U.S. GOVERNMENT PRINTING OFFICE: O——1969

REISSUES

FEBRUARY 11, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

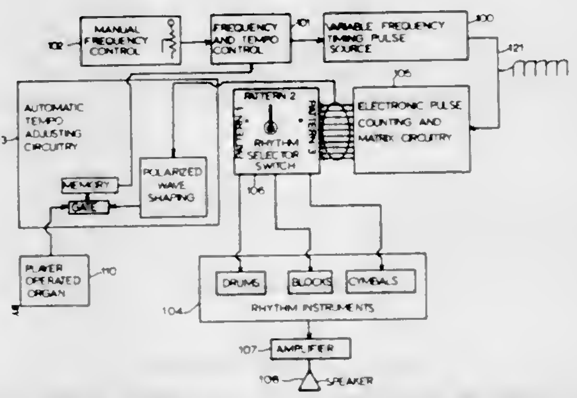
26,521
AUTOMATIC REPETITIVE RHYTHM INSTRUMENT TIMING CIRCUITRY

Donald M. Park, by the Seeburg Corporation, Chicago, Ill., a corporation of Delaware, assignee

Original No. 3,255,292, dated June 7, 1966, Ser. No. 378,093, June 26, 1964. Application for reissue Aug. 8, 1967, Ser. No. 666,221

U.S. Cl. 84—1.03 **15 Claims**

Int. Cl. G10f *1/00;* **G10h** *1/02*



Apparatus is provided for electronically producing an automatic rhythm accompaniment for a musical instrument. The apparatus includes a counter circuit driven by a pulse generator. Output pulses of the counter circuit are conveyed to a diode logic matrix which combines with the counter circuit to distribute instrument driving pulses in pre-arranged patterns. A switching arrangement provides for selection of a desired pattern of instrument driving pulses from the diode logic matrix. The driving pulses actuate appropriate instrument simulating circuits to provide the desired rhythm accompaniment.

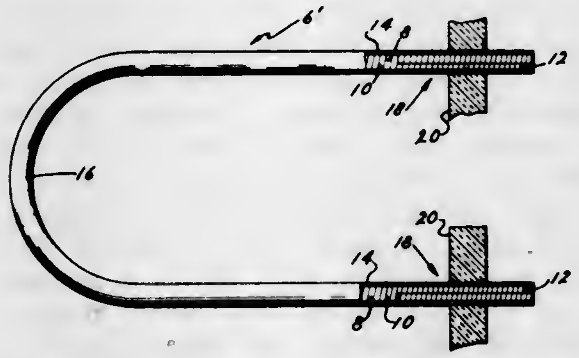
26,522
COLD TERMINAL ELECTRICAL RESISTANCE HEATING CABLE

Peter J. Fessenden, East Longmeadow, Mass., assignor to Springfield Wire, Inc., Springfield, Mass., a corporation of Massachusetts

Original No. 3,045,102, dated July 17, 1962, Ser. No. 1,621, Jan. 11, 1960. Application for reissue Jan. 17, 1968, Ser. No. 718,270

U.S. Cl. 219—528 **10 Claims**

Int. Cl. H05b *3/34, 3/54*



Electrical resistance heaters, such as defrosters, for providing heat within a chamber from a source of electricity outside the chamber. The heater includes a helical element wound on a core of insulation and having a heat emitting section and unheated or "cold terminal" sections integral with the heat emitting section, insulated therewith, and defined by a shorting strip extending longitudinally along the turns of resistance wire and extending from within the chamber to the outside. In one form the heater is a flexible cable having an extruded moisture impervious insulation. Another embodiment is a rigid tubular heater in which a flexible heater cable, insulated with heat resistant fibrous braid, is disposed within the tube wherein the cold terminals extend from within the tube into a molded moisture seal which has a relatively low rate of heat transfer and is formed over the ends of the tube.

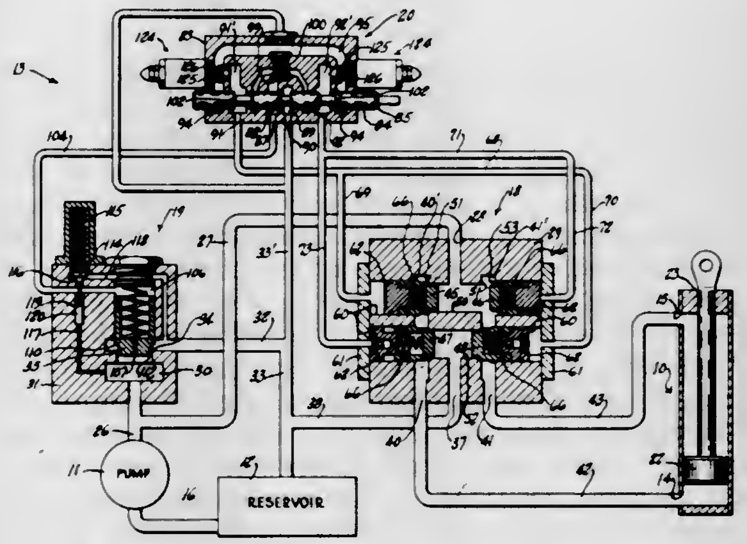
26,523
PILOT OPERATED CONTROL VALVE MECHANISM

Francis H. Tennis, Oconomowoc, Wis., assignor, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin

Original No. 3,151,455, dated Oct. 6, 1964, Ser. No. 280,901, May 16, 1963. Reissue No. 26,028, dated May 17, 1966, Ser. No. 506,145, Oct. 23, 1965. This application for reissue Nov. 17, 1967, Ser. No. 689,739

U.S. Cl. 91—454 **30 Claims**

Int. Cl. F15b *11/10, 13/042;* **F15c** *3/00*



Fluid pressure actuatable supply and exhaust check valves govern communication of a service line with either a supply line or an exhaust line, depending upon pressure conditions at the control ports of a pilot valve for said check valves.

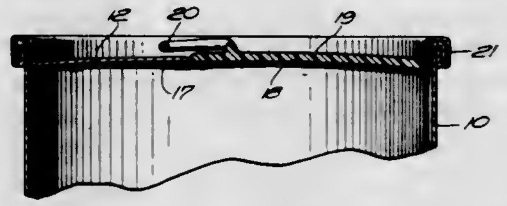
26,524
PULL TAB CAN OPENER

Fernando M. Ronci, Providence, R.I., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Original No. 3,241,708, dated Mar. 22, 1966, Ser. No. 327,967, Dec. 4, 1963. Application for reissue Mar. 19, 1968, Ser. No. 717,055

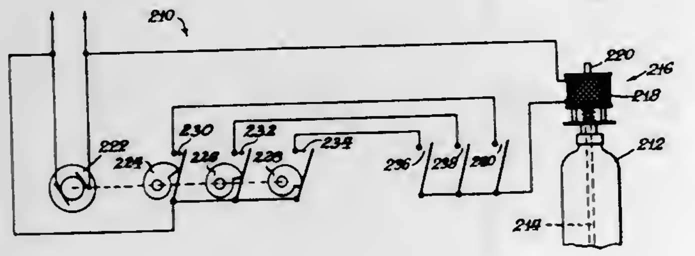
U.S. Cl. 220—53 **2 Claims**

Int. Cl. B65d *17/20, 25/14, 17/02*



A pull tab can opener which is easily opened without the use of an opening tool and yet which will expose no *jagged edges to create a hazard to the user. The can end has an opening, the edges of which project downwardly to provide a sharp cutting surface, a plug having a pull tab positioned in the opening and a thin membrane bonded to the bottoms of the plug and can end so that when the pull tab is lifted, the membrane is torn at the cutting edge and the plug and the portion of the membrane bonded to it are detached from the end to open the can.*

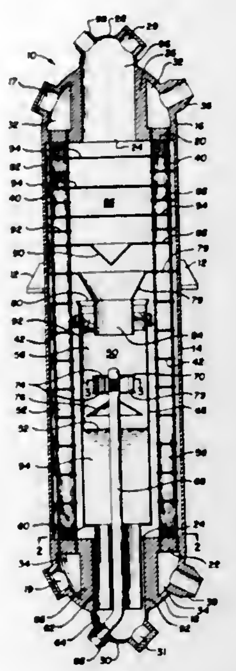
26,525
DIAZO REPRODUCING MACHINE
Frederick G. Wilde, Mount Prospect, Ill., and Leslie Gordon Booth, Rochester, N.Y., assignors to Addressograph-Multigraph Corporation, Charles Bruning Division, Mount Prospect, Ill., a corporation of Delaware
Original No. 3,362,314, dated Jan. 9, 1968, Ser. No. 415,540, Dec. 2, 1964. Application for reissue Jan. 10, 1968, Ser. No. 708,468
U.S. Cl. 95—94 **9 Claims**
Int. Cl. G03d *3/00, 3/12*



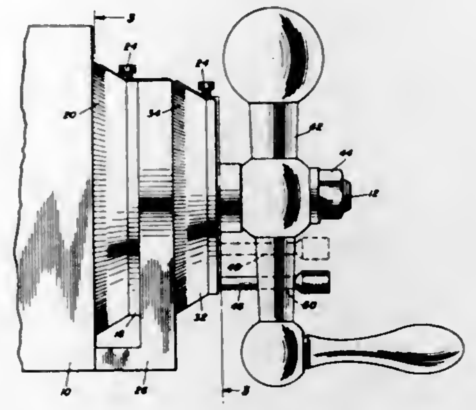
An ammonia-type diazo copying machine in which the subject matter to be copied and the sensitized sheets are transported by a system of conveyor belts and nipping rollers. Provision is made to have the finished copy sheet exit from either the front or rear of the machine, selection being made by manually controlling a gating mechanism located along the path of the conveyor belts. Another gating device permits delivery of the copy at the front of one of two stations depending on the length of the copy. A tray, adjustable to infinite number of positions, is located at the front face of the machine to catch different size tracings, and disc members mounted on a common shaft serve to roll up tracings delivered into the tray. A pump, operated in response to preset timing cams, pumps developing material into the developing chamber at a rate which is independent of the speed of the conveyor belts and drive rollers.

26,526
FLUID OPERATED STEAM GENERATOR HAVING STEAM OPERATED FEEDWATER PREHEATER
Nicholas Dimitrios Romanos, Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Original No. 3,262,428, dated July 26, 1966, Ser. No. 334,526, Dec. 30, 1963. Application for reissue July 26, 1967, Ser. No. 661,147
U.S. Cl. 122—34 **7 Claims**
Int. Cl. B67d *5/26;* **B65d** *5/72, 25/40*

A shell and tube type vapor generator adapted to provide for preheating of a vaporizable liquid, evaporation of that liquid together with vapor-liquid separation and superheating of the produced vapor all within a single vessel. The arrangement includes an axially elongated concentric baffle within which heating fluid conducting tubes are disposed and outside of which is located a downcomer passage which contains stored liquid for supplying the evaporation section of the unit. Preheating is accomplished by discharging feedwater into the downcomer passage in direct heat exchange relation with a portion of the vapor produced in the evaporation section. Vapor-liquid separation is effected by a reversing hood arrangement interposed between the evaporation section and the downcomer passage through which the vapor produced in the former must pass in flowing to a superheater section that occupies an elevated portion of the vessel.



26,527
MACHINE TOOLS
Jacob Rabinow, Bethesda, Md., assignor of ten percent to Max L. Libman, Reston, Va.
Original No. 3,315,633, dated Apr. 25, 1967, Ser. No. 319,771, Oct. 29, 1963. Application for reissue Jan. 11, 1968, Ser. No. 698,984
U.S. Cl. 116—115.5 **4 Claims**
Int. Cl. B23q *17/00;* **G01b** *3/18, 5/00*

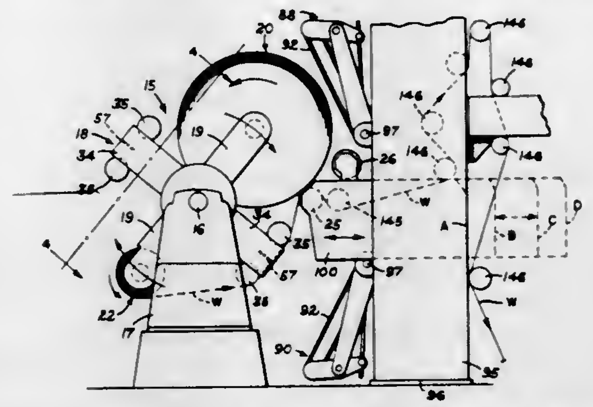


1. In combination, a machine tool having
(a) a rotatable shaft,
(b) first scale means having unit marks thereon and a cooperating pointer,
(c) a direct driving connection between said shaft and said scale means for moving the scale means to indicate an integral unit distance on the scale means when the shaft moves a complete revolution,
(d) second scale means having different unit marks from the first scale means and a cooperating pointer,
(e) gear train means mechanically interconnecting said shaft and said second scale means, the gear ratio being such that [the shaft moves a complete revolution when said second scale means moves a unit distance on the second scale means,] *when said second scale means moves a complete revolution, the shaft rotates a different amount from the said complete revolution, said different amount corresponding to a unit of motion of the machine tool in the scale system of said second scale means,*
(f) manual driver means for said shaft,
(g) selectively operably coupling means between said driver means and the shaft,

(h) said coupling means having two operative conditions
  (1) in one of said conditions coupling said driver means directly to the shaft to move the shaft in unison with motion of the driver,
  (2) in the other of said conditions coupling the driver means to said second scale means to move the shaft through said gear train with motion of the driver.

26,528
PAPER MACHINERY
Maurice J. Anderson, Fulton, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Original No. 3,309,036, dated Mar. 14, 1967, Ser. No. 443,314, Mar. 29, 1965. Application for reissue May 29, 1967, Ser. No. 646,756
U.S. Cl. 242—58.3 **14 Claims**
Int. Cl. B65h *19/14*

An apparatus for continuously unwinding and splicing web materials comprising a reel assembly for supporting a plurality of supply rolls and including web severing and splicing means. Roll speed up mechanisms are provided for bringing the speed of the reserve rolls up to that of the expiring web prior to the splicing operation. A pair of pressure rollers are resiliently urged against the new roll by pressure cylinder means acting on their common supporting arms so as to provide a resilient loading or cushioning effect during splicing operations irrespective of which roll is used.



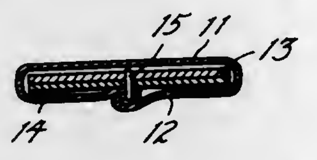
PATENTS

GRANTED FEBRUARY 11, 1969

GENERAL AND MECHANICAL

3,426,360
NECKTIE LINING AND NECKWEAR CONSTRUCTION

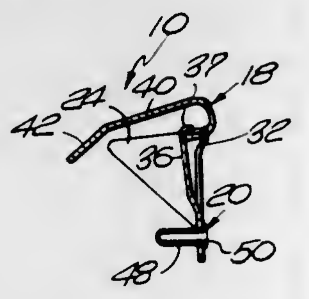
Myron H. Ackerman, New York, N.Y., assignor to Collins & Aikman Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,799
U.S. Cl. 2—146 **12 Claims**
Int. Cl. A41d *25/06*



A necktie is disclosed having a double-layer lining, each of the layers being of a different crease-resistant fabric material having dissimilar characteristics. The two superimposed layers are coextensive in length and width. The width of the double-layer lining corresponds with that of the interior of the folded casing of the tie. The lining fabric layer which is adjacent to the front or face of the tie casing is an acrylic or a polyester fabric. The layer which is adjacent to the back of the tie casing is a rayon or a wool-containing fabric. The longitudinal center of the double-layer lining is stitched to the overlapping longitudinal edges of the folded tie casing.

3,426,361
READY-MADE NECKTIE FORM

Nils A. Ellin, Warren, R.I., assignor to E-Z Clasp, Inc., Warren, R.I., a corporation of Rhode Island
Filed May 15, 1967, Ser. No. 638,524
U.S. Cl. 2—153 **1 Claim**
Int. Cl. A41d *25/08, 25/14*

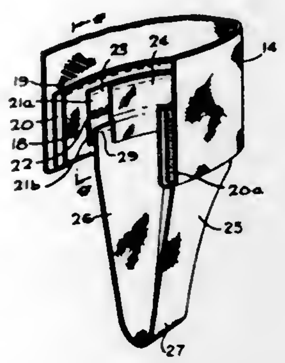


A necktie form for use with a ready-made necktie that includes a clip assembly formed of a metallic material in a one-piece construction and to which a spring member and pin are integrally joined, the pin being hollow in construction and extending through an opening in the clip assembly and being secured in the opening by the deforming of the inner end thereof.

3,426,362
REMOVABLE STIRRUP FOR PANT LEG

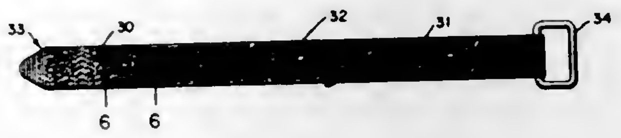
Sade Colman, 910 S. Los Angeles St., Los Angeles, Calif. 90015
Filed Sept. 7, 1965, Ser. No. 485,275
U.S. Cl. 2—232 **2 Claims**
Int. Cl. A41d *1/06, 13/02*

The disclosure consists of a pair of stirrups for removable application to the bottoms of the legs of a pair of trousers, the trousers having the lower edges stiffened to give a trim tailored look, slide fastener elements being provided respectively for the circumference of the interior of each leg at a location spaced from the free edge of the leg and another element of the fastener means being of substantially equal length and to which opposite ends of the respective stirrup is attached.



3,426,363
COMPOSITE LENGTH OF PILE FABRIC SHEET MATERIAL

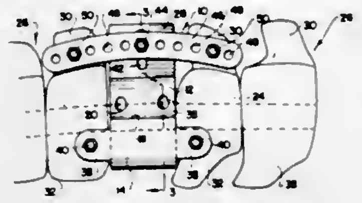
Laurent H. Girard, Bedford, N.H., assignor to American Velcro Inc., a corporation of New Hampshire
Filed Feb. 17, 1965, Ser. No. 433,341
U.S. Cl. 2—338 **6 Claims**
Int. Cl. A41f *3/62, 9/00, 15/00*



6. A composite length of at least two lengths of pile fabric sheet material of the type having a surface of hooking elements secured thereto in positions extending generally vertically from one surface of a base of sheet material to which they are secured, said hooking elements on one length being hooks and on the other length being loops which are characterized by the property that pressing of a surface defined by said hooks in face-to-face relation with a surface defined by said loops will result in a large number of hooks engaging a large number of loops to secure the members in face-to-face relation comprising a first length of said sheet material having one surface defined by said hooking elements, a flat marginal edge portion on one end of said first length being substantially free of said hooking elements, a second length of said sheet material having one surface defined by said hooking elements having its hooking elements extending in the same general direction as said first length and its back marginal end portion opposite to the surface on which the pile elements extend overlapping the flat marginal end portion and joined thereto in interfacial adhesive contact whereby the two lengths are joined and define together a substantially continuous surface of hooking elements, and a buckle attached to one end of the joined lengths through which the opposite end thereof can be inserted and folded back against itself with respective surfaces of hooks and loops in engaging relationship to form a closed loop.

3,426,364
PROSTHETIC APPLIANCE FOR REPLACING ONE OR MORE NATURAL VERTEBRAE

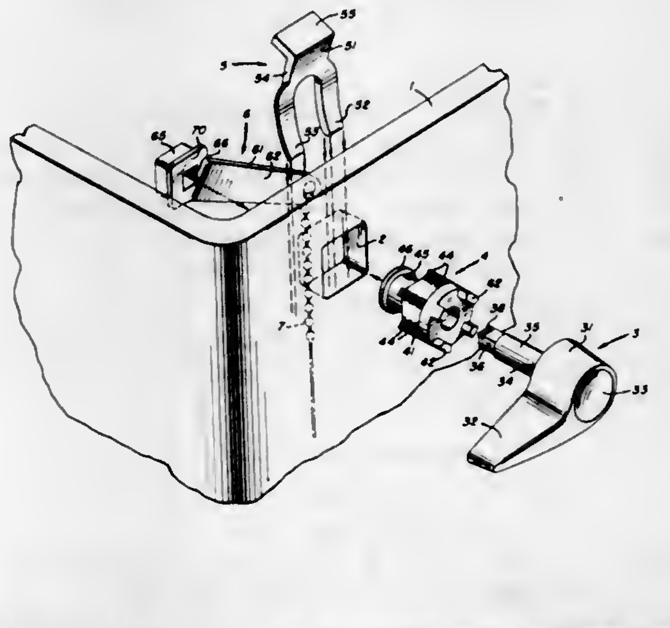
William V. Lumb, Fort Collins, Colo., assignor to Colorado State University Research Foundation, Fort Collins, Colo., a nonprofit corporation of Colorado
Filed Aug. 25, 1966, Ser. No. 575,065
U.S. Cl. 3—1 **10 Claims**
Int. Cl. A61f*1/00, 5/04;* **A61b** *17/04*



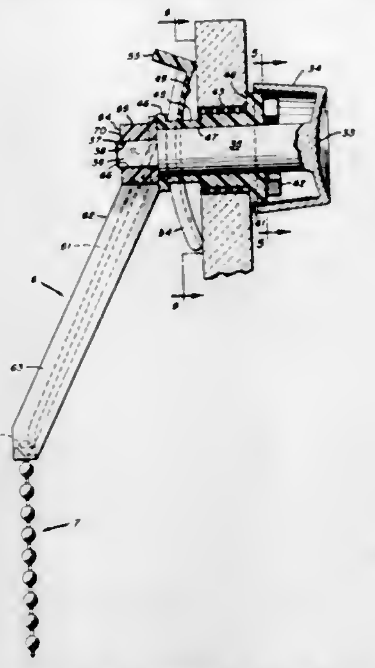
1. The prosthetic appliance which comprises: at least one body member sized for insertion into the gap left in the spinal column of a higher vertebrate following removal of one or more natural vertebrae therefrom, each of said body members having at least one relatively flat surface extending between its ends that includes a longitudinal substantially semi-cylindrical trough; generally Y-shaped elements having a stem-portion merging at one extremity into divergent leg-portions that fasten onto the flattened surfaces of each of the body members astride the trough and cooperate therewith to define a passage sized to loosely receive said vertebrate's spinal cord; first connecting means attached to the stem-portion of each Y-shaped element located adjacent a natural vertebra adapted for attachment to the neural spine of the latter; and, second connecting means attached to each base member located adjacent a natural vertebra adapted for attachment to the centrum thereof, said first and second connecting means cooperating with one another to hold said adjacent natural vertebra in fixed relation to said appliance.

3,426,365
TOILET TANK LEVER ASSEMBLY

Myron J. Ament, Adrian, Pa., and Frank R. Holycross, Jr., Royal Oak, Mich., assignors to Wallace-Murray Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,284
U.S. Cl. 4—67 **6 Claims**
Int. Cl. E03d *1/34, 5/02, 5/10*

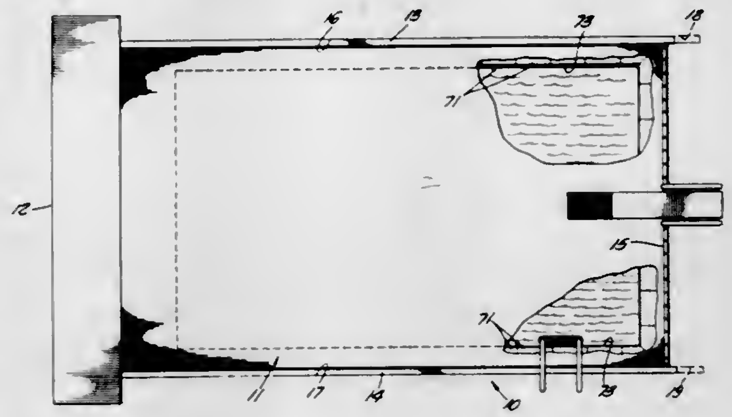


A tank lever assembly for toilet tanks where the lever mounting spud is designed to be held in place on tank walls of different thicknesses between a resilient arcuate clip and a flange on the spud. On the periphery of the spud are fingerlike flanges to engage with the hole through which the spud passes and assist in holding it in position and against rotation on the tank wall.



3,426,366
SWIMMING POOL COVER AND METHOD OF COVERING A POOL

Victoria A. Bailey, 6455 Langdon Ave., Van Nuys, Calif. 91406, and Max C. Dressel, 48½ Hull St., Ansonia, Conn. 06401
Filed Jan. 21, 1966, Ser. No. 522,110
U.S. Cl. 4—172 **5 Claims**
Int. Cl. E04h *3/16*

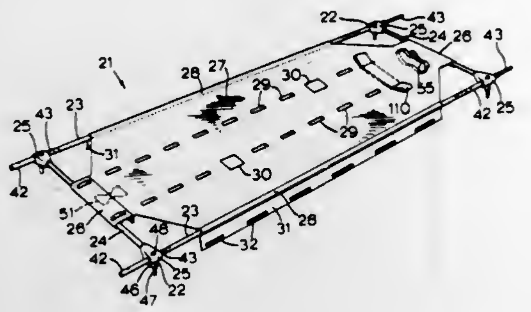


A flexible pool cover is stored in rolled condition on a reel at one end of the pool. Cables attached to each side of the leading edge of the pool cover extend along the pool sides, pass over sheaves at the other end of the pool and return about a pulley on the reel. The leading edge of the cover includes at each side a trolley which rides on a rail extending along the pool sides outwardly of the pool edge. Apparatus is provided for raising and lowering the rails as a unit, such that during covering and uncovering of the pool the cover extends above the pool and when in covering relation it is lowered into contact with the pool edge walls.

3,426,367
COLLAPSIBLE SUPPORTING STRUCTURES

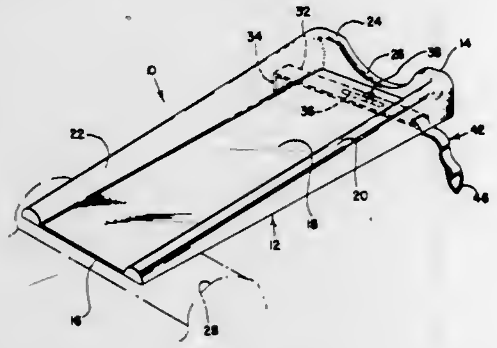
John G. Bradford, 32 St. Margaret's Road, Ancaster, Ontario, Canada
Original application Dec. 21, 1965, Ser. No. 515,347, now Patent No. 3,336,060, dated Aug. 15, 1967. Divided and this application June 22, 1967, Ser. No. 667,614
U.S. Cl. 5—82 **17 Claims**
Int. Cl. A61g *1/02;* **A47c** *17/64*

A collapsible and portable supporting frame having two end members and two side members, each of the end members comprising a tubular member subtended at each end by a housing and each side member comprising at least two tubular sections releasably socketed together, each end member being so constructed that it can be releasably attached by several socket means to the top of or to one end of another end member to form a variety of supporting structures.



3,426,368
PET CARRIER FOR VEHICLES

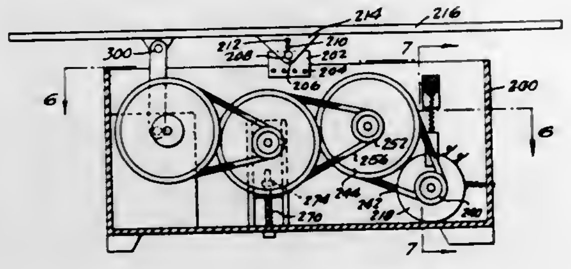
Alvin J. McCluskey, 4872 Columbia Drive S., Seattle, Wash. 98108
Filed Mar. 9, 1967, Ser. No. 621,953
U.S. Cl. 5—94 **6 Claims**
Int. Cl. A47d *7/04;* **A47c** *17/84*



Pet carrier or bed for vehicles in which an elongated body member is supported at one end by the back rest of the vehicle's rear seat and wherein the front end of the carrier or bed is supported by a strap attached to the automobile hanger hook. The carrier can be used on either side of the vehicle and includes means for restraining it from swinging or sliding away from the side to which it is secured.

3,426,369
ROCKING ASSEMBLY

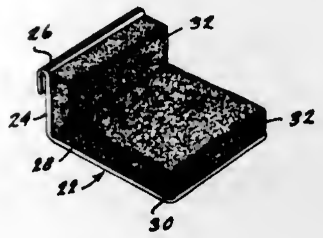
Grover L. Cauthron, West Sacramento, Calif.
(Box 440, Republic, Mo. 65738)
Filed Apr. 19, 1967, Ser. No. 631,971
U.S. Cl. 5—109 **6 Claims**
Int. Cl. A47d *9/02;* **A61h** *1/00*



A rocking assembly for beds which includes a pivotal support for a mattress board, a link connected to the mattress board, an off-center drive means for the link which may be a cam or an eccentric shaft, a speed reducing system and a motor for pivotally oscillating the mattress board is disclosed.

3,426,370
BOX-SPRING SUPPORT BRACKET

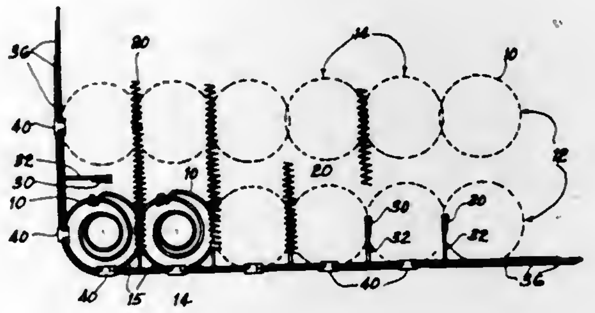
Parks C. Underdown, Sr., Lenoir, N.C., assignor to Hickory Springs Manufacturing Co., Inc., a corporation of North Carolina
Filed Oct. 31, 1966, Ser. No. 590,718
U.S. Cl. 5—238 **7 Claims**
Int. Cl. A47c *21/00, 31/00, 23/00*



This invention relates generally to a bracket structure for use with bedsteads to support a box-like spring unit thereon, and more particularly to a support bracket that is constructed so as to be readily attached and positioned on the side rail of a bedstead and including, additionally, resilient padding secured thereto for preventing relative sliding between the bracket structure and the supported box-spring unit.

3,426,371
SPRING ASSEMBLY

Dale D. Robinson, Richfield, Minn., assignor to The United States Bedding Company, St. Paul, Minn., a corporation of Minnesota
Filed Feb. 20, 1967, Ser. No. 617,277
U.S. Cl. 5—260 **10 Claims**
Int. Cl. A47c *23/04, 25/00*

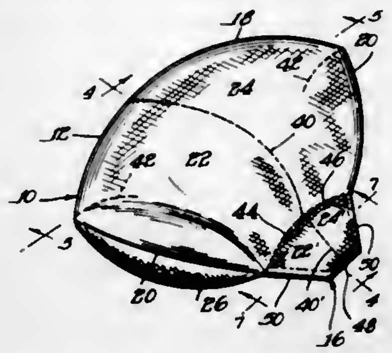


This invention relates to a spring assembly formed of a plurality of coil springs arranged in lengthwise and crosswise rows with the edge construction formed of a plurality of spring elements having a central spring supporting portion and arm portions extending lengthwise in parallel relationship adjacent the terminal coils of the coil springs outermost in the rows with the arm portions in overlapping relationship and interconnected to the coil springs to provide the features of a continuous border wire with edge supports.

3,426,372
PILLOW

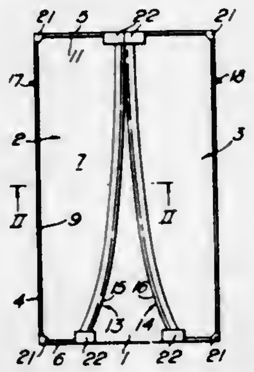
Gertrude S. Enelow, 199 E. Lake Shore, Chicago, Ill.
Filed June 1, 1967, Ser. No. 642,797
U.S. Cl. 5—337 **6 Claims**
Int. Cl. A47g *9/00*

A fan-shaped pillow carrying preferably a non-matting compressible, particulate foamed filler material, and having a tab, extension or handle formed integral therewith to enable the pillow to be drawn into correct placement with relation to the head and the longitudinal axis of the spine of the user.



3,426,373
INFLATABLE MATTRESSES

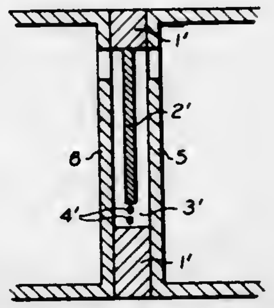
James H. S. Scott, 35 Mansionhouse Road, and Wilfred Salisbury, 17 Marchmont Crescent, Edinburgh 9, Scotland
Filed Oct. 17, 1966, Ser. No. 590,165
Claims priority, application Great Britain, Oct. 18, 1965, 44,104/65
U.S. Cl. 5—348 **4 Claims**
Int. Cl. A47c *27/08*



An inflatable under-mattress comprises a base member having at each longitudinal side thereof an inflatable chamber. The chambers are independently inflatable. Each chamber is so shaped that when inflated the upper surface thereof is inclined downwardly towards the center of the under-mattress. Each chamber has one longitudinal side extending along the length of the under-mattress along one side thereof. The other side of each chamber is so shaped as to increase the width of the chamber from the foot end to the head end of the under-mattress.

3,426,374
METHOD AND DEVICE FOR CONGREGATING BEE COLONIES

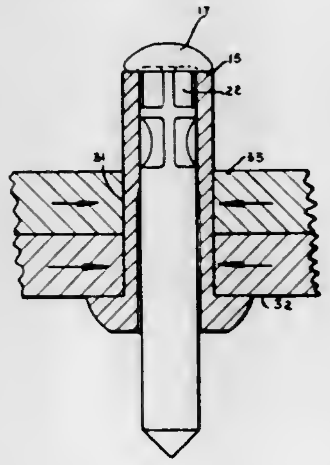
Ernst Kurt Johne, % Riverdale Country School for Girls, New York, N.Y. 10471
Filed May 17, 1966, Ser. No. 550,771
U.S. Cl. 6—1 **6 Claims**
Int. Cl. A01k *47/00, 47/06*



Bee hive complex for combining two or more bee colonies with separate queens having the separate hives interconnected by a confined path provided with at least one reversed bend and a queen excluder. The reversed bend in the interconnecting path forces a bee to detour in travelling between the hives, so disorienting and irritating the bee that it will not attack the queen of the entered hive and will not itself be attacked, even though a native of the other hive.

3,426,375
BLIND RIVET WITH SELF-PLUGGING MANDREL

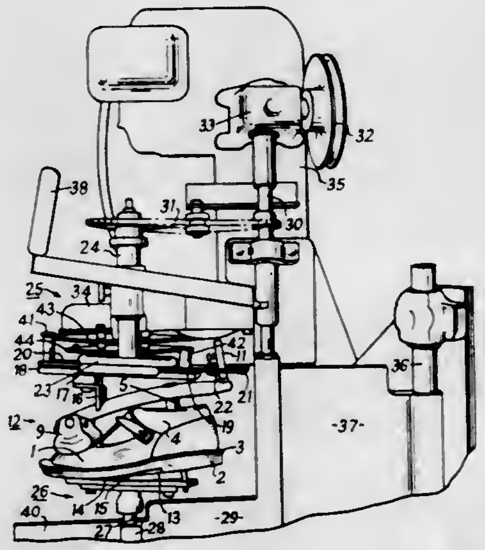
Harvey Philip Jeal, Stevenage, Hertfordshire, England, assignor to Avdel Limited, Welwyn Garden City, England, a British joint-stock company
Original application Oct. 22, 1965, Ser. No. 507,622, now Patent No. 3,286,580, dated Nov. 22, 1966. Divided and this application Aug. 3, 1966, Ser. No. 581,125
Claims priority, application Great Britain, June 19, 1961, 22,026/61
U.S. Cl. 10—27 **1 Claim**
Int. Cl. B21j *15/36;* **F16b** *19/10*



A blind hollow rivet with a self-plugging mandrel is assembled by first forming the rivet to have an interference fit with the mandrel. The mandrel is then inserted into the rivet and following the assembly step the rivet is then crimped over a portion of its length increase the clenching power of the rivet when set in apertured workpieces.

3,426,376
SHOE SUPPORT FOR SOLE EDGE TRIMMING MACHINE

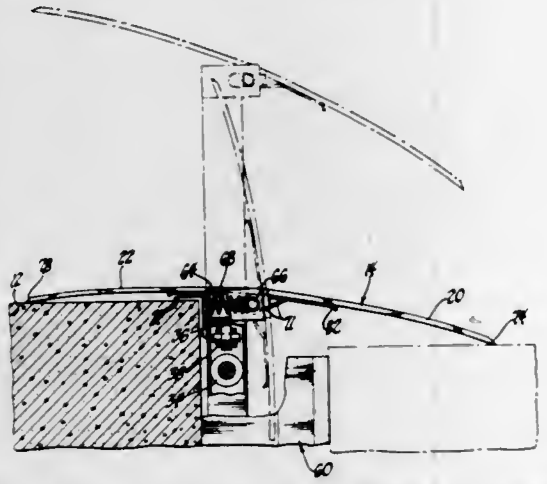
Henry Cecil Clark, Langport, Somerset, England, assignor to Clarks Limited, Somerset, England
Filed Jan. 12, 1967, Ser. No. 613,386
Claims priority, application Great Britain, Jan. 17, 1966, 2,176/66
U.S. Cl. 12—86.7 **14 Claims**
Int. Cl. A43d *27/00, 25/10*



A shoe supporting device for supporting a shoe while trimming the sole edge. The supporting device is particularly adapted for trimming a shoe having an upwardly inclined toe end portion. The device has a shoe last support member mounted for rotation about a first axis, and a last is rockably mounted on the support member. Means are coupled to the last for rocking the last about a second axis which extends at right angles to the lengthwise dimension of the shoe and to the first axis. The last can be rocked into a first position in which the general plane of the bottom of the shoe is normal to said first axis, and into a second position in which the plane of the toe end portion of the sole is normal to said first axis.

3,426,377
DOCKBOARD

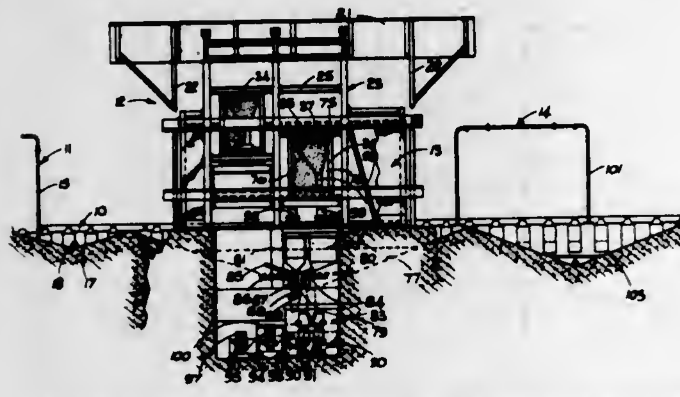
Robert C. Beckwith, Milwaukee, Wis., and Robert W. Hecker, Jr., Clare, Mich., assignors to Loomis Machine Company, Clare, Mich., a corporation of Michigan
Filed May 3, 1967, Ser. No. 635,822
U.S. Cl. 14—71 **21 Claims**
Int. Cl. B65g *11/12, 11/18*



A dockboard comprising a support frame means adapted to be attached to a dock, carriage means supported by the suport frame means for vertical movement relative thereto, a lip section and a platform section supported by the carriage means for rotation independently of one another about a common axis, and locking means for selectively preventing relative rotation between the lip section and the platform section. The lip section and platform section may be locked together to be moved between a vertical stored position and a substantially horizontal cross traffic position to carry traffic between a vehicle and a dock. The locking means may be moved to the unlocked position so that the platform section may be moved from the vertical stored position independently of the lip section for engaging the upper surface of the dock to define an end load position.

3,426,378
APPARATUS FOR WASHING AND DEGREASING

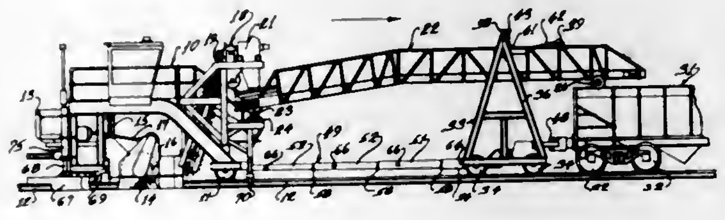
Colin Trevor Ashworth, Henley-in-Arden, Solihull, England, assignor to Abrasive Developments Limited, Solihull, England, a British company
Filed May 8, 1964, Ser. No. 365,879
Claims priority, application Great Britain, May 15, 1963, 19,234/63; Nov. 7, 1963, 43,943/63
U.S. Cl. 15—3 **2 Claims**
Int. Cl. B08b *3/02;* **B60s** *3/00*



Apparatus for washing and/or degreasing articles comprising one or more centrifugal throwing wheels arranged to project a flowable washing and/or degreasing substance at an article to be cleaned, means to collect the used substance after it has impinged on the articles and centrifugal separating means for separating reusable substance from waste and returning the reusable substance to the wheel or wheels. The invention is particularly useful for the cleaning of motor vehicles and railway rolling stock.

3,426,379
RAILROAD TRACK CLEANING APPARATUS

John D. Holley and Antonio H. Martinez, Montgomery, Ala., assignors to Kershaw Manufacturing Company, Inc., a corporation of Alabama
Filed Sept. 6, 1966, Ser. No. 577,307
U.S. Cl. 15—55 **12 Claims**
Int. Cl. B61f *19/00;* **E01h** *8/00*



1. In apparatus for removing debris from a railroad track and depositing it in a debris receiving car adapted for movement along the rails of a track,

(a) a vehicle frame adapted for movement along the rails of a track in spaced relation to said debris receiving car,
(b) a debris conveyor supported at one end by said vehicle frame with the other end thereof disposed to move to selected longitudinal positions over said debris receiving car, and be supported thereby,
(c) means to transfer debris from the railroad track to said one end of the debris conveyor,
(d) a traveling support frame adapted for connection to said debris receiving car for movement along the rails of a track intermediate said vehicle frame and said debris receiving car in position to support said debris conveyor at selected elevations relative to said debris receiving car to position said other end of the debris conveyor over said debris receiving car, and
(d) means holding said traveling support frame at selected positions along said track relative to said vehicle frame to position said other end of said debris conveyor at said selected longitudinal positions over said debris receiving car.

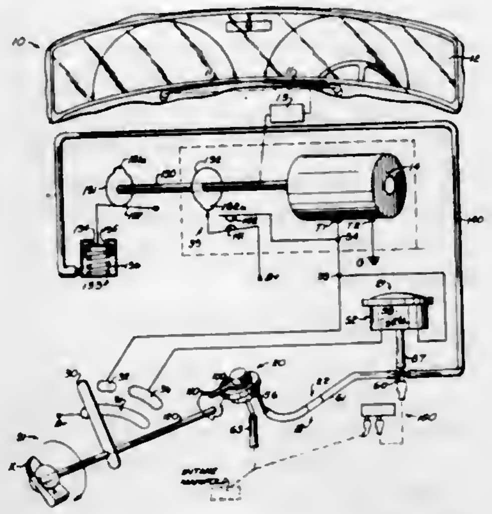
ERRATUM

For Class 15—105 see:
Patent No. 3,427,636

3,426,380
VARIABLE TIME DELAY MECHANISM

Roland B. Caldwell, Worthington, Ohio, assignor to Ranco Incorporated, Franklin County, Ohio, a corporation of Ohio
Filed Mar. 17, 1967, Ser. No. 623,985
U.S. Cl. 15—250.12 **16 Claims**
Int. Cl. A47l *1/02;* **B60s** *1/12*

Windshield wipers **11** of an automotive vehicle are driven by an electric motor **14** controlled by switch **53** to break the motor circuit following each oscillation of the blades. The motor circuit is remade around the open switch **53** to initiate a succeeding oscillation by closing of a switch S2, which is normally open and is closed by a time delay **21** including a switch actuator **43** movable through a given stroke to actuate the switch by fluid pressure differentials established by an adjustable regulator **20**, including adjusting knob K, the degree of vacuum determining the rate of movement of the member through its stroke. The actuator **43** is returned to its starting position of the switch actuating sroke by opening of valve **134** operaed by cam **131** during oscillation of the blades by the motor.

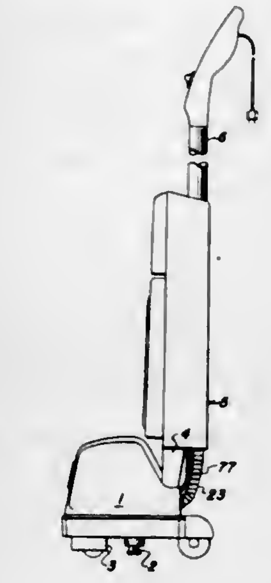


ERRATUM

For Class 15—250.42 see:
Patent No. 3,427,637

3,426,381
HOUSING AND AIR-WATER SEPARATOR ASSEMBLY FOR FLOOR TREATING MACHINES

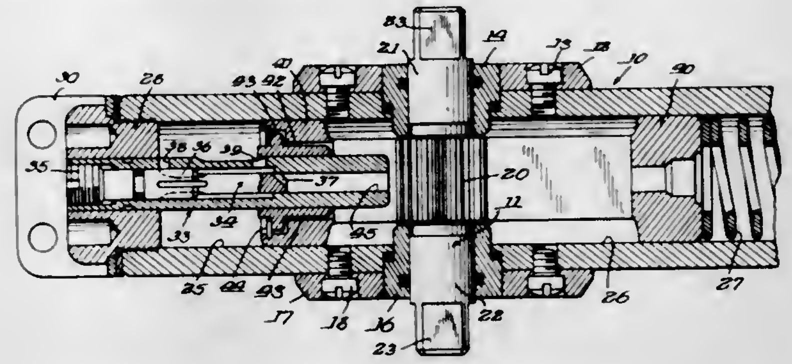
Louis E. Segesman, North Canton, Ohio, assignor to The Hoover Company, Canton, Ohio, a corporation of Delaware
Filed Nov. 15, 1966, Ser. No. 594,551
U.S. Cl. 15—353 **7 Claims**
Int. Cl. A47l *9/10, 9/20.*



A housing and air-water separator for floor treating machines having a main dished housing member divided by a bulkhead into a rear compartment receiving an air conduit extending from a nozzle to a separator positioned in the upper portion of the structure and a forward dished section. The rear wall of the separator is formed by the bulkhead. A projecting element on the bulkhead extends into the separator and cooperates with a transversely extending flange to provide an anti-flood block to block dirty water out of the separator as the handle is dropped or lowered to the floor.

3,426,382
HOUSING FOR DOOR CLOSING AND CHECKING MECHANISM

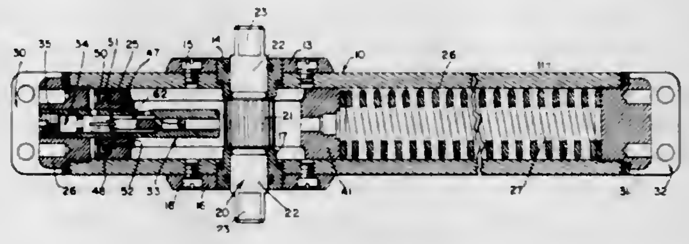
Thomas R. Lasier and Roy L. Pollack, Princeton, Ill., assignors to Schlage Lock Co., San Francisco, Calif., a corporation of California
Continuation-in-part of application Ser. No. 654,306, June 28, 1967. This application Sept. 27, 1967, Ser. No. 670,865
U.S. Cl. 16—49 **5 Claims**
Int. Cl. E05f *3/00, 3/04*



The invention provides housing structure for door checking mechanism wherein a piston reciprocates within the housing and one end of the piston carries improved valving means which has movement in telescoping relation on a fixed valve body as the piston reciprocates. The housing includes a metal tube to which journalling plates are secured exteriorly and which is closed at respective ends by closing plugs.

3,426,383
DOOR CLOSER MECHANISM

Thomas R. Lasier and Roy L. Pollack, Princeton, Ill., assignors to Schlage Lock Co., San Francisco, Calif., a corporation of California
Filed June 28, 1967, Ser. No. 654,306
U.S. Cl. 16—62 **7 Claims**
Int. Cl. E05f *3/04*

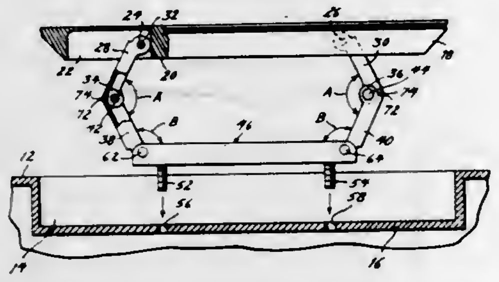


In the present door checking mechanism a piston reciprocates within a cylinder. A fixed valve stem is mounted internally at one end of the cylinder. The piston reciprocates in telescoping relationship to said fixed valve stem. Coacting parts between said piston and valve stem control the rate of flow of fluids during the checking operation.

3,426,384
SELF-CENTERING COLLAPSIBLE HANDLE

Marton Szabo, Broomall, Pa., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 630,389, Apr. 12, 1967. This application Oct. 24, 1967, Ser. No. 677,631
U.S. Cl. 16—115 **10 Claims**
Int. Cl. E05b *5/00;* **A45c** *13/10*

A handle for a carrying case, luggage and the like which is collapsible from a raised position above a well in the case to a non-carrying position into the well including a handgrip approximating the size of the well, pivotally interconnected pairs of upper and lower links, means pivoting the upper links to the handgrip, means pivotally securing the lower links in the well automatically in their proper position, and means so limiting the extended position of the links wherein the handgrip is in its raised carrying position so that when the handgrip is released it will return to its non-carrying position and center itself in the well.



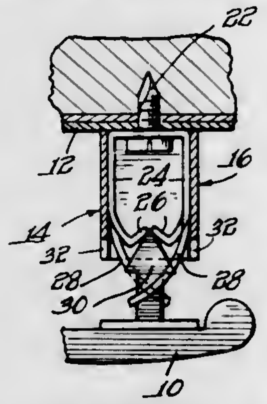
3,426,385
SOCKET-TYPE FASTENER

Charles E. Gutshall, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Apr. 10, 1967, Ser. No. 629,473

U.S. Cl. 16—125 **10 Claims**

Int. Cl. A47b *95/02;* **E05b** *1/00;* **A44b** *17/00*



This invention relates generally to socket-type fasteners adapted to telescopically accommodate headed shank or stud elements. More specifically, the present application discloses a socket member adapted to be secured to a panel surface by a screw element, said member having sets of resilient tongues or fingers, a first set for interlocking with a headed stud member to prevent unauthorized axial removal and a second set adapted to resiliently resist axial pressure resulting when a work surface is forced against the free extremities thereof. The aforesaid tongues are adapted to be urged laterally toward each other by and snugly housed within a shell extending between the panel surface and said work surface.

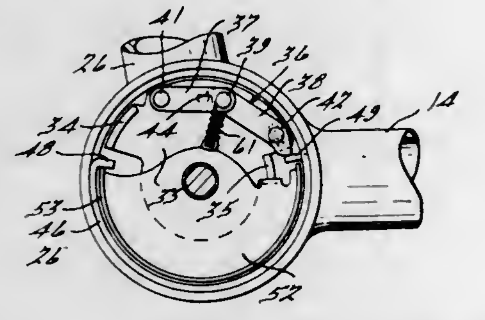
3,426,386
LOCKING DEVICE FOR PIVOTED MEMBERS

Ralph H. Wise, Dearborn, Mich., assignor of fifty percent to Vernon Duke, Columbus, Ind.

Filed Jan. 5, 1967, Ser. No. 607,513

U.S. Cl. 16—140 **3 Claims**

Int. Cl. E05b *11/08;* **A47c** *3/00*



1. In a locking device for pivoted members, a fixed cylindrical housing, a helical spring disposed within said housing and normally engaging the inner surface thereof, the ends of said spring having first and second inwardly extending tabs, an adjustable plate rotatably mounted within said housing, a locking tab on said adjustable plate facing the first tab on said spring, and engageable therewith upon rotation of said adjustable plate in one direction in such manner as to expand said spring against said housing, thereby locking the adjustable plate against further rotation, and a spring releasing plate rotatably mounted within said housing and having ends facing said spring tabs in such manner that a rotation of said spring releasing plate in either direction will withdraw said spring from frictional locking engagement with said housing, thereby permitting said adjustable plate to be rotated.

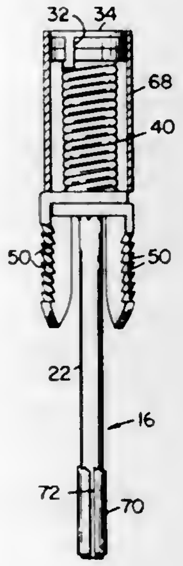
3,426,387
SPRING BIASED HINGE

Robert H. Bitney, 10649 Morengo Drive, Cupertino, Calif. 95014

Filed Apr. 24, 1967, Ser. No. 633,276

U.S. Cl. 16—189 **13 Claims**

Int. Cl. E05f *1/12*



A hinge of the type having a pair of hinge leaves pivotally interconnected by a hinge pin. A spring carried on one end of the hinge pin is coupled to the hinge leaves to bias the same in predetermined directions about the hinge pin. Means is provided to vary the tension of the spring of the biased structure.

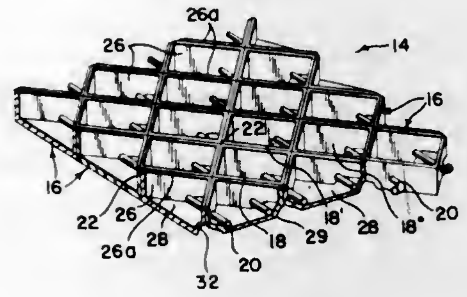
3,426,388
SPONGE RUBBER PADDING

John O. Prohaska, San Clemente, Calif., assignor to Orcco Industries, Inc., Los Angeles, Calif., a corporation of California

Filed Feb. 10, 1965, Ser. No. 431,516

U.S. Cl. 18—4 **8 Claims**

Int. Cl. B29c *1/16*



An endless conveyor belt consisting of individual mold cups having each a bottom and side walls, the cups being in close association with each other throughout the upper and lower parallel portions of the belt so as to form a substantially continuous and uninterrupted belt surface, the walls of the individual cups being hinged together by hinge pins so that they can pass over drums at opposite ends of the belt.

ERRATA

For Class 18—19 see:
Patent No. 3,427,638

For Class 18—30 see:
Patent No. 3,427,639

3,426,389
PROCESS AND APPARATUS FOR THE CONTINUOUS TREATMENT OF A STAPLE FIBER BAND OR THE LIKE WITH LIQUID

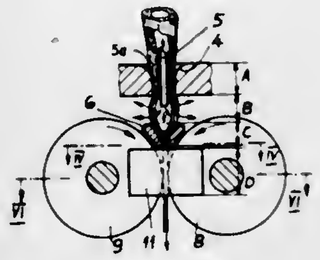
Werner Naegeli, Winterthur, Switzerland, assignor to Pavena A.G., Basel, Switzerland

Filed Aug. 9, 1965, Ser. No. 478,194

Claims priority, application Switzerland, Aug. 24, 1964, 11,050/64

U.S. Cl. 19—66 **15 Claims**

Int. Cl. D01b *3/04*



A process for the continuous treatment of a through-passing staple fiber band with liquid which comprises the steps of forming a tubular-shaped staple fiber layer from the through-passing staple fiber band. The latter is then intensively passed through a guide zone which internally and externally supports the tubular-shaped staple fiber layer. Liquid is introduced into the tubular-shaped staple fiber layer after it has left the guide zone, and the staple fiber layer is extensively freed externally and internally in a freeing zone along a predetermined length. The excess liquid is permitted to flow off by free radial discharge, and then the staple fiber layer is consolidated into a compact sliver by guiding at all sides, whereafter it is subjected to a high specific surface compression which acts at all sides of the sliver. The apparatus for carrying out the inventive method incorporates means which provide a guide zone for the staple fiber band and including a substantially coaxially extending liquid conduit. Means are disposed after the guide zone for providing an extensive liquid discharge zone which is completely free at all sides, and following the liquid discharge zone there is provided means which define a consolidating zone for the staple fiber layer to form such into a compact sliver. Further, means are disposed at a location following the consolidating zone for providing a hydrodynamic pressure zone.

3,426,390
APPARATUS FOR POSITIONING SLIVER CANS BENEATH A PLANETARY COILER HEAD

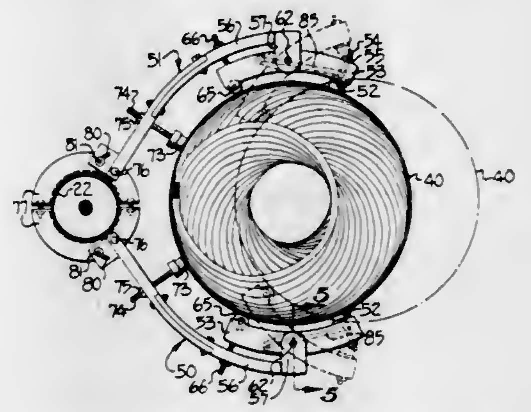
Joe R. Whitehurst, Kings Mountain, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina

Filed May 15, 1967, Ser. No. 638,261

U.S. Cl. 19—159 **14 Claims**

Int. Cl. D04h *11/00*

A releasable gripping means spaced between a planetary coiler head and a supporting surface therebelow for grippingly engaging peripheral portions of a sliver can to position and maintain the can in a stationary condition resting upon the supporting surface with the upper end of the can centered with respect to the coiler head.



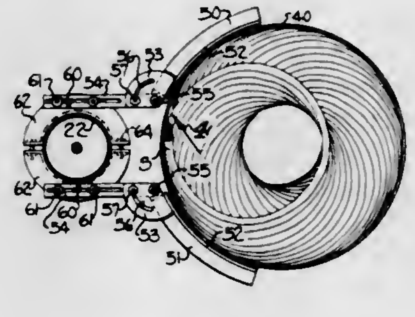
3,426,391
CAN-CENTERING MEANS FOR TEXTILE PLANETARY COILERS

Joe R. Whitehurst, Kings Mountain, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina

Filed May 15, 1967, Ser. No. 638,263

U.S. Cl. 19—159 **5 Claims**

Int. Cl. D04h *11/00*



A planetary coiler with guide arms engaging peripheral portions of a coiler can only adjacent the upper end of the can with the can being otherwise free of engagement so the bottom of the can may seek its own position on a supporting surface without significantly disturbing the centered relationship of the upper end of the can to the head of the coiler irrespective of whether or not the bottom of the can extends at a right angle to the axis of the can.

3,426,392
FASTENINGS FOR METAL STRAPS

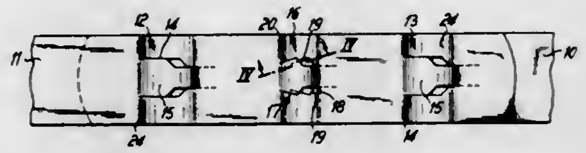
Harald Timmerbeil, Schwelm, Westphalia, Germany, assignor to Titan Eisenwarenfabrik G.m.b.H., Schwelm, Westphalia, Germany, a firm

Filed May 3, 1967, Ser. No. 635,858

Claims priority, application Germany, May 4, 1966, T 31,090

U.S. Cl. 24—20 **3 Claims**

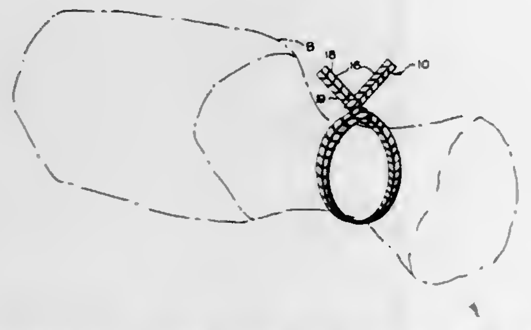
Int. Cl. B65d *63/02*



A strapping band for packages and the like is provided in the region of its opposite end portions with interengaging web portions provided by longitudinally slotting sections of the end portions. Overlapping of the end portions and movement of one thereof with reference to each other in a sense tending to separate them effects interengagement of the web portions after the movement has progressed by a predetermined distance. Interengaging locking portions are also provided on the end portions and are operative for preventing separation of the interengaging web portions as well as for interengaging themselves in a sense assisting the web portions in response to movement of the one end portion by the aforementioned predetermined distance.

3,426,393
WIRE-REINFORCED TYING TAPE

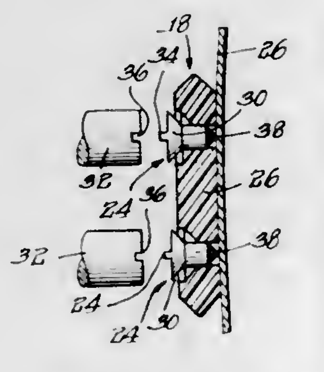
Stanley L. Mead, Portland, Oreg., assignor to Package Containers, Inc., Portland, Oreg., a corporation of Oregon
Filed Sept. 1, 1967, Ser. No. 664,973
U.S. Cl. 24—30.5 **1 Claim**
Int. Cl. B65d *77/18*



A wire-reinforced tying tape having a soft, readily bendable wire core and a strip of flexible material encasing the core, the strip having 45 degree feather cuts along the opposite edges thereof at spaced intervals therealong, said feather cuts forming points in the strip of material, so that the cuts can engage one another and the points bite in and provide a strong grip when a length of the tape is wrapped around an object and the ends of the tape are twisted together.

3,426,394
MOLDING CLIP AND RIVET

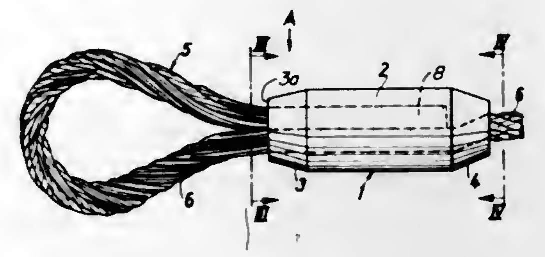
Ougljesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,761
U.S. Cl. 24—73 **3 Claims**
Int. Cl. A44b *21/00;* **F16b** *1/00;* **B23k** *11/04*



This application illustrates a new and improved molding accommodating fastener which, when applied to a metallic surface such as the surface of an automobile body, may be secured to said body by welding. The application illustrates a molding accommodating fastener of nonconductive material having a pair of rivet members which may be rotatably and axially pressed into intimate contact with the surface of a metallic workpiece and then welded in position; the workpiece forming a part of the electrical circuit. This molding accommodating fastener is applied by the practice of a new and novel method and apparatus for subjecting a plurality of spaced weldable rivets to rotation and axial pressures, followed by the instantaneous passage of a welding current through said spaced rivets and through the workpiece with which they are in contact.

3,426,395
ROPE CLAMP

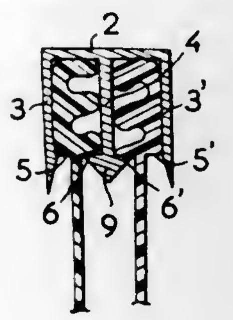
Otto Sahm, 8 Behringstrasse, Bremerhaven, Germany
Filed Dec. 7, 1966, Ser. No. 599,829
Claims priority, application Germany, July 9, 1966, S 104,721
U.S. Cl. 24—123 **2 Claims**
Int. Cl. F16b *7/04*



A rope clamp which secures two overlapping rope portions together and which comprises a sleeve having a cylindrical center portion and one end portion through which two overlapping rope portions extend, whereby this one end portion of the sleeve tapers conically outwardly and is oval in cross-section. The other end of the cylindrical center portion of the sleeve is pressed around a single rope portion and tapers conically outwardly but is circular in cross-section.

3,426,396
PROFILED STRIP SLIDE FASTENER

Leon Ker Laguerre, 10 Rue Lemoine, Boulogne-sur-Seine, France
Filed Feb. 26, 1968, Ser. No. 708,142
Claims priority, application France, Mar. 7, 1967, 97,720
U.S. Cl. 24—201 **8 Claims**
Int. Cl. A44b *19/24*

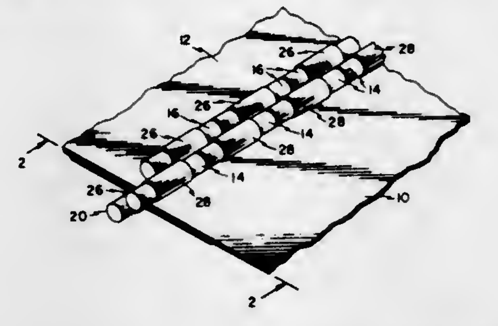


A slide for fasteners of satchels formed of complementary profiled fastener strips and comprising a small plate having two convergent lateral walls and a central partition therebetween; the said slide is made of a sufficiently flexible material so as to be engageable by resilient deformation by the upper edge of the strips, perpendicularly to their longitudinal direction, the lower faces of said flanges being inclined toward the opening provided between those walls, so as to facilitate this engagement.

3,426,397
FABRIC CONNECTOR

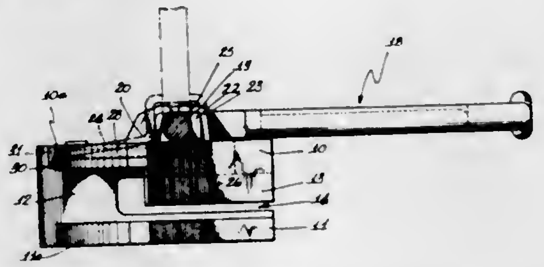
Robert J. Redden, Dover, Del., assignor to ILC Industries, Inc., Dover, Del., a corporation of Delaware
Filed May 19, 1967, Ser. No. 639,715
U.S. Cl. 24—203 **5 Claims**
Int. Cl. A44b *21/00;* **A43c** *9/00*

An improved connector for joining opposite edges of at least two sheets of flexible material, such as adjacent sections of an air-supported structure. Each of the flexible sheets to be joined has adjacent loop members formed on their edges with alternate loop members of one flexible sheet being interdigitated with alternate loop members of the other flexible sheet and positioned on one side of said flexible sheet, and the remaining loop members of the one flexible sheet being interdigitated with the remaining loop members of the other flexible sheet and positioned on the other side of the flexible sheet. Retaining members are respectively threaded through the two sets of interdigitated loop members so as to releasably join together the opposite edges of the flexible sheets.



3,426,398
SLIDER FOR SLIDE FASTENERS

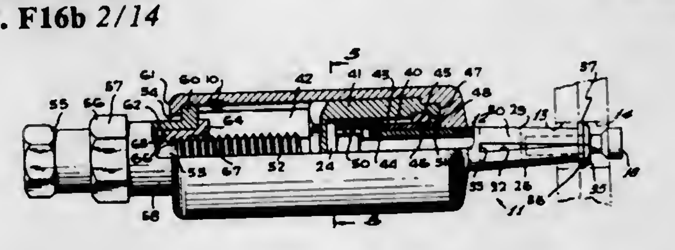
Arthur R. Morris, Camille L. Provencher, and Sydney Silverman, Montreal, Quebec, Canada, assignors to The Export Corporation of Canada Limited, Montreal, Quebec, Canada
Filed Jan. 4, 1967, Ser. No. 607,281
U.S. Cl. 24—205.14 **2 Claims**
Int. Cl. A44b *19/24*



A slider for slide fasteners of the type having a spring strip one end of which constitutes a locking prong engageable with the fastener elements to lock the slider thereto, wherein the spring strip comprises a length of uniform spring wire and the pull tab of the slider incorporates a cam for moving the strip and the locking prong out of locking position.

3,426,399
CLAMPING DEVICE

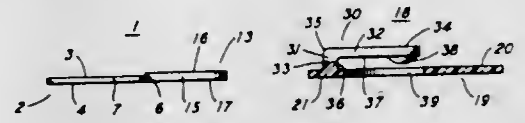
Sterling B. Jones, West Covina, Calif., assignor to Monogram Industries, Inc., Culver City, Calif., a corporation of California
Filed Oct. 12, 1966, Ser. No. 586,126
U.S. Cl. 24—211 **12 Claims**
Int. Cl. F16b *2/14*



A sheet metal clamp for temporarily holding a pair of workpieces together is disclosed herein providing a tubular body having an axial aperture formed in one end thereof and an opening coaxial with the aperture formed in its other end. Clamping means are slidably mounted in the body for reciprocal movement through the aperture between a clamping position and an unclamped position with respect to the workpieces. Actuating mechanism is slidably carried by the body and is operatively coupled to the clamping means to effect movement of the clamping means with respect to said body and means adapted for powered rotation are rotatably mounted in the body opening which operatively couple the actuating means to the body for forcibly protracting and retracting the clamping means between its alternate positions.

3,426,400
PLASTIC HOOK AND EYE FASTENER APPARATUS

Anthony Lauro, 60 Parkway Drive E., East Orange, N.J. 07017
Filed Dec. 29, 1966, Ser. No. 605,793
U.S. Cl. 24—225 **9 Claims**
Int. Cl. A44b *13/00*



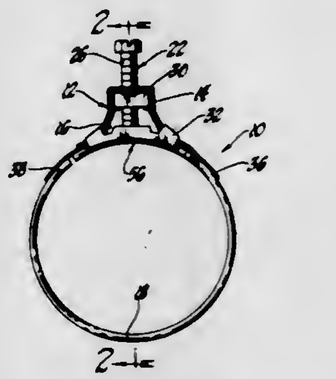
A plastic hook and eye fastener is disclosed having a wafer thin tab of sewing machine puncturable plastic material plastic molded to a plastic hook or eye catch member.

ERRATUM

For Class 24—243 see:
Patent No. 3,426,412

3,426,401
HOSE CLAMP

Richard T. Denyes, 1536 Dorchester, Birmingham, Mich. 48008
Filed Feb. 2, 1967, Ser. No. 613,558
U.S. Cl. 24—278 **15 Claims**
Int. Cl. F16l *33/081, 33/10*

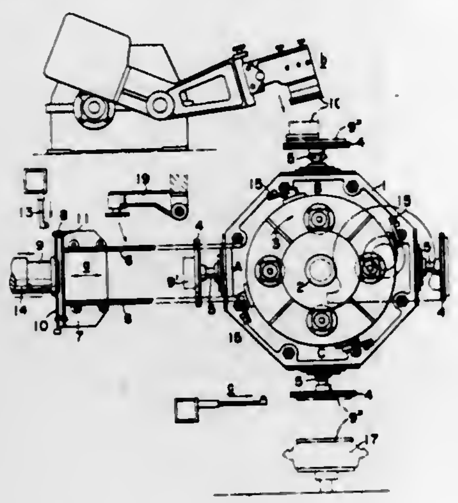


A hose clamp including a pair of wire-like members having a substantially circular cross section and extending about the major portion of the circumference of the clamp and attached to a pair of coacting band strips which provide the remaining portion of the circumference of the clamp and which coact with a fastener which changes the circumference of the clamp by moving the band strips circumferentially and relative to one another.

3,426,402
AUTOMATIC PREFORMING DEVICE FOR CONTINUOUS POTTERY FORMING MACHINE

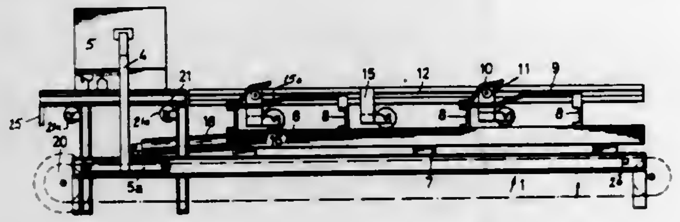
Isao Matsushima, Nagoya-shi, Japan, assignor to Nippon Toki Kabushiki Kaisha, Nagoya-shi, Aichi-ken, Japan, a corporation of Japan
Filed Dec. 28, 1966, Ser. No. 605,344
Claims priority, application Japan, May 19, 1966, 41/31,478
U.S. Cl. 25—22 **3 Claims**
Int. Cl. B28b *1/00;* **C11d** *13/16*

This disclosure relates to an automatic preforming device for continuous pottery forming machine. More specifically, the disclosure relates to a device for cutting the rolls of clay to slabs of clay each about equal in amount to the article to be shaped, preforming the bats, and then replacing the bats thus formed onto molds.



3,426,403
CONCRETE MOLDING APPARATUS

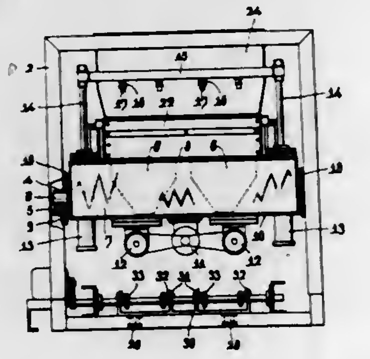
Kurt Wochner, Dotternhausen, Germany, assignor to Rheinbau G.m.b.H., Mainz, Germany
Filed Mar. 23, 1966, Ser. No. 536,792
U.S. Cl. 25—41 **6 Claims**
Int Cl. B20b *1/08*



A vibratory table mounted on a base and an elongated concrete form movable longitudinally and vertically above the table. The form includes side members and a bottom member, and means are provided for guiding the form in its movement so that initially the form rests on the vibratory table while concrete is poured therein, whereupon the form side members are raised from the bottom member and eventually the bottom member is raised off the table to be rolled out of the apparatus for discharge of the molded product.

3,426,404
BLOCK MAKING MACHINE

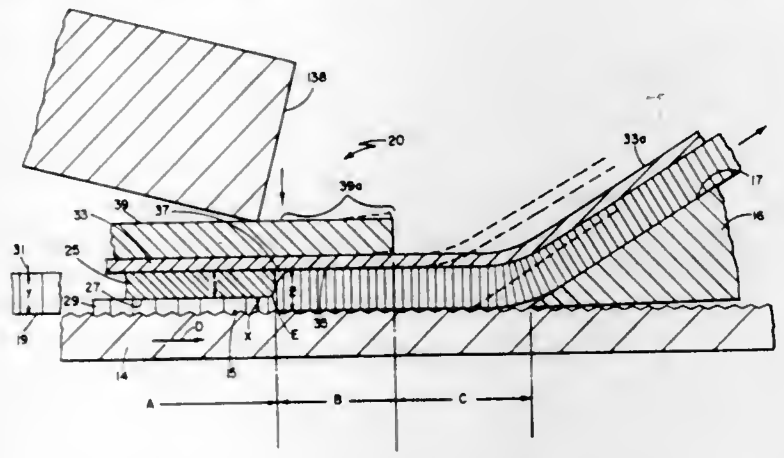
Keniti Yamasita, 2080, 2-chome, Suwada-cho, and Zyozi Yamasita, 2026, 6-chome, Sugano-cho, both of Ichikawa-shi, Japan
Filed Mar. 31, 1966, Ser. No. 539,015
Claims priority, application Japan, Mar. 31, 1965, 40/18,530, 40/18,531, 40/18,532
U.S. Cl. 25—41 **7 Claims**
Int. Cl. B28b *1/08*



A block making machine comprising a support frame, a mold frame, and vibration absorbing means disposed on the support frame and supporting thereon the mold frame. A mold box means is disposed on the mold frame for receiving concrete therein. Vibrator means exclusively mounted on the mold frame vibrates the mold box means. A press device means exclusively mounted on the mold frame presses the concrete in the mold box means while the latter is being vibrated, the vibrations thereby substantially not being transmitted to the support frame.

3,426,405
CONFINING DEVICE FOR COMPRESSIVE TREATMENT OF MATERIALS

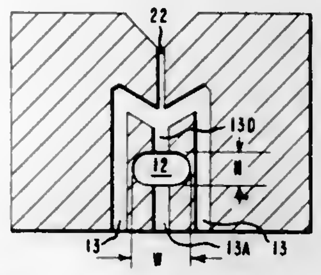
Richard Rhodes Walton, 10 West Hill Place, Boston, Mass. 02114
Continuation-in-part of application Ser. No. 342,589, Jan. 23, 1964. This application July 11, 1966, Ser. No. 564,130
U.S. Cl. 26—18.6 **7 Claims**
Int. Cl. D06c *21/00;* **B31f** *1/12*



In a machine for compressively treating materials, a device for confining the material against a drive surface in the form of a first surface and a second surface portion, both stationary, and generally parallel to the drive surface, the second surface extending beyond the first surface to define an enlargement cavity in which the material is treated due to the back-up action of a subsequent retarding passage.

3,426,406
APPARATUS FOR INTERLACING MULTIFILAMENT YARN

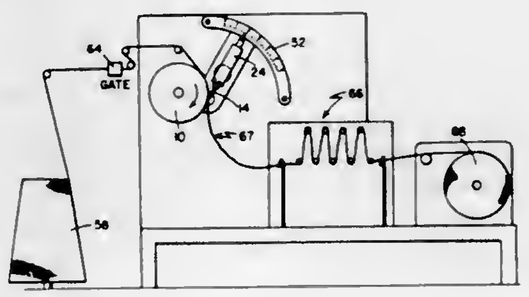
Frank McCutchan, Jr., Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 18, 1967, Ser. No. 639,362
U.S. Cl. 28—1 **5 Claims**
Int. Cl. D02g *1/16*



An improved jet for interlacing and plying multifilament yarn comprising a body member, a yarn passageway through the body along a straight axis, and at least one pair of opposed fluid conduits having a common longitudinal axis which intercepts and is perpendicular to the axis of the yarn passageway, the yarn passageway being further characterized by having a cross section in the vicinity of the fluid conduits corresponding to an ellipse or a rectangle having semicircular ends, the cross section having a width to height ratio within critical limits for improved interlace uniformity and greater fluid efficiency.

3,426,407
APPARATUS FOR PRODUCING TEXTURED YARNS

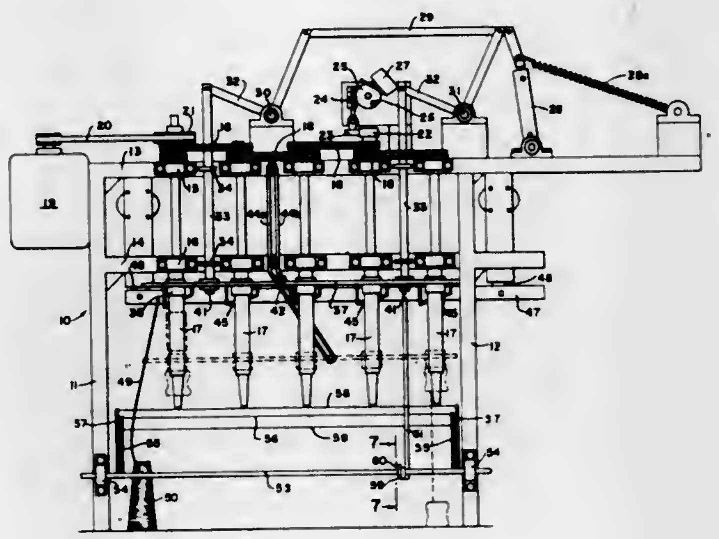
Thomas T. Constantine, South Easton, Mass., assignor to Fabric Research Laboratories, Inc., Dedham, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 554,085, May 31, 1966. This application May 6, 1968, Ser. No. 727,093
U.S. Cl. 28—1 **2 Claims**
Int. Cl. D02g *3/00*



Yarn texturing apparatus has a compressible surface roll and a blade terminating in an edge for making a transverse depression in the roll surface as the roll rotates. The blade edge has a double pivot mounting so that the blade may be selectively adjusted into different angular positions with respect to the periphery of the roll and then pivoted on a separate pivot to resiliently press it into the roll surface to make a depression through which a yarn is run and out of which the yarn is extruded in a tautless relaxed condition and then collected after it has run a predetermined distance in relaxed condition. The blade edge can also be mounted for adjustable longitudinal movement relative to its operating pivot.

3,426,408
METHOD AND APPARATUS FOR SKEIN WINDING OF YARNS

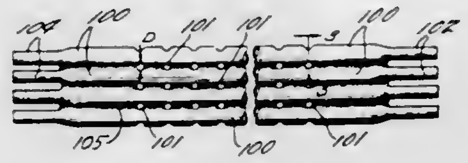
Silas M. Wheelock, Box 91, Kirk Road, Boothwyn, Pa. 19061
Filed May 8, 1967, Ser. No. 636,888
U.S. Cl. 28—21 **9 Claims**
Int. Cl. B65h *55/04, 54/56*



This invention is directed to the method and apparatus for successively winding skeins of yarn upon a substantially upright rotary spindle wherein the skeins as wound are doffed downwardly along the spindle for gravity discharge so that as a skein clears the spindle the connecting yarn between adjacent skeins are burned through to separate the skeins. Another aspect of the invention is the metering of the exact amount of yarn in each skein.

3,426,409
METHOD OF MAKING A TUBULAR WALLED CHAMBER

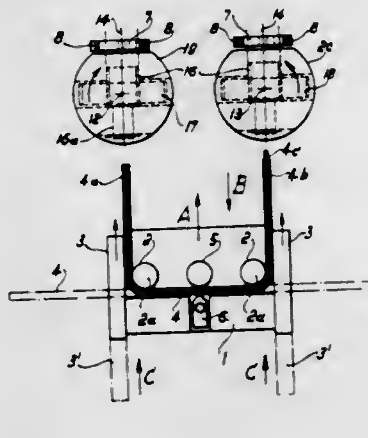
George D. Lewis, North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Original application Jan. 26, 1965, Ser. No. 428,110, now Patent No. 3,359,737, dated Dec. 26, 1967. Divided and this application Apr. 13, 1966, Ser. No. 542,421
U.S. Cl. 29—157.4 **10 Claims**
Int. Cl. B21d *53/00;* **B23k** *31/02, 1/04*



A method of making a perforated wall with a plurality of tubes having approximately circular cross section and being all approximately the same length. The method involves placing a crimp or groove along two substantially diametrically opposed sides with the crimps or grooves of adjacent tubes having the same spaced relationship. Said tubes being supported in contacting relation with the tubes being bonded together along their areas of contact, which is between the crimps or grooves. While the area between adjacent tubes is bonded, care is taken to see that each perforation, formed by mating grooves of adjacent tubes, is maintained at its proper size.

3,426,410
METHOD AND APPARATUS FOR THE MANUFACTURE OF A CIRCULAR SPRING FROM A STRAIGHT HELICAL TENSION SPRING

Jakob Kirchgasser, Gustav Kirchhoffstr 18, Heidelberg, Germany
Filed Aug. 29, 1966, Ser. No. 575,814
Claims priority, application Germany, Sept. 1, 1965, K 57,022
U.S. Cl. 29—173 **16 Claims**
Int. Cl. B21f *35/02;* **B23p** *15/00, 19/00*



A process and apparatus for the manufacture of a circular spring from a straight helical tension spring having a cut-back slightly conical end. The straight tension spring is initially bent into a U-shape, whereupon the ends of the spring are inserted into clamping devices and firmly clamped therein. The clamping devices are then swung through 180° relative to one another to locate the spring ends opposite one another. The spring ends are then rotated relative to one another and are pushed one into the other and screwed together by relative rotation therebetween in the opposite direction.

3,426,411

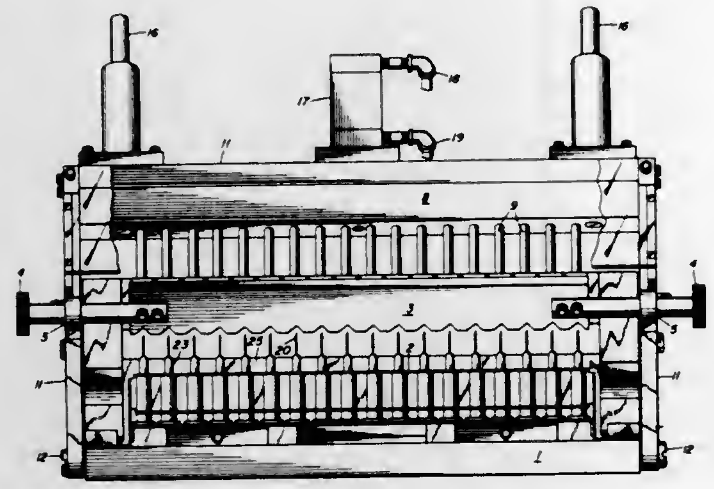
APPARATUS FOR CAPPING A PLURALITY OF NEEDLES ATTACHED TO SYRINGES

Julius Bernard Lagsdin, Pearl River, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 10, 1967, Ser. No. 615,194

U.S. Cl. 29—235 **6 Claims**

Int. Cl. B23p *19/02, 19/04;* **B65b** *7/28*



A machine is described in which a tray of syringes with the needle ends up are capped. A grooved aligning bar is pivoted so that it can be swung down and notches in the bar fit over the syringe barrels and hold them in alignment by spring pressure. The machine is provided with a second bar, which is stationary and in which are mounted a series of small funnels, their ends being aligned with, and just above, the needles on the syringes. Above the bar carrying the funnels is a second bar which can be swung back or forward and which is provided with a series of rods aligned with the mouths of the funnels. Means are also provided, preferably pneumatic, for raising and lowering this bar in its forward position.

3,426,412

FASTENING FLEXIBLE SHEET MATERIAL

Alfred Josef Streng, Zurich, and Kurt Zurcher, Mannedorf, Switzerland, assignors to Hilti Aktiengesellschaft, Schaan, Liechtenstein, a corporation of Liechtenstein

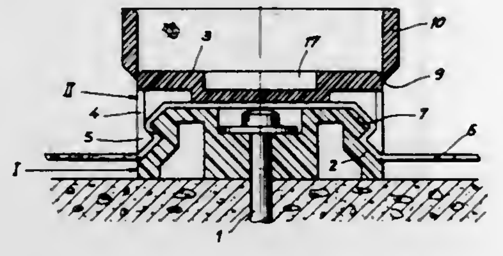
Filed Sept. 20, 1966, Ser. No. 580,783

Claims priority, application Switzerland, Sept. 27, 1965, 13,319/65; Jan. 27, 1966, 1,104/66

Claims priority, application Germany, Mar. 9, 1966, H 58,755

U.S. Cl. 24—243 **6 Claims**

Int. Cl. B23p *11/00;* **E21d** *11/14, 21/00*



A fastener for securing sheet material to a foundation or backing wall includes a first part which may be made substantially cylindrical or rectangular box-shaped and a second part complementary to the first part which is adapted to be engaged over the first part. The sheet material is secured in position by first securing the first part to the foundation such as by driving a stud or securing nail through this part and into the foundation. Thereafter, the sheet is positioned over and around the first part and the second part is engaged over the sheet and over the first part and locked with the first part by means of interlocking resilient elements which in one embodiment comprise a plurality of spaced tines having protuberances which engage in recesses defined around the periphery of the first part. The tines are locked in position by an interlocking element which resiliently holds and deforms the tines into engagement in the recess of the first part. In another embodiment, the second part is interlocked with the first part by sliding it over projecting flanges of the first part after the first part has been covered with the sheet material and to cause locking engagement of inwardly directed flanges of the second part over the sheet material and the flanges of the first part. The second part is made resilient and it is locked in a holding engagement with the first part by means of a locking plate which is inserted between upstanding extensions of the side edges of the second part.

3,426,413

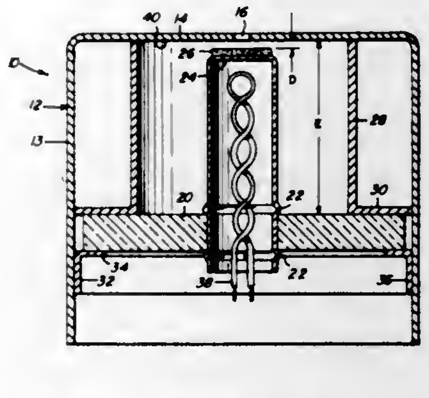
METHOD OF MAKING A CATHODE-GRID ASSEMBLY

Leighton E. Griffiths, Pompton Lakes, N.J., assignor to Griffiths Electronics, Inc., Newark, N.J., a corporation of New Jersey

Filed Oct. 4, 1965, Ser. No. 492,565

U.S. Cl. 29—25.14 **1 Claim**

Int. Cl. H01j *9/00, 9/18*



A cathode grid assembly is made by mounting a cathode sleeve with a closed end in an insulating supporting member, thereby forming a cathode-supporting member assembly, applying an emissive coating to the upper face of the closed end of the cathode sleeve, facing off the upper face of the emissive coating, thereby establishing a predetermined distance between the upper face of the emissive coating and the upper surface of the insulating supporting member, providing a spacer having a length equal to said predetermined distance plus a prescribed distance, inserting the spacer into a grid cup so that it engages the closed end thereof, introducing the cathode sleeve insulating supporting member assembly into the grid cup so that the upper surface of the insulating supporting member will engage the spacer and thus provide the requisite clearance between the upper face of the emissive coating and the closed end of the grid cup.

3,426,414

SLEEVE ROLL

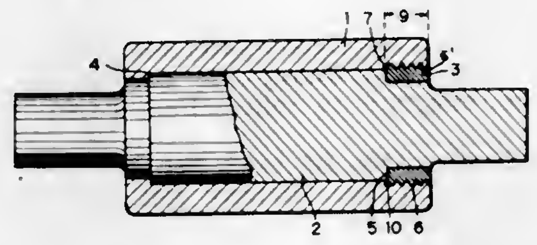
Takeshi Iseki, Fujisawa, and Kosho Koga and Seiji Ito, Chigasaki, Japan, assignors to Kanto Special Steel Works, Ltd., Fujisawa, Kanagawa Prefecture, Japan

Filed June 7, 1966, Ser. No. 555,883

U.S. Cl. 29—129 **11 Claims**

Int. Cl. B21b *31/08;* **B21h** *1/14;* **B21d** *55/10;* **B21k** *1/04*

A sleeve roll, comprising a rigid arbor having a barrel portion inwardly stepped so as to have step sides near both ends; a sleeve stepped inwardly so as to have a step side engaged with one step side of said arbor, having the other end portion internally threaded, said sleeve being shrink-fitted on said arbor; and an externally threaded metal ring screwed in the threaded portion of said sleeve tightly enough to be in contact with the other step side of said arbor and engaged with the arbor, the sleeve being under axial tension.



3,426,415

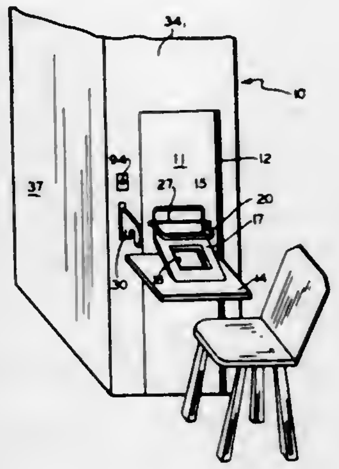
PRINTED CIRCUIT ASSEMBLY APPARATUS

Albert J. Countryman, Mohawk, and George R. Cogar, Frankfort, N.Y., assignors to Mohawk Data Sciences Corporation, Herkimer, N.Y., a corporation of New York

Filed Sept. 26, 1966, Ser. No. 581,898

U.S. Cl. 29—203 **11 Claims**

Int. Cl. H01r *43/00;* **B23q** *7/10*



1. In an apparatus having a work station, means for bringing work pieces to a position in close proximity with the work station comprising a magazine having a plurality of work piece support positions, means to effect linear movement of said magazine relative to said work station, and control means coactable with said movement effecting means for positioning said magazine so that a selected work piece support position is moved into a predetermined location adjacent said work station, said control means including additional means for moving the work pieces at said selected support position into close proximity with said work station.

3,426,416

PROCESS AND APPARATUS FOR MAKING ARTIFICIAL TEETH

Giuseppe Bianchini, Vicolo Pomodoro No. 13, Verona, Italy

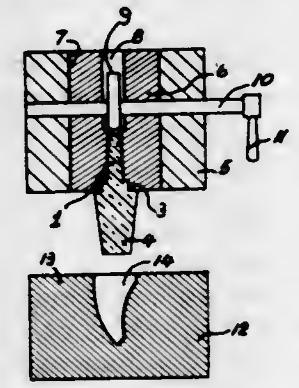
Filed Nov. 1, 1963, Ser. No. 320,671

Claims priority, application Italy, Nov. 3, 1962, 21,981/62

U.S. Cl. 29—160.6 **8 Claims**

Int. Cl. H05b *3/00;* **H01c** *1/02*

1. In a process of making artificial teeth, the steps of forming a moldable projecting member having a pin portion, forming a cavity having the shape of an artificial tooth in a punch, attaching said pin portion to a counter punch, inserting said projecting member into said cavity, pressing said counter punch against said punch until said projecting member fills said cavity and assumes the shape of said artificial tooth, and then withdrawing the artificial tooth thus produced from said cavity.



3,426,417

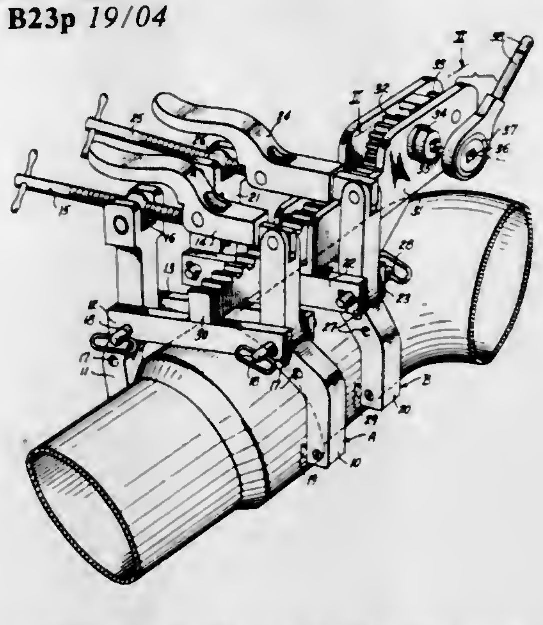
TOOL FOR JOINING AND SEPARATING PIPE JOINTS

Joe H. Austin, Box 4237, Tyler, Tex. 75701

Filed Feb. 13, 1967, Ser. No. 615,521

U.S. Cl. 29—237 **6 Claims**

Int. Cl. B23p *19/04*



This invention relates to a compact tool which may be clamped on to two mating pipe ends to force them together to form a joint, or separate them if they have already been made up into a joint. The clamping mechanism has a toggle action.

3,426,418

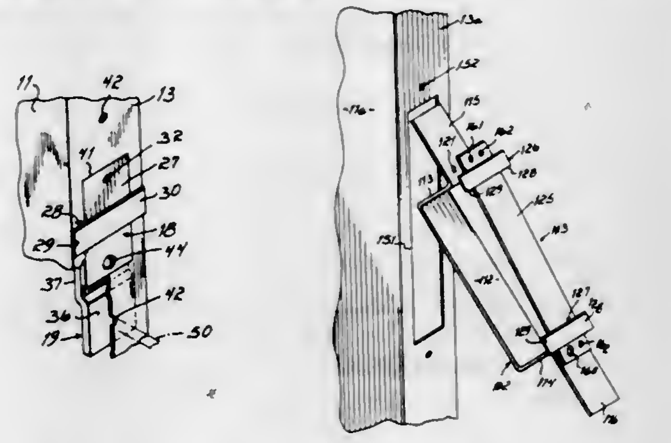
METHOD OF ASSEMBLING DOOR MEMBERS

Joseph Maloney, Cincinnati, Ohio, assignor to The Steelcraft Manufacturing Company, Rossmoyne, Ohio, a corporation of Ohio

Filed Oct. 12, 1966, Ser. No. 586,062

U.S. Cl. 29—407 **8 Claims**

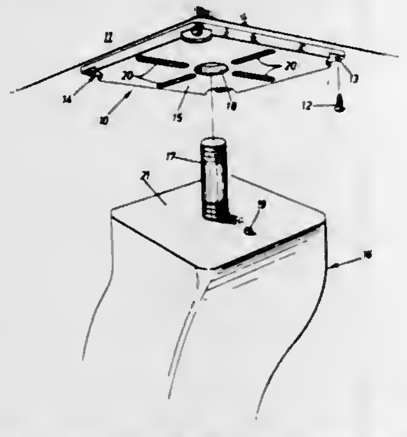
Int. Cl. B23q *3/00, 17/00;* **E05b** *17/06*



1. A method of assembling a hollow sheet metal door which comprises the steps of:

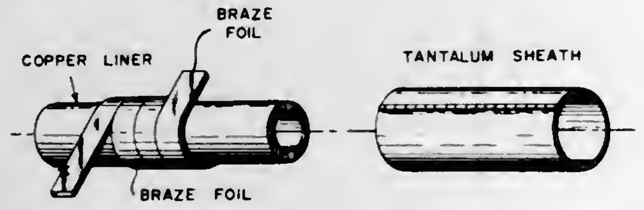
- positioning a template over a side of the door to locate a lock aperture,
- cutting an aperture in the door in the position demarked by the template,
- attaching a mounting element to a locating fixture,
- locating said fixture in said aperture so as to position the attached mounting element within the hollow interior of said door,
- securing said mounting element to said door on the interior thereof while said mounting element is held in place by said fixture,
- removing said fixture from said mounting element after it has been secured to said door, and
- attaching an element of a door lock to said mounting element.

3,426,419
LOCATOR PLATE
Charles B. Banks, Hannover, Ontario, Canada, assignor to Plastiglide Limited, Downsview, Ontario, Canada
Filed Oct. 21, 1966, Ser. No. 588,500
U.S. Cl. 29—407 **9 Claims**
Int. Cl. B23q *3/00, 17/00;* **B23p** *19/04*



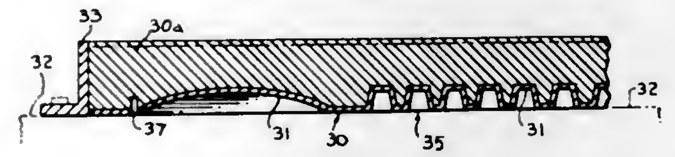
9. A method of attaching a part to an article of manufacture whereby said part is attached by means of a screw-threaded mounting post, and when fully attached to said article is in a desired orientation, comprising: attaching a substantially flat locator plate having therein a central hole and a plurality of recesses extending radially outwardly from said central hole to said article; attaching a stud to said part whereby when said part is screwed into said article, a relative helical traverse is described between said stud and said recesses; and screwing said part into said article by applying to said part sufficient torque to achieve said relative helical traverse, and ceasing said screwing of said part into said article when a predetermined torque applied to said part has been reached.

3,426,420
METHOD OF MAKING BRAZED COMPOSITE TUBING FOR HEAT EXCHANGERS USED IN CORROSIVE FLUIDS
Foster R. Grant, Millis, and Maurice L. Torti, Jr., Boston, Mass., assignors to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts
Filed Apr. 8, 1966, Ser. No. 541,222
U.S. Cl. 29—474.5 **1 Claim**
Int. Cl. B23k *31/06, 35/38, 35/28*



Bayonet heater tubing is made by enclosing a braze-covered liner of inexpensive high conductivity, high thermal expansion metal with a sheath of refractory metal which has a lower coefficient of expansion and heating the assembly to produce a well bonded laminate tubing.

3,426,421
METHOD FOR MAKING ROLL-TYPE DIES FOR CONTINUOUSLY PRODUCING FLAT MATS
Arthur A. Leedy, Fort Lauderdale, Fla., John T. Pope, Rittman, Ohio, and Harry M. Zimmerman, Baton Rouge, La., assignors to Seilon, Inc., a corporation of Delaware
Original application Oct. 10, 1962, Ser. No. 229,543, now Patent No. 3,256,376. Divided and this application Jan. 25, 1966, Ser. No. 522,878
U.S. Cl. 29—529 **4 Claims**
Int. Cl. B23p *17/00;* **B29c** *1/02;* **B22d** *19/00*



Method of making drum-type mold for forming plastic floor mats includes machining into planar side of rigid metal plate to form negative of flat mat design, including elongated ribs defined by grooving, the rib surfaces constituting major proportion of the total area of negative design configurations. In subsequent step of rolling plate to circular shape between bending rollers there is always substantially continuous smooth rolling engagement of rollers with coplanar design surfaces, along progressively moving lines of contact of the rollers with the plate. Where mat mold design requires relatively wide recessed portions, continuous rolling engagement is maintained by temporary or permanent roller-engaging portions of plate. Bending failures are thereby obviated by preventing rollers from engaging within recessed portions of negative design. Modified method utilizes mat die formed of different formable materials rolled to circular shape.

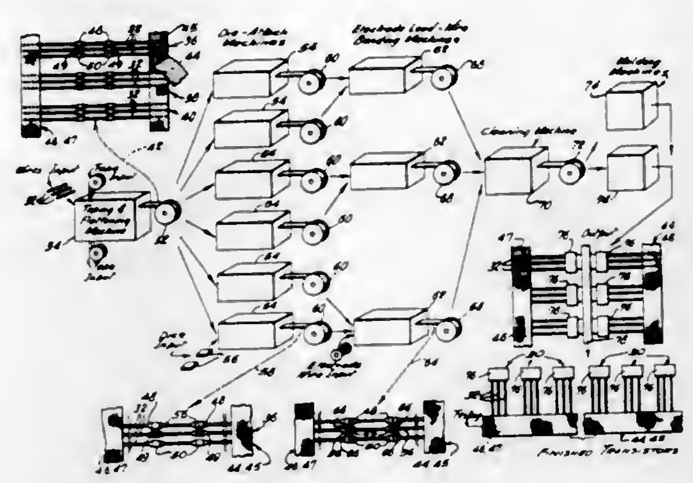
3,426,422
METHOD OF MAKING STABLE SEMICONDUCTOR DEVICES
Bruce E. Deal, Palo Alto, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,179
U.S. Cl. 29—571 **6 Claims**
Int. Cl. B01j *17/40;* **H01l** *7/00*

1. In an improved method for preparing semiconductor devices having a silicon dioxide layer between an aluminum layer and a doped silicon substrate, the steps of which minimize the introduction of alkali metal ions into the silicon dioxide layer, which comprises:

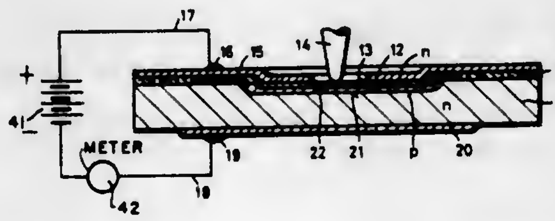
- prior to the deposition of the aluminum, removing at least 10 angstroms of the layer of silicon dioxide using an alkali metal ion-free acid fluoride etchant,
- vacuum depositing pure aluminum into the silicon dioxide layer, in the essential absence of alkali metal ion sources, wherein said aluminum is heated using an electron beam, and
- forming the aluminum layer into the desired dimensions using photoresist masking techniques and an alkali metal ion-free etchant.

3,426,423
METHOD OF MANUFACTURING SEMICONDUCTORS
Robert L. Koch, Easton, Earl F. Thomas, Shelton, Joseph A. Miklos, Danbury, and William H. Curry, Bethel, Conn., assignors to Molectro Corporation, a corporation of Delaware
Filed July 8, 1965, Ser. No. 470,410
U.S. Cl. 29—574 **4 Claims**
Int. Cl. H01l *7/68, 1/10;* **H05k** *13/06*

A method of manufacturing plastic encapsulated transistors wherein the lead wires for a plurality of transistors are mounted in spaced relationship on strips of flexible carrier tape for transport to processing stations which may include those provided to flatten portions of the leads, mount a semiconductor body on one of the leads, interconnect electrodes of the semiconductor body to other leads and mold an encapsulating plastic body onto each transistor device.



3,426,424
PRESSURE-RESPONSIVE SEMICONDUCTOR DEVICE
Wolfgang Touchy, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Original application Sept. 11, 1964, Ser. No. 395,792, now Patent No. 3,292,057, dated Dec. 13, 1966. Divided and this application Aug. 2, 1966, Ser. No. 586,342
Claims priority, application Germany, Sept. 13, 1963, S 87,344
U.S. Cl. 29—578 **2 Claims**
Int. Cl. B01j *17/34;* **H01l** *7/32, 7/02*

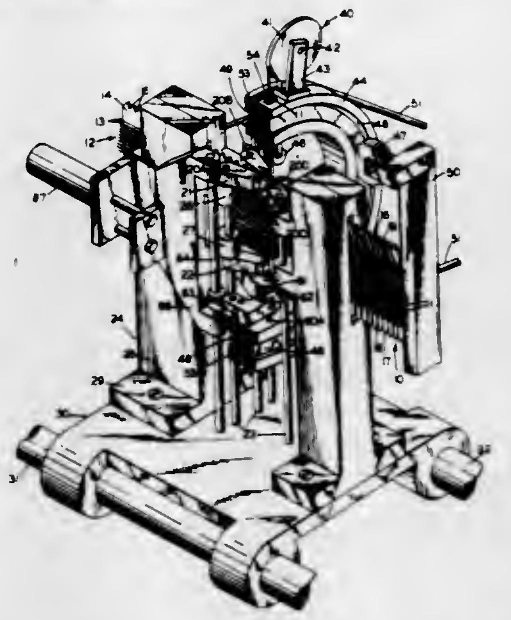


A method of producing a pressure sensitive semiconductor device having three regions with two P–N junctions between them, one of the regions being engaged by a pressure member under variable contact pressure, in which a junction between two regions is shifted by heat before the third region, to which the pressure is applied, is formed in one of the two regions by a diffusion operation.

3,426,425
WINDING METHODS
Ford J. Brown, Kutztown, and Joseph C. McAlexander, Jr., Center Valley, Pa., said Brown assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York, and said McAlexander assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,246
U.S. Cl. 29—605 **3 Claims**
Int. Cl. H01f *7/06;* **B65h** *81/06*

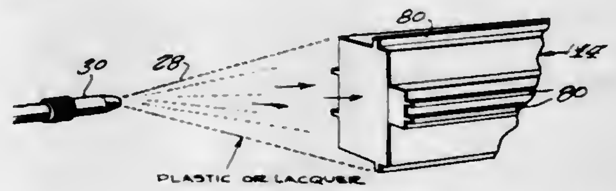
1. The method of winding a strand in a modified helical pattern about an article having a longitudinal axis about which such winding can take place, which comprises, in the order named:

- (a) positioning the article with respect to a winding plane such that the longitudinal axis is perpendicular to the winding plane and a first circumferential region along the article lies in the winding plane;
- (b) winding the strand about the article through an arc less than one full revolution to form a partial convolution of the strand in the winding plane;
- (c) partially moving a pair of pressing rollers across the article in timed relationship to the winding step to bond the partial convolution in place against the article;
- (d) causing relative movement between the article and the winding plane to displace the partial convolution from the winding plane;



- (e) winding the strand further about the article to complete a full revolution, thus forming an angled section of the strand defining the end of one convolution due to the displacement provided in step (d);
- (f) completing the movement of the pair of pressing rollers to bond the angled section of the convolution to the article to hold that convolution in place; and then
- (g) repeating steps (a) to (f) to wind the strand about successive regions of the article in a modified helix in which a portion of each convolution lies in a plane parallel to the winding axis and an end section of each convolution is wound at an angle.

3,426,426
SLICED CIRCUITRY
David F. Born, Youngstown, Ohio
(807 Longview, Akron, Ohio 44307)
Filed Feb. 27, 1967, Ser. No. 618,820
U.S. Cl. 29—624 **1 Claim**
Int. Cl. H01b *13/00;* **H05k** *13/00*

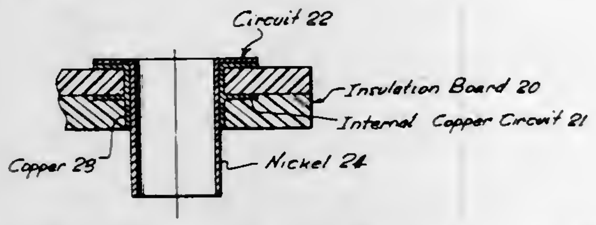


Identical electrical, electronic or other complex configurations and a method for producing these by forming bars have a cross-sectional configuration of a portion of a circuit. The bars are arranged adjacent each other to form a cross-sectional configuration of a component of a circuit or a whole circuit. The spaces between the bars are filled with an electrically non-conductive liquid material which is subsequently hardened into a solid bar assembly. The bar is then sliced like bologna into sheets which constitute a complete component of a circuit or a whole circuit. The bars are provided with mating protruding electrical conductors and mating slots along their lengths, thus making it possible to join two or more bars and thus form multiples of circuits.

3,426,427

INTERNAL CONNECTION METHOD FOR CIRCUIT BOARDS

William P. Dugan, Ontario, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,258
U.S. Cl. 29—625 **7 Claims**
Int. Cl. B41m *3/08;* **H05k** *3/10;* **C23b** *5/02*

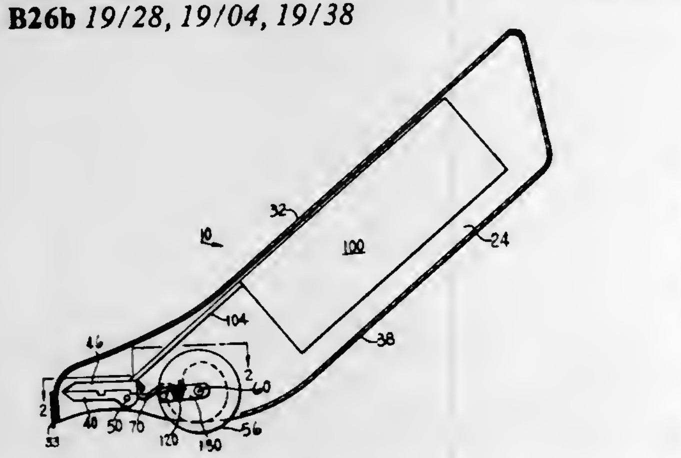


In a single or multi-layer circuit board, a process for the electrical connection from the layer of copper plating to the copper circuits is set forth in which the copper is activated after the plastic insulation board has been sensitized.

3,426,428

HAIR CLIPPERS

Joseph A. Acciani, 353 High St., Perth Amboy, N.J. 08861
Filed Sept. 13, 1966, Ser. No. 579,070
U.S. Cl. 30—202 **6 Claims**
Int. Cl. B26b *19/28, 19/04, 19/38*

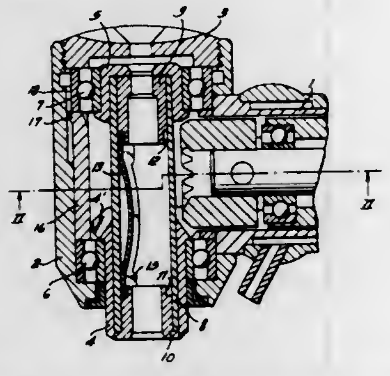


The disclosure is of a hair clipper which includes a housing, within which cutting blades are mounted and are adapted to be operated mechanically or electrically. A cam is rotatably mounted in the housing and is coupled to the cutting blades to raise them from a starting cutting plane as the clipper moves over the body to provide a gradation in the length of hair cut.

3,426,429

CHUCK MEANS FOR DENTAL HAND PIECE

Erich Hoffmeister, Alpenstrasse 30, and Hans Loge, Ranzweg 23, both of Biberach (Riss), Germany
Filed Mar. 10, 1966, Ser. No. 533,285
Claims priority, application Germany, Mar. 23, 1965, K 55,621
U.S. Cl. 32—27 **4 Claims**
Int. Cl. A61c *1/05;* **B23b** *31/08*

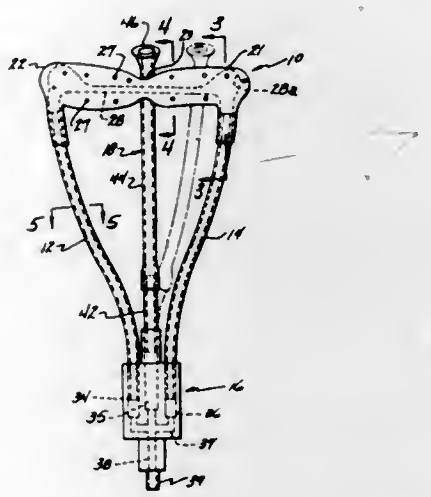


A dental hand piece including an elongated spindle formed by a sleeve rotatable about its axis and a pair of tool guide bushings on opposite ends of the sleeve in which a dental tool guided by the guide bushings of the spindle may be releasably clamped by at least a pair of elongated leaf springs having each end portion held in annular cutouts of the guide bushings and an inwardly curved middle portion adapted to engage the shank of a dental tool for clamping the same.

3,426,430

SALIVA EJECTOR

Roy L. Newman, 1023 Lundvall, Rockford, Ill. 61107
Filed Aug. 1, 1966, Ser. No. 569,471
U.S. Cl. 32—33 **10 Claims**
Int. Cl. A61c *17/04*

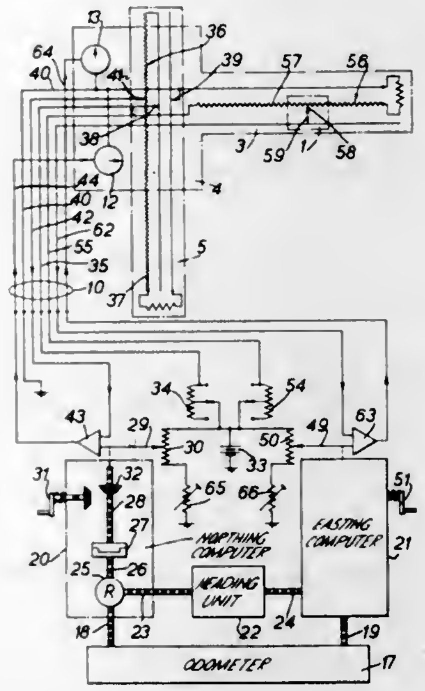


A resilient member is shaped to lie in and collect saliva from the upper labial area of a patient's mouth. First and second suction tubes lead from the member to a manifold. A third suction tube extends from the manifold to a bell-shaped member which collects saliva from the roof of the mouth.

3,426,431

NAVIGATION APPARATUS FOR VEHICLES

Edward William Anderson, Charlton Kings, Cheltenham, England, assignor to Smiths Industries Limited, London, England, a British company
Filed Oct. 27, 1966, Ser. No. 590,014
Claims priority, application Great Britain, Nov. 2, 1965, 46,475/65
U.S. Cl. 33—1 **9 Claims**
Int. Cl. G01e *21/20*

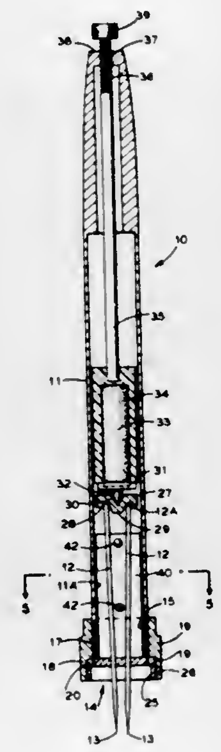


Vehicle-navigation apparatus includes a map-board providing signals representing map-coordinates of a cursor moveable across the board, and dead-reckoning equipment providing signals representing the corresponding coordinates of vehicle-position. Center-zero indicators mounted on the cursor slide-bar of the map-board display coordinate-differences obtained from comparison of the two sets of signals. Display of required change in vehicle-heading is computed from the coordinate differences and actual heading angle.

3,426,432

SCRIBING DEVICE

Benjamin Sheer, 61 Horatio St., New York, N.Y. 10014
Filed Dec. 5, 1967, Ser. No. 688,040
U.S. Cl. 33—41 **11 Claims**
Int Cl. B43l *13/02*

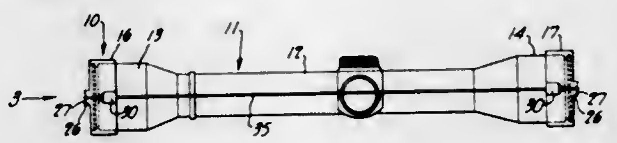


A scribing device having a pair of scribing elements mounted in floating relation to each other to facilitate marking or cutting a pair of parallel lines during the normal use of the device.

3,426,433

LENS COVER FOR TELESCOPIC SIGHT

Harvey B. Anderson, 1203 Broadway, Yakima, Wash. 98902
Filed Mar. 30, 1966, Ser. No. 538,722
U.S. Cl. 33—50 **5 Claims**
Int. Cl. F41g *1/38, 1/42;* **G03b** *11/04*



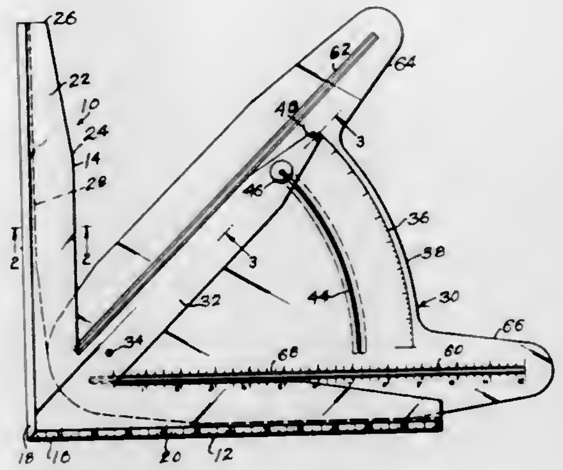
A pair of plastic caps are manually wedged within sleeves frictionally fitting over the front and rear ends of a telescopic gun sight. The caps are connected by a string in such a manner that they may be readily dislodged by merely tensioning the string with a finger, thereby opening opposite ends of the telescopic sight for use.

3,426,434

DRAFTING PROTRACTOR

Harvey R. Zarling, 417 9th St. N., Breckenridge, Minn. 56520
Filed Nov. 3, 1967, Ser. No. 680,411
U.S. Cl. 33—93 **10 Claims**
Int. Cl. B43l *13/00*

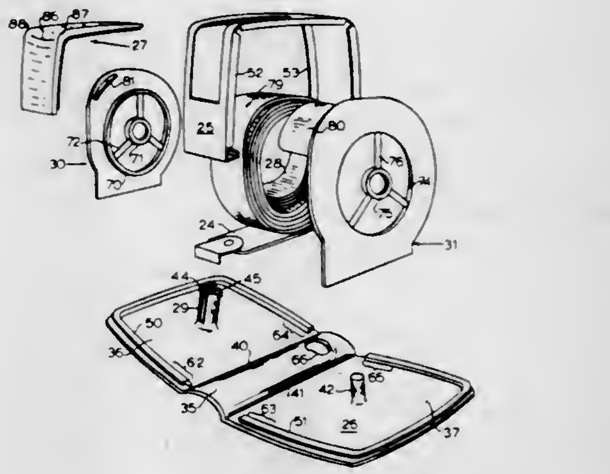
A drafting protractor for use by draftsmen, architects, carpenters, engineers and others, formed of two main parts, a fixed main frame and a movable frame pivoted on the fixed main frame. The fixed main frame has two main arms at right angles to each other and a pointer arm extending outwardly between the two main arms. The movable frame has a graduate arcuate scale imprinted near its outer edge to which the end of the pointer arm points, so that any angle may be set or measured by merely turning the movable member on its pivot until the pointer arm points to the desired angle on the scale. A locking member is provided for locking the parts in any angular position, and the movable member has two guide slots at forty-five degree angle separation into which a pencil may be inserted to draw a line at any set angle.



3,426,435

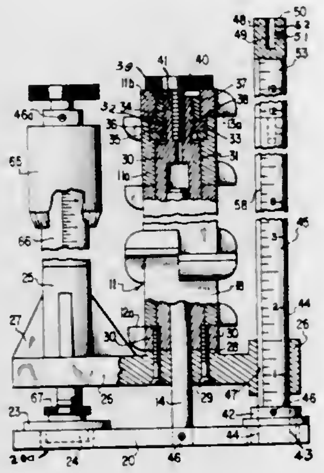
DIRECT READING TAPE RULE

Robert L. Ballard, Pittsburgh, and James E. Edgell, Wexford, Pa., assignors to H. K. Porter Company, Inc., (Delaware), Pittsburgh, Pa., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,411
U.S. Cl. 33—138 **9 Claims**
Int. Cl. G01b *3/00, 3/10*



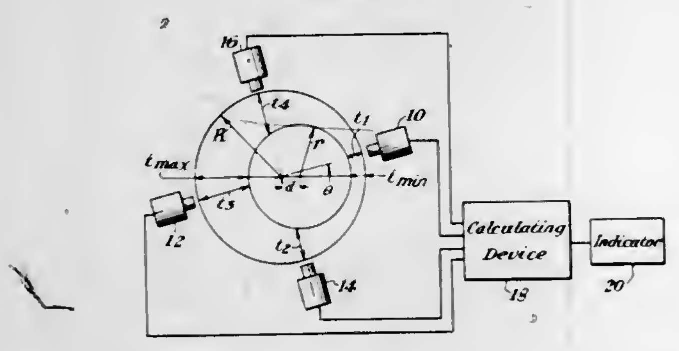
A tape rule incorporates suitable indicia on the back of the tape, a tapered magnifying indexed window in the top front corner of the rule housing, internal tracks and guides which the tape follows and which keeps a portion of the tape pressed against the window and along a path of constant length, flexible side walls and internal tape braking mechanism dependent on flexing of the side walls and arranged such that inside dimensions may be read through the window directly, the tape may be locked against the usual spring tension by allowing the side walls to flex outwardly and released for movement under spring tension by pressing the walls inwardly.

3,426,436
PROJECTED MEASURING SURFACE GAGE BLOCKS
Ludwig F. Perwas, Mountainview Ave., Orangeburg, N.Y. 10962
Continuation-in-part of application Ser. No. 70,213, Nov. 18, 1960. This application Apr. 23, 1965, Ser. No. 450,452
U.S. Cl. 33—168 **4 Claims**
Int. Cl. G01b *5/00, 5/20, 5/28*



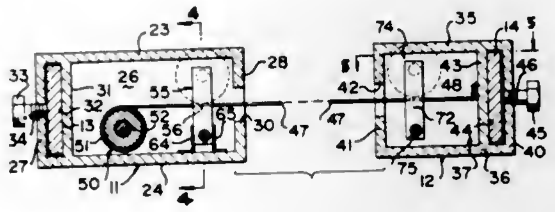
A gage block for planar height gages for taking height or distances of various specific positions on a workpiece above the working surface upon which the device is utilized to obtain dimensions of the workpiece by subtracting one height or distance from another. Vertical rows of alternated projected over and under surfaces with foolproof opposing angular surfaces to avoid taking erroneous readings from a non-gage surface are provided for taking measurements off a workpiece. Specially designed into the gage block are alternated same plane precision projected gage surface on the sides that when the gage blocks are stacked form a vertical row of gage surfaces that provide for the co-acting operation of a precision scriber setting unit.

3,426,437
ECCENTRICITY DETERMINATION SYSTEM
Charles F. Rebhun, Natrona Heights, and Keith W. Roessing, Pittsburgh, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed July 13, 1966, Ser. No. 564,776
U.S. Cl. 33—174 **3 Claims**
Int. Cl. G01b *3/00*



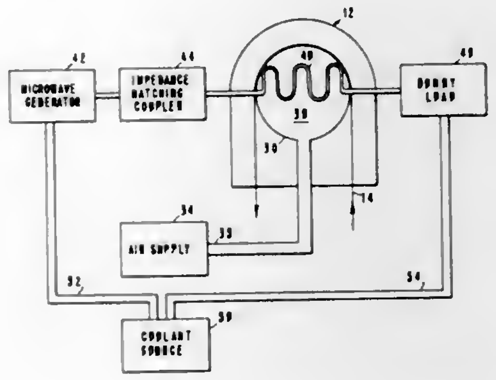
An apparatus and method for determining the percent eccentricity of a conduit at any point along its entire length. Sensing devices are used to measure the wall thickness of a conduit at four points around a particular point. The measured values are then introduced into a computing device programmed to determine the approximate percent eccentricity of the circuit.

3,426,438
WHEEL ALIGNMENT ANGLE INDICATOR
Edward D. Wilkerson, 280 E. Northfield Road, Livingston, N.J. 07039
Filed Sept. 17, 1965, Ser. No. 487,983
U.S. Cl. 33—203.2 **20 Claims**
Int. Cl. G01b *5/255, 3/56, 3/00*



This invention relates to an apparatus for indicating the angular position of a pair of automobile wheels, and includes an elongated member which spans a pair of housings adapted for securement to the automobile wheels. The elongated member includes a conductive element supported at a point offset from its center of gravity such that it tends to rotate in a predetermined direction. Contacts are associated with the conductive element for indicating wheel angularity dependent upon the rotation of the conductive element under the influence of gravity.

3,426,439
MICROWAVE DRYING SYSTEM
Ivan Ryman, Los Angeles, and Gunter Schmidt, Marina Del Rey, Calif., assignors to Houston Fearless Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 16, 1967, Ser. No. 616,728
U.S. Cl. 34—1 **20 Claims**
Int. Cl. F26b *3/34;* **H05b** *9/06*

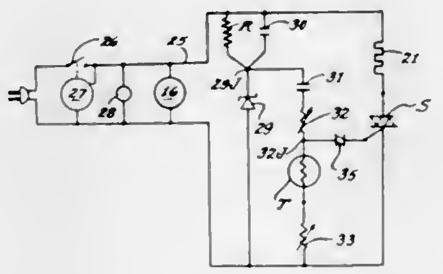


An apparatus useful for drying film and the like at high speeds by the application of microwave energy. A conductor is serpentined through a perforated surface which may, for example, be substantially cylindrical or planar. Microwave energy is coupled to the conductor to establish a fringing electromagnetic field through which the film is pulled. The film is spaced from the surface by an air bearing formed by exhausting air through the surface perforations.

3,426,440
DETERGENT FLUIDIZED DRYING PROCESS
Chung Yu Shen, St. Louis, Mo., and Norman Earl Stahlheber, Columbia, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 24, 1966, Ser. No. 560,083
U.S. Cl. 34—10 **10 Claims**
Int. Cl. F26b *3/08, 3/10*

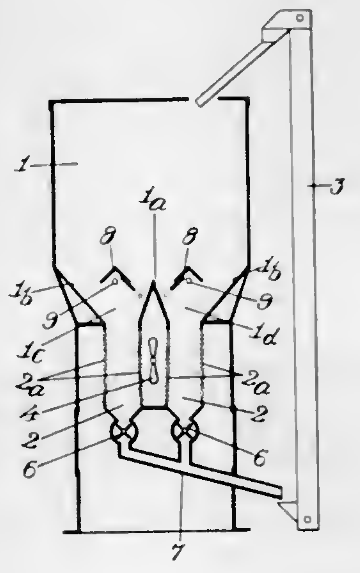
A process for drying wet particulate detergent material by feeding the material to a generally horizontal moving bed e.g., rotating drum, while passing heated gas upwardly through the bed in such a manner that a part of the bed is in a spout fluidized state. The process affords greater control over bulk density and particle size than the prior art methods.

3,426,441
ELECTRIC HAIR DRYER
Thomas J. Broski, Glen Ellyn, Ill., assignor to Helene Curtis Industries, Inc., a corporation of Illinois
Filed Jan. 30, 1967, Ser. No. 612,562
U.S. Cl. 34—48 **24 Claims**
Int. Cl. A45d *20/44;* **H05b** *3/02, 1/02*



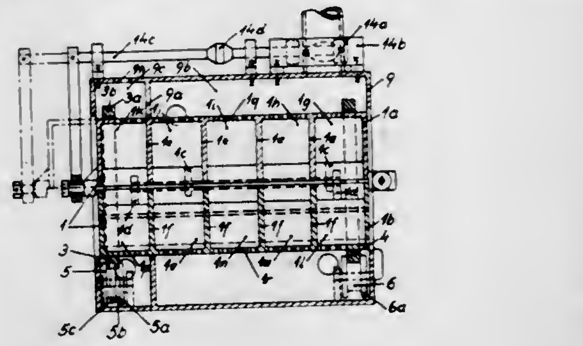
An electric hair dryer having a forced air stream heated by an electric resistance element mounted directly in stream and selectively energized under the control of a thermistor responsive to air temperature downstream of the heater element to afford rapid warm up and close regulation of the air temperature. A solid state circuit operating from conventional 60 cycle A.C. power generates switching pulses applied to the thermistor which, responsive to its temperature, energize a semiconductor switch during each cycle of the applied A.C. to govern the current to the resistance element.

3,426,442
DRYING APPARATUS FOR CEREALS
Toshihiko Satake, 2–38 Oaza Nishihon-machi, Saijo-cho, Kamo-gun, Hiroshima Prefecture, Japan
Filed June 1, 1967, Ser. No. 642,898
Claims priority, application Japan, June 10, 1966, 41/37,411; Aug. 15, 1966 (utility model), 41/76,846; Oct. 22, 1966, 41/69,866; Oct. 22, 1966 (utility model), 41/98,204; Oct. 22, 1966 (utility model), 41/98,203; Nov. 17, 1966 (utility model), 41/106,338; Dec. 14, 1966 (utility model), 41/114,324
U.S. Cl. 34—102 **7 Claims**
Int. Cl. F26b *17/14, 25/00*



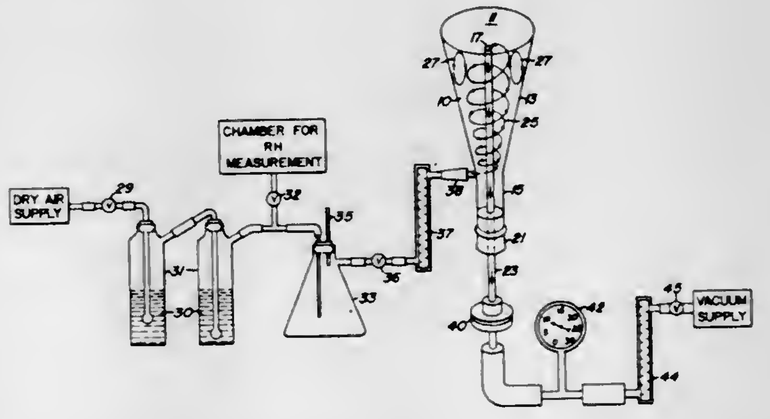
A drying apparatus for cereals is comprised of a hot-air drying chamber in which the cereals are subjected to a flow of high temperature air for a comparatively short time and brans thereof are dried, a tempering chamber is in communication with the drying chamber in which the cereals are stored for a comparatively long time, and the moisture in the starchness, or endosperm and germ of the cereals is tempered and transferred over to the dried brans, and a conveyance extends between the drying chamber and tempering chamber for circulating the cereals from the drying chamber to the tempering chamber. In the drying apparatus the cereals are constantly and uniform circulated at a predetermined speed and dried efficiently by successive and repeating drying and tempering operations in the drying chamber and tempering chamber.

3,426,443
DRUM DRIER
Ernest Wollmann, Wimpassing, and Wilhelm Morgenbesser, Ternitz, Austria, assignors to Semperit Osterreichisch-Amerikanische Gummiwerke Aktiengesellschaft, Vienna, Austria, a stock corporation of Austria
Filed Oct. 23, 1967, Ser. No. 677,232
U.S. Cl. 34—109 **10 Claims**
Int. Cl. F26b *11/04, 15/02*



This invention involves a hollow drum drier, substantially a perforated shell split lengthwise along a diameter to constitute two halves, each with axially spaced transverse semi-circular partition walls, disposed for mutual transverse mating alignment to sub-divide the drum into several spaced compartments.

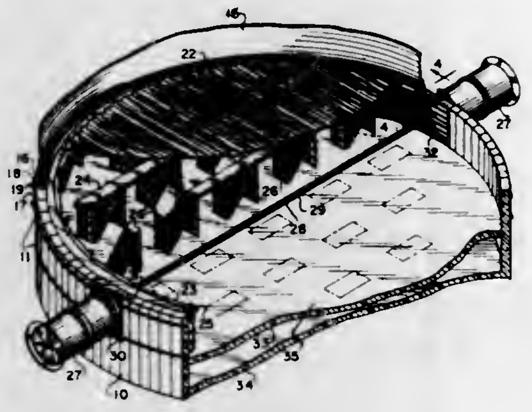
3,426,444
LABORATORY AEROSOL DEVICE
Jule N. Dews and George W. Schmersahl, Frederick, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 9, 1967, Ser. No. 659,544
U.S. Cl. 34—218 **2 Claims**
Int. Cl. F26b *25/00, 19/00*



An apparatus and system for the suspension of a sample of dry powder in a moving stream of controlled air. A conical vessel having a flat top, a reduced lower section, and a neck portion. A tube supported by a rubber stopper positioned axially inside the vessel and extending outside the vessel to a point substantially near the flat top portion thereof. The lower end of the protruding tube being connected in turn to a vacuum supply. A controlled air intake orifice positioned on the reduced section near and essentially tangent to the periphery of the vessel.

3,426,445
BASE FOR STEEL STORAGE BIN

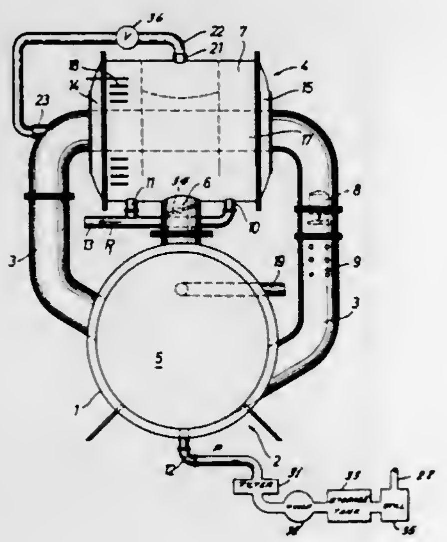
Vincent B. Steffen, New Hampton, Iowa 50659
Continuation of application Ser. No. 386,181, July 30, 1964, now abandoned. This application Aug. 22, 1966, Ser. No. 581,411
U.S. Cl. 34—233 **7 Claims**
Int. Cl. F26b *25/10;* **E04h** *7/30*



This invention relates particularly to a base for supporting a floor in a storage bin used for storing grains and other crops, which base comprises a plurality of identical, mesh-type supports, each support of a substantial, Z-shaped open work provided with a combination of generally horizontally disposed members and generally vertically disposed members, all of which are integral, of heavy gage wire or rod stock for supporting the floor.

3,426,446
APPARATUS FOR COOLING AND CONDENSING GASES

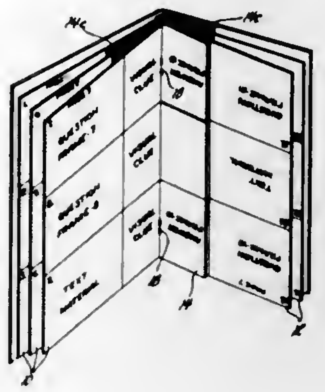
Löthar Lotzsch, Bad-Niederbreisig, Germany, assignor to ETMA Maschinenfabrik G.m.b.H.
Filed Aug. 22, 1966, Ser. No. 573,970
Claims priority, application Germany, Aug. 23, 1965, L 51,456
U.S. Cl. 34—77 **11 Claims**
Int. Cl. F26b *21/14;* **D06f** *43/08*



An apparatus for condensing gases evolved in dry-cleaning or washing machines using a liquid cleaning agent comprising an air-circulating conduit extending from the working chamber of the machine through a condenser and back to the chamber in gas tight relationship, an additional conduit providing communication between the working chamber and the interior of the condenser, and a conduit for discharging the condensed liquid cleaning agent from the condenser.

3,426,447
INSTRUCTIONAL BOOKLET

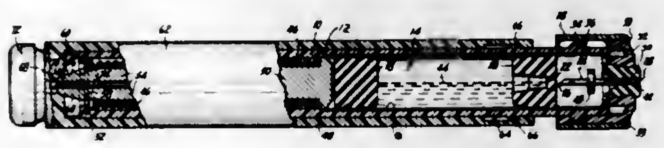
Robert R. Montgomery, Livonia, Mich., assignor to Oakland Community College, Union Lake, Mich., a corporation of Michigan
Filed Sept. 26, 1966, Ser. No. 581,923
U.S. Cl. 35—9 **6 Claims**
Int. Cl. G09b *3/02*



An instructional booklet having facing pages with information and response-evoking statements in upside down relationship thereon and smaller tabs situated toward the binding of the booklet having related responses in a visual line with selected information and response-evoking statements. With a given tab turned back, a visual clue is provided also in a visual line with the selected information and response-evoking statement and is then covered as the response is brought into view by turning the tab down.

3,426,448
TRAINING INJECTION DEVICE

Stanley J. Sarnoff, 7507 Hampden Lane, Bethesda, Md. 20014
Filed Feb. 2, 1967, Ser. No. 613,644
U.S. Cl. 35—17 **9 Claims**
Int. Cl. G09b *23/28;* **A61m** *5/18*

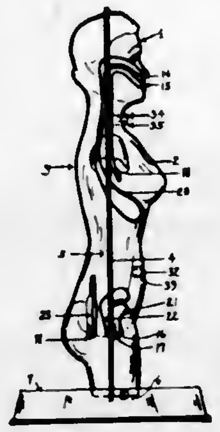


A simulated injector device comprises a blunt hollow needle normally housed inside of an insert at the end of an inner barrel. An outer barrel is arranged in telescopic relationship with the inner barrel and when the inner barrel insert end is placed against an individual and the outer barrell telescoped toward that individual, the blunt end of the needle is forced outwardly slightly from the insert without rupturing of the individual's skin and fluid from a cartridge within the inner barrel is forced out through the needle, all to simulate an injection and give a person the training necessary to make a real injection.

3,426,449
DEVICE FOR DEMONSTRATING MEDICAL PROCEDURES

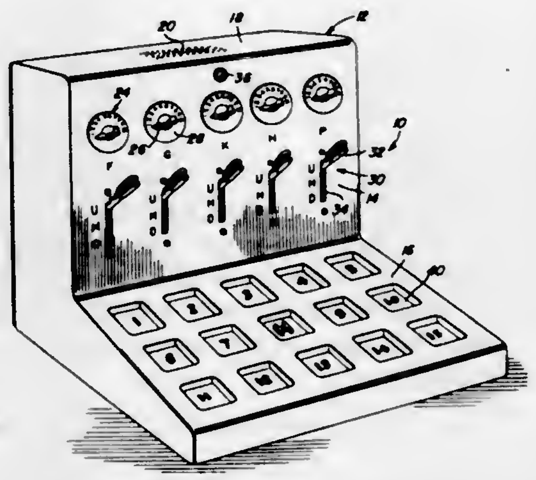
Cordell C. Van Noy, Jr., Granada Hills, Calif., assignor, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois
Filed May 9, 1967, Ser. No. 637,276
U.S. Cl. 35—17 **11 Claims**
Int. Cl. G09b *23/34*

A hollow transparent shell in the shape of a human female for teaching students how to insert tubes and catheters into a human body. Inside the transparent shell are hollow translucent organ members (trachea, esophagus, bladder, vagina and rectum) with silicone coating on their interior surfaces to simulate a lubricity of comparable organs in a human body. The bladder, vagina and rectum organ members also have foam material bushings at their respective mouth orifices to stimulate the texture and resiliency of these orifices in a human body.



3,426,450
PERCEPTUAL SPEED TESTING DEVICE

Burthel B. Isenhour, New Braunfels, Tex., assignor of sixteen percent to R. B. Isenhour, Del Rio, sixteen percent to J. N. Riggs, San Antonio, and sixteen percent to L. E. Minns, Houston, Tex.
Filed Dec. 28, 1966, Ser. No. 605,313
U.S. Cl. 35—22 **5 Claims**
Int. Cl. G09b *1/04, 7/02*

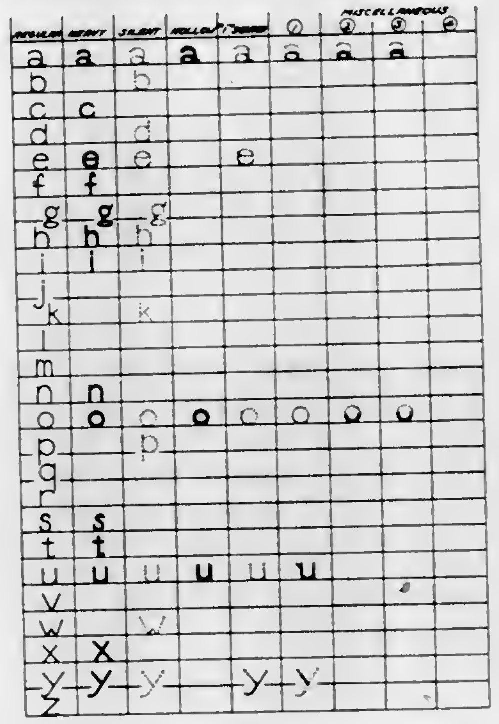


An aptitude testing and training device through which a subject is instructed to position a plurality of rotary and lever operated switches of the multiposition type, in accordance with a prearranged sequence or pattern. Accurate compliance by the subject with instructional commands produces an indication signal. Facilities are provided for changing the test command pattern with which the signal is associated.

3,426,451
PHONIC ALPHABET

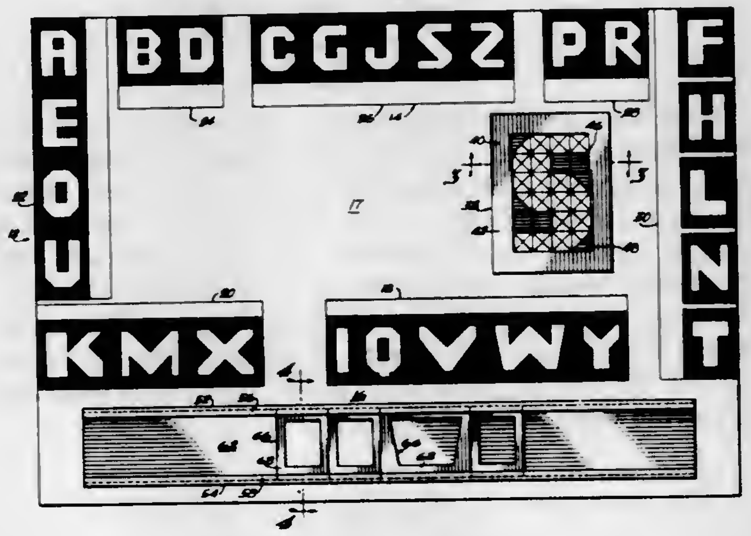
Banesh Hoffmann, New York, N.Y. (43—17 169th St., Flushing, N.Y. 11358)
Filed Aug. 9, 1966, Ser. No. 571,261
U.S. Cl. 35—35 **15 Claims**
Int. Cl. G09b *17/00*

A font of alphabetical letters are disclosed herein which may be employed for the teaching of spelling and reading. The font is characterized by the fact that each letter of the font has the shape of the standard letter of the alpabet to which it corresponds but has a shading, density or other typographical characteristic to suggest its pronunciation in the word in which it is used. Accordingly, the alphabet disclosed may be used to print words for the beginning reader in a fashion that retains the correct spelling yet appropriately indicates or suggests the manner in which the letter is pronounced in the word involved. The alphabet or font also includes an underline and a dot denotation to suggest and indicate those pronunciation characteristics which cannot be handled solely by the typography associated with individual letters. For example, the underline is used to indicate dual letter pronunciations such as diphthongs and digraphs.



3,426,452
EDUCATIONAL TOY

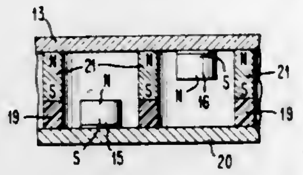
Hugh H. Kerr III, 2921½ Bird Ave., Miami, Fla. 33133, and Charles Demee, 107 NE. 22nd St., Miami, Fla. 33137
Filed Aug. 25, 1966, Ser. No. 575,103
U.S. Cl. 35—35 **7 Claims**
Int. Cl. G09b *17/00, 1/24*



A game board and frame members used in an educational device in which said frame members define a closed, recessed area on a base and in which the area peripherally defines limits of a figure to be produced at the option of a user, and in which a plurality of game members are removably but adheringly applicable in said area and have a regular polygonal shape including a side marginal edge which is a multiple of a unit length whereby a plurality of the game members are combined to form a completed figure at the option of the user.

3,426,453
MAGNETIC DISPLAY DEVICE

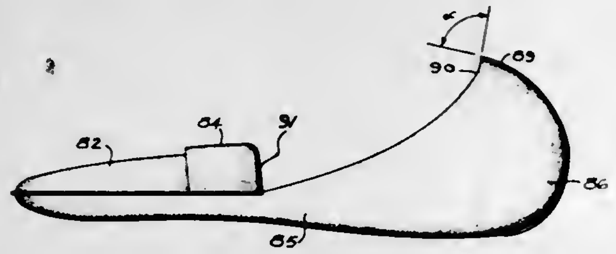
Robert P. Dingwall, Mahopac, N.Y., and Haik Marcar, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 22, 1967, Ser. No. 640,024
U.S. Cl. 35—61 **5 Claims**
Int. Cl. G09b *1/08;* **G09f** *7/04*



A multiplicity of magnetic cylinders having contrastingly colored end faces, disposed one each in cylindrical pockets formed in a laminar display board having a transparent cover and magnetized laminations both translate and rotate to selectively expose a contrasting surface to view when a magnetized writing stylus is moved over the display surface. The magnetized laminae latch the cylinders in their binary positions and provide the rotating and latching force therefor.

3,426,454
PLASTIC FOOTWEAR AND METHODS FOR FABRICATION

James G. Mitchell and Winalee G. Mitchell, both % Principle Business Enterprises, 205 Farnsworth Road, Waterville, Ohio 43566
Continuation-in-part of application Ser. No. 451,181, Apr. 27, 1965. This application Apr. 24, 1967, Ser. No. 634,426
U.S. Cl. 36—2.5 **9 Claims**
Int. Cl. A43b *3/00, 11/00*

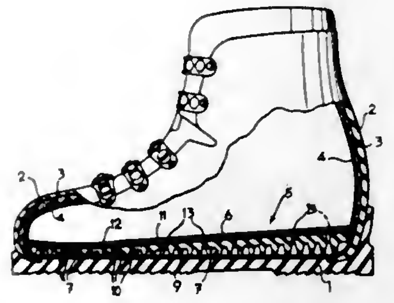


The disclosure describes slippers made of stretchy synthetic polymer sheet material and improvements in the heel structure of such slippers. The improved heel structure includes two side portions of said material which meet and are secured to one another along a generally upright but forwardly inclined seam at the rear of the heel. This seam, which is under tension and thereby subjected to tearing forces when the slipper is worn, meets the upper edges of the side portions at an acute angle, thus reducing the tearing tendencies of the seam.

3,426,455
SHOE INSOLE

Vittorio Drago, Turin, Italy, assignor to Superga Società per Azioni, Turin, Italy
Filed June 13, 1966, Ser. No. 557,014
Claims priority, application Italy, June 25, 1965, 3,981/65
U.S. Cl. 36—3 **1 Claim**
Int. Cl. A43b *13/40, 7/06*

The invention pertains to a removable insole for a ski shoe designed to increase ventilation and consisting of a first layer of rubber having a plurality of spaced ribs formed on one surface and on the free surface thereof, a covering of foam rubber, the free surface of the second layer being covered with a third layer of woolly material, and all three layers perforated by a plurality of holes positioned to connect with the spaces existing between the ribs.

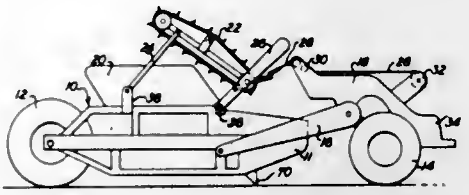


ERRATUM

For Class 37—2 see:
Patent No. 3,427,640

3,426,456
SCRAPER

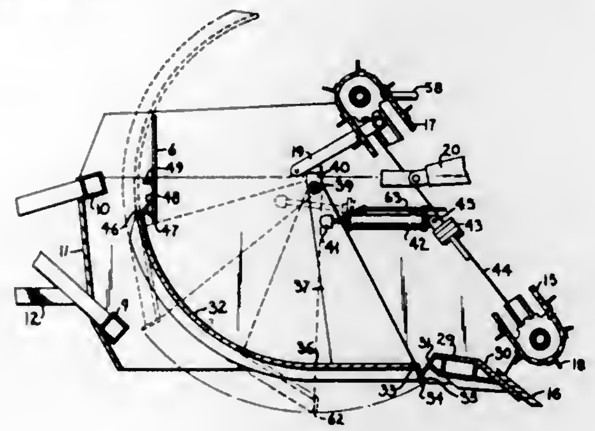
Guy E. Keith, Calvin L. Turner, and Max F. Marsh, Casper, Wyo., assignors to Western Oil Tool & Mfg. Co., Inc., Casper, Wyo., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,606
U.S. Cl. 37—8 **2 Claims**
Int. Cl. E02f *3/62;* **B60p** *1/36*



A scraper having a conveyor mounted diagonally upward from its open mouth for assisting in the filling of the scraper bowl during normal scraper operation, the scraper being mounted on pivot arms so that the scraper may be lifted upward and above the filled contents of the bowl to avoid interference with the ejection of the contents of the bowl through the open mouth.

3,426,457
MOVABLE BOTTOM ELEVATING TYPE SCRAPER WITH BOTTOM CLEANING GATE

James E. Hancock and Howard E. Stuller, Lubbock, Tex., assignors to Clark Equipment Company, a corporation of Michigan
Filed Sept. 12, 1966, Ser. No. 578,552
U.S. Cl. 37—8 **5 Claims**
Int. Cl. E02f *3/82*



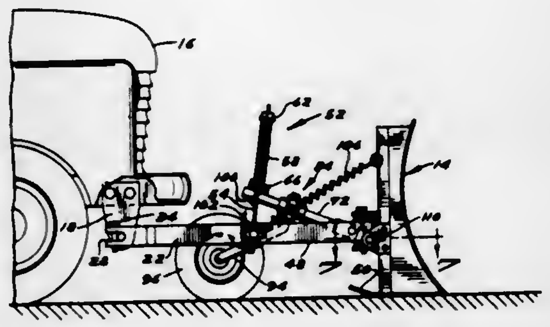
This invention relates to apparatus for handling dirt which includes a mobile frame having a dirt collecting box with a vertically extending rear end gate forwardly of the rear end box, and having a partially open bottom with a curved closure for the bottom and the open portion of the box below the partial end gate, whereby the closure member is swung from closed position closing the bottom and rear end to open position for dumping of the dirt through the bottom.

ERRATUM

For Class 37—8 see:
Patent No. 3,427,641

3,426,458
SNOWPLOW CARRIAGE

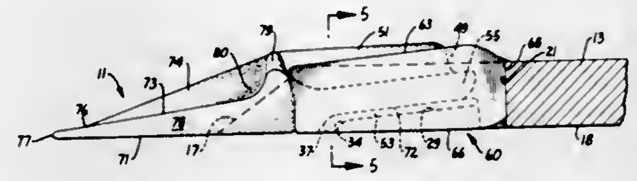
Jake R. Spitzer, 2717 Terrace Drive, Rte. 1, Savage, Minn. 55378
Filed July 21, 1965, Ser. No. 473,650
U.S. Cl. 37—42 **10 Claims**
Int. Cl. E01h *5/04*



A surface treating apparatus such as a snowplow, broom carrying mechanism, or the like having a support mechanism therefor which permits the surface treating apparatus to run at a controlled elevation in the forward direction, and upon reversing, the surface treating apparatus will be carried at an elevated disposition. Means are provided for locking the surface treating apparatus in an elevated disposition for purposes of transport.

3,426,459
TOOTH AND HOLDER FOR BUCKET

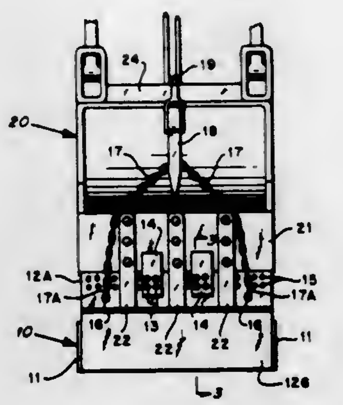
Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.
Continuation-in-part of application Ser. No. 485,154, Sept. 7, 1965. This application Oct. 22, 1965, Ser. No. 501,574
U.S. Cl. 37—142 **4 Claims**
Int. Cl. E02f *9/28*



The blade edge of a front end loader bucket is formed with slots in the leading edge to receive tooth-holders, the bottom edge of the holder being coplanar with the bottom of the bucket so that the bottom of the bucket contacts the ground. Replaceable teeth are detachably held in the holders. When desired, teeth may be removed and the holder sockets filled with plugs merging with the contour of the bucket edge. The tooth is formed with a distal and a proximal end, the bottom surfaces of which are at an obtuse angle. The bottom of the distal end is coplanar with the bottom of the bucket, the holder formed with a socket-like recess disposed at an angle to accommodate such relationship.

3,426,460
SMOOTH BITE ATTACHMENT FOR A CLAM-SHELL BUCKET

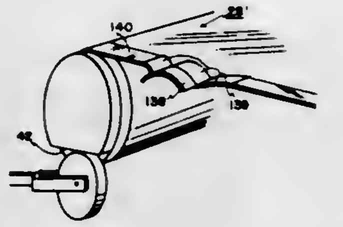
Walter D. Hinkel, Philadelphia, Pa. (2410 High Road, Huntingdon Valley, Pa. 19006), and Russell G. Hinkel, Sr., 3277 Parkview Drive, Bensalem Township, Pa.
Substituted for abandoned application Ser. No. 107,819, May 4, 1961. This application Dec. 14, 1966, Ser. No. 609,977
U.S. Cl. 37—184 **1 Claim**
Int. Cl. B66c *3/02;* **E02f** *9/28*



1. A smooth-bite attachment for a clam-shell bucket, said bucket having a jaw provided with a plurality of teeth extending therefrom; said attachment comprising a metal shield bent to form a pocket, said shield having an outer section adapted to bear against one side of said teeth, and a perforated section adapted to bear against the other side of said teeth, said perforated section being longer than said outer section, a cap connecting said outer section and said perforated section at each end of said shield, a plurality of holes in said perforated section, a plurality of extensions, each said extension being equipped with means removably connecting said extension to a selected hole of said plurality of holes, a chain yoke attached to said perforated section, a chain binder attached to the middle of said chain yoke, a hook attached to that portion of the chain binder remote from the chain yoke, and adapted to hold said smooth-bite attachment to said jaw.

3,426,461
MOVEABLE ADVERTISING DISPLAYS

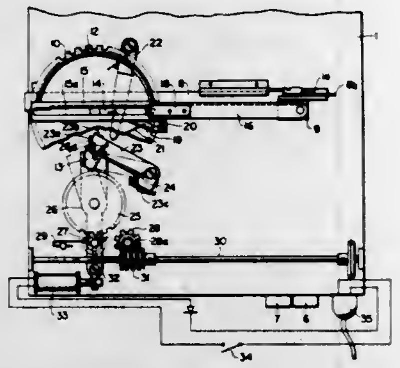
Glen E. Miller, 544 West 2900 South, Bountiful, Utah 84010
Filed Sept. 28, 1966, Ser. No. 594,955
U.S. Cl. 40—31 **4 Claims**
Int. Cl. G09f *11/28, 11/16*



The present invention provides a movable advertising display incorporating a movable display belt provision is made for automatic reversing the direction of the movement of the belt, and detent means are employed with other suitable structures for accomplishing the reversing function.

3,426,462
AUTOMATIC SLIDE STRIP FEEDING DEVICE FOR USE IN OPTICAL IMAGE PROJECTORS

Shiuji Sugiyama, Tokyo-to, Japan, assignor to Cabin Kogyo Kabushiki Kaisha, Tokyo-to, Japan
Filed Mar. 22, 1967, Ser. No. 625,172
Claims priority, application Japan, Apr. 9, 1966, 41/22,312
U.S. Cl. 40—79 **4 Claims**
Int. Cl. G09f *11/30*



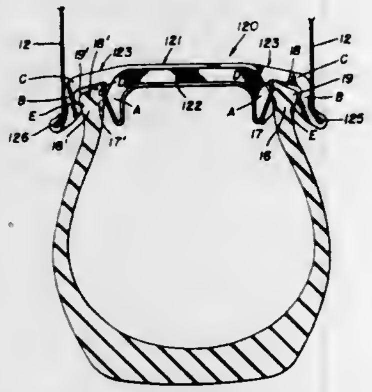
Quick and easy loading and unloading of a slide strip magazine on and off a power-driven projector during the period when a slide is posted in the path of the projection light is achieved by providing the projector with a rotary wheel adapted to be driven intermittently so as to make one revolution at a time and also with a slide strip feeding mechanism adapted to automatically release the engagement between said bar mechanism and said rotary wheel during the aforesaid period, whereby enabling the operator to manually pull the slide strip feeding bar of said mechanism off the magazine and thereby unload the magazine off the projector during said period.

ERRATUM

For Class 40—124.1 see:
Patent No. 3,427,642

3,426,463
TIRE DISPLAY APPLIANCES

George F. Weisenbach, Akron, Ohio
Continuation-in-part of application Ser. No. 472,988, July 19, 1965. This application Feb. 9, 1967, Ser. No. 623,170
U.S. Cl. 40—125 **3 Claims**
Int. Cl. G09f *7/18;* **B60c** *25/14*

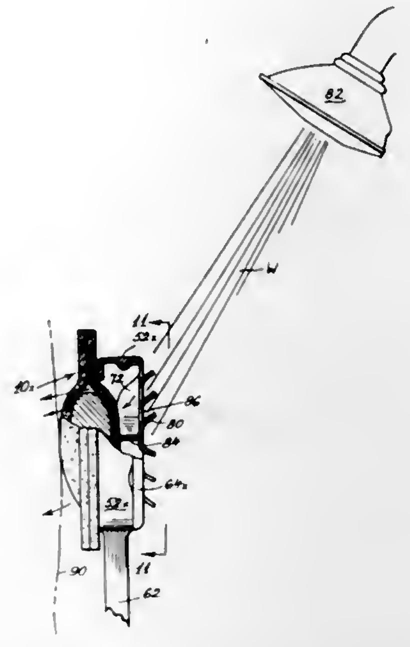


Article for attaching display signs to tires. The article spans the beads of a tire at spaced intervals, presents the tire in an appearance of actual use, and carries advertising or name cards.

3,426,464
COMBINED CAKE OF SOAP AND APPLICATOR

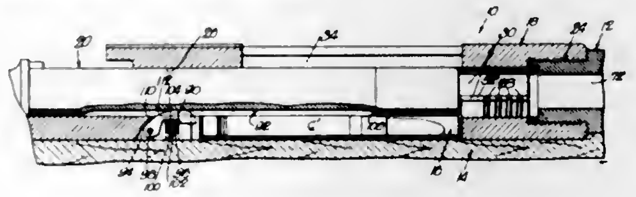
Livia Mezey, 41–50 78th St., Elmhurst, N.Y. 11373
Filed June 9, 1967, Ser. No. 645,031
U.S. Cl. 401—201 **1 Claim**
Int. Cl. A47k *7/02*

A cake of soap enclosed in a casing of sponge rubber simulating a grotesque representation of a child, animal, flower and the like. The cake of soap is positioned in the belly of the figure and the soap suds oozes out through the material of the casing, by means of which the soapy suds are applied to the portion of the body being cleaned.



3,426,465
FIREARM WITH NON-BINDING MANUAL BOLT ACTION

Thomas R. Robinson, Jr., New Haven, Conn., assignor to The Marlin Firearms Company, New Haven, Conn., a corporation of Connecticut
Filed July 3, 1967, Ser. No. 650,816
U.S. Cl. 42—16 **12 Claims**
Iit. Cl. F41c *7/00, 11/00*

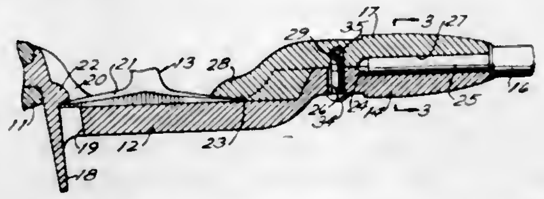


The disclosure deals with a breech bolt having with its cylindrical body and conventional front locking lugs the usual relatively loose fit in the receiver bore and side channels therein for its excursions into open and closed position, with the closed bolt being turnable into and from firm interlock with the receiver in usual manner. Featured is a longitudinal groove in the bolt and a key in the rear part of the receiver, of which the key has on the bolt excursions into open and closed position a sufficiently close sliding fit in the groove at least to prevent such canting of the bolt in the receiver as would cause binding of the former in the latter especially on opening the bolt, with the groove and key being otherwise arranged to permit turning of the closed bolt into and from interlock with the receiver.

3,426,466
CLAMP FOR SECURING A FISHING ROD AND REEL TO A HANDLE

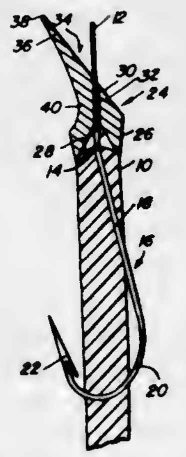
Bob G. Shepherd, West Columbia, S.C., assignor to Columbia Products Company, Columbia, S.C., a corporation of South Carolina
Filed Apr. 26, 1967, Ser. No. 633,842
U.S. Cl. 43—22 **12 Claims**
Int. Cl. A01k *87/06*

A one-piece clamp having a flange overlying one end of a base plate for a fishing reel which is in a recessed portion of a handle, and a main body portion overlying a fishing rod which is in a grooved portion of the handle. A single threaded fastener passes through the handle and threadably engages the clamp between the flange and the main body portion of the clamp so that, upon tightening, the base plate of the reel and the fishing rod are both clamped between the clamp and handle by means of the same fastener.



3,426,467
LURE HEAD WITH DIVING VANE

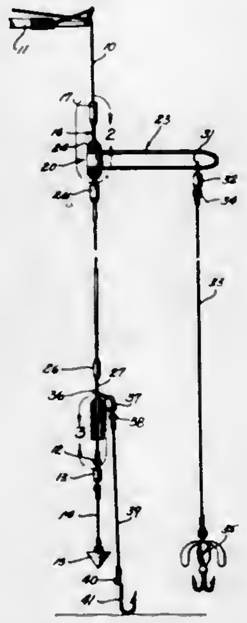
Sherman G. Bryant, Rte. 3, Lewisport, Ky. 42351
Filed Feb. 24, 1967, Ser. No. 618,366
U.S. Cl. 43—42.28 **2 Claims**
Int. Cl. A01k *85/00*



A buoyant head is capped over the leading end of a wriggly imitation plastic worm. A spatulate-shape oblique-angled extension on the head provides a duckbill-like diving vane. The head is provided with an axial bore freely receiving a fishing line or leader which is connected to the eye of a fish hook nested in a socket in the rear end of the head. The shank of the fish hook passes through and out of the leading portion of the imitation worm and the point of the fish hook impales the imitation worm.

3,426,468
SWIVEL HANGER FOR FISHING LURE

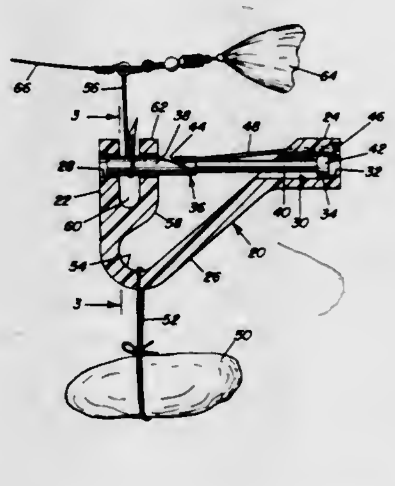
Clair L. Hinkson, R.R. 5, Box 389C, Olympia, Wash. 98501
Filed Jan. 20, 1967, Ser. No. 610,590
U.S. Cl. 43—42.74 **5 Claims**
Int. Cl. A01k *91/04, 95/00*



A swivel hanger for a fishing lure includes an elongated first tubular member slidable on a fishing line and has a second tubular member rotatable and slidable thereon. A swivel arm on the second tubular member loosely receives a leader provided with a fishing lure on its outer end. A sinker line is swivel connected to the outer end of the fishing line and tubular friction means at the lower end of the first tubular member releasably secures the first tubular member to said fishing line through the swivel.

3,426,469
AUTOMATICALLY DETACHABLE CASTING WEIGHT

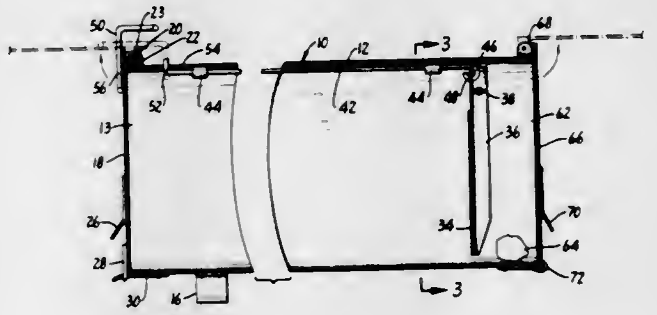
Oscar M. Lee and Mona F. Lee, both of 5785 Derk Drive, La Mesa, Calif. 92091
Filed July 25, 1966, Ser. No. 567,696
U.S. Cl. 43—43.12 **7 Claims**
Int. Cl. A01k *95/00*



A weight carrier for casting a fishing line, which carrier has an abutment and a water soluble element yieldingly urged against the abutment by a pin. The carrier and the pin form a loop which receives a line carrying a weight. Upon dissolution of the water soluble element, the line for the weight is released whereby the weight is released.

3,426,470
ANIMAL TRAP

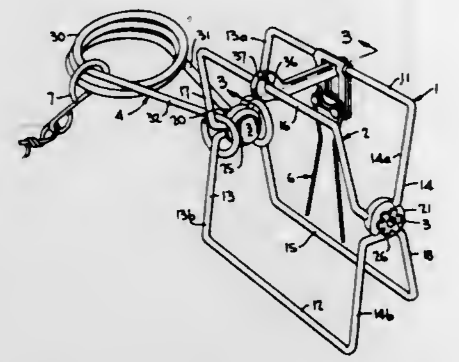
Faucette S. Rudolph, 6122 Sonoma Highway, Santa Rosa, Calif. 95405
Filed July 21, 1966, Ser. No. 566,994
U.S. Cl. 43—61 **1 Claim**
Int. Cl. A01m *23/18*



A trap for the capture of animals comprising, a tubular enclosure having a gate at one end thereof spring biased towards a closed position and a trigger mechanism disposed within the enclosure to selectively maintain the gate in an open position and automatically effect its release responsive to the entry of an animal into the enclosure. The mechanism is made up of a baffle pivotally mounted within the enclosure and having a lever portion extending therefrom, a rod slidably received in the housing and connected to the lever portion of the baffle, and a pair of mutually engageable detents on the rod and gate to selectively maintain the gate in an open position. The detents are disposed so as to be confined within the enclosure upon their mutual engagement and an alignment aperture in the enclosure provides for manual manipulation of the detents to facilitate the engagement.

3,426,471
ANIMAL TRAPS

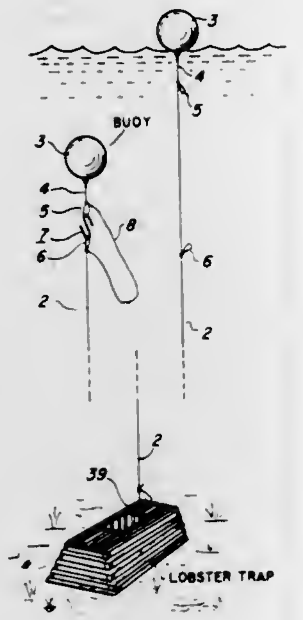
John U. Lehn, Lititz, Pa., assignor to Woodstream Corporation, Lititz, Pa., a corporation of Pennsylvania
Filed June 21, 1967, Ser. No. 647,650
U.S. Cl. 43—92 **10 Claims**
Int. Cl. A01m *23/28*



A trap having pivotally connected similar frames and spring means for swinging the frames relative to each other from a set position to a closed position. A downwardly swinging gravity assisted latch in the form of an arm pivotally mounted on a portion of one of the frames and having one or more upwardly opening notches spaced therealong to receive the underside of a corresponding portion of the other frame in a selected one of the notches to hold the frames in a set position. The downwardly swinging gravity assisted latch is triggered by a trigger member pivotally mounted on the corresponding portion of the other frame and having surfaces engaging the latch in such a manner that it will release the latch and thereby let the frames move to a closed position under the action of the spring means.

3,426,472
DELAYED RELEASE DEVICE

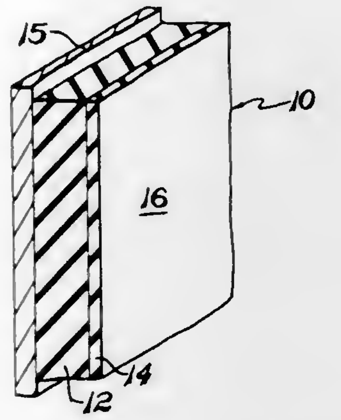
Joseph D. Richard, 3613 Loquat Ave., Miami, Fla. 33133
Filed Apr. 26, 1967, Ser. No. 633,744
U.S. Cl. 43—100 **10 Claims**
Int. Cl. A01k *93/00, 69/06*



A delayed release device comprising an expendable linkage for temporarily restraining the float or buoy of a lobster trap or the like beneath the sea surface for a predetermined time interval. The linkage device consists of a galvanic couple having a highly corrosive anode section which breaks after a predetermined period of immersion in seawater.

3,426,473
ANTIFOULING COVERING

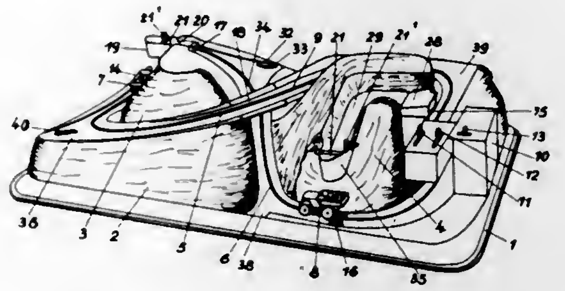
Nathan F. Cardarelli, Copley, and Samuel J. Caprette, Jr., Chagrin Falls, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 31, 1966, Ser. No. 539,177
U.S. Cl. 43—131 **10 Claims**
Int. Cl. A01m *1/20;* **C09d** *5/14;* **E02d** *5/60*



1. A covering resistant to marine fouling organisms comprising a reservoir layer of material saturated with a toxic agent for poisoning or repelling marine fouling organisms such as barnacles and the like, and a toxic transfer control layer of elastomeric material in which said toxic agent is soluble between said reservoir layer and the surface of said covering adapted for exposure to sea water containing said fouling organisms, said transfer control layer having a solubility rate such that the transfer layer is capable of dissolving said toxic agent at a rate which is appreciably slower than the rate at which said toxic is transferred to said control layer from said reservoir layer.

3,426,474
TOY VEHICLE TRACK SET

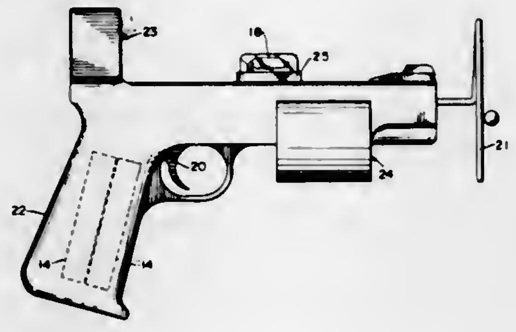
Alfred Einfalt, Nuremberg, Germany, assignor to Gebruder Einfalt Blechspielwarenfabrik, Nuremberg, Germany, a German firm
Filed Oct. 27, 1966, Ser. No. 590,003
Claims priority, application Germany, Feb. 14, 1966, E 22,918
U.S. Cl. 46—40 **6 Claims**
Int. Cl. A63h *33/30, 11/10, 19/00*



1. In a toy vehicle track set, first and second road tracks each having at one end a high-level unloading station and at its other end a low-level loading station, a screw spring in a recess in each of said first and second road tracks, a toy vehicle with a tiltable container and having a depending pin engageable in said screw spring of said first and second road tracks, means at each of said high-level unloading stations for causing tilting of a said container on its vehicle reaching said station, a bin above each of said low-level loading stations, means for conveying material discharged at said high-level unloading station of said first road track to said bin above said loading station of said second road track, means for conveying material discharged at said high-level unloading station of said second road track to said bin above said loading station of said first road track, a flap in each said bin, and means for driving each of said screw springs selectively in forward and reverse drive directions.

3,426,475
TOY GUN HAVING ELECTROMAGNETIC RADIATION MEANS

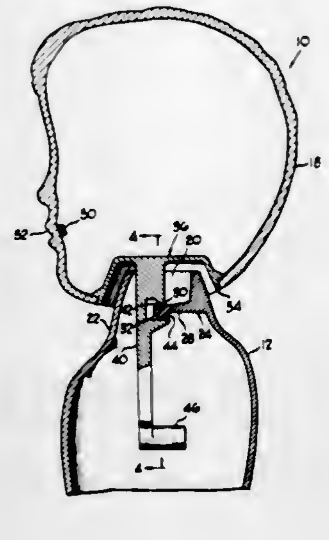
John Donald Foster, 22700 Hamlin St., Canoga Park, Calif. 91304
Filed Aug. 17, 1966, Ser. No. 573,015
U.S. Cl. 46—45 **6 Claims**
Int. Cl. A63h *33/26;* **H05b** *41/14*



A toy gun which incorporates an electric buzzer, a battery, and an antenna. When a trigger is pressed, the buzzer and antenna transmit electromagnetic waves, receivable by a television receiver and producing an effect or disturbance on the receiver screen.

3,426,476
DOLL WITH FREE MOVING HEAD

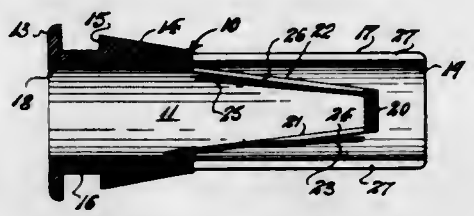
Carl Ayala, Chicago, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed June 8, 1966, Ser. No. 556,537
U.S. Cl. 46—164 **6 Claims**
Int. Cl. A63h *3/36, 11/00*



A doll having its head portion supported on its body for universal pivotal movement by means including a weighted portion connected with the head and extending into the body. As the doll is moved, the head turns from side to side due to the shifting of said weighted portion. There is also provided a magnet in the head of the doll which is cooperable with a magnet or metal portion held adjacent the head to cause the head to move.

3,426,477
ONE-PIECE AIR FLOW ACTUATED SOUND PRODUCING DEVICE

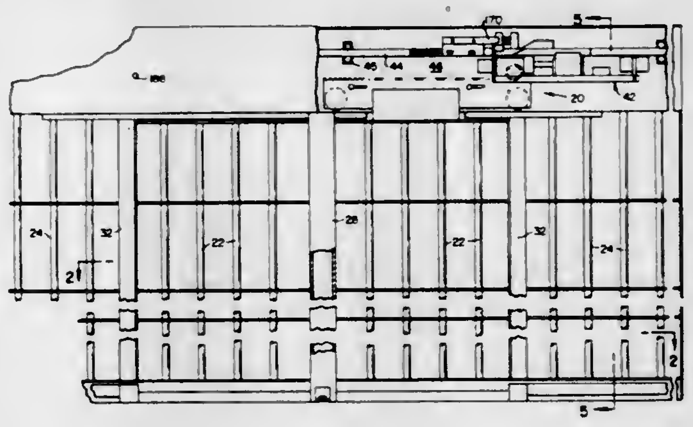
Stanley G. Novaco, Nutley, N.J., assignor to Proll Products Co., Newark, N.J., a corporation of New Jersey
Filed July 18, 1966, Ser. No. 566,136
U.S. Cl. 46—180 **6 Claims**
Int Cl. A63h *5/00*



Novel sound producing devices for use in hollow resilient articles such as squeeze toys comprise an open-ended tubular body having a plurality of integral longitudinal panels disposed internally of the body and at an angle to the axis thereof. Each panel contains at least one longitudinal slot and an integral harmonic reed disposed to vibrate with respect to said slot. At least two of the integral harmonic reeds are disposed with their fixed and free ends in reverse relationship to the fixed and free ends of another of the reeds, whereby at least one reed is caused to vibrate by air flowing in either direction through the body, thus producing a sound on either squeezing the toy or permitting it to expand to its normal state after releasing the squeezing pressure.

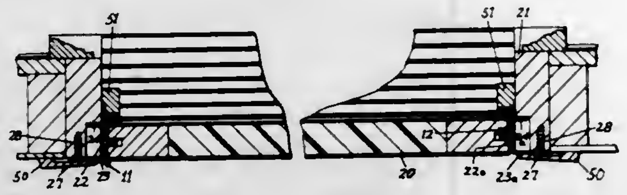
3,426,478
JAIL LOCKING SYSTEM

Richard A. Sturges, Fremont, and Lewis B. Richards, Oakland, Calif., assignors to The Herrick Corporation, Hayward, Calif., a corporation of California
Filed Sept. 6, 1966, Ser. No. 577,280
U.S. Cl. 49—16 **22 Claims**
Int. Cl. E05c *13/08;* **E05b** *47/00;* **E06b** *5/00*



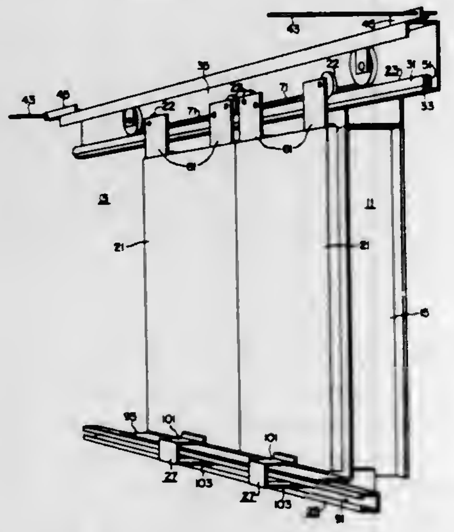
A system for operating from a remote control station one or more of a plurality of doors along a corridor comprising a mechanism for each door located within a housing above the door, and a movable release bar extending from the remote control station through each housing. Each mechanism includes a reversible drive means for moving the door linearly from an open to a closed position, a vertical locking column adjacent each door containing a vertically movable locking and bolt means in each housing fixed to the locking head and engageable with the door below to hold it in the closed position. A pivotal deadlock means is provided for preventing vertical movement of the locking head when the door is closed, thereby preventing the bolt means from being unlocked by external tampering. A cam actuator means on the movable release bar is operable to pivot the deadlock means and operate the locking head to open all doors of a group simultaneously.

3,426,479
ADAPTER DOOR FRAME AND DOOR
David H. Pease, Jr., Wyoming, Ohio, assignor to Pease Woodwork Company, Inc., Hamilton, Ohio, a corporation of Ohio
Filed Mar. 9, 1967, Ser. No. 621,927
U.S. Cl. 49—380 **4 Claims**
Int. Cl. E06b *1/18, 1/02*



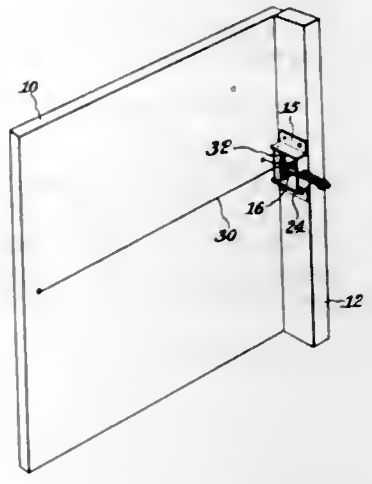
This invention relates to a building component comprising a metal frame adapted to fit door openings of random size, and a prehung door hinged to said frame. Specifically, the assembly is formed of three channel members, two of which are perpendicular to and secured to the two ends of the third member to form an inverted U. A door, such as described in U.S. Letters Patent No. 3,153,817—Pease, issued Oct. 27, 1964, to the assignee of the present case, is fitted within the three members and hinged to one of said perpendicular members. Thus, by this arrangement of parts, a pre-fabricated door assembly having latitudes in positioning can be secured to the existing door jamb during remodeling or in the initial construction of a building without the necessary fitting problems normally encountered.

3,426,480
DOOR ASSEMBLY
Edward T. Dzamba, New Milford, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 511,158, Dec. 2, 1965. This application July 7, 1967, Ser. No. 651,947
U.S. Cl. 49—410 **9 Claims**
Int. Cl. E05d *13/02;* **B66b** *13/08*



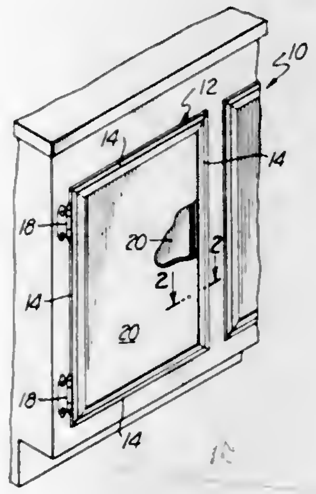
A track for guiding rollers is formed by an elongated, elastic member having a U-shaped section. This member is snapped on the edge of a header. Lateral guiding for a reciprocating panel is provided by a roller assembly which enters an elongated box through a side slot.

3,426,481
GUIDE MECHANISM
William Hensrude, Rural Route, Mekinock, N. Dak. 58258
Filed Nov. 13, 1967, Ser. No. 682,293
U.S. Cl. 49—410 **5 Claims**
Int. Cl. E05d *13/00*



A guide mechanism for a sliding door which eliminates all bottom rollers, nails, bottom support rails and other components normally used for sliding doors, wherein the guide mechanism comprises a pulley freely rotatable, a cable secured at both ends to the door and wound about said pulley with spring biasing means normally biasing said pulley away from the door and maintaining tension on said cable holding said door against a vertical jamb.

3,426,482
DOOR OR RELATED STRUCTURE
Donald E. Mock, Covina, Calif., assignor to Anjac Plastics, Inc., El Monte, Calif.
Filed Jan. 10, 1968, Ser. No. 696,879
U.S. Cl. 49—501 **4 Claims**
Int. Cl. E06b *3/00, 3/72*

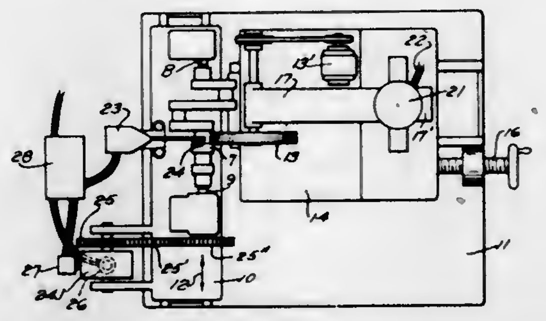


A door or related structure is disclosed in which two panels are secured in parallel, spaced relationship by structural members. The structural members used have a back wall, two outer walls attached to the back wall so as to extend from one side thereof and so as to converge towards one another, and positioning means located on the back wall between the outer walls so that the panels are held between the positioning means and the outer walls.

ERRATUM

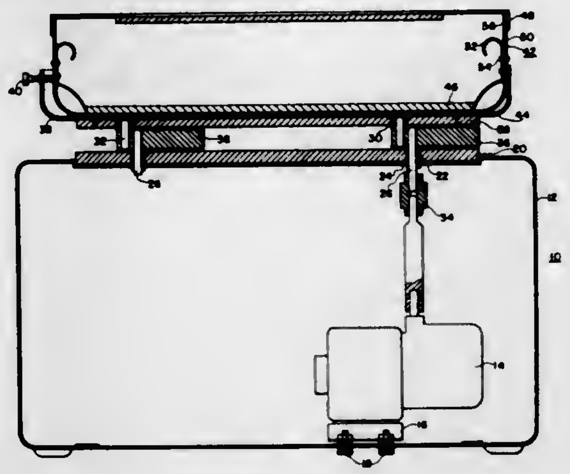
For Class 51—5 see:
Patent No. 3,427,643

3,426,483
GRINDING MACHINES
Howard A. Droitcour, 374 Meshanticut Valley Parkway, Cranston, R.I. 02910
Filed Mar. 31, 1965, Ser. No. 444,165
U.S. Cl. 51—165 **21 Claims**
Int. Cl. B24b *49/00, 51/00*



A grinding machine in which when pressure is applied between a grinding wheel and a work piece a distortion occurs due to bending of the parts, with a means for measuring and making a record along the cycle of operation of the grinding wheel as to such bending as occurs and a means to vary the pressure by applying greater pressure where greatest bending occurs in order to compensate for the bending and obtain true dimensions as desired.

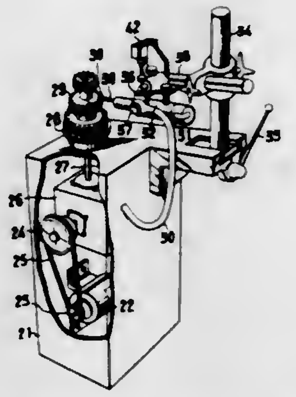
3,426,484
METHOD OF LAPPING AND POLISHING
Robert G. Mazur, Penn Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application July 12, 1963, Ser. No. 294,716, now Patent No. 3,277,610, dated Oct. 11, 1966. Divided and this application Nov. 19, 1965, Ser. No. 508,738
U.S. Cl. 51—281 **5 Claims**
Int. Cl. B24b *1/00*



A method of abrading workpieces in which the workpieces are freely movable on a flat surface with abrasive material on it. The surface is rotated eccentrically by drive through shaft and imparts acceleration to the workpieces so that they move at random over surface.

3,426,485
METHOD OF CHAMFERING THE TEETH OF A GEAR
Kojiro Yamaoka, 24—2, Wakamatsu-cho, Nishinomiya, Hyogo Prefecture, Japan
Filed Sept. 16, 1964, Ser. No. 396,865
Claims priority, application Japan, Oct. 31, 1963, 38/82,537
U.S. Cl. 51—287 **5 Claims**
Int. Cl. B24b *1/00, 5/00, 17/00*

1. A method of chamfering teeth of a gear, said method comprising the steps of: rotating a tool about a central axis of the tool; resiliently aggressively engaging a profile edge portion of the gear with the rotating tool; rotating the gear relative to the tool in continuation of said resiliently aggressive engagement whereby to bring profile edge portions of the teeth of the gear sequentially

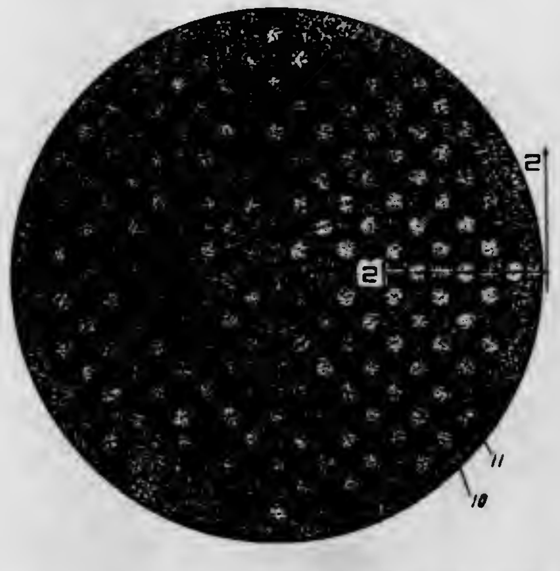


into engagement with the rotating tool; and whereby said tool continuously follows the profile edge portion of the gear to form a chamfer on said profile edge portion.

ERRATUM

For Class 51—319 see:
Patent No. 3,427,644

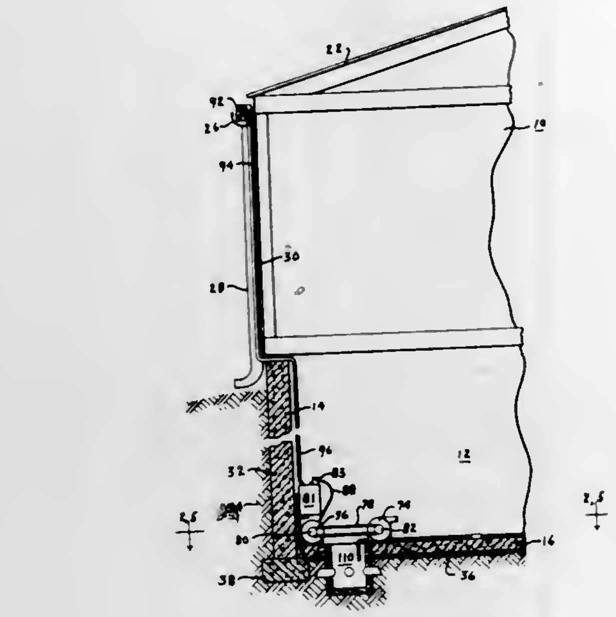
3,426,486
ABRASIVE DISC
Leroy M. Kubsh, Beloit, Wis., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Nov. 16, 1964, Ser. No. 411,466
U.S. Cl. 51—356 **10 Claims**
Int. Cl. B24b *55/02;* **B24d** *5/00, 7/00*



Abrasive disc for use on disc-type surface grinding machines in which the grinding operation is performed by the annular surface of the abrasive disc. The abrasive disc consists of a body of abrasive material. Distributed uniformly throughout the abrasive disc are inserts of abrasive material substantially harder than that of the body of the disc. The softer abrasive of the disc body will wear more rapidly than that of the inserts, leaving the inserts to perform the grinding operation. The space between the inserts provides for the circulation of coolant to carry away metal chips and abrasive particles from the body of the disc as well as from the inserts.

3,426,487
BASEMENT DRAINAGE SYSTEM
Dennis D. Forte, Mishawaka, Ind. (61667 Locust Road, South Bend, Ind. 46614)
Filed Mar. 24, 1967, Ser. No. 625,842
U.S. Cl. 52—1 **9 Claims**
Int. Cl. E04b *1/64;* **E04h** *9/00;* **E04d** *13/04*

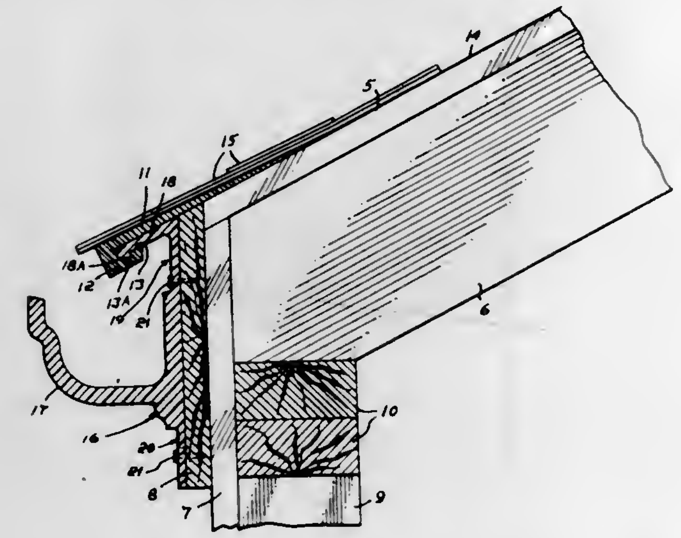
A drainage system for basements and the like having a floor and a wall with cavities, cracks, fissures and similar voids, including conduit means connected from the inside wall surface with the voids, a motor driven pump connected to the conduit means for positively removing the water, and a control for the motor for intermittently removing the water from the wall or floor structure. The control means for the motor may be responsive to external conditions.



3,426,488

DRIPBOARD AND INTEGRAL FACIA BOARD AND GUTTER COMBINATIONS

George H. Stanford, Spurwink Road, Scarborough, Maine 04074
Filed Nov. 4, 1965, Ser. No. 506,315
U.S. Cl. 52—15 4 Claims
Int. Cl. E04d *13/06, 3/40*



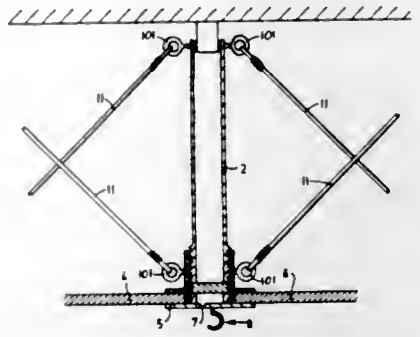
Facia board provided with an integral gutter and a downwardly and outwardly inclined flange above the gutter detachably caught to a channel in the projecting portion of a dripboard strip.

3,426,489

FALSE CEILING

Paul Henri Lambert, 28 Rue de la Banniere, Lyon, France
Filed Oct. 7, 1966, Ser. No. 585,154
Claims priority, application France, Oct. 7, 1965, 13,826
U.S. Cl. 52—39 5 Claims
Int. Cl. E04b *5/57, 5/58*

This disclosure concerns a false ceiling construction including juxtaposed polygonal modular panels with corners; means suspending the panels from the ceiling and including elongated tubes suspended at the upper end to the ceiling; bracing means diagonally extending between the ends of neighboring tubes to form an assembly rigid enough so that movable partitions of a construction may be secured thereto; means for height-adjustably securing the panels to the lower extremity of the tubes including external threads on the lower extremities of each of the tubes, an inwardly threaded sleeve threadably engaged with the threads of the tubes, a supporting flange integral with the sleeve but spaced apart from the lower extremity thereof so as to form a space receiving the corners of the panels together with a retaining cap threadably engaged in the sleeve and locking these corners to the flange.



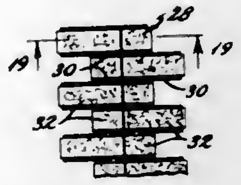
ERRATUM

For Class 52—169 see:
Patent No. 3,427,645

3,426,490

MASONRY VENEER SIDING AND MOLD

Calvin N. Taylor, Atmore, Ala., assignor, by mesne assignments, to Bric-Wall Manufacturing Co., Inc., Uriah, Ala.
Filed Dec. 23, 1966, Ser. No. 604,299
U.S. Cl. 52—204 5 Claims
Int. Cl. E04f *13/14;* **E04g** *13/00;* **E06b** *1/24*



Apparatus for covering corners of a building and mold means for producing such apparatus. The apparatus consists of a masonry veneer panel including a plurality of blocks mounted in spaced relation on a base and simulating the ends and sides of conventional bricks.

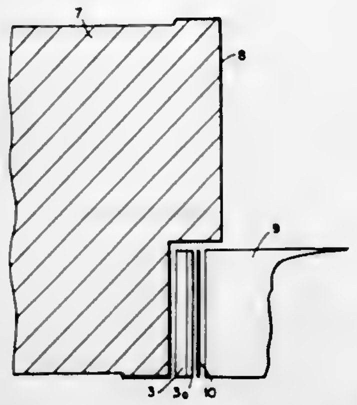
3,426,491

FIRE-RESISTING DOORS WITH EXPANDABLE SEAL MEANS INCLUDING A THERMAL CONDUCTOR

Rudolf Gaeth, Limburgerhof, Pfalz, Fritz Stastny, Ludwigshafen (Rhine), Rudolf Breu, Lambsheim, Pfalz, and Friedhelm Gaertner, Schauernheim, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Mar. 28, 1967, Ser. No. 626,618
Claims priority, application Germany, Apr. 1, 1966, B 86,482
U.S. Cl. 52—204 10 Claims
Int. Cl. E06b *1/06, 5/10;* **E04b** *1/76*

Fire-resisting doors consist of an incombustible material or are at least combined therewith and have, at the edges

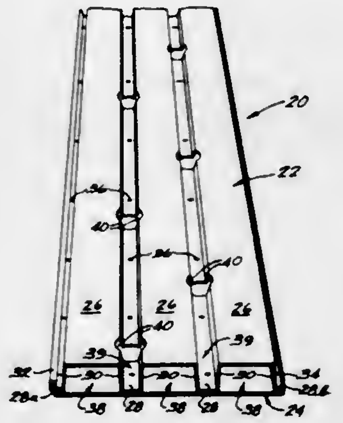
and/or in the door frame rabbet, layers of materials which expand under heat and which in the case of fire, fill out the gap between the edge of the door and the door frame with foamlike substances which offer certain resistance to the spread of fire at these particularly endangered places.



3,426,492

METAL CELLULAR FLOORING SECTION AND METHOD OF MAKING THE SAME

Frank W. Fork, Allison Park, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1966, Ser. No. 587,509
U.S. Cl. 52—221 8 Claims
Int. Cl. E04b *5/48, 5/10*



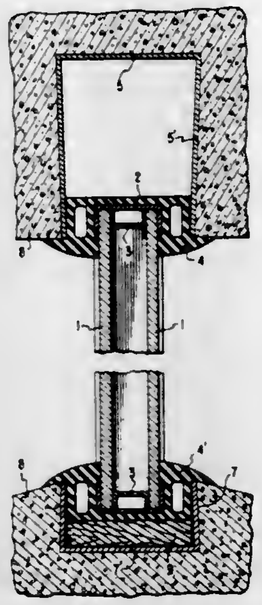
A metal cellular flooring section providing a plurality of spaced, generally parallel cells, each pair of adjacent cells presenting spaced crests, confronting side walls, and an intermediate valley disposed between the confronting side walls. Opposed openings, one in each of the confronting side walls, provide communication at one location in the flooring section, between the interiors of the adjacent cells and the space above the intermediate valley.

3,426,493

METHOD FOR MOUNTING PLATE SHAPED BUILDING SECTIONS

Finn Aspaas, Tollbodgaten 19, Kristiansand, Norway
Filed Nov. 9, 1965, Ser. No. 507,075
Claims priority, application Norway, Nov. 11, 1964, 155,517
U.S. Cl. 52—403 8 Claims
Int. Cl. E04b *2/60, 1/66;* **E06b** *1/38*

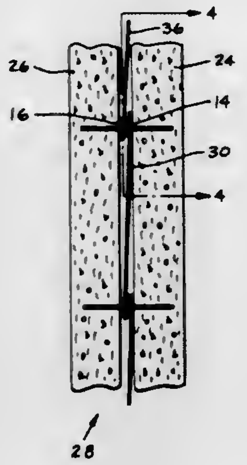
1. A multi-frame assembly for openings in buildings, said assembly comprising a plurality of post members and frame members alternately disposed in said openings in an abutting relationship, channels formed in the upper and lower edge portions of said openings, inserts formed on the upper and lower end portions of the frame members and the upper and lower portions of the posts, said inserts engaging in said channels so that said posts and frame members are slidable in said openings, said post members having H-shaped transverse sections forming vertical channels of differing depths for engagement by corresponding frame members, and an elastomeric compressible element disposed in the deepest of said vertical channels of each of said post members so that exchange of a frame member may be made by mutual displacement between a post member and a frame member against the section of the compressible element, in order to obtain an adequate space for the new frame member to be inserted.



3,426,494

WALL-TIE ASSEMBLY FOR USE IN THE CONSTRUCTION OF WATERPROOF WALLS

Alfred A. Hala, 28 Meeks Lane, Islip, N.Y. 11751
Continuation of application Ser. No. 456,367, May 17, 1965, This application Aug. 15, 1967, Ser. No. 669,338
U.S. Cl. 52—410 28 Claims
Int. Cl. E04b *2/28, 1/68;* **E04c** *5/01*



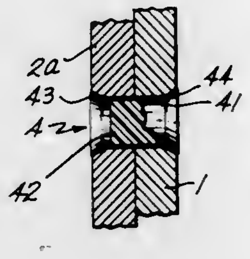
The present invention provides a new and novel wall-tie comprising a metal wire having a pair of circular discs slidably mounted thereon in frictional engagement with the wire. The wall-tie is intended to be mounted between the inner and outer wythes of a wall assembly, and the discs serve to positionally secure waterproof membrane sheets between the wythes.

3,426,495

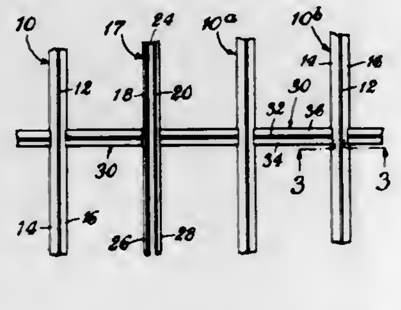
TIMBER TRUSS JOINT AND JOINT CONNECTOR

James C. Glasgow, Seattle, Wash., assignor to Timber Imports, Inc., Edmonds, Wash., a corporation of Washington
Filed Aug. 19, 1966, Ser. No. 573,667
U.S. Cl. 52—641 2 Claims
Int. Cl. E04c *3/17;* **E04b** *1/343*

This invention provides an improved timber structure joint and joint connector therein comprising an elongated relatively thin-wall tubular body filled with solid cementitious filler imparting stiffness and strength to the connector. The ends of the tubular body beyond the filler are flared outwardly to form heads of a diameter exceeding that of the holes in the members through which the connector passes.

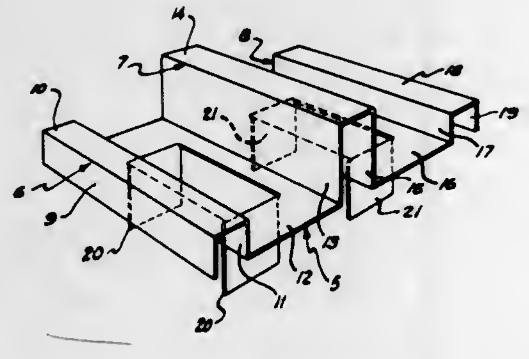


3,426,496
SUSPENDED VENTILATING CEILING AND VENTILATING RUNNER THEREFOR
W Bartlett Jones, Chicago, Ill., assignor to Conwed Corporation, a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,509
U.S. Cl. 52—669 **7 Claims**
Int. Cl. E04b *5/55;* **E04c** *2/42;* **F24f** *7/00*



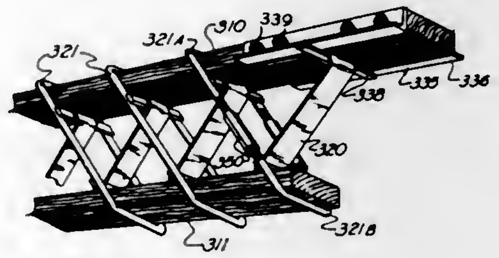
In a ventilating type suspension grid that ventilates through the web, the web comprises two spaced members to define the ventilating passage and at intervals along the length thereof one of the members is depressed inwardly to the center line to accommodate the extending tongue of either a ventilating or non-ventilating cross runner.

3,426,497
TIE AND SPACER FOR BUILDING BLOCKS
Robert E. Mundy, 559 Petty Ave.,
Roanoke, Va. 24019
Filed Jan. 16, 1967, Ser. No. 609,594
U.S. Cl. 52—677 **3 Claims**
Int. Cl. E04c *5/18, 1/07;* **E04b** *1/41*



A tie and spacer designed to permit masonry blocks to be stacked dry without mortar, in spaced relation to each so that wet mortar may then be sprayed onto the blocks and into the spaces between the blocks by a method such as the Gunite method. The tie and spacer is formed from a sheet of metal with three U-shaped portions disposed in parallel relation to each other and interconnected by rectangular connecting members. The legs of the centrally disposed U-shaped member are longer than those of the U-shaped members on either side thereof and the connecting members have struck-out portions which form flanges extending away from the U-shaped portions.

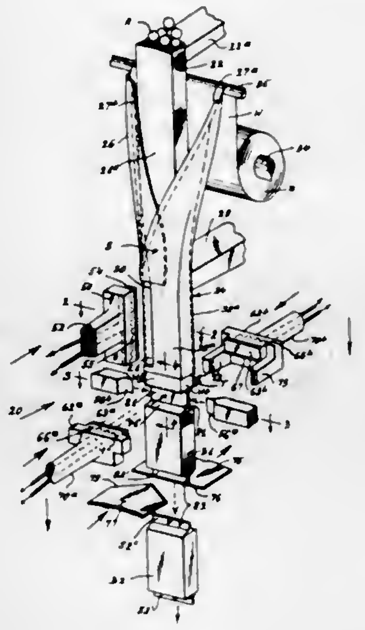
3,426,498
TRUSS
Harry Elmer Ezell, 3850 Hillcrest Lane, Mobile, Ala. 36609
Continuation-in-part of application Ser. No. 322,674, Nov. 12, 1963. This application July 5, 1966, Ser. No. 564,500
U.S. Cl. 52—695 **3 Claims**
Int. Cl. E04c *3/02*



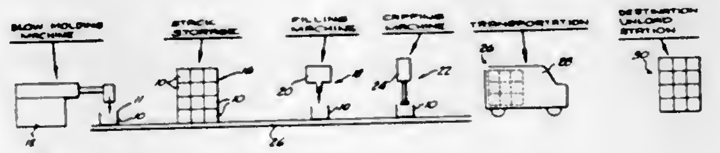
A truss having horizontally extending upper and lower chords and a web extending between and connecting together said chords. The web includes a series of first web members each extending downwardly and away from the centerline of the truss and including upper and lower leg portions positioned respectively on the upper surface of the upper chord and the lower surface of the lower chord, side leg portions extending between and connecting together the upper and lower leg portions on opposite sides of said upper and lower chords, and upper and lower bearing members extending between said side leg portions adjacent the lower surface of the upper chord and the upper surface of the lower chord. A series of second web members are connected to the first web members, and each extends downwardly and toward the centerline of the truss. The second web members extend between and connect together the upper and lower bearing members of adjacent ones of the first web members.

3,426,499
METHOD OF PACKAGING FOOD ARTICLES
Richard E. Paige, 411 E. 57th St.,
New York, N.Y. 10022
Filed Feb. 18, 1965, Ser. No. 433,730
U.S. Cl. 53—28 **1 Claim**
Int. Cl. B65b *9/08, 9/12, 51/30*

Apparatus for and method of continuously forming, filling, sealing and separating small folded up boxes containing various articles. Thin paper coated on both sides in the form of a web is fed continuously from a roll and is used to be wrapped continuously around an axially, vertically extending rectangular inner guide tube by a similarly shaped outer tubular paper funnel and pulled down around and around the inner guide tube to form a rectangular shaped paper tube. Opposite overlapped edges of the paper tube are pressed together by a hot sealing bar to form a continuous fused seam extending longitudinally along the paper tube. Periodically, a pair of opposed fingers bend inwardly at first two opposite small sides of the paper tube and then a pair of opposed hot jaws squeeze the other two wide sides of the paper tube together to form a fused transverse seamed closure at the bottom of the paper tube and to close a preceding filled box.



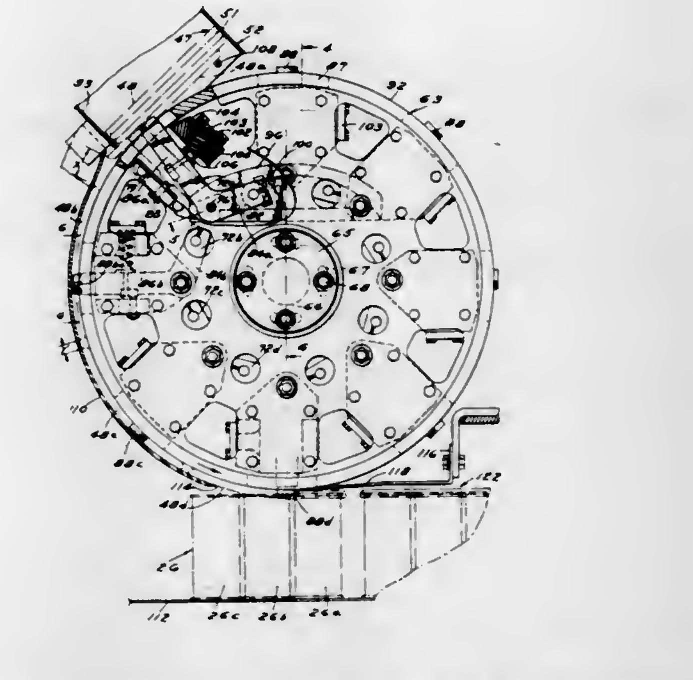
3,426,500
SYSTEM UTILIZING SINGLE SERVICE CONTAINER FOR MOVING BOTTLES FROM BOTTLE MAKING MACHINE TO DESTINATION POINT FOR FILLED BOTTLES
Samuel J. Rupert, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed June 9, 1965, Ser. No. 462,647
U.S. Cl. 53—37 **1 Claim**
Int. Cl. B65b *3/04, 21/06, 35/30*



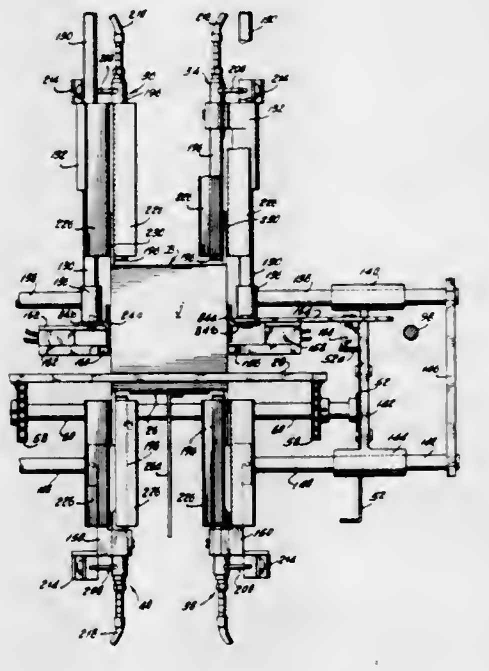
A system of blow molding plastic bottles, immediately placing the blown bottles in an upright position in a single service container, stacking the containers with the bottles therein at a storage station, transferring containers with empty bottles from the storage station to a filling machine and filling such bottles while in the container, transferring the containers with filled bottles to a capping station where the bottles are capped while in the containers, and restacking said filled containers with capped bottles for transportation to their final destination point.

3,426,501
CLIP FEEDING DEVICE
James F. Earp, Farmington, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed Oct. 24, 1966, Ser. No. 589,103
U.S. Cl. 53—48 **6 Claims**
Int. Cl. B65b *21/08, 7/28;* **B67b** *3/08*

A carrying clip applying machine having an extended lever which engages the bottom clip of a clip stack and moves it from its stacked position at an upper position of a drum member and moves it to a lower position on the drum member to apply it to a six-pack can unit. The lever being in the form of a bell-crank and controlled by a spring member and cam member so as to be accelerated when engaging the clip when it is removed from its stack thus eliminating any skip feeding of the clip member during its removal operation.



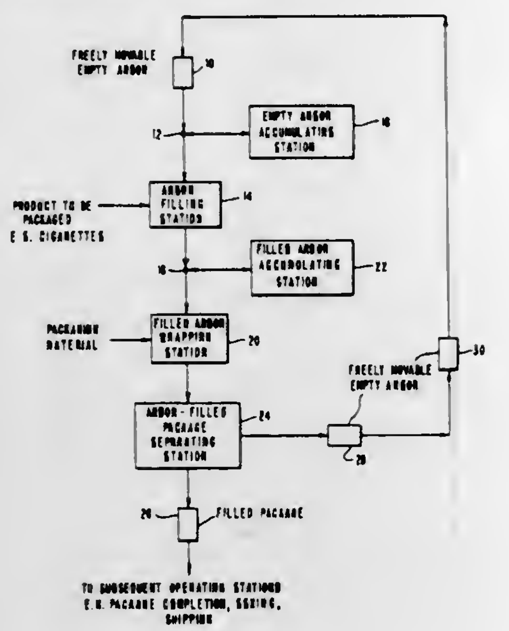
3,426,502
BOX-TREATING APPARATUS
Robert L. Greenberg, Englewood, N.J., assignor to National Equipment Corporation, a corporation of New York
Filed Sept. 16, 1965, Ser. No. 487,781
U.S. Cl. 53—75 **19 Claims**
Int. Cl. B67b *57/02, 7/20;* **B05c** *11/00*



A carton sealing apparatus for adhesively connecting outer flaps of a carton to inner flaps thereof. A transporting means is provided for transporting a carton in a given direction along a predetermined path where a normally closed adhesive-applying means is situated for applying adhesive to at least a pair of the carton flaps during movement thereof. An adjustable control means coacts with the adhesive-applying means to open and close the latter, and an adjustable guide means for the carton is adjustable transversely of the direction of movement thereof. An adjusting means which acts to adjust the guide means to accommodate the latter to the dimensions of a particular carton actuates through the guide means an automatic adjusting means which coacts with the control means to adjust the latter for controlling the opening and closing of the adhesive-applying means in accordance with the adjustment of the guide means.

3,426,503
CIGARETTE PACKAGING APPARATUS

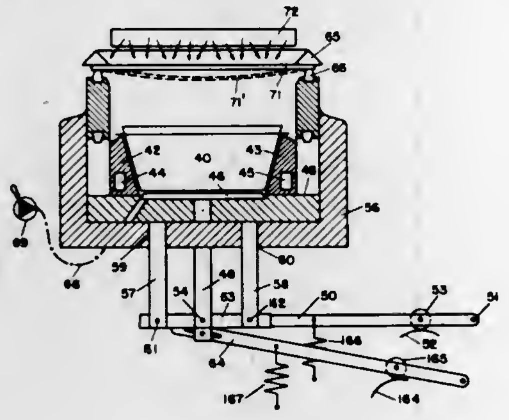
Joseph H. Sherrill, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed Aug. 23, 1965, Ser. No. 481,632
U.S. Cl. 53—124 **14 Claims**
Int. Cl. B65b *19/04, 19/12, 5/00*


FREELY MOVABLE EMPTY ARBOR
10
12
EMPTY ARBOR ACCUMULATING STATION
16
PRODUCT TO BE PACKAGED E.G. CIGARETTES
ARBOR FILLING STATION
14
18
FILLED ARBOR ACCUMULATING STATION
22
PACKAGING MATERIAL
FILLED ARBOR WRAPPING STATION
20
FREELY MOVABLE EMPTY ARBOR
30
ARBOR - FILLED PACKAGE SEPARATING STATION
24
28
26
FILLED PACKAGE
TO SUBSEQUENT OPERATING STATIONS E.G. PACKAGE COMPLETION, SEALING, SHIPPING

A cigarette packaging system employing freely movable arbors which may be conveyed from point to point and selectively accumulated or directed to operating stations in which different operations are performed such as filling and wrapping. The arbors are hollow, rectangular in section, and adapted to hold a number of cigarettes equal to the number in a conventional package of cigarettes. The accumulating system stores arbors when they cannot be supplied to operating stations and supplies arbors when the opertaing stations are in need of arbors.

3,426,504
ARRANGEMENT FOR CLOSING PLASTIC LINED PACKAGES

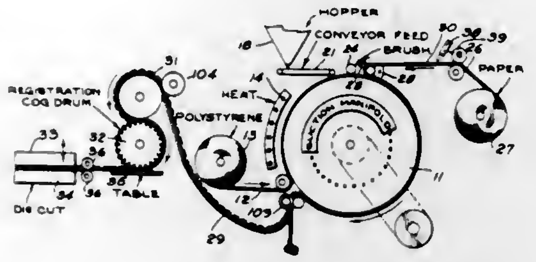
Od Wikar Christensson, Ekbacksvagen 32–34, Ulvsunda, near Stockholm, Sweden
Filed Sept. 13, 1965, Ser. No. 486,782
Claims priority, application Sweden, Oct. 22, 1964, 12,700/64
U.S. Cl. 53—141 **11 Claims**
Int. Cl. B65b *53/02, 7/28, 61/00*



An arrangement for placing a closure formed of a thin sheet onto the open end of a cup-shaped package including a first support member having a mould for holding the package and a second support member for holding the end sheet. The two support members are movable relative to each other and in all relative positions the space between the package and the thin sheet is substantially enclosed. A heating element is provided for heating the thin sheet when the first support member has moved, relative to the second support member, to space the package from the sheet. The mould includes a separate bottom which rests on a plate and guide means are included for guiding movement of the mould bottom and the plate.

3,426,505
MAKING INDIVIDUAL CONDIMENT PACKAGES

Charles E. Cloud, 1345 Greenwood Ave., Wilmette, Ill. 60091
Continuation of applications Ser. No. 3,463, Jan. 19, 1960, and Ser. No. 412,880, Nov. 16, 1964. This application Nov. 15, 1965, Ser. No. 510,444
U.S. Cl. 53—184 **8 Claims**
Int. Cl. B65b *1/02, 1/04;* **B26d** *5/42*



A continuous web having small preformed bulging packages, supplied freely (independent of registration) is registered with respect to a cut-off device by passing around a cog drum which feeds it by forward thrust against the bulging packages. The cog drum is stopped for each cutting operation, with the position of its cog bars (and hence registration between the cutter and the packages) determined by engagement of a stop pawl with a tooth on a ratchet toothed wheel rotating with the cog drum and having one tooth for each cog. Means for forming the packages in the web is also disclosed, the web drooping between that means and the cog drum.

3,426,506
CARTON FOLDING MACHINE

Thomas L. Jernigan, Richmond, Va., assignor to Eskimo Pie Corporation, Richmond, Va., a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 596,299
U.S. Cl. 53—186 **19 Claims**
Int. Cl. B65b *49/00, 51/10, 51/32*

1. An automatic carton folding and sealing machine comprising

a support frame,

a support bed affixed to said frame for supporting the lower side of an open carton for movement from the upper to the lower end of said bed as the carton is filled, folded closed and sealed,

means for drawing a flat, collapsed carton with flaps projecting from its top and bottom ends downwardly from a stack of collapsed cartons to a fully opened position resting on said bed at a first station at the upper end of said bed,

a carriage movably supported by said bed for reciprocating motion between a forward and a rear position longitudinally of said support bed a fraction of its length,

said carriage comprising,

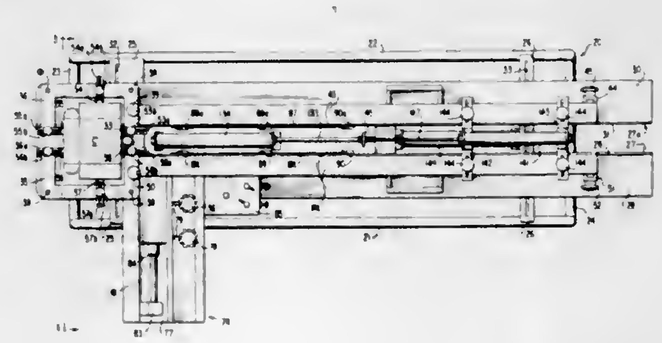
two pairs of longitudinally extending rails of which each pair is disposed in juxtaposition on opposite sides of said bed with each of the rails of

a pair connected for limited movement relative to each other longitudinally of said bed between a propelling position and a retracting position and one of each of said pairs of rails movably supported by said bed for movement between said forward and rear positions,

a plurality of carton propelling means having carton contacting surfaces engageable with the trailing side of the open cartons on said bed and supported by said rails at intervals spaced along their length,

means for moving at least some of said carton contacting surfaces between an extended position in which said surfaces project above the level of said support bed when said rails of each pair are in said propelling position and a retracted position in which said surfaces are below said support bed when said rails of each said pair are in said retracting position,

said carton propelling means being oppositely spaced in pairs along said rails with said pairs separated by a distance longitudinally of said bed that a carton is propelled between successive stations located along said bed between said first station and a sealing station at the lower end of said bed by successive movements of said rails between said forward and rear positions,



means for interconnecting each of the outermost of the two pairs of rails,

a first flap folding lug supported from the forward end of one of said pairs of rails and movable relative to the adjacent rail to engage and fold closed the trailing flap on the bottom side of a carton at said first station as said rails are moved relative to each other from said retracting to propelling positions, and

a second flap folding lug supportingly carried by said pair of rails opposite said one pair having said first flap folding lug and movable into engagement with and folding closed the trailing flap on the top side of a carton at a filling station subsequent to said first station as said rails move relative to each other between the retracted and propelling positions,

means supported by said frame and connected to said rail interconnecting means for moving said carriage along said bed between said forward and rear positions to propel cartons from said first station through subsequent stations,

carton bottom flap folding means supported from said frame to engage and fold inwardly the leading flap and remaining flaps on the bottom of the carton as it is propelled along said bed between the first station and a filling station,

carton top flap folding means supported from said frame to engage and fold inwardly the leading flap and other flaps on the top of the carton subsequent to it being propelled from the filling station toward the sealing station by said carriage, the trailing flap of the carton top being folded closed by said second flap folding lug as said rails move between said retracting and said propelling positions as said carriage initiates movement of the carton out of the filling station,

heater strips supported from said frame to contact the top and bottom folded carton flaps at a sealing station at the lower end of said bed subsequent to the filling station and,

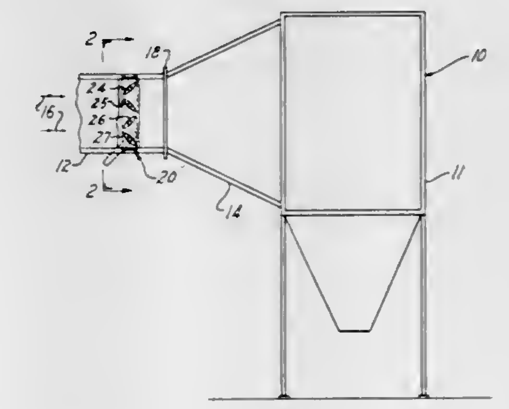
means for propelling each carton from said sealing station in contact with said heating strips in timed relation to the movement of said carriage.

ERRATUM

For Class 53—281 see:
Patent No. 3,427,646

3,426,507
ELECTRICAL PRECIPITATOR

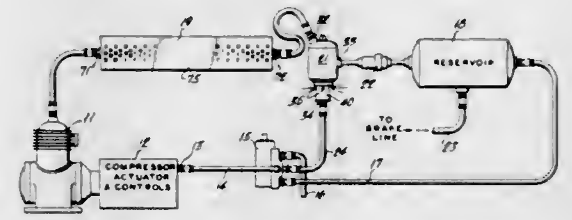
Kazimierz Kossowski, Los Angeles, and Harley G. Peterson, La Crescenta, Calif., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1964, Ser. No. 420,714
U.S. Cl. 55—129 **4 Claims**
Int. Cl. B03c *3/00*



A louver damper for an electrical precipitator incorporating interchangeable links and levers cooperable to open and close the louvers in counter rotating sets to avoid turning vane effect in the partially open condition.

3,426,508
FILTER UNIT FOR AIR SYSTEMS

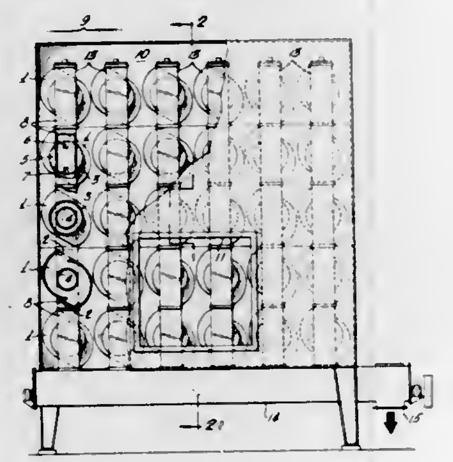
Doyle Wayne McGrath, Fletcher Road, Wayne, Pa. 19087
Filed Aug. 9, 1967, Ser. No. 659,455
U.S. Cl. 55—210 **8 Claims**
Int. Cl. B01d *35/00*



In an air system, a filter device for removing excess heat, liquids and solids from the air prior to its passage into a reservoir, the system including a cooler and a filter unit. The filter unit has a filter element to entrap solid particles and a sump to collect liquid droplets normally entrained in the air stream. The sump is provided with an unloading valve which is automatically operated momentarily when the compressor is either shut down or energized to discharge any liquid accumulated in the sump.

3,426,509
CYCLONIC SEPARATOR

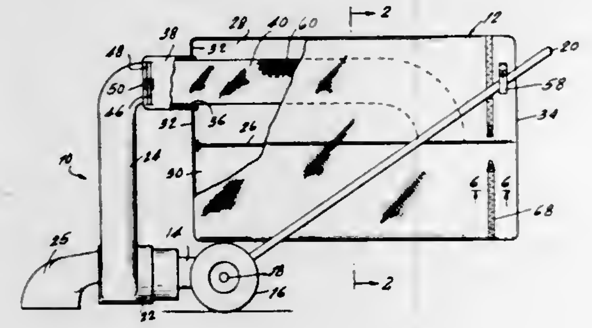
Gunnar Wilhelmsson, Vaxjo, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed May 31, 1966, Ser. No. 553,749
Claims priority, application Sweden, May 28, 1965, 7,025/65
U.S. Cl. 55—349 **1 Claim**
Int. Cl. B04c *3/06*



A cyclonic separator comprising a generally cylindrical casing having an inlet portion with a pair of tangential inlets for introducing dust-laden gas thereinto, and a central outlet tube for exhausting clean gas from the casing. An imperforate end wall at the opposite end has cut-outs in its periphery providing diametrically-opposed dust outlets along the shell of the casing. The separator is mounted horizontally with the outlets in vertical alignment so as to open into a vertical dust channel connected to the casing. A plurality of such separators are connected in vertical alignment and channels are interconnected to form a coherent discharge pipe common to all of the vertically-aligned separators.

3,426,510
VACUUM CLEANER FILTER BAG

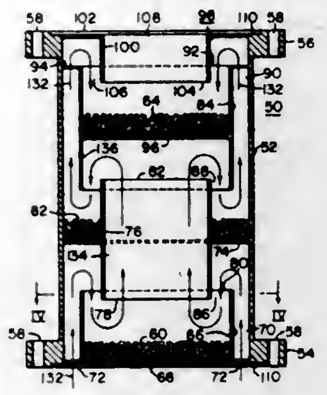
Robert W. Schaaf, Ozone Park, N.Y., assignor to Mil-An Mfg. Corp., a corporation of New York
Filed Sept. 13, 1965, Ser. No. 486,757
U.S. Cl. 55—368 **16 Claims**
Int. Cl. B01d *29/24*



A vacuum cleaner filter bag comprising an air pervious body, a partition dividing the interior of the bag into two compartments, an inlet for said bag in communication with one of said compartments, an air pervious sleeve, with one end of said sleeve being in communication with said inlet and the other end with the other compartment.

3,426,511
ISOLATION TRAP

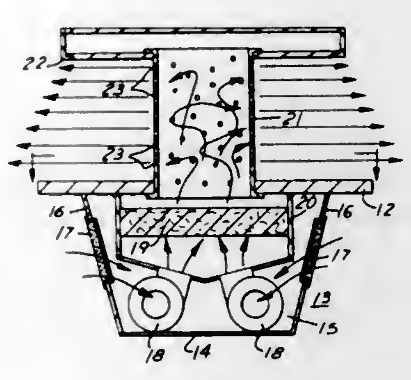
Manfred A. Biondi, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 370,585, May 27, 1964. This application Aug. 31, 1966, Ser. No. 582,789
U.S. Cl. 55—389 **8 Claims**
Int. Cl. B01d *53/14, 53/04*



A non-refrigerated isolation trap for use particularly in conjunction with fluid diffusion pumps in vacuum systems to prevent backstreaming of vapor from such pumps wherein a tortuous path is provided through the trap. In certain examples, a bed of an anhydrous zeolite compound is positioned in said path.

3,426,512
VENTILATION DEVICE FOR PRODUCING LAMINAR FLOW

Alexander G. Nesher, 210 Fitzwilliam Lane, Rosemont, Pa. 19010
Continuation-in-part of application Ser. No. 534,750, Mar. 16, 1966. This application June 28, 1967, Ser. No. 649,663
U.S. Cl. 55—410 **9 Claims**
Int. Cl. B01d *46/00;* **F24f** *7/00*

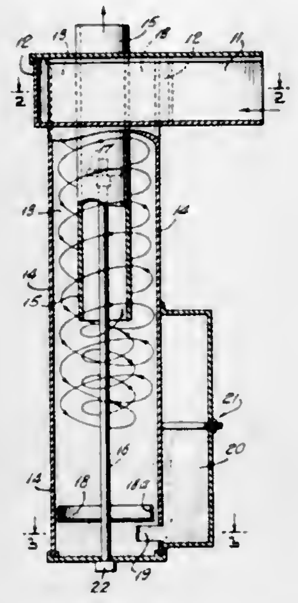


This invention relates to a ventilation device for producing a controlled velocity laminar flow of clean air over a work bench or other work area. The laminar flow is produced by a curved perforated membrane which either converges or diverges the air flow in relationship to the work area.

3,426,513
VEHICULAR VORTEX CYCLONE TYPE AIR AND GAS PURIFYING DEVICE

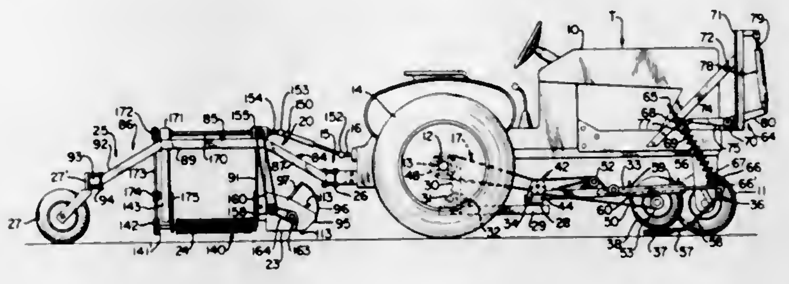
Kurt Bauer, Merkwitz-Leipzig, Germany, assignor of fifty percent to Albert C. Nolte, Jr., New York, N.Y.
Continuation of application Ser. No. 443,038, Mar. 26, 1965. This application Nov. 13, 1967, Ser. No. 683,103
U.S. Cl. 55—459 **6 Claims**
Int. Cl. B04c *5/04*

A vortex-type fluid purifying device has a cylindrical chamber, a helical inlet conduit laterally opening into said chamber at its top portion, a tubular outlet concentrically protruding through the top end and partially extending within said chamber, a disc-shaped member disposed at the bottom portion and in spaced relation therewith, and a dust collector housing the outlet of which is in communication with said chamber between the disc-shaped member and the bottom end.



3,426,514
BEET TOPPING ASSEMBLY

Andrew F. Barnes, Rte. 1, Box 295, Longmont, Colo. 80501
Filed Sept. 29, 1965, Ser. No. 491,224
U.S. Cl. 56—121.46 **14 Claims**
Int. Cl. A01d *23/02, 33/10*

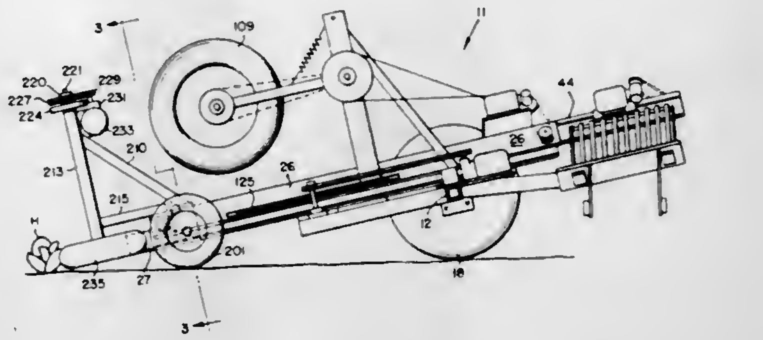


A tractor-mounted beet topping assembly includes a series of beet topping units pivotally mounted and biased independently of one another downwardly into cutting engagement with a series of beet rows, and a pick-up assembly is arranged in trailing relation to the tractor and to the beet topping units to pick up the severed beet crowns, foliage and trash, the pick-up assembly being especially constructed for multi-row topping operations in cooperation with the beet topping units and is characterized by a series of flexible finger rows on a drive tube being driven at opposite ends through one or more stripper rolls located in closely spaced relation behind the finger rows.

3,426,515
CABBAGE HARVESTER

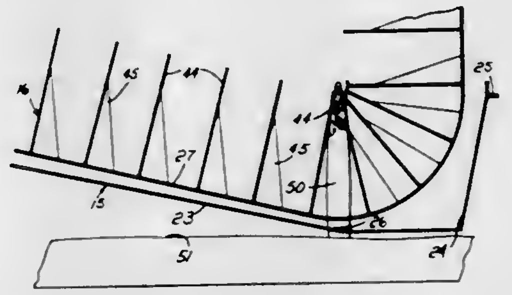
Emanuel F. Boyer, 4826 Oak Orchard Road, Albion, N.Y. 14411
Filed Sept. 7, 1965, Ser. No. 485,346
U.S. Cl. 56—327 **2 Claims**
Int. Cl. A01d *45/26, 23/06*

The cabbage harvester disclosed comprises a wheeled carriage, on which is mounted a frame that is inclined downwardly from rear to front nearly to ground level. Mounted on the frame are two spaced conveyor belts which travel upwardly from front to rear but whose upper reaches lie in downwardly converging planes. Mounted in front of the conveyors below the forward end of the frame are two spaced pneumatic-tired wheels which are coplanar and driven in opposite directions. As the vehicle moves over a row of cabbages, the wheels engage under the heads of the cabbages at opposite sides thereof to uproot the cabbages and deliver them onto the conveyor belts which carry them to a knife that severs the heads from the stalks.



3,426,516
ASPARAGUS HARVESTER

Charles R. Lyons, % Lyons Engineering & Development, Rte. 2, Box 119–b, Zillah, Wash. 98953
Filed Mar. 21, 1966, Ser. No. 536,040
U.S. Cl. 56—327 **9 Claims**
Int. Cl. A01d *45/10*

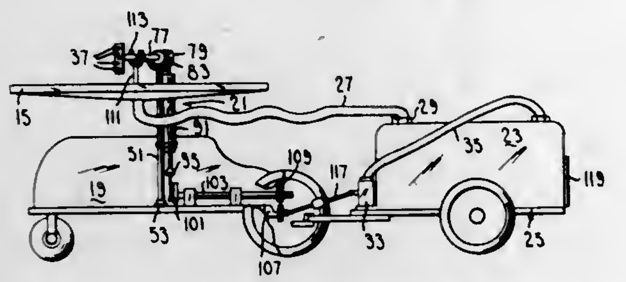


An asparagus harvester mounted on a mobile framework. The harvester includes wire guides having converging horizontal sections which engage asparagus spears having at least a selected minimum height. Each guide element leads downwardly to ground level, and carries a cutting knife at its rear end. A spear conveyor moves across the guides and grips each spear simultaneously with the cutting thereof. The spears are carried by flexibile paddles to a receiving bin.

3,426,517
GRAPE HARVESTER

George R. Duncan, Sr., Scenic Drive, Washington, Mo. 63090
Filed Dec. 3, 1965, Ser. No. 511,797
U.S. Cl. 56—330 **8 Claims**
Int. Cl. A01g *19/06*

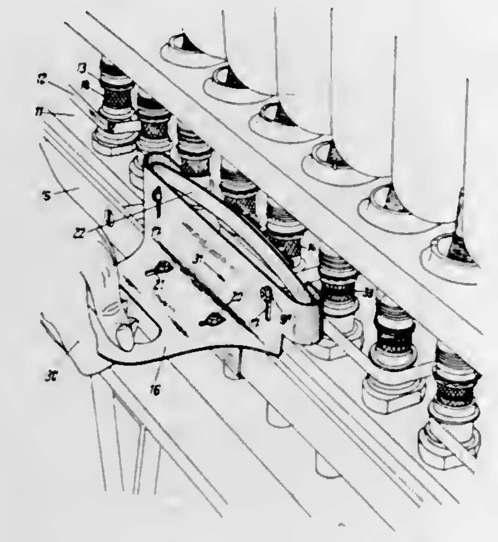
Apparatus is described which harvests grapes hanging in clusters from vines supported on generally horizontal wires. The apparatus includes an open topped pan having a downwardly tapered upper surface for collecting grapes falling from the grape clusters. Grapes falling on the pan surface will roll into a hole therein and are delivered to a tank having a filling opening. A tank discharge opening is provided for removing the grapes. A conduit provides communication between the hole in the pan and the tank filling opening so that grapes can be conveyed from the pan to the tank therethrough. The apparatus further including a vacuum pump and means positionable above the pan for shaking the wire from which the grapes are hanging. The wire-shaking means is mounted for movement horizontally toward and away from the wire



whereby it can be moved into engagement with the wire for shaking the wire when the pan is beneath grapes hanging from the wire so that individual grapes shaken from the clusters fall onto the pan and roll along the upper surface of the pan into the hole in the pan and are then conveyed into the tank.

3,426,518
THREAD SEVERING AND BRUSHING APPARATUS

Nikolaus Winter, Augsburg, Germany, and János Benedict, Almelo, Netherlands, assignors to Mechanische Baumwoll-Spinnerei und Weberei, Augsburg, Germany
Filed Aug. 24, 1964, Ser. No. 391,424
Claims priority, application Germany, Aug. 26, 1963, M 57,967
U.S. Cl. 57—34 **19 Claims**
Int. Cl. D01h *13/26, 9/14, 11/00*

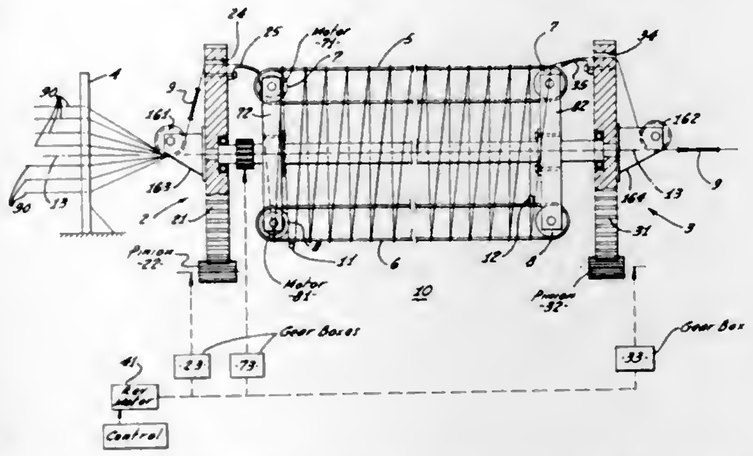


A brush is moved along a guide rail parallel to a spindle rail for severing and removing the lower thread ends of caps on the spindle which are underwound on base portions of the spindles or held on base portions of the cops.

3,426,519
APPARATUS FOR STRANDING FIBERS WITH REVERSING TWIST

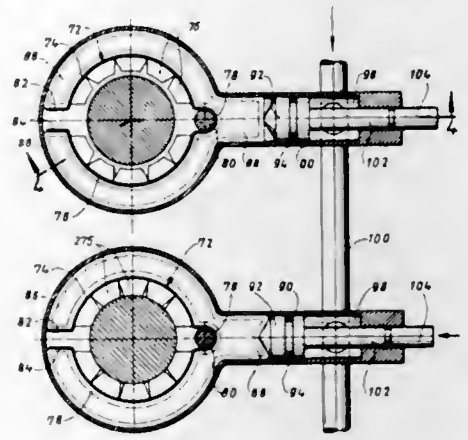
Artur Unger, Isernhagen, and Hans-Peter Stehmann and Paul Heidenreich, Hannover, Germany, assignors to Kabel- und Metallwerke Gutehoffnugshutte AG, Hannover, Germany, a corporation of Germany
Filed Feb. 8, 1968, Ser. No. 704,155
Claims priority, application Germany, Feb. 11, 1967, K 61,407
U.S. Cl. 57—59 **11 Claims**
Int. Cl. D01h *7/02, 13/26;* **D07b** *3/02*

An apparatus for stranding fibers with reversing twist is disclosed wherein a reeling store can rotate reversibly in the standing axis. Fibers are stranded and wound onto the store with a twist, the resulting loops are moved along the store axis until taken up through unwinding. The strand is wound and unwound on opposite ends of the store and in opposite directions, both of them are periodically reversed. The strand is axially movably arrested on the store at the points of reversal.



3,426,520
SPINDLE BRAKING APPARATUS FOR TEXTILE MACHINES

Erich Bucher, Goppingen, Wolfgang Osterreicher, Hohenstaufen, and Werner Mahlmann, Rechberghausen, Germany, assignors to Zinser-Textilmaschinen G.m.b.H., Ebersbach (Fils), Germany
Filed May 12, 1965, Ser. No. 455,174
Claims priority, application Germany, May 16, 1964, Z 10,847
U.S. Cl. 57—88 **10 Claims**
Int. Cl. D01h *13/18*



In a textile machine which includes a plurality of spindles, a brake for each spindle, and actuating means connected to the brakes for actuating the same and thereby brake the spindles.

3,426,521
RAYON LOOPER CLIP YARNS

Robert E. Rodermund, Asheville, Vance G. Fowler, West Asheville, and David B. Denning, Asheville, N.C., assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
No Drawing. Filed Apr. 28, 1966, Ser. No. 545,860
U.S. Cl. 57—140 **1 Claim**
Int. Cl. D02g *3/02;* **D04b** *7/16, 11/12*

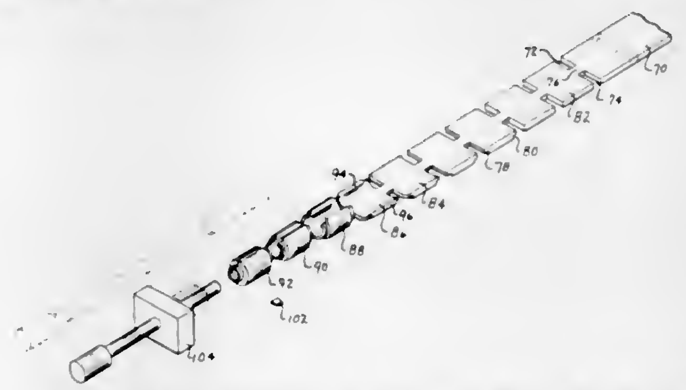
A new rayon looper clip yarn engineered especially for use in the manufacture of seamless hosiery comprising a selected number of uniquely designed ribbon-like continuous rayon filaments twisted into yarn, the number of filaments being critical and in amounts sufficient to produce a yarn having a denier from about 90 to 120 grams per 9000 meters and each of said filaments having as a cross-section, a length-to-width ratio ranging from about 9:1 to about 15:1. The number of filaments comprising the yarn may vary only over a limited range and the denier per filament has an absolute value ranging from about 6 to about 15.

ERRATUM

For Class 57—144 see:
Patent No. 3,427,647

3,426,522
LINK CHAIN AND METHOD OF MAKING SAME

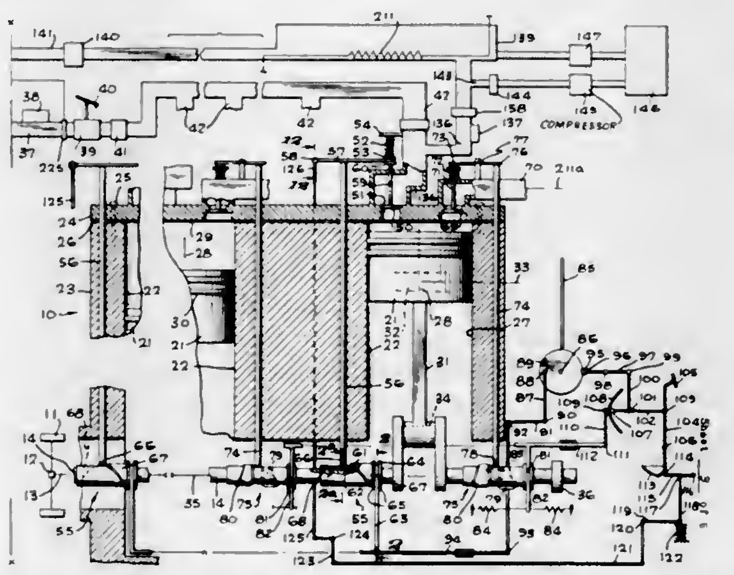
Eugene W. Onulak, P.O. Box 631, Huntington, Ind. 46750
Original application Nov. 18, 1963, Ser. No. 324,482, now Patent No. 3,324,737, dated June 13, 1967. Divided and this application Mar. 30, 1967, Ser. No. 627,145
U.S. Cl. 59—8 **7 Claims**
Int. Cl. B21l *9/02*



A method of forming a bushing for a link chain in which a strip of steel stock is advanced longitudinally, coined intermittently to form transverse shoulders, curled in the longitudinal direction, and cut into the required length at the shoulders. Notches may be cut in the sides of the strip at the places where the coining is performed.

3,426,523
ENGINE WITH COMPRESSION BRAKING SYSTEM

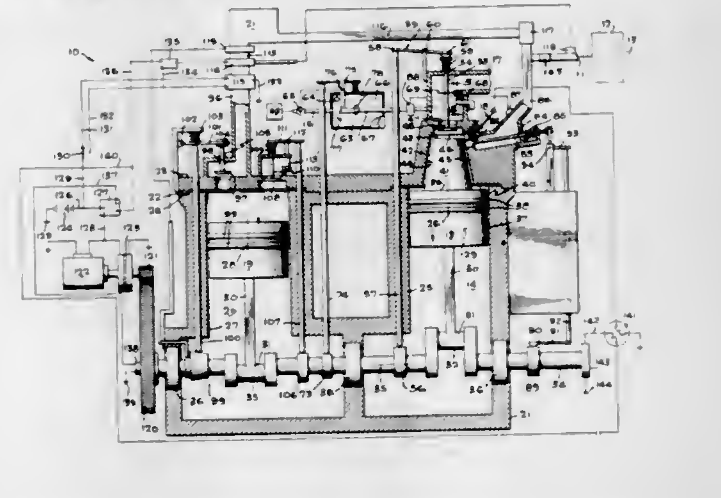
Edward L. Straub, 1400 N. Buena Vista St., Burbank, Calif. 91505
Filed Oct. 26, 1966, Ser. No. 589,728
U.S. Cl. 60—15 **26 Claims**
Int. Cl. F02b *33/02;* **F01b** *1/00;* **F02d** *31/00*



A work-brake assembly including a piston and cylinder mechanism whose pistons are in one condition driven by heated gases to produce output power, and in a second condition function as a compressor acting to take in atmospheric air and compress it into a storage container, with the compressing action producing a braking effect on the engine. The heated gases are produced by burning of a fuel-compressed air mixture within the cylinder of a second piston and cylinder mechanism, which is in turn driven by a third piston and cylinder mechanism. The third mechanism is driven by some of the heated gases from the second mechanism, supplemented by air compressed in the first piston and cylinder mechanism when in its braking condition.

3,426,524
HOT GAS GENERATOR

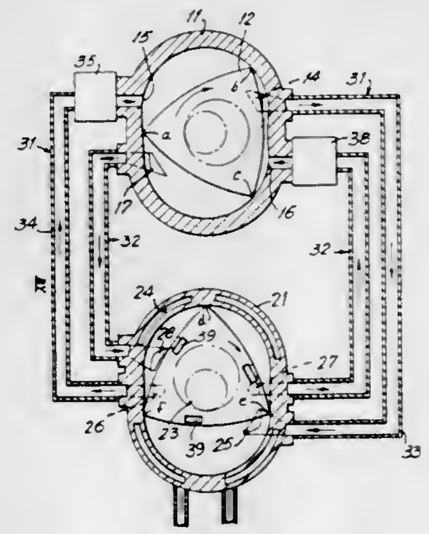
Edward L. Straub, 1400 N. Buena Vista St., Burbank, Calif. 91505
Filed Oct. 31, 1966, Ser. No. 590,954
U.S. Cl. 60—15 **21 Claims**
Int. Cl. F02g *1/00;* **F02b** *3/00;* **F02d** *13/00*



A hot gas generator for producing heated gases to be used in driving an engine, or for other purposes, said generator including a piston reciprocable within a cylinder to compress air in the cylinder, together with means for igniting fuel in the compressed air and then discharging the resultant heated gases from the cylinder, with the piston having a projection extending into an end recess in the cylinder in a relation dividing the cylinder into a first region for receiving a burnable air-fuel mixture, and a second partially isolated region for receiving primarily air. Some of the mixed air and burned gases from the cylinder may be taken to a second piston and cylinder mechanism which acts as a motor to drive the first piston.

3,426,525
ROTARY PISTON EXTERNAL COMBUSTION ENGINE

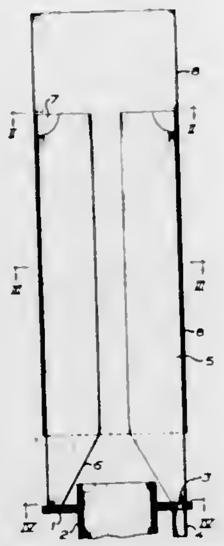
Gotthard G. Rubin, 748 Hollywood Ave., New York, N.Y. 10465
Filed Aug. 10, 1967, Ser. No. 659,706
U.S. Cl. 60—24 **10 Claims**
Int. Cl. F03g *7/06;* **F01k** *23/02*



An engine having at least two trochoidal chambers, each with a rotary piston, drivingly connected to an output shaft. The chambers are connected together through a pair of regenerative paths through which gas flows with the gas being heated prior to entry to one chamber and being cooled in the other chamber whereby the compression and expansion of the gas as it flows through the regenerative cycle develops usable work energy.

3,426,526
DEVICE FOR DRYING EXHAUST GASES FROM AN INTERNAL COMBUSTION ENGINE

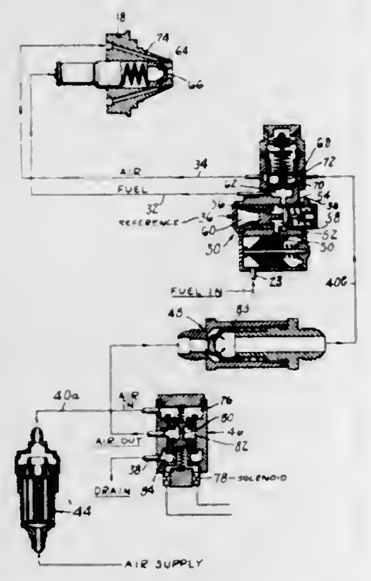
Sven Ivan Arvid Tornmarck, Malmo, Sweden, assignor to Kockums Mekaniska Verkstads Aktiebolag, Malmo, Sweden
Filed June 6, 1967, Ser. No. 643,905
Claims priority, application Sweden, June 10, 1966, 7,951/66
U.S. Cl. 60—30 **2 Claims**
Int. Cl. F01n *3/04;* **B01d** *47/00*



A device for drying exhaust gases from an internal combustion engine, comprising a vertical tube with lobed cross section and having an open upper end and a lower end closed by a baseplate having a central inlet for exhaust gases from the engine and an outlet for liquid, said inlet and outlet communicating with the interior of the tube, and a jacket around said tube extending from a point above said baseplate to a point above the upper end of said tube so that exhaust gases leaving the upper end of said tube draw cooling air upwards through said jacket around the lobes of said tube.

3,426,527
STARTING SYSTEM FOR GAS TURBINE ENGINES

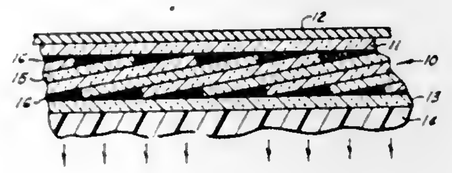
James G. O'Connor, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,297
U.S. Cl. 60—39.14 **5 Claims**
Int. Cl. F02c *7/26;* **F02g** *3/00;* **B05b** *7/06*



A gas turbine engine fuel system wherein fuel is injected through both flow paths of dual flow injection nozzles during normal operation but through only one during startup operation with air or other atomizing fluid being injected through the other.

3,426,528
LINER CONFIGURATION FOR SOLID PROPELLANT ROCKET MOTORS

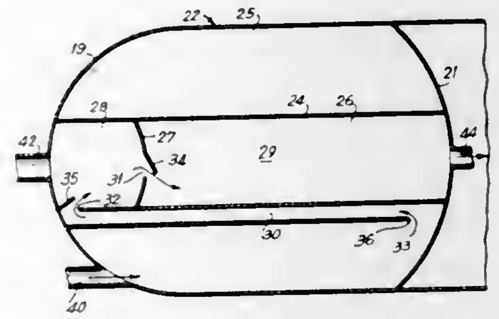
Grafton F. Mangum and Carl J. Whelchel, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,973
U.S. Cl. 60—39.47 **3 Claims**
Int. Cl. F02c *3/26;* **F02k** *9/04;* **F42b** *9/14*



This invention relates to a solid propellant support configuration comprising a plurality of juxaposed members positioned between and bonded to a solid propellant liner and a rocket motor casing but unbonded to one another.

3,426,529
TANK CONSTRUCTION FOR JET ENGINE

Hartmann J. Kircher III, Sparta, N.J., and James A. Rossetto, Orlando, Fla., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 531,173
U.S. Cl. 60—39.48 **7 Claims**
Int. Cl. F02k *9/02*

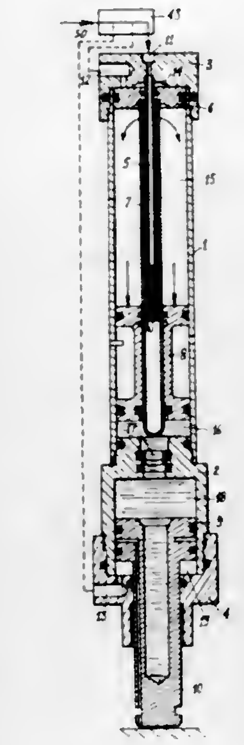


Disclosure is directed to a cylindrical tank construction for a rocket engine having partitions forming concentric chambers with the inner space divided into separate chambers along the axis and a passageway for flow between the outer chamber and forward inner chamber having a check valve. In the illustrated embodiment the tank is divided by a transverse partition to provide inner and outer chambers for separate liquid propellants.

3,426,530
OLEOPNEUMATIC JACK WITH STAGED STRUCTURE

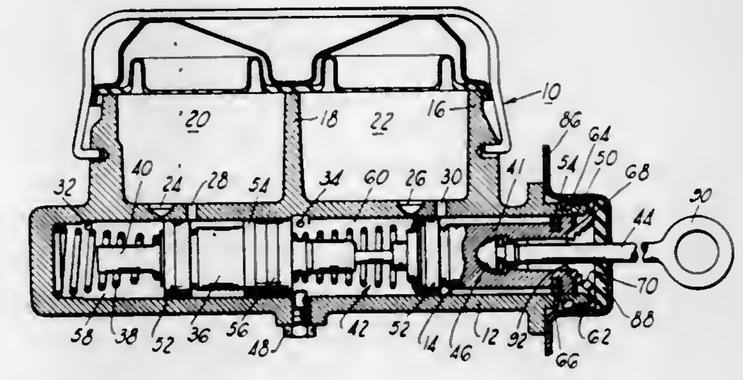
Alexandre Georgelin, Colombes, France, assignor to Etablissements L. Faiveley, St-Ouen, Seine-St-Denis, France, a company
Filed Oct. 18, 1967, Ser. No. 676,213
Claims priority, application France, Oct. 26, 1966, 81,641
U.S. Cl. 60—54.5 **9 Claims**
Int. Cl. F15b *7/00, 15/14*

An oleopneumatic jack having a staged structure for the purpose of producing a rapid advance followed by a slow advance comprises on the one hand a control cylinder inside which are slidably fitted a master piston secured to a hollow rod and a float which is adapted to slide along said hollow rod and on the other hand an actuating cylinder containing a driving piston which carries the thrust member. The space located between the float and the driving piston is filled with a liquid and divided into two chambers by a diaphragm which is obsturated by the hollow rod of the master piston at the moment of slow advance of the jack. Provision is made in addition for a compressed-air distributor in order that a driving fluid under pressure may be delivered at will between the master piston and the float for the purpose of initiating the rapid advance and between the master piston and the end of the control cylinder for the purpose of initiating the slow advance. Restoring means are also provided for the purpose of returning the moving components to their starting positions.



3,426,531
MASTER CYLINDER BOOT

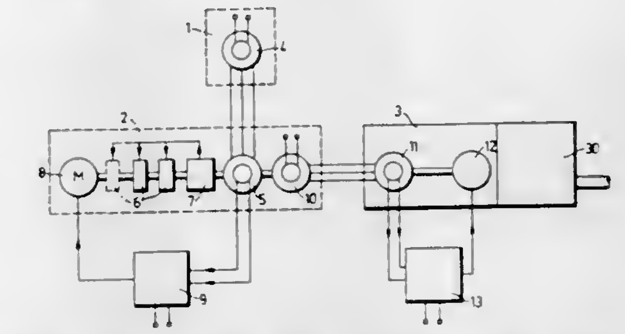
Raymond A. Reznicek and Julian L. Chalk, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,765
U.S. Cl. 60—54.6 **10 Claims**
Int. Cl. F15b *7/08;* **F16j** *15/52*



A boot for closing the end of a bore of a master cylinder which will maintain sealing contact with the piston of the master cylinder regardless of the pressure differential across the boot.

3,426,532
REMOTE CONTROL SYSTEM FOR POWER PLANT PREFERABLY FOR THE DIRECT CONTROL OF A SHIP'S MAIN PROPULSION POWER PLANT FROM THE SHIP'S BRIDGE

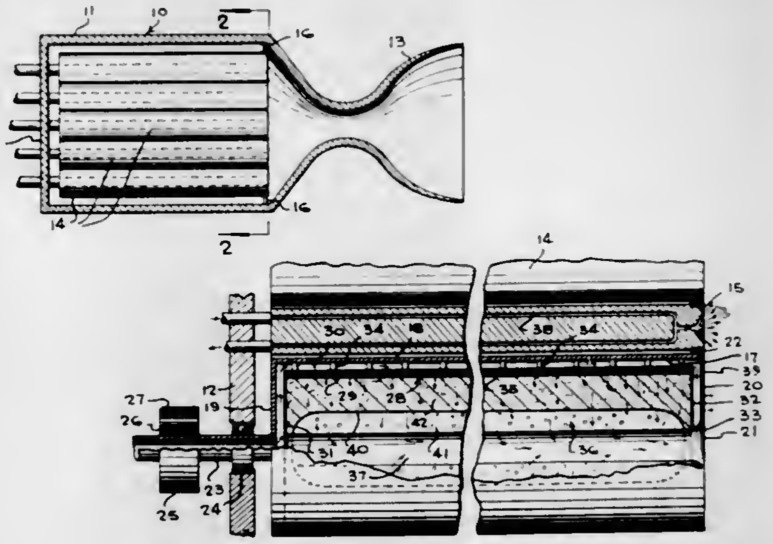
Gunnar A. Kihlberg, Ekorrvagen 4, Sollentuna, Sweden, and Henry E. Reit, Rorstrandsgatan 46, Stockholm, Sweden
Filed Feb. 10, 1966, Ser. No. 526,599
Claims priority, application Sweden, Feb. 10, 1965, 1,660/65
U.S. Cl. 60—105 **15 Claims**
Int. Cl. F01k *13/60;* **H02p** *1/54*



A remote control system for controlling the power plant of a ship such as controlling the speed of the ship, which includes a transmitting unit such as a synchro transmitter, adapted to develop an electrical signal proportional to the desired change in operation of the ship, such as an electrical signal proportional to an increase in speed, a storage and comparison system, such as a synchro comparator, which is adapted to store the next previous electrical signal from the transmitter, receive the new electrical signal from the transmitter, and change the mechanical position of the comparator ready for comparison with the next received signal, and finally to produce an output signal proportional to the difference between the previous signal and the new signal, and a control unit, such as a synchro comparator mechanically coupled to the speed governor of the ship's engine, which is adapted to receive the signal from the storage and comparison unit, and change the position of the operating element of the propulsion system to bring about the demanded change in operation.

3,426,533
LIQUID CORE NUCLEAR PROPULSION REACTOR

Jerry Grey, 61 Adams Drive, Princeton, N.J. 08540; Seymour T. Nelson, Lake Hiawatha, N.J.; and Peter M. Williams, Princeton, N.J. (9418 Thrush Lane, Potomac, Md. 20854); said Nelson assignor to said Grey
Filed June 28, 1965, Ser. No. 474,200
U.S. Cl. 60—203 **30 Claims**
Int. Cl. G21d *5/06*



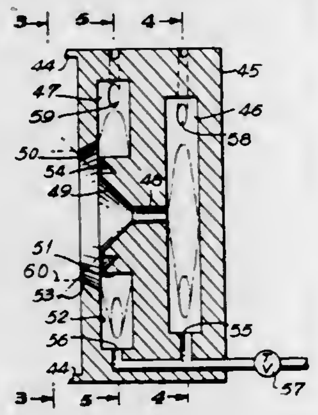
1. A nuclear reactor propulsion unit comprising a plurality of rotatable fuel elements, the interiors of said fuel elements defining thrust chambers, each of said fuel ele-

ments having a stratum surrounding the chamber thereof comprising a fissionable fuel-moderator material, means for activating said fissionable fuel material to melt said strata, means for individually rotating said fuel elements to maintain the physical integrity of each of said strata when at least a portion thereof is in the molten phase, means for cooling the outer regions of said strata to maintain the same in the solid phase when said fissionable fuel material is activated and means for injecting a working fluid through said strata into said thrust chambers.

3,426,534

FUEL CONTROL DEVICE

Donald F. Murphy, Hackettstown, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 2, 1966, Ser. No. 554,814
U.S. Cl. 60—258 **14 Claims**
Int. Cl. F02k *9/02;* **F02g** *1/00;* **B05b** *7/10*

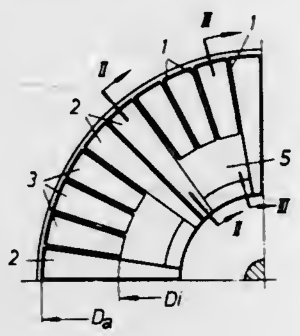


A method of and apparatus therefor of controlling the delivery of a fluid with the aid of a circular chamber having an axial outlet opening at one side by supplying fluid to the chamber, supplying a second lower specific gravity fluid to the chamber to import rotative force and energy to the first fluid therein, and varying the rate of flow of said second fluid to control the rate at which the first fluid escapes from said opening.

3,426,535

FLUID COUPLING WITH CONSTANT FILLING

Siegfried Mlacker, Heidenheim (Brenz), Hans Mack, Sontheim (Brenz), and Lorenz Karl, Heidenheim (Brenz), Germany, assignors to Voith Getriebe KG, Heidenheim (Brenz), Germany
Filed Sept. 19, 1966, Ser. No. 580,312
Claims priority, application Germany, Sept. 22, 1965, V 29,379
U.S. Cl. 60—54 **20 Claims**
Int. Cl. F16h *41/04;* **F04d** *29/18*

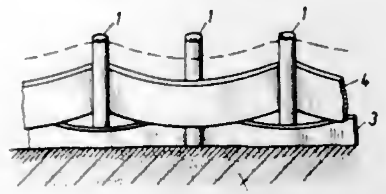


A fluid coupling with constant filling in which the turbine wheel is provided with a plurality of circumferentially distributed blade cells of different shapes and of considerably different inner diameters while the outer diameter of at least some of said blade cells is approximately the same.

3,426,536

BARRIER DEVICE FOR COASTAL PROTECTION

Heinrich Danz, 72 Christbuchenstrasse, Kassel, Germany
Filed Mar. 30, 1966, Ser. No. 538,656
Claims priority, application Germany, Apr. 2, 1965, D 46,951
U.S. Cl. 61—3 **2 Claims**
Int. Cl. E02b *3/12;* **E02d** *29/02;* **E01f** *7/00*

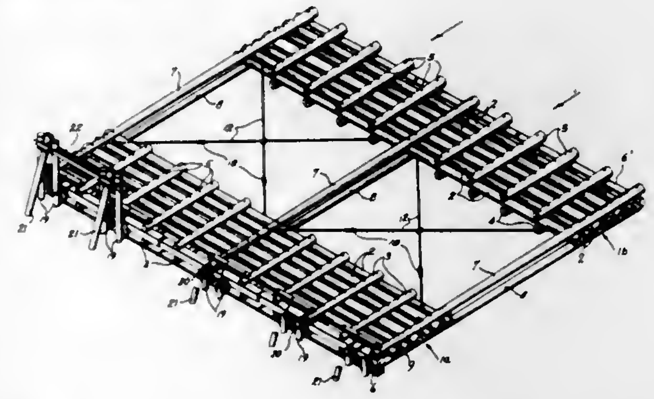


A device for impeding the flow of moveable sand or silt, such as wind and wave driven sand and mud, utilizes the concept of interweaving horizontal strips of material between spaced apart upright posts. The horizontal strips are susceptible of being relocated vertically when the buildup of such moveable sand or silt on the incoming side of the retaining structure warrants such action.

3,426,537

FLOATING BREAKWATERS

Harry H. Chenoweth and Gordon G. Ingman, Seattle, Wash., assignors, by mesne assignments, to Hill, Ingman, Chase & Co., Seattle, Wash., a corporation of Washington
Filed Nov. 5, 1965, Ser. No. 506,533
U.S. Cl. 61—5 **5 Claims**
Int. Cl. E02b *3/06*



Grids to dissipitate wave energy are composed of a series of substantially parallel elongated members, such as logs, connected positively in substantially parallel, definitely spaced relationship by upper and lower cross members in vertical registry. The elongated members and cross members are secured together by bolts extending through their crossing portions. The width of the grid is a plurality of times as great as its depth and the slots between the elongated members are of substantial width, but at least not appreciably greater than the width of one of such members. A plurality of grid portions are connected together by spaced spreaders to form bays between the grid portions. Tie rods extend diagonally across such bays in crossing relationship.

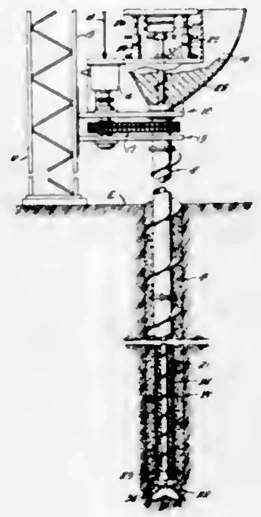
3,426,538

METHOD OF MAKING SAND DRAINS IN SITU

Lee A. Turzillo, Bath, Ohio
(2078 Glengary Road, Akron, Ohio 44313)
Filed Mar. 19, 1965, Ser. No. 441,053
U.S. Cl. 61—11 **6 Claims**
Int. Cl. E02b *11/00;* **E02d** *5/34*

Method and means for providing in an earth situs a pile or other structural column different from that of the situs, includes screwing hollow-shafted auger into situs to form bore, and smaller auger is selectively axially

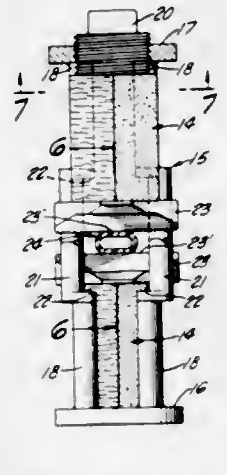
shifted in the hollow shaft to move closure carried by smaller auger to selectively adjusted spacing of closure from closed position against inner end of hollow shaft. Larger auger progressively withdrawn from bore while rotating smaller auger in hollow shaft, forcibly to convey bore filling material through hollow shaft, past closure and be dispersed and compacted within the bore. Other means provided, separately supplying fluid material to bore through shaft of smaller auger for combination with materials conveyed into bore by auger flighting.



3,426,539

MOISTURE ACTUATED DEVICE

Alfred L. Whear, P.O. Box 366, Minden, Nev. 89423
Filed Feb. 2, 1965, Ser. No. 429,747
U.S. Cl. 61—13 **11 Claims**
Int. Cl. E02b *13/02*



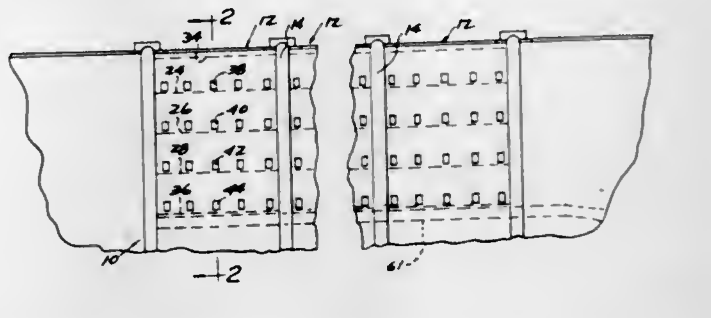
A moisture responsive sensor to control an underground irrigation system is buried in the soil and comprises an open plastic cage straddling a resiliently collapsible tube of the irrigation system and confining moisture responsive means that expands to actuate jaw means to pinch and close the resilient tube, the jaw means being guided by the plastic cage.

3,426,540

TIDEWATER POWER GENERATION SYSTEM

Arthur E. Fixel, 2163 Penobscot Bldg., Detroit, Mich. 48226
Continuation-in-part of application Ser. No. 523,682, Jan. 28, 1966. This application Jan. 27, 1967, Ser. No. 612,133
U.S. Cl. 61—20 **8 Claims**
Int. Cl. E02b *9/08;* **F03b** *13/12;* **H02p** *9/04*

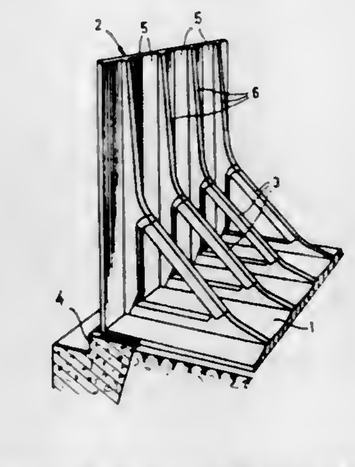
A dam structure between the body of water in the sea and a natural or artificial reservoir or estuary, the dam structure having numerous vertically and laterally wall-separated chambers with power generating turbines in the horizontal walls between adjacent chambers, a plurality of individually controllable gates on both the seawater and the reservoir sides of the chambers and between adjacent chambers, with interior enclosures to selectively close the turbines from water flow between chambers, and bypass means for bypassing the turbines in permitting waterflow between the vertically adjacent chambers, and the dam having a large gate for rapid transfer of water from one side to the other when desired.



3,426,541

EARTH SUPPORTING STRUCTURES

Carlo Chiaves, 48 Corso Re Umberto, Turin, Italy
Filed Mar. 21, 1967, Ser. No. 624,929
Claims priority, application Italy, Mar. 30, 1966, 7,371/66
U.S. Cl. 61—39 **5 Claims**
Int. Cl. E02d *5/20;* **E04b** *1/344;* **E04c** *1/10*



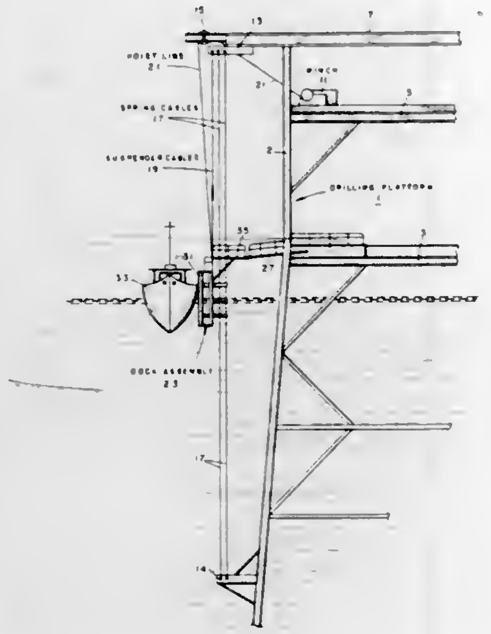
An earth supporting structure is formed from a plurality of prefabricated re-inforced elements, each element comprising a prefabricated re-inforced concrete panel with a prefabricated re-inforced concrete tie rod for supporting the panel in an erect position, the tie rod being articulated to the panel through exposed common re-inforcing elements so that the structural element as a whole will take up relatively little space in storage and handling and will be easy to erect. A method of erecting the structural element includes supporting the panel in a substantially upright position utilizing the tie rod as a prop. With the element in such propped position final adjustment and the laying of a concrete base over the free end of the tie rod may be carried out and the exposed common re-inforcing elements covered with concrete.

3,426,542

APPARATUS FOR USE WITH OFFSHORE MARINE STRUCTURES

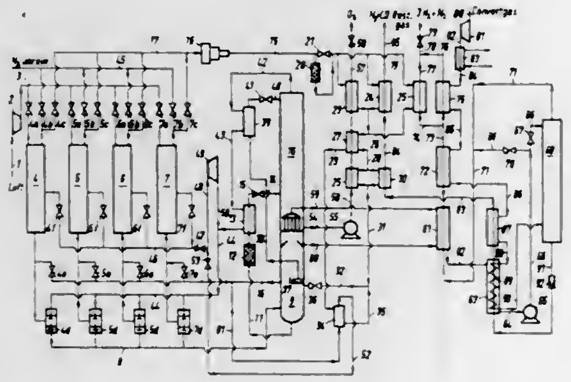
Robert G. Hindman, Madrid, Spain, and John J. Bardgette, New Orleans, La., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Original application Mar. 15, 1965, Ser. No. 439,688. Divided and this application Sept. 29, 1967, Ser. No. 671,838
U.S. Cl. 61—46 **2 Claims**
Int. Cl. E02b *17/00, 3/20;* **B63b** *21/04*

A marine fender includes a curved rubber sheath affixed to a cylindrical base member detachable cap. The fender is used with a mooring structure including a rectangular dock suspended from a marine structure and having a personnel transfer deck. A ladder extends from normal level on the dock to the level of the personnel transfer deck, and ramp means extends from the deck to the marine structure.



3,426,543
COMBINING PURE LIQUID AND VAPOR NITROGEN STREAMS FROM AIR SEPARATION FOR CRUDE HYDROGEN GAS WASHING

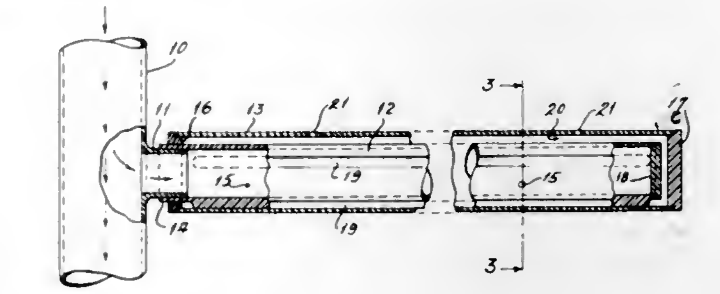
Rudolf Becker, Munich-Solln, Germany, assignor to Linde Aktiengesellschaft, Hildastrasse, Germany
Continuation-in-part of application Ser. No. 373,418, June 8, 1964. This application Oct. 17, 1967, Ser. No. 677,839
Claims priority, application Germany, June 19, 1963, G 37,986
U.S. Cl. 62—13 **21 Claims**
Int. Cl. F25j *3/04*



Air is separated in an air separation plant employing a double rectification column. An impure nitrogen stream from the high pressure column is recompressed and then cooled by vaporizing oxygen from the low pressure column as well as exiting ammonia synthesis gas and scrubber liquid streams from a crude hydrogen scrubber before returning to the high pressure column. Separate streams of pure nitrogen liquid and vapor are removed from the high pressure column which streams are combined and completely liquefied with part of the liquid nitrogen being used to wash a crude hydrogen gas while another part of the pure liquefied nitrogen is added to the washed hydrogen to form a gas stream for ammonia synthesis.

3,426,544
AQUA-TUBE SUB-SURFACE IRRIGATION

Robert Curtis, Rte. 4, Box 253, Springfield, Mo. 65801
Filed Nov. 24, 1967, Ser. No. 685,713
U.S. Cl. 61—13 **4 Claims**
Int. Cl. E02b *13/00*



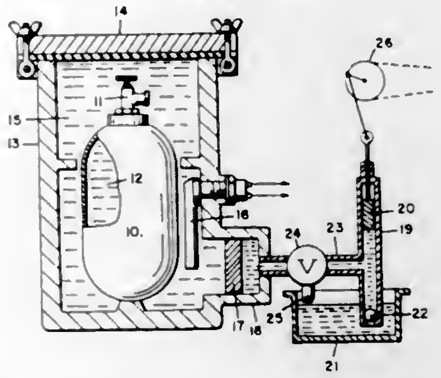
An irrigation system which includes means for supplying irrigating fluid or water below grade or below the surface of the ground, said means including a fluid distributor conduit having spaced perforations, a distributor conduit enclosing the feeder conduit and itself provided with perforations, and means retaining the conduits in spaced relation to provide a chamber therebetween which is flooded with the irrigating fluid so as to maintain a supply distributed substantially equally to the perforations in the distributor conduit.

ERRATUM

For Class 62—13 see:
Patent No. 3,426,543

3,426,545
GENERATION OF GAS AT HIGH PRESSURES

Clayton T. Lloyd, 4917 55th Place, Hyattsville, Md. 20781
Continuation-in-part of application Ser. No. 412,582, Nov. 12, 1964. This application Oct. 21, 1966, Ser. No. 588,421
U.S. Cl. 62—45 **9 Claims**
Int. Cl. F17c *1/02, 7/00;* **F02k** *7/00*

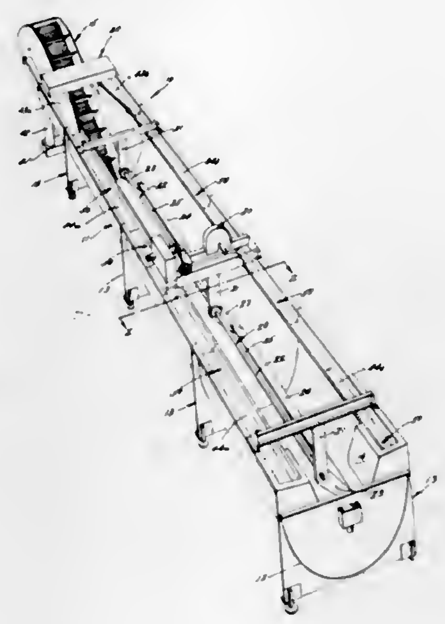


A receptacle containing gas at cryogenic temperature is disposed in a sealed jacket containing a liquid. The liquid is heated so that the gas in the receptacle is transformed into vapor at extreme pressure. The liquid in the jacket is subjected to extreme static pressure by mechanical means, so as to counteract the pressure of the generated gas and prevent the receptacle from bursting.

3,426,546
HEAT EXCHANGE TANK

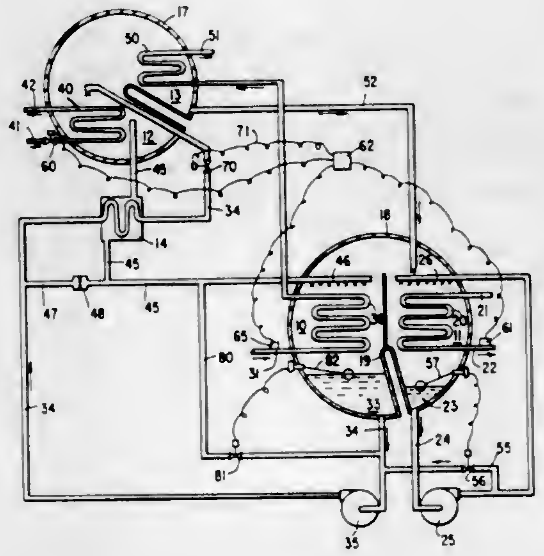
Edward J. Crane, Ottumwa, Iowa, assignor to International Agri Systems, Inc., Ottumwa, Iowa, a corporation of Iowa
Filed Aug. 23, 1967, Ser. No. 662,718
U.S. Cl. 62—63 **8 Claims**
Int. Cl. F25d *13/06, 13/04;* **F25** *17/02*

A heat exchange apparatus having an elongated tank adapted to be filled with circulating heat-exchange fluid. An oscillating paddle structure is provided within the tank to agitate the articles (poultry in the preferred embodiment) as they pass through the tank. The heat exchange liquid is recirculated through the tank by withdrawing it at one extremity, treating it to raise or lower its temperature and then discharging it by way of a series of flumes into the opposite extremity of the tank. The flumes are provided with adjustable discharge ports at spaced locations along their complete lengths whereby the heat-exchange fluid may be reintroduced into the tank at any specified section thereof and at any desired rate. This permits different sections of the tank to be maintained at different temperature levels.



3,426,547
CONTROL OF ABSORPTION REFRIGERATION SYSTEMS

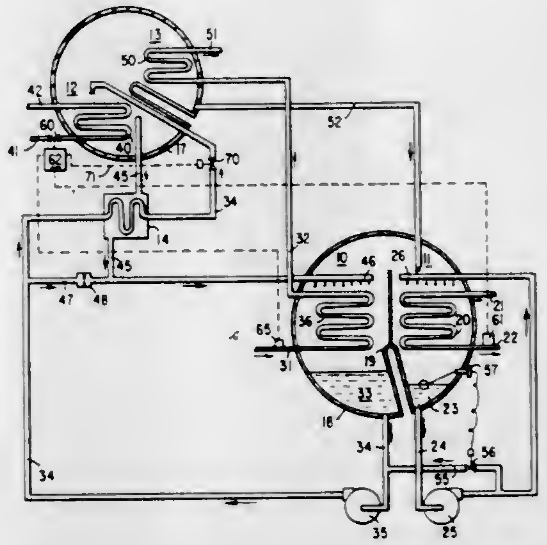
Glenn B. Foster, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 682,254
U.S. Cl. 62—101 **12 Claims**
Int. Cl. F25b *15/00, 39/00*



An absorption refrigeration control system having a steam valve responsive to leaving chilled water temperature from the evaporator for modulating supply of steam to the generator, a solution control valve responsive to leaving chilled water temperature from the evaporator for reducing the quantity of solution supplied to the generator under conditions of relatively low refrigeration demand, and a strong solution bypass passage and a solution bypass valve responsive to the level of absorbent solution in the absorber for bypassing strong solution around the absorber upon a rise in level of solution therein above a predetermined level.

3,426,548
CAPACITY CONTROL FOR ABSORPTION REFRIGERATION SYSTEMS

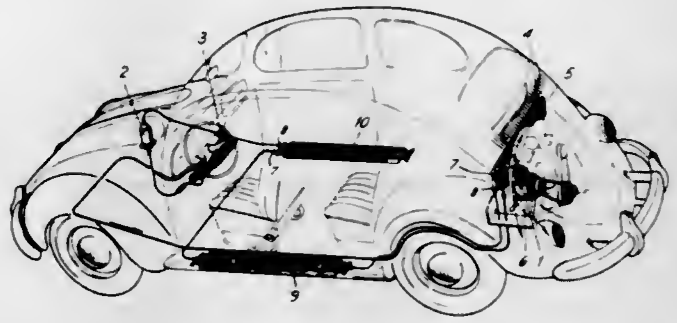
John A. Greacen, Fayetteville, and Lawrence S. Beresik, East Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 682,349
U.S. Cl. 62—101 **12 Claims**
Int. Cl. F25b *15/00, 39/00*



A control system for an absorption refrigeration machine having a steam valve for modulating the heat input to the generator and a solution control valve arranged for stepwise adjustment of the quantity of strong solution cooled in the absorber Both the steam valve and solution valve controls are responsive to the refrigeration demand imposed on the system, which is detected by sensing the temperature of chilled water leaving the evaporator. A dilution control is provided responsive to level of refrigerant in the evaporator to prevent over-concentration of the absorbent solution under conditions of low or uncontrolled entering condensing water temperature.

3,426,549
AIR CONDITIONING INSTALLATION FOR MOTOR VEHICLES

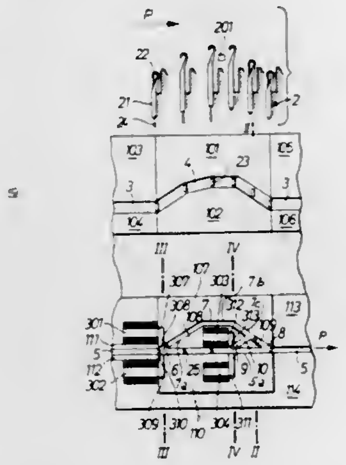
Helmut Bardong, Stuttgart-Feuerbach, Germany, assignor to Fa. Suddeutsche Kuhlerfabrik Julius Fr. Behr. Stuttgart-Feuerbach, Germany
Filed July 28, 1967, Ser. No. 656,764
Claims priority, application Germany, July 29, 1966, S 105,101
U.S. Cl. 62—244 **2 Claims**
Int. Cl. B60h *3/04*



Air conditioning system for automobile, including auxiliary condensers mounted externally of the motor.

3,426,550
SLIDE LATCH NEEDLE SELECTOR ARRANGEMENT

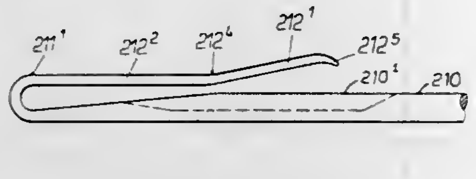
Richard Schmidt, Stuttgart-Vaihingen, Germany, assignor to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Mar. 21, 1967, Ser. No. 624,830
Claims priority, application Germany, Jan. 14, 1967, M 72,411
U.S. Cl. 66—13 **11 Claims**
Int. Cl. D04b *15/78, 9/12*



The hook elements and latch elements of slide latch needles mounted on a needle cylinder, are guided by different cam tracks to close or open the latch needles while the same are raised and lowered. At the junctures between different cam tracks, electromagnetic selectors switch the latch elements selectively between higher rising and lower horizontal cam tracks.

3,426,551
KNITTING MACHINE NEEDLE

Robert Buck, Eberhardstr. 18, Rottenburg (Neckar), Germany
Filed Dec. 19, 1966, Ser. No. 602,725
Claims priority, application Germany, Dec. 3, 1966, B 85,124
U.S. Cl. 66—119 **4 Claims**
Int. Cl. D04b *35/08*

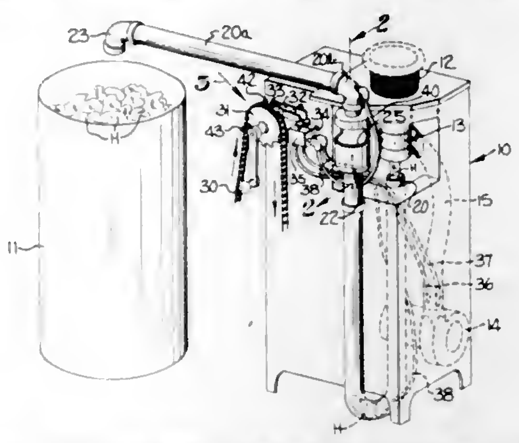


Knitting machine needle, which has a groove formed in the shank and the beard (FIGS. 1 to 4—**212**) so arranged that the upper edge of at least a portion of the tip is parallel to the shaft, fitting in the groove with clearance to permit free movement of yarn to be knitted and enable positive closing without wear on the machine rail by providing a bearing surface for the machine presser bar at the upper edge of the shank where the groove is formed.

3,426,552
HOSIERY TAKE-UP AND DELIVERY APPARATUS

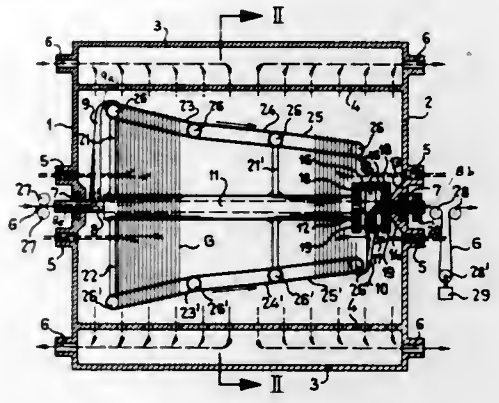
Truette H. Baird, Valdese, N.C., assignor to Stevens Hosiery Division of J. P. Stevens & Co., Inc., Hickory, N.C., a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,789
U.S. Cl. 66—149 **7 Claims**
Int. Cl. D04b *27/34;* **B65g** *53/06*

An apparatus for temporarily retaining textile articles at a convenient location in a pneumatic conveying system to permit selective removal of the articles for inspection. This apparatus is particularly adapted for use with circular hosiery knitting machines and retains the last-knit hose in a convenient position for a period of time where it may be removed and inspected before it continues on to the collection point.



3,426,553
APPARATUS FOR CONTINUOUSLY TREATING A YARN

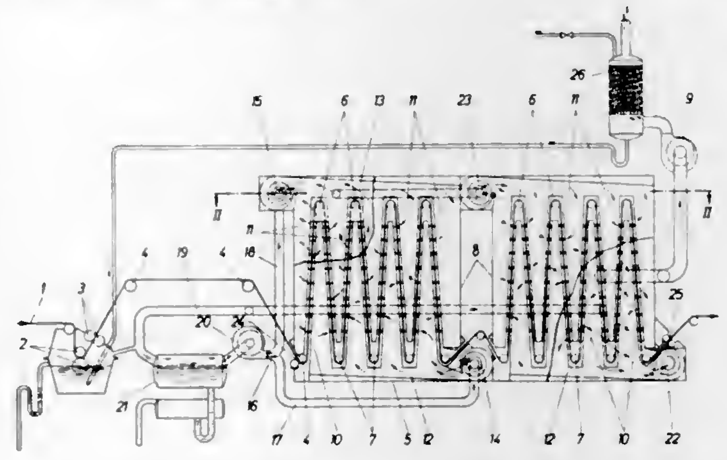
Ernst Erb, 20 Realpstrasse, 4000 Basel, Switzerland
Filed July 27, 1966, Ser. No. 568,229
Claims priority, application Switzerland, July 30, 1965, 10,805/65; Apr. 7, 1966, 5,230/66
U.S. Cl. 68—5 **17 Claims**
Int. Cl. D06f *35/00;* **B65h** *49/04*



A non-rotatable structure including a plurality of conveyors disposed about an axis, receives yarn loops at the receiving ends of the conveyors which transport the loop in the form of a coil to the delivery ends of the conveyors where the leading loop is taken off. The conveyors are designed to cause no rotation of the coil. The apparatus is located in a closed chamber where the yarn is treated.

3,426,554
APPARATUS FOR BLEACHING

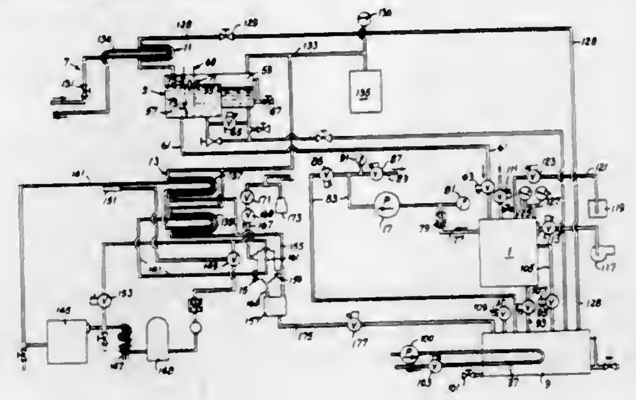
Aloys Simons, Aachen, Germany, assignor to H. Krantz, Aachen, Germany, a corporation of Germany
Filed Mar. 12, 1965, Ser. No. 439,194
Claims priority, application Germany, Mar. 13, 1964, K 52,366
U.S. Cl. 68—9 **7 Claims**
Int. Cl. D06c *1/10;* **D06l** *3/08*



7. The apparatus of claim 1, said directing means having partitions extending along both sides of the fabric for directing upon both sides of the fabric whirling blasts of air containing 0.5 to 7% by volume of chlorine dioxide gas.

3,426,555
DRY CLEANING

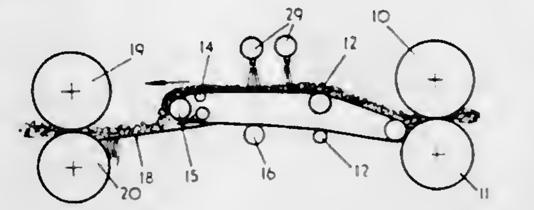
Charles E. McCutcheon, Jr., Highway 5 and Lucky, Fayette, Mo. 65248
Filed June 26, 1964, Ser. No. 378,162
U.S. Cl. 68—12 **18 Claims**
Int. Cl. D06f *33/02, 29/02*



A dry cleaning machine has a vacuum chamber in which work to be cleaned and dried is agitated throughout a cleaning cycle and a subsequent drying cycle. A closed-circuit fluid system supplies a quantity of highly volatile dry cleaning fluid into the chamber for cleaning the work and subsequently reconditions the fluid for reuse. A vacuum pump communicates with the chamber and its operation is controlled so that a vacuum is drawn in the chamber at the beginning of the cleaning cycle and vacuum is maintained in the chamber during the cleaning and drying cycles of operation. Work is cleaned by loading it into the chamber and sealing the chamber, then drawing a vacuum in the chamber and introducing the evaporative dry cleaning fluid into the chamber. The work is agitated in the chamber and cleaned by the cleaning fluid under a vacuum on the chamber. Then the fluid is drained from the chamber and the fluid evaporated from the work. The used cleaning fluid is reconditioned by a process including the steps of vaporization and condensation of the fluid.

3,426,556
APPARATUS FOR TREATING FIBROUS MATERIAL

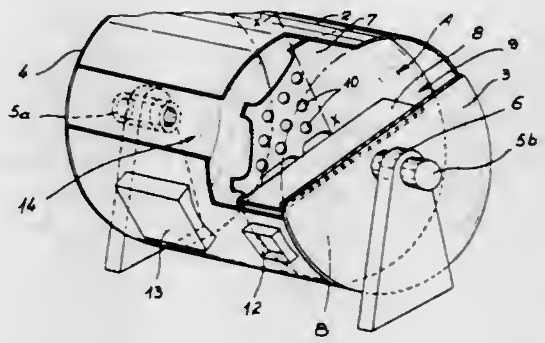
Kenneth Rutter, Shawforth, near Rochdale, England, assignor to Petrie & McNaught Limited, Rochdale, England, a British company
Filed June 3, 1966, Ser. No. 555,035
Claims priority, application Great Britain, June 3, 1965, 23,814/65
U.S. Cl. 68—22 **8 Claims**
Int. Cl. D06f *45/28*



Fibrous material treating apparatus which has means for applying treating liquor to fibrous material, a permeable conveying means to convey the fibrous material past the treating liquor applying means, squeezing means to remove the excess treating liquor from the fibrous material, and chute means which extend between the liquor treatment and the squeezing means. In the past serious problems occurred because short fibers were not long enough to be caught between the squeezing means and thereby tended to form a blockage. This problem is overcome by providing a means for directing a fluid flow through the permeable conveying means to transfer the fibrous material from the conveying means to the chute means, and a liquid supply means to provide a liquid flow along the chute means in order to convey the fibrous material to the squeezing means.

3,426,557
TREATING DRUM

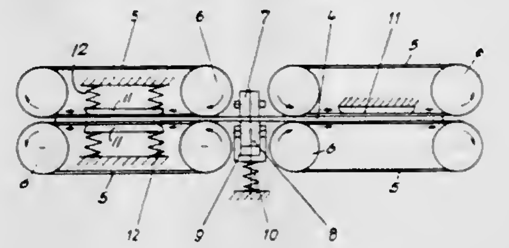
Claude Pillard, Lyon, France, assignor to Centre Technique du Cuir, Lyon, France
Filed Aug. 17, 1967, Ser. No. 661,429
Claims priority, application France, Aug. 31, 1966, 47,673
U.S. Cl. 69—30 **6 Claims**
Int. Cl. C14c *15/00;* **D06f** *37/04*



A rotary tanning drum having a cylindrical shell and end walls mounting the drum for rotation provided with a transverse vertical partition wall adjacent one end wall to form a false end section, said false end section being divided into two unequal communicating compartments by a plate between the partition wall and the end wall, aperture means between the main drum section and the smaller compartment and drain means to the outside of the drum from the larger compartment whereby upon rotation of the drum in one direction the liquid in the drum will be drained by passage through the partition wall apertures, the small compartment, the large compartment and drain means, but, upon reverse rotation, there is no drainage of the liquid in the drum.

3,426,558
DEVICE FOR STRETCHING LEATHER OR THE LIKE

Norbert Schmid, Scharnhorst-Strasse 8, Regensburg, Germany
Filed Aug. 25, 1966, Ser. No. 575,176
Claims priority, application Germany, Aug. 25, 1965, B 83,424
U.S. Cl. 69—46 **2 Claims**
Int. Cl. C14b *1/22, 1/26*



Provided at a station of a hide's pass to a power feed is a hide spreading device having means acting substantially midway of the width of a passing hide to guide and hold the latter in a straight direction to the feed, and pairs of power-driven belts on opposite sides of the guide means, of which each pair of belts has adjacent runs extending substantially normal to said direction and gripping a passing hide between them for its widthwise spread.

3,426,559

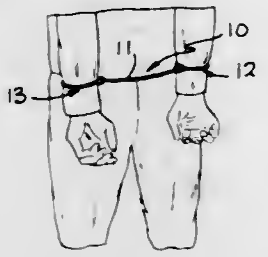
DEVICE FOR RESTRAINING PRISONERS AND THE LIKE

Uluse E. Schubach, 2419 Golden Spur Lane, Miraleste, Calif. 90731; Otho C. Woods, 15152 Fairacres Drive, La Mirada, Calif. 90638; and Patrick C. Grutsch, 1724 Ortega Place; and Jack L. Eberhardt, 27607 Bandra Place, both of San Pedro, Calif. 90732

Filed Dec. 30, 1966, Ser. No. 606,359

U.S. Cl. 70—16 **9 Claims**

Int. Cl. E05b *75/00;* **A01k** *1/06*



A prisoner restraining device including an elongated flexible cord for connecting the wrists or ankles of a prisoner, froming two loops at its opposite ends to receive the ankles or wrists, with the cord having a small terminal loop at one of its extremities received about an intermediate portion of the cord to form a first of the loops, and with the cord carrying a snap hook at its opposite end detachably connectable to an intermediate portion of the cord to form the second loop, and further with the flexible member and its terminal eye and snap hook having a combined overall length of between about 27 inches and 33 inches.

3,426,560

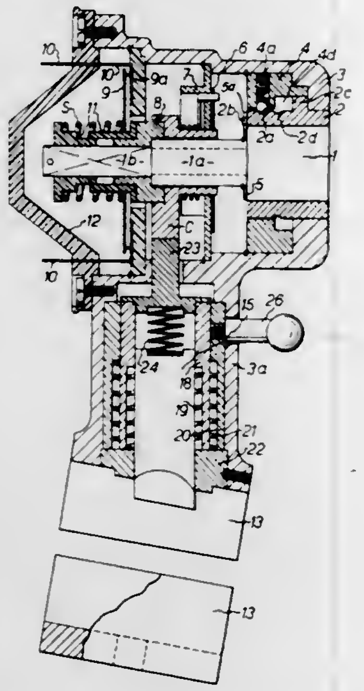
DEVICE FOR IMMOBILIZING MOTOR VEHICLES

Arthur Stanley Dwan, 23 Grenaby Road, Croydon, England

Filed July 19, 1966, Ser. No. 566,434

U.S. Cl. 70—252 **9 Claims**

Int. Cl. B60r *25/04, 25/02;* **H01h** *27/06*



An anti-theft lock for road vehicles in which the lock barrel of a standard form of tumbler lock is upset by being moved inwardly of its housing if forcing or picking is attempted, this upsetting breaking the electrical circuits and resulting in the lock barrel being rotatable and capable of re-setting only by the correct key. A mechanical steering column lock is also provided controlled by the lock key, and by which the steering can be locked only when the key is in the off position.

3,426,561

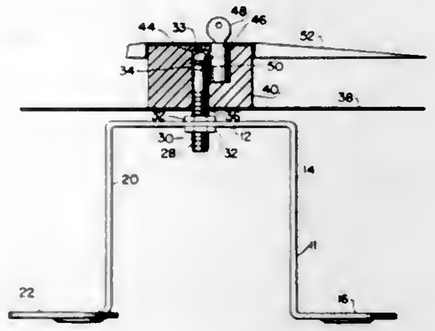
HUB CAP DEVICE

Fred Kinait, 225 E. 95th St., New York, N.Y. 10028

Continuation-in-part of application Ser. No. 432,529, Feb. 15, 1965. This application Oct. 22, 1965, Ser. No. 500,833

U.S. Cl. 70—259 **3 Claims**

Int. Cl. E05b *65/12*



An adjustable universal type automotive vehicle wheel hub cap locking device, intended to secure hub caps to wheels and to protect the wheels against theft.

3,426,562

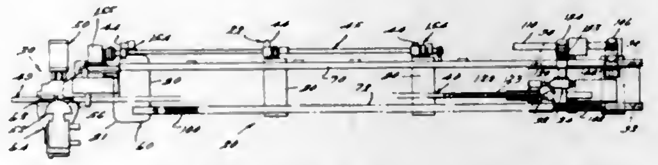
MACHINE FOR BENDING METAL TUBES

Floyd Inda, Racine, Wis., assignor to Walker Manufacturing Company, a corporation of Delaware

Filed Sept. 1, 1960, Ser. No. 53,407

U.S. Cl. 72—7 **21 Claims**

Int. Cl. B21b *37/14;* **B30b** *15/26;* **B21j** *7/26*



My invention relates generally to automated machines and more particularly to an automated machine for bending relatively long sections of tubing.

3,426,563

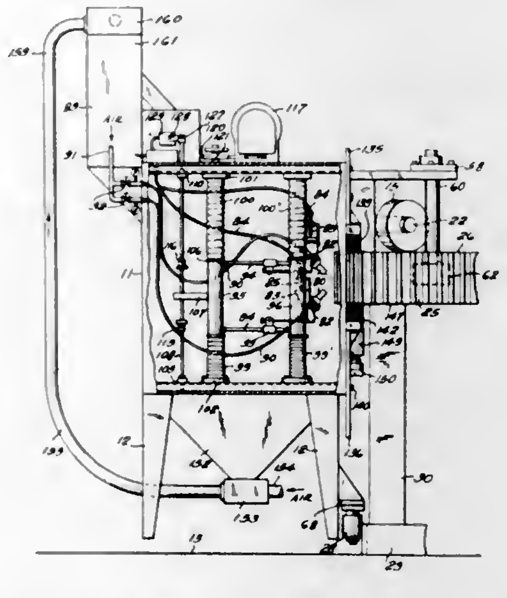
PEENING APPARATUS

Harold W. Burney, Hackensack, N.J., assignor to Metal Improvement Company, Carlstadt, N.J., a corporation of New Jersey

Filed Apr. 4, 1966, Ser. No. 539,933

U.S. Cl. 72—53 **15 Claims**

Int. Cl. B21d *31/06;* **B24b** *1/00;* **B24c** *3/12*



This invention relates to peening apparatus which is particularly adapted for peening large size components.

As a general proposition, the component is suitably supported in any desired fashion and relative motion between the peening device and the component is achieved usually by a movement of the peening apparatus about the component. The peening rig is adapted to be supported for rotational movement by being supported upon the component and gradually moved thereabout while shot are ejected against the component from selected nozzle units.

3,426,564

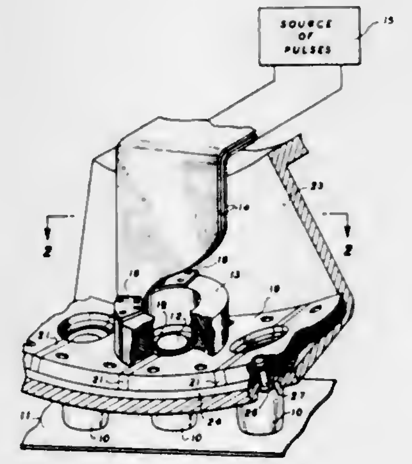
ELECTROMAGNETIC FORMING APPARATUS

Hansjorg Jansen, Santiago, Chile, and Paul Wildi, San Diego, Calif., assignors to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed May 31, 1967, Ser. No. 643,328

U.S. Cl. 72—56 **7 Claims**

Int. Cl. B21d *26/02, 19/00;* **B65d** *7/28*



Apparatus for electromagnetically forming a plurality of work pieces moving in succession in a given direction, wherein apertured field shaper or shapers are positioned about and moved with the work pieces into operative relationship with a stationary forming coil.

3,426,565

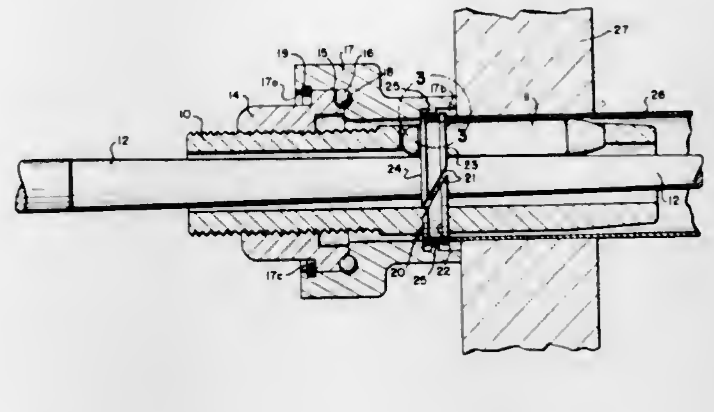
TUBE EXPANDER

Donald E. Schott, Emerson, N.J., assignor to Thomas C. Wilson, Inc., Long Island City, N.Y., a corporation of New York

Filed Mar. 11, 1966, Ser. No. 533,553

U.S. Cl. 72—122 **4 Claims**

Int. Cl. B21d *3/02, 1/02, 39/10*



A tube expander of the roller and mandrel type for expanding tubes within tube sheets is provided with a stop collar for restricting movement of the rollers into the tube. Outward movement of the tube is arrested by a radially expansible thrust ring which is mounted in a recess at the forward end of the collar and is capable of encircling and bearing tightly against the rollers.

3,426,566

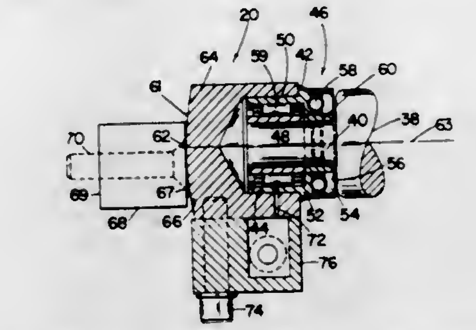
INTERMEDIATE SUPPORTING ROLL BEARING BLOCK

Robert J. McKnight III, Pittsburgh, Pa., assignor to Voss Engineering Company, Callery, Pa., a corporation of Pennsylvania

Filed Dec. 1, 1966, Ser. No. 598,412

U.S. Cl. 72—163 **6 Claims**

Int. Cl. B21d *1/02, 3/02;* **F16c** *19/04*



1. In a six-high roller leveler, the combination of upper and lower frame means, primary support means fixed to said frame means rotatably supporting a plurality of work rolls, said work rolls arranged in two banks to flex work material therebetween, a plurality of intermediate supporting rolls arranged in banks in staggered relation with respect to said work rolls and in contact therewith to maintain said work rolls against vertical and horizontal deflection, said intermediate supporting rolls having bearing necks at opposite ends thereof, said bearing necks being journaled in bearing block means, said bearing block means having a front face and a rear face, said front face having a plurality of openings therein adapted to receive bearing means, a plurality of spacer block means, said spacer block means having a front face and a rear face, the rear face of said bearing block means abutting the front face of said spacer block means, the rear face of said spacer block means abutting said primary support means, the rear face of said bearing block means providing means to rock on the front face of said spacer block means when the work rolls and intermediate rolls are being deflected, and a plurality of secondary support means carried by each said upper and lower frame means to rotatably support a plurality of back-up roll sections, said back-up roll sections located along the longitudinal axis of each of said banks of intermediate supporting rolls and in contact therewith to thereby support and maintain said intermediate supporting rolls against vertical and horizontal deflection.

3,426,567

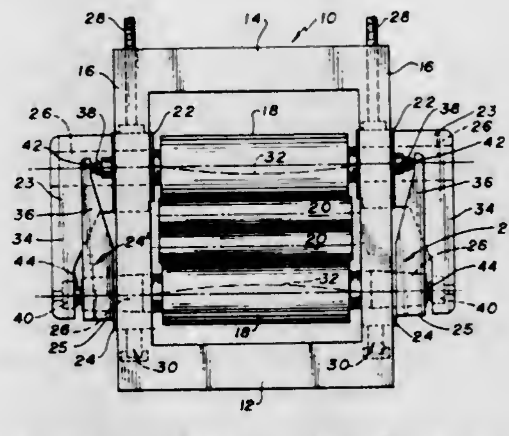
ROLL BENDING DEVICE FOR A ROLLING MILL

Arthur Dean Smith, also known as A. Dean Smith, San Lorenzo, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,612

U.S. Cl. 72—240 **15 Claims**

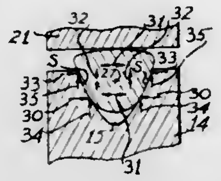
Int. Cl. B21b *31/20, 31/16, 31/32*



An improved roll bending device for a rolling mill provided with at least one roll and separate chock block means connected to the opposite ends of the roll wherein the improved bending device advantageously comprises a lever arm means operatively connected at one end thereof to the roll and one of the chock block means associated therewith. The other end of the lever arm means is adapted to cooperate in an improved fashion with the other chock block means for the same roll or chock block means of a different roll in the same mill stand to effect a bending of the first named roll.

3,426,568
METHOD OF DEFORMING CAST METAL

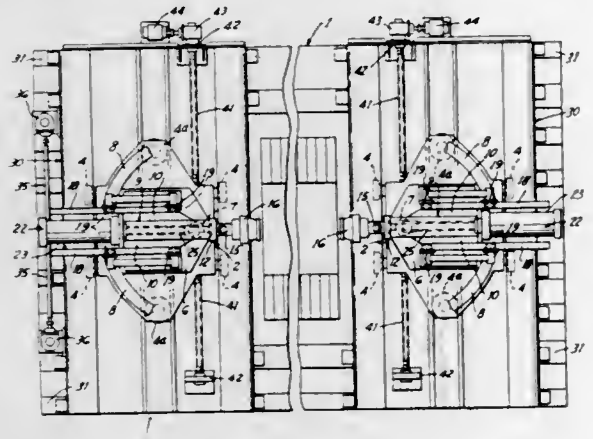
Daniel B. Cofer, Carrollton, Ga., assignor to Southwire Company, Carrollton, Ga., a corporation of Georgia
Continuation of application Ser. No. 476,420, Aug. 2, 1965. This application Aug. 3, 1967, Ser. No. 658,296
U.S. Cl. 72—250 **4 Claims**
Int. Cl. B21b *39/20;* **B21d** *45/00;* **B65g** *13/02*



A method of deforming successive lengths of a cast bar having a substantially triangular cross-section and involving deforming the cast bar with a deforming force tending to rotate the cast bar about its lengthwise axis and restricting rotation of the cast bar about this axis by resistive forces applied to a first side of the cast bar above and below this axis, to a second side above and below this axis, and to a third side.

3,426,569
STRETCH FORMING MACHINE AND SEGMENTAL ADJUSTABLE DIE COMBINATION

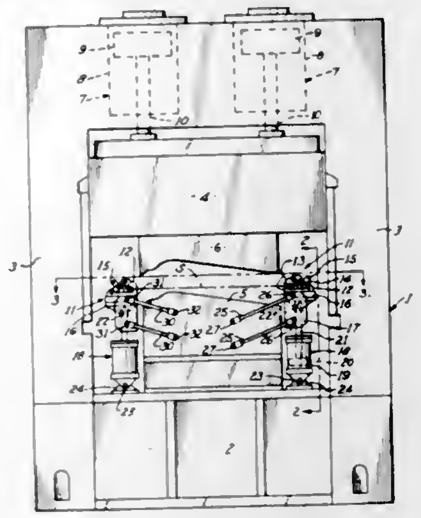
Edwin H. Brauer, Cleveland, and T. Virgil Huggett, Chagrin Falls, Ohio, assignors to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 31, 1967, Ser. No. 612,982
U.S. Cl. 72—295 **6 Claims**
Int. Cl. B21d *11/02, 37/02, 37/08*



The invention comprises a bending machine for bending elongated structural members, such as I-beams, channels, bulb beams, and the like. The machine employs two series of companional die segments, each segment of each series being toward and away from the other series, independently of the other segments of the same series, to adjusted positions by individual power means, such as electric motors, which are numerically controlled to drive, through self-locking mechanisms, so that each segment remains in the position to which driven. Gripping heads are provided at opposite ends of the dies and are operable to tension the stock lengthwise, transversely of the closing direction of the die segments, into a range above its yield point and to maintain the stock in that condition during bending by the dies. At least one stretch head is movable to and fro in the direction transversely of the tensioning dimension so as to lay the metal progressively from one end toward the other end onto the die segments.

3,426,570
STRETCH WRAPPING FIXTURE AND COMBINATION THEREOF WITH DRAWING DIES AND PRESS

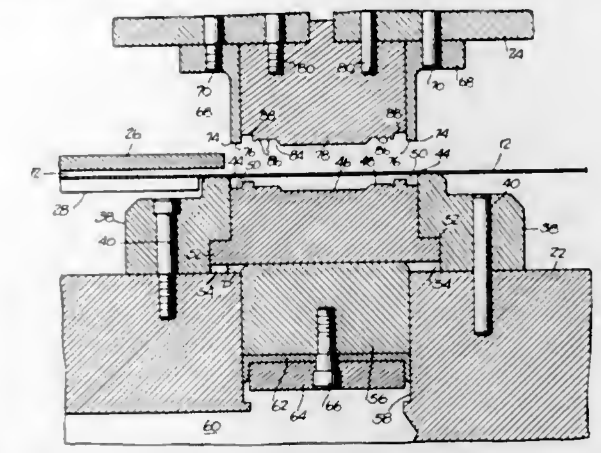
Cyril J. Bath, Chagrin Falls, and John H. Leonard, Hudson, Ohio, assignors to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 11, 1967, Ser. No. 608,669
U.S. Cl. 72—296 **10 Claims**
Int. Cl. B21d *11/02, 11/22;* **B21j** *9/18*



The stretch draw fixture is employed in a drawing die press, one fixture at each end of the set of drawing dies. Each fixture includes a gripping head which grips the adjacent end margin of the sheet. The heads are arranged for tensioning a sheet of metal unidimensionally into the yield range while wrapping it onto the forming face of the male die, preparatory to closure of the dies. Each head is supported by linkages which are pivotally connected at one end to the male die and at the other end to the head. The pivotal axes of each linkage define a quadrilateral with axes extending transversely of the direction of tensioning of the sheet. The linkages cause the heads to move apart for tensioning the sheet as the heads are moved by power means in the direction for laying the sheet onto the male die.

3,426,571
CONTROLLED EMBOSSING

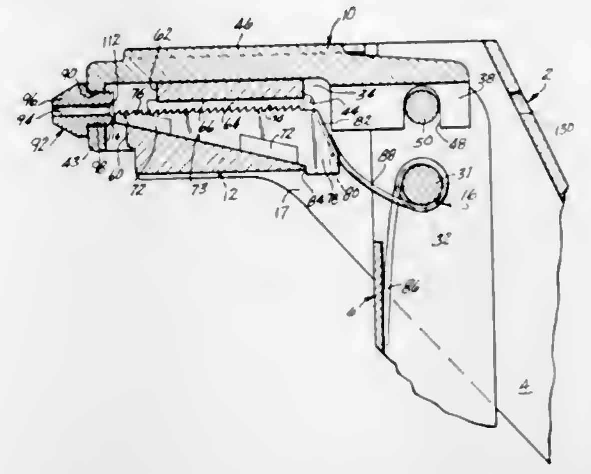
Bernard L. Hoffman, Trenton, N.J., assignor to Frederick A. Krause Associates, Inc., Frenchtown, N.J., a corporation of New Jersey
Filed Jan. 27, 1967, Ser. No. 612,185
U.S. Cl. 72—335 **10 Claims**
Int. Cl. B21d *28/10, 37/10;* **B21j** *13/04*



Tear strip formation on sheet metal objects during press formation thereof by limiting the minimum clearance between die shoes and absorbing excess motion by allowing the die shoes to move together in the same direction when the force between the two exceeds a predetermined value.

3,426,572
RIVET SETTING TOOL

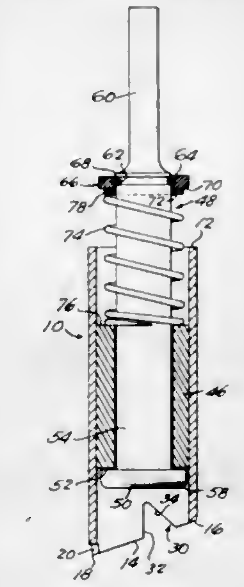
Frank C. Lahnston, Peabody, Mass., assignor to Celus Fasteners, Inc., a corporation of Massachusetts
Filed Mar. 31, 1967, Ser. No. 627,537
U.S. Cl. 72—391 **7 Claims**
Int. Cl. B21d *9/05;* **B21j** *15/04, 15/32*



A rivet setting tool includes a pusher member mounted in a frame which terminates a handle. A lever is pivotally connected to the frame and has its end attached to the pusher member to move the pusher member relative to the frame. A yoke member is attached to the frame and includes a bore. A jaw member is mounted in the bore to define, along with a portion of the surface of the bore, a cavity for receiving the mandrel of a rivet. A nose piece attached to the base of the pusher member has an extension portion to contact the jaw member when the lever and handle are pivoted apart to move the jaw member upward in a tapered groove to enlarge the mandrel receiving opening. A spring member urges the jaw member downwardly and the lever away from the handle.

3,426,573
IMPACT HAMMER CRIMPING TOOL

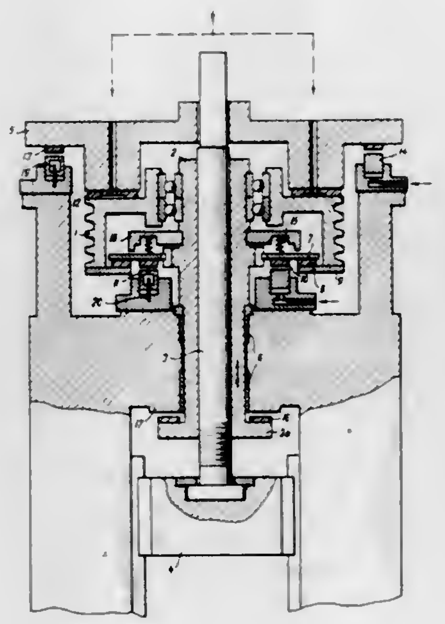
O. C. Wilson, Jr., Shreveport, La., assignor of one-half to Dwight M. Brown and Taylor W. O'Hearn, both of Caddo Parish, La., jointly
Filed June 24, 1966, Ser. No. 560,339
U.S. Cl. 72—434 **8 Claims**
Int. Cl. B21j *7/12;* **B21c** *3/16;* **B21d** *5/16*



An impact-operated sheet metal crimping tool consisting of a sleeve with a striking plunger slidably disposed therein. The plunger has an enlarged impact head at its bottom end receivable in the sleeve and limited in its upward movement by an internal stop collar fixed in the sleeve. The plunger has a driving shank at its top end. The plunger is biased upwardly by a coil spring. The bottom end of the sleeve is angled and is formed with notches shaped to engage on the interengaged end flanges of pieces of sheet metal to be joined to form desired crimps therein.

3,426,574
PERCUSSION PRESS

Jozef Voroňák, Michalovce, Czechoslovakia, assignor to CHEPOS, Závody Chemického a potravinářského strojírenství, Oborový podnik, Brno, Czechoslovakia
Filed Nov. 7, 1966, Ser. No. 592,360
Claims priority, application Czechoslovakia, Nov. 16, 1965, 6,828/65
U.S. Cl. 72—454 **9 Claims**
Int. Cl. B21j *9/18, 7/20;* **B30b** *1/18*

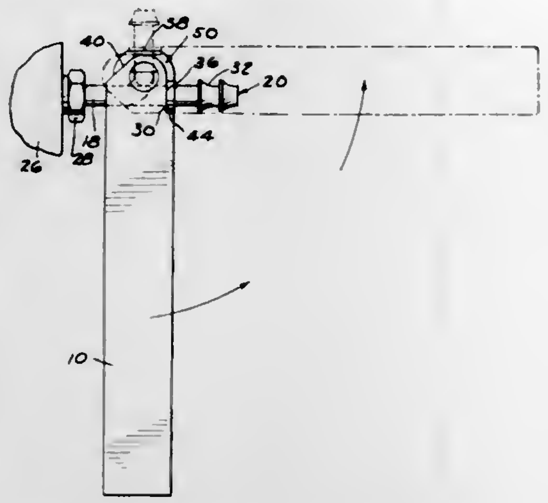


1. A percussion press combination:
(a) a frame including a press bed;
(b) a ram member slidable in said frame in a vertically extending direction toward and away from said bed;
(c) sleeve means having an axis extending in said direction, mounted in said frame for rotation about said axis, and movable in the frame in the axial direction;
(d) stop means for limiting the axial movement of the sleeve means in the frame;
(e) means for axis displacement of said sleeve means with respect to said frame;
(f) a screw fastened to said ram for joint movement in said direction, a portion of said screw being received in said sleeve means in threaded engagement therewith;
(g) a drive member having an upwardly directed face, and provided on said sleeve;
(h) coupling means interpolated between said drive member and sleeve;
(i) a flywheel secured against rotation relative to said screw, said flywheel being superposed on said drive member and axially movable on said screw toward and away from a position of weight transmitting friction engagement with said face of the drive member;
(j) pneumatic means for lifting said flywheel from said position thereof, said face and said flywheel axially defining a normally sealed chamber therebetween, and said pneumatic means including means for admitting gas under pressure to said chamber; and

(k) motor means and motion transmitting means for rotating said drive member about said axis.

3,426,575
BENDING TOOL FOR MOUNTED FITTINGS

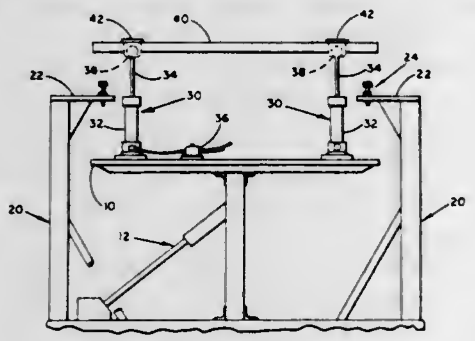
William J. Orley, Detroit, Mich., assignor to Hydralink Corporation, Warren, Mich., a corporation of Michigan
Filed Nov. 25, 1966, Ser. No. 596,837
U.S. Cl. 72—458 **11 Claims**
Int. Cl. B21j *13/08, 13/02;* **B21c** *3/16*



1. A tool for bending a mounted tubular hose fitting of the type having radial enlargements spaced axially apart and an intermediate straight tubular portion at which the bend is adapted to be formed comprising a handle having a pair of flanges at one end thereof spaced laterally apart a distance corresponding to the transverse dimension of the tubular portion of the fitting to be bent, said flanges being interconnected by a base portion and defining therebetween a straight channel open at its opposite ends and along one side so that the tool can be engaged with the fitting by guiding the straight tubular portion thereof between said flanges from the open side of the channel, a pin extending transversely between said flanges at a location intermediate the opposite ends of the flanges and spaced from said base portion a distance corresponding generally to the transverse dimension of said straight tubular portion of the fitting, the base portion of the channel being shaped in cross section to conform to the outer peripheral surface contour of said straight portion of the fitting and said pin having an arcuate circumferentially extending groove which is similarly shaped in cross section so that the periphery of the straight tubular portion of the fitting is adapted to be substantially completely encircled at the portion thereof to be bent when engaged with the tool as described.

3,426,576
SELF-LEVELING SCORSBY MACHINE

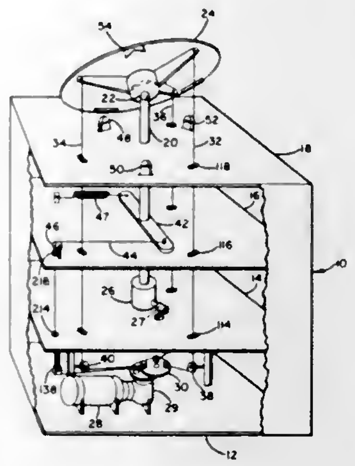
Lloyd G. Miller, Rockford, Mich., assignor to Lear Siegler, Inc.
Filed Feb. 21, 1966, Ser. No. 528,911
U.S. Cl. 73—1 **6 Claims**
Int. Cl. G01m *7/00;* **G01e** *25/00*



A scorsby machine for simulating the motions of an aircraft for testing navigational instruments. A table is mounted above the usual scorsby platform by shiftable positioning means so that the table can be returned to a horizontal position for checking the instruments mounted thereon without disturbing the position of the scorsby platform.

3,426,577
SELF-LEVELING SCORSBY MACHINE

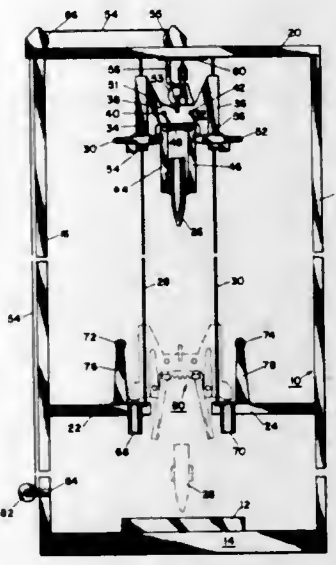
William Punt, Grand Rapids, Mich., assignor to Lear Siegler, Inc.
Filed Feb. 24, 1966, Ser. No. 529,758
U.S. Cl. 73—1 **8 Claims**
Int. Cl. G01c *25/00;* **G01m** *7/00*



A scorsby machine simulating the motions of an aircraft for testing navigation instruments. A platform is provided upon which the instruments are mounted and the platform is subjected to the motions. Means are provided for returning the platform to a horizontal position so that errors in the performance of the instruments can be checked.

3,426,578
IMPACT TESTING APPARATUS

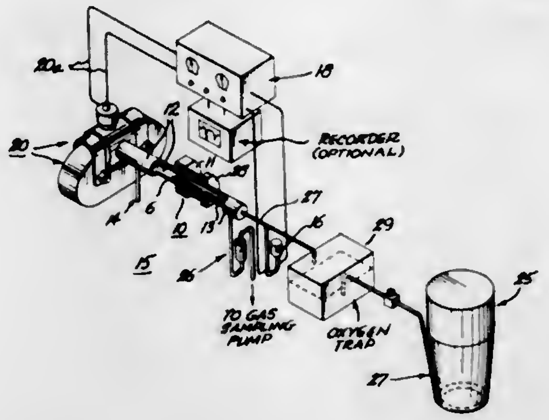
Arvids Bergs, Spring City, and John T. M. Lee, Audubon, Pa., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,549
U.S. Cl. 73—12 **8 Claims**
Int. Cl. G01n *3/30*



In the art of impact testing, an apparatus for conducting controlled attitude tests wherein a drop table releases a test specimen supported at a fixed angle for impact from a height above an impact base such that substantially no variation of the fixed angle for impact occurs.

3,426,579
CONTINUOUS MONITOR FOR THE RAPID DETECTION OF HYDROGEN AND OXYGEN

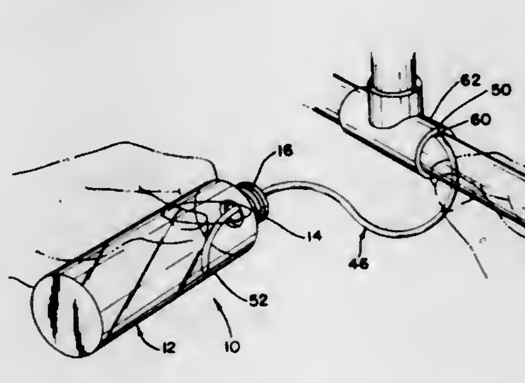
Stephen J. Lebel and William E. Strobelt, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,962
U.S. Cl. 73—23 **4 Claims**
Int. Cl. G01n *31/04*



The invention is addressed to a method and apparatus for the qualitative and quantitative analysis of a fluid or gas, in particular, those containing hydrogen and oxygen. The fluid is impinged on a heated palladium-alloy barrier in a chamber which has been activated by hydrogen formed by an electrolysis cell. The other side of the chamber is continuously pumped by a vacuum ion pump. The hydrogen permeating the palladium-alloy barrier creates a pressure change which is detected by a change in the current supplied to the ion pump and a detector unit. A further feature resides in an oxygen scrubber placed between the barrier and the fluid source to remove oxygen from the fluid. Another important feature is the use of two analyzers, one of which has no oxygen scrubber, whereby the difference in current represents the amount of oxygen present in the fluid or gas.

3,426,580
METHOD OF TESTING JOINTS IN PRESSURIZED FLUID LINES

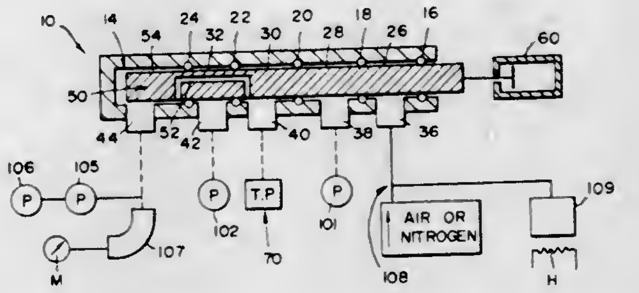
Francis J. Callahan, Jr., Chagrin Falls, Ohio, assignor to Nupro Company, a corporation of Ohio
Continuation of application Ser. No. 528,593, Feb. 18, 1966, which is a continuation of application Ser. No. 294,097, July 10, 1963, which in turn is a division of application Ser. No. 97,911, filed Mar. 23, 1961, now Patent No. 3,134,515. This application Jan. 25, 1967, Ser. No. 611,779
U.S. Cl. 73—40 **1 Claim**
Int. Cl. G01m *3/08*



A method of fluid testing joints for leaks with a manually deformable liquid-filled bottle having an extensible hose which is positioned adjacent the joint under test and the liquid dispensed in a bubble-free manner.

3,426,581
VACUUM VALVES FOR LEAK DETECTORS AND THE LIKE

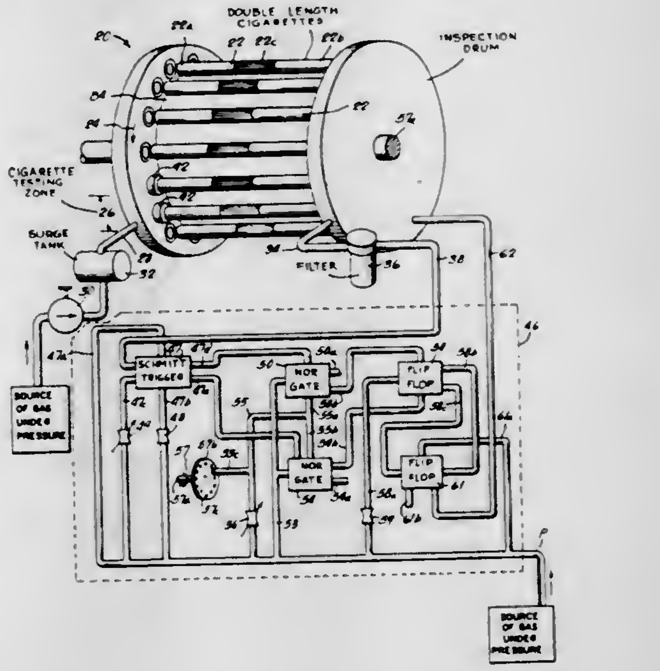
Walton E. Briggs, Lynnfield, Mass., assignor to National Research Corporation, Newton, Mass., a corporation of Massachusetts
Filed Dec. 13, 1966, Ser. No. 601,515
U.S. Cl. 73—40.7 **9 Claims**
Int. Cl. G01m *3/04*



Water vapor is injected into vacuum valves to provide a monolayer lubricating film on the valving member which reduces gasket damage. This provides a reduction in "noise" for vacuum valves used in systems which are sensitive to gas composition.

3,426,582
CIGARETTE INSPECTION APPARATUS

Colin Shaw McArthur and Bruce Wall McKnight, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed May 18, 1966, Ser. No. 551,162
U.S. Cl. 73—45.1 **12 Claims**
Int. Cl. G01m *3/04*



Inspection apparatus for filter cigarettes, in which the interior of the cigarette is subjected to a pressure differing from the external atmospheric pressure, and the internal pressure is utilized to control a bistable fluid amplifier, which in turn actuates an ejecting mechanism if the internal pressure in the cigarette indicates that the cover of the cigarette is leaky. The inspection and ejection of faulty cigarettes takes place at a single station on the periphery of a rotating drum. The peripheral length of that station on the drum surface is substantially equal to the spacing between cigarettes on the drum. The pressure is applied to the cigarette throughout the length of its passage through the station. Synchronizing means is provided so that the ejection apparatus operates only during the latter part of the passage of a cigarette through the station, thereby ensuring that the pressure condition in the cigarette is stabilized before the ejection apparatus is actuated, and also ensuring that only the cigarette under test is ejected if an indication of a leak is found.

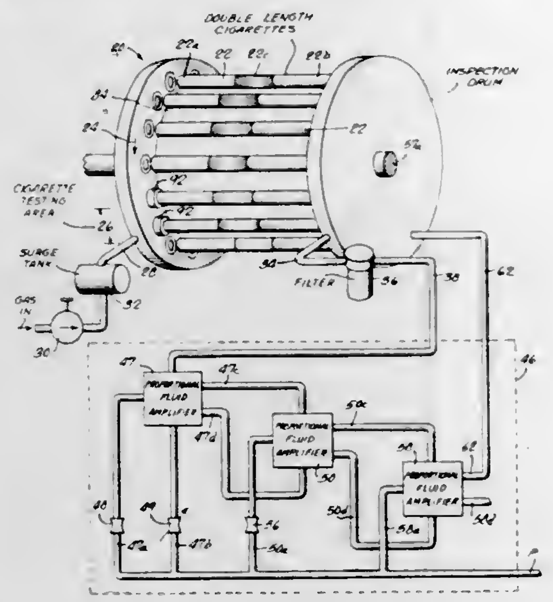
3,426,583
CIGARETTE INSPECTION APPARATUS

Colin Shaw McArthur and Benny Lee Hester, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey

Filed May 23, 1966, Ser. No. 552,050

U.S. Cl. 73—45.1 4 Claims

Int. Cl. G01m *3/04*



Apparatus for testing cigarettes for leaks, especially at the connection between the filter and the tobacco section, including a testing station extending along a path for moving cigarettes, means for moving cigarettes one at a time through the station, means for subjecting each passing cigtrette to an internal-external pressure difference, proportional fluid amplifier means for sensing that difference, and accept-reject mechanism adjacent the downstream end of the station for removing from the path cigarettes having a pressure difference outside a predetermined range.

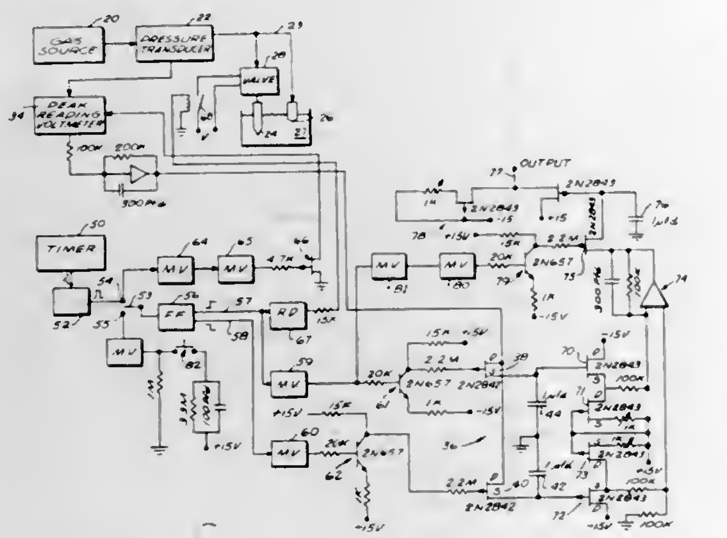
3,426,584
SURFACE TENSION MEASURING INSTRUMENT

Tennyson Smith, Thousand Oaks, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Mar. 24, 1967, Ser. No. 625,704

U.S. Cl. 73—64.4 6 Claims

Int. Cl. G01n *11/00*



An instrument for measuring the surface tension of a liquid is disclosed which utilizes a pair of tubes submerged in the liquid through which a gas is bubbled. The tubes have submerged openings of different radii and penetrate the liquid to different depths. The difference in pressure is measured between the flow in the tubes and a signal generated which is proportional to the surface tension of the liquid.

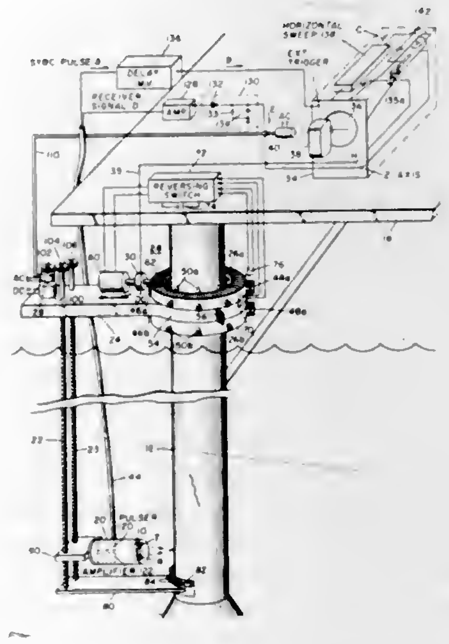
3,426,585
ULTRASONIC SYSTEM FOR INSPECTING SUBMERGED PILES

Joseph Zemanek, Jr., and Richard L. Caldwell, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Feb. 3, 1966, Ser. No. 524,920

U.S. Cl. 73—67.7 1 Claim

Int. Cl. G01n *9/24*



The specification discloses an ultrasonic system for inspecting the physical condition of the exterior surfaces of piles supporting offshore well platforms and the like. The system includes an ultrasonic transmitter-receiver for generating and receiving a directional beam of ultrasonic pulses. The transmitter-receiver is scanned both peripherally and longitudinally about the pile. The reflected sonic pulses are converted to electrical form and are used to intensity modulate the beam of a cathode-ray oscilloscope. The oscilloscope beam is swept along its X-axis in accordance with the peripheral scan of the transmitter-receiver. A motion picture camera optically coupled to the oscilloscope drives film past the oscilloscope face in proportion to the scan of the transmitter-receiver longitudinally of the pile. The film, developed from the motion picture camera, indicates the physical condition of the pile including flaws and weaknesses.

3,426,586
AIRCRAFT WEIGHT MEASUREMENTS

Charles Kadlec, Acton, Mass., assignor to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware

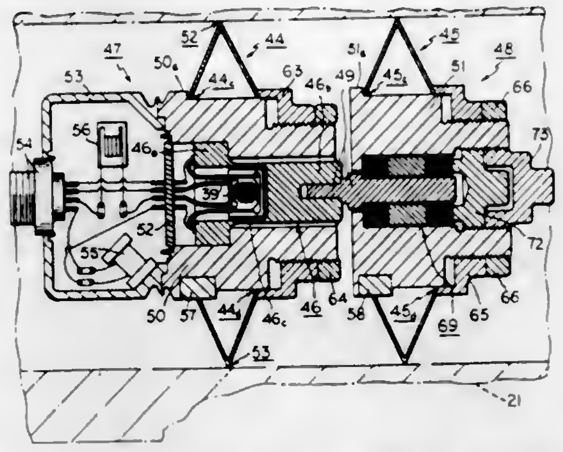
Filed June 17, 1966, Ser. No. 558,514

U.S. Cl. 73—88.5 30 Claims

Int. Cl. G01n *5/00*

Weight supported by a wheeled vehicle such as an aircraft, is detected inside hollow axles by strain-gage transducers which are locked in place by expansible collets formed by flexible washers making substantially line-contact connections with interior axle surfaces; the collets for each transducer are carried by rigid end portions

of a sensing element between which is a deformable tubular portion equipped internally with strain gages arranged to characterize shear effects caused by the weight.



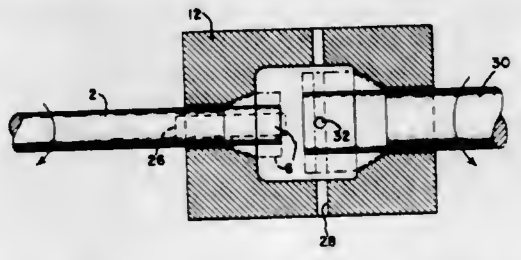
3,426,587
RUPTURE TEST SPECIMEN AND COUPLING THEREFOR

Albert K. Schmieder, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 28, 1967, Ser. No. 634,533

U.S. Cl. 73—103 4 Claims

Int. Cl. G01n *3/04*



An apertured coupling member in which the aperture has a circular central cross section and elongated end cross sections. A mating rod member of enlarged end portion having similar elongated cross section.

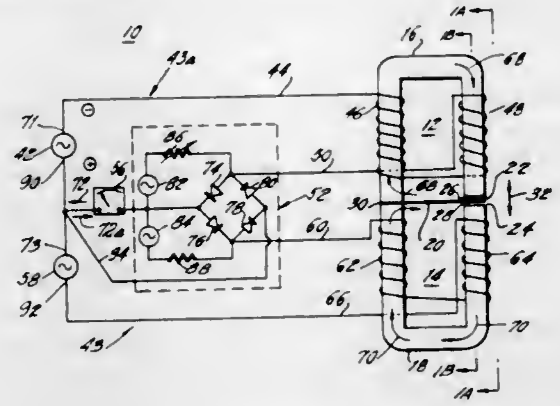
3,426,588
DIFFERENTIAL FLUX CURRENT TRANSDUCER

Edward D. Duda, 1709 Wrightfield Ave.,
Yardley, Pa. 19067

Filed Nov. 3, 1966, Ser. No. 591,845

U.S. Cl. 73—141 19 Claims

Int. Cl. G01l *5/00*



The invention is broadly concerned with producing an electrical current signal, the magnitude of which is dependent upon the physical displacement of a force-responsive sensing member. Specifically the invention provides that the sensing member be a common portion of two magnetic circuit paths with each magnetic circuit path including an air gap, the length of which is dependent upon the position of the sensing member. Deflection of the sensing member increases the air gap in one magnetic path and decreases the air gap in the other magnetic path whereby the magnetic reluctances of such paths are proportionately changed. Thus, by inductively coupling two voltage sources to the magnetic paths, the magnetization currents produced thereby will vary in accordance with the reluctance of the associated magnetic path. It is the measurement of such magnetization currents which provides the indication of the displacement of the sensing member.

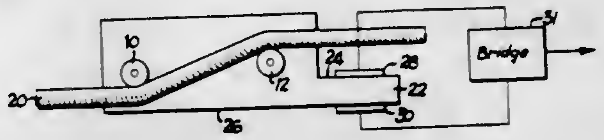
3,426,589
TENSION TRANSDUCER

Albert E. Brendel, Roseville, Mich., assignor to Lebow Associates, Inc., Oak Park, Mich., a corporation of Michigan

Filed July 18, 1966, Ser. No. 566,162

U.S. Cl. 73—144 3 Claims

Int. Cl. G01l *5/04*



A transducer for measuring cable tension. An elongate beam is provided with cable-engaging support members ranged on opposite sides of a reduced central section in a fashion such that tensioning of the cable induces a proportionate bending moment on the central section which may be readily measured by an electrical strain gage system.

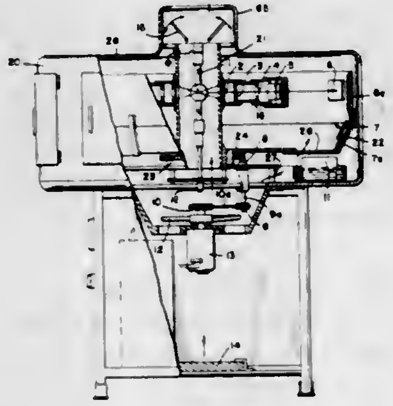
3,426,590
APPARATUS FOR EXPOSING SAMPLES TO LIGHT

Nagaichi Suga, 2 Toyama-cho, Shinjuku-ku, Tokyo, Japan

Filed Nov. 10, 1964, Ser. No. 410,074

U.S. Cl. 73—150 7 Claims

Int. Cl. G01n *17/00;* **G01j** *3/14*

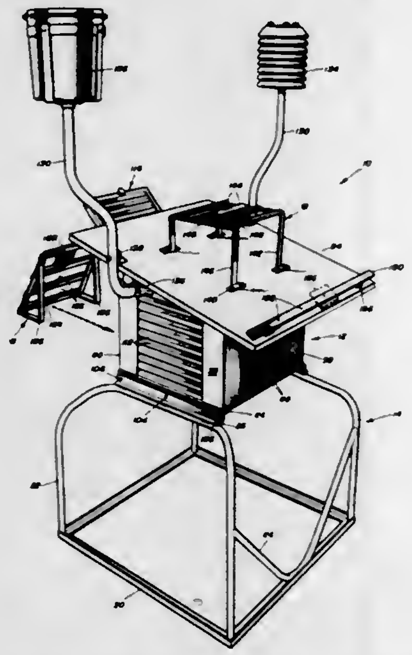


1. An apparatus for exposing samples to light of various wavelengths, comprising a source of light similar to natural solar radiation, at least one optical system positioned in the path of light from said source of light for forming a narrow beam of light and including a prism for refraction and dispersion of the light into distinct wavelength bands, a screen having an adjustable width slit therein adjacent the other end of the optical system from the source of light and positioned to transmit selected bands of the light dispersed by said prism, rotating means on which at least said prism is mounted for rotation in the path of light, a first sample holder having an elongated slit therein through which material to be tested can be exposed, a second sample holder having an elongated slit therein substantially perpendicular to the slit in said first sample holder through which material to be tested can be exposed, and moving means on which said sample holders are mounted for moving the sample holders in a scanning movement completely through the beam of light dispersed by the prism in a direction transverse to

the light emitted through the optical system, said moving means moving the first sample holder past the end of the optical system on a path to receive light directly from the prism on the opposite side of the screen from the optical system when the system is in a first position and moving the second sample holder past the end of the optical system on a path to receive light directly from the prism when the prism is rotated 90° from said first position.

3,426,591
PORTABLE TEST APPARATUS FOR DETERMINING EFFECTS OF ATMOSPHERIC POLLUTION

Francis L. Struben, Baltimore, and Paul M. Plowman, Baldwin, Md., assignors to Silver-Top Manufacturing Company, Inc., White Marsh, Md., a corporation of Maryland
Filed Oct. 28, 1966, Ser. No. 590,416
U.S. Cl. 73—170 **10 Claims**
Int. Cl. G01w *1/00*



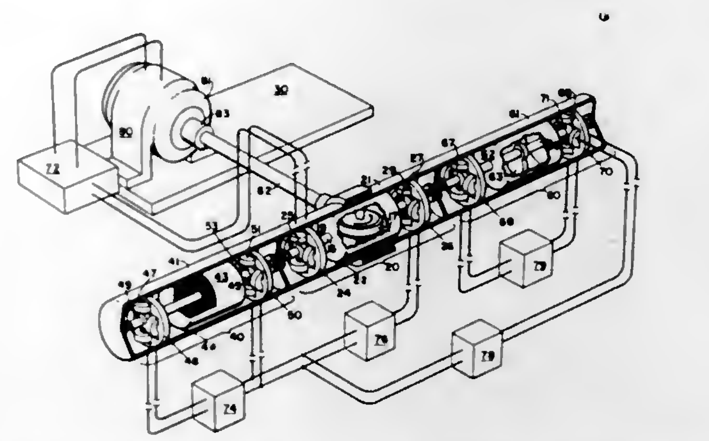
An effects package is described for standardized environmental exposure of test devices. A light-tight, air permeable housing is provided upon a wide-spreading leg stand and pivotably arranged to be inverted and depended between the legs thereof for portability. In the erected position the wide-spreading sloping roof includes a rack of slide mounts which carry fabric samples for exposure.

Another roof-mounted element is a transverse bar with provisions for mounting metallic test specimens. The eaves portion incorporates a mounted plate of silver which reacts to hydrogen sulphide in the atmosphere but is protected from rain wash. A rack within the housing exposes specimens in the absence of sunlight. Side brackets extending upwardly carry a dust fall collector and a lead peroxide candle in a measure of isolation.

3,426,592
INERTIAL REFERENCE UNIT

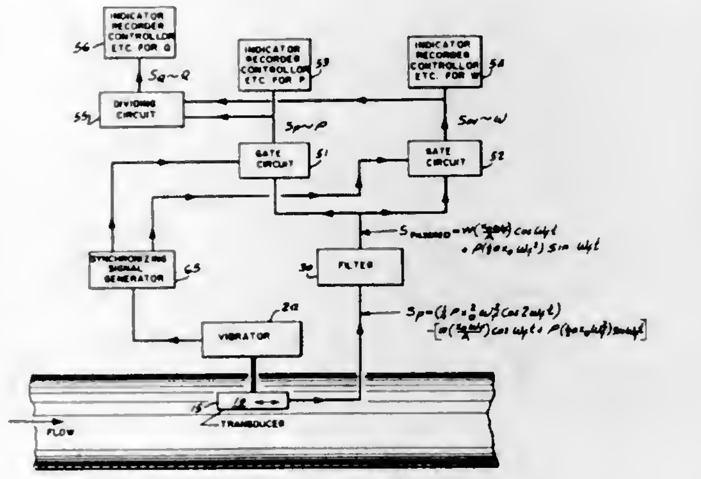
Charles Broxmeyer, Cambridge, and Aldo De Simone, Wellesley, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 6, 1964, Ser. No. 357,706
U.S. Cl. 73—178 **8 Claims**
Int. Cl. G01c *19/54, 19/34;* **G01n** *9/18*

An inertial reference unit comprising an angular accelerometer, a single degree gyro unit, and a linear accelerometer all mechanically coupled to a shaft of a base-mounted torque motor aligned with the input axis of the gyro unit. The output axes of the gyro unit and angular and linear accelerometers are codirectional. The motor maintains the orientation of the gyro unit so that it has zero angular velocity with respect to inertial space about its input axis. The shaft's rotation provides a measure of the angular deviation of the base about this input axis. Error-producing output axis torque developed in the gyro unit and both accelerometers is neutralized by operation of the angular accelerometer acting in conjunction with a control unit. The angular accelerometer generates a signal which, when applied by the control unit to the torque generators of the gyro unit and both accelerometers, generates a counterbalancing torque that offsets output axis torque.



3,426,593
VIBRATING TRANSDUCER FOR FLOW AND RELATED MEASUREMENTS

Robert B. Jacobs, 840 Park Lane, Boulder, Colo. 80302
Filed Dec. 23, 1965, Ser. No. 515,877
U.S. Cl. 73—194 **8 Claims**
Int. Cl. G01f *1/00;* **G01n** *11/10, 9/10*

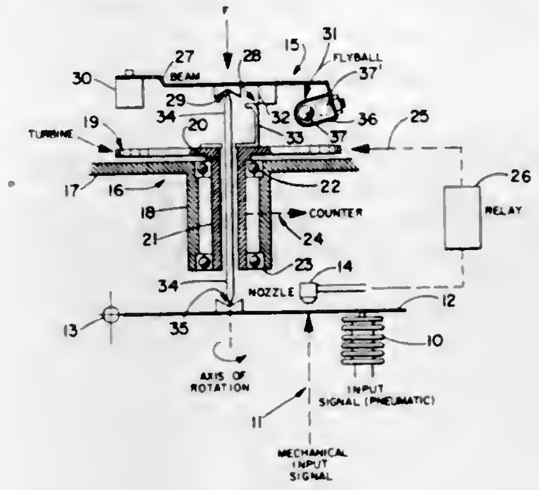

INDICATOR RECORDER CONTROLLOR ETC FOR Q
56
Sq~Q
DIVIDING CIRCUIT
55
INDICATOR RECORDER CONTROLLOR ETC FOR P
53
INDICATOR RECORDER CONTROLLOR ETC. FOR W
54
Sp~P
Sw~W
GATE CIRCUIT
51
GATE CIRCUIT
52
FILTER
30
SYNCHRONIZING SIGNAL GENERATOR
65
VIBRATOR
20
FLOW
TRANSDUCER
15
12

The flow characteristics of a fluid system are measured by vibrating a transducer longitudinally of a conduit through which the fluid to be measured flows. The transducer is vibrated at a selected frequency and the resultant pressure or force exerted by the fluid on the transducer produces an electrical signal. The in-phase and out-of-phase components of the transducer signal are isolated and the output indications therefrom provide a measure of mass flow rate, density, and volumetric flow rate.

3,426,594
FLYBALL INTEGRATOR CUTOFF

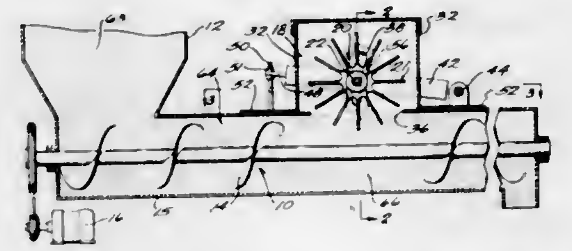
Howard W. Nudd, Jr., Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Apr. 14, 1967, Ser. No. 631,055
U.S. Cl. 73—206 **6 Claims**
Int. Cl. G01f *1/02*

Industrial process variable measurement in terms of the speed of a jet actuated turbine wheel system including flyball low range cutoff means. The flyball is supported on the turbine wheel on an incline which is inclined upwardly in the outward direction of the radius of the wheel. Above a predetermined minimum speed of the turbine wheel, the ball moves upwardly on the incline to a centrifugal force controlled location. When the speed of the turbine wheel goes below the predetermined speed, the ball rolls down the incline providing a direct and abrupt low-speed cutoff.



3,426,595
FLOW METER FOR INSTALLATION IN AN AUGER SYSTEM

Robert F. Skelton, Bluffton, Ind., assignor, by mesne assignments, to Mix-Mill, Inc., Bluffton, Ind., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,480
U.S. Cl. 73—230 **10 Claims**
Int. Cl. G01f *1/00, 1/08*

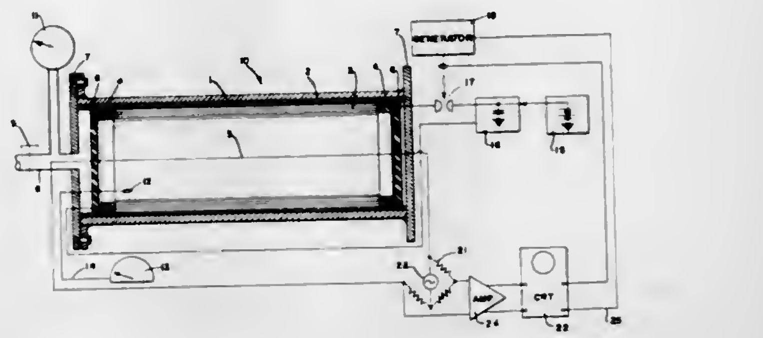


The present invention provides a flow meter having a metering wheel extending into a conveyor duct, said wheel driving a counter and being adjustable for calibration purposes. It is intended for principal use in an auger system wherein a portion of the auger flight is interrupted to permit extension of the measuring wheel into the conveying duct and to insure that the duct will be filled at the point where the measurement is taken, whether or not it is filled throughout its length. The adjustment to calibrate my device comprises radial movement of the wheel to change the effective pitch diameter of the wheel, and thus the rate at which the conveyed material turns it.

3,426,596
METHODS OF AND APPARATUS FOR DETERMINING PROPAGATION CHARACTERISTICS OF THERMIC WAVES IN GASES AND ITS APPLICATION TO TEMPERATURE MEASUREMENTS

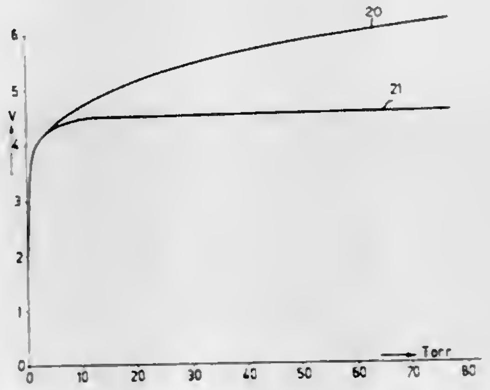
Henry de Beaumont, Nazelles, France, assignor to Société pour l'Utilisation Rationnelle des Fluides
Filed Mar. 29, 1966, Ser. No. 538,430
U.S. Cl. 73—339 **15 Claims**
Int. Cl. G01k *3/00*

3. Apparatus for enabling the temperature of emission of a thermic wave propagating through a gas to be ascertained comprising a volume of said gas at uniform initial temperature maintained throughout its volume at constant pressure, means positioned at a first predetermined point in said gas for coupling energy from an energy source into said gas, said energy causing a thermic wave front to be propagated, by conduction, through said gas, a detector for said thermic wave front positioned at a second predetermined point in said gas, said first and second predetermined points being separated, and means responsive to coupling of said energy to said first point and detection of said energy at said second point for measuring the propagation time of said thermic wave front between said two points.



3,426,597
PRESSURE GAUGE

Leopold Heijne and Adrianus Teunis Vink, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,926
Claims priority, application Germany, Apr. 19, 1966, N 28,399
U.S. Cl. 73—399 **3 Claims**
Int. Cl. G01l *21/12*

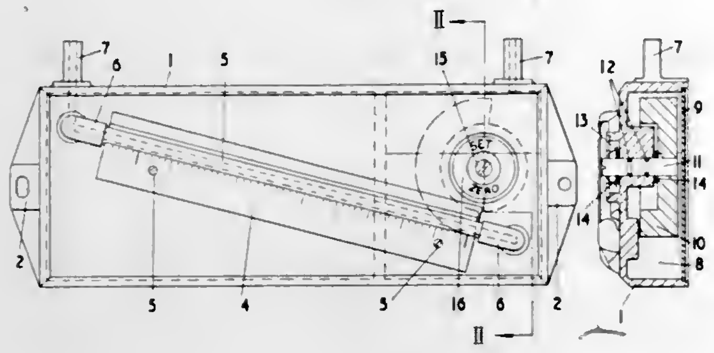


A "Pirani" manometer in which natural convection occurs along a hot wire due to rarefaction of gases upon heating, which convection is ensured by curving the envelope above the wire.

3,426,598
MANOMETERS

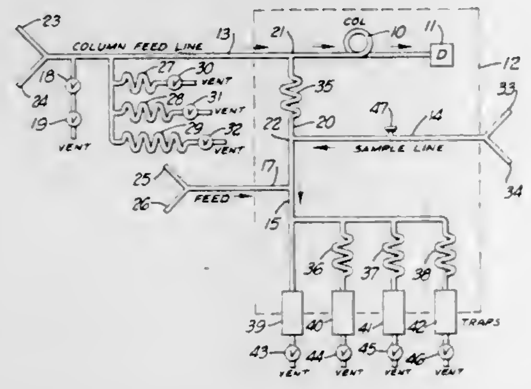
Peter Edward Bagley, Henley-on-Thames, England, assignor to Airflow Developments Limited, High Wycombe, Buckinghamshire, England, a British company
Filed Mar. 31, 1966, Ser. No. 539,008
Claims priority, application Great Britain, Apr. 1, 1965, 13,818/65
U.S. Cl. 73—401 **1 Claim**
Int. Cl. G01l *7/18*

A manometer comprising a measuring tube mounted beside a graduated scale and containing liquid supplied from a reservoir in a manometer casing, there being a flat element mounted in the reservoir and movable therein to displace a varying volume of liquid in said reservoir and thereby adjust for zeroing purposes the position of the meniscus in the measuring tube.



3,426,599
SAMPLE INJECTION SYSTEM

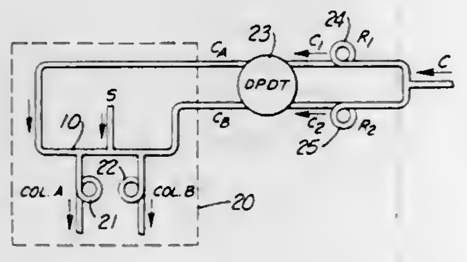
Irwin H. Krull, Garden Grove, and James C. Sternberg, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Jan. 14, 1966, Ser. No. 520,592
U.S. Cl. 73—422 **14 Claims**
Int. Cl. G01n *1/24*



An apparatus and method for providing the introduction of a sample into a gas chromatograph utilizing a column feed stream and a sample feed stream connected by a tie line. Various vents and feed line arrangements are provided for adjusting the stream input pressures to divert a portion of the sample into the column feed line or to split the sample to introduce a controlled portion into the column feed line.

3,426,600
GAS FLOW CONTROL SYSTEM

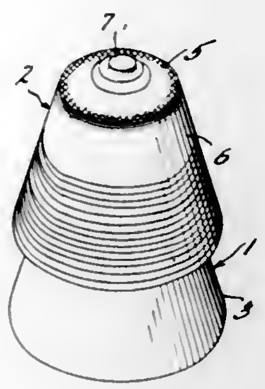
Julius H. Bochinski, La Habra, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Jan. 14, 1966, Ser. No. 520,593
U.S. Cl. 73—422 **4 Claims**
Int. Cl. G01n *1/26*



A valving arrangement without moving parts for selectively switching a fluid stream flowing into a manifold or conduit from an inlet into one of two outlets in the manifold disposed on opposite sides of the inlet. The valve arrangement includes at least two control lines, one each being connected into the manifold between the inlet and each respective outlet. By varying the rate of flow of fluid into the manifold from the control lines, the direction of flow of the inlet stream may be switched from one outlet to the other.

3,426,601
COMBINED STATIC AND DYNAMIC WHEEL BALANCER

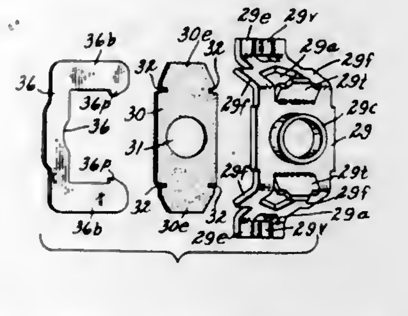
Eddie McCowan, Middleburg, Ky. 42541
Filed Nov. 12, 1965, Ser. No. 507,281
U.S. Cl. 73—459 **4 Claims**
Int. Cl. G01m *1/04, 1/16*



A compact, portable wheel balancer comprising a hollow frusto-conical rotor and a conical base each having a similar pitch whereby the tip of the conical base provides a bearing to support the rotor in free working relationship thereon, and the elements can be disassembled and the rotor telescoped within the base for storage.

3,426,602
RESILIENT SNUBBER FOR GOVERNOR ASSEMBLY

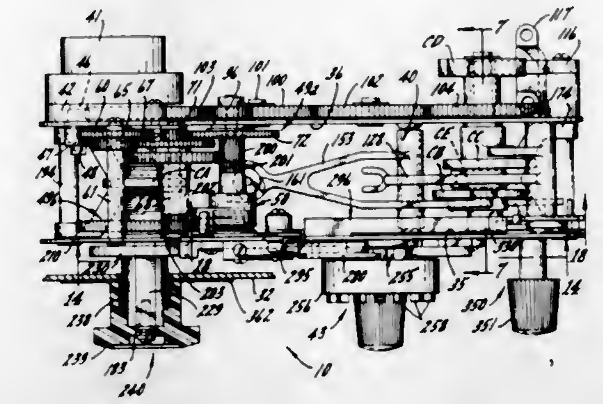
Gene L. Dafler, New Lebanon, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,763
U.S. Cl. 73—526 **9 Claims**
Int. Cl. G01p *3/16*



A centrifugal switch governor assembly comprising a shaft mounted backing member having opposite flange and tang portions forming V-shaped recesses in radially opposite locations. An axially slidable switch actuating member may be moved by weights attached to pivotally movable arms in engagement with the switch actuating member. A plastic plate member, located on one side of the backing member with respective opposite ends thereof extending through respective V-shaped recesses in the backing member, is resiliently engaged by the switch actuating member. A spring located on the side of the backing member opposite the plastic plate member engages the tang portions of the backing member and the ends of the plastic plate member extending therethrough for resiliently backing the end of the plastic plate member.

3,426,603
WATER CONDITIONING SYSTEM

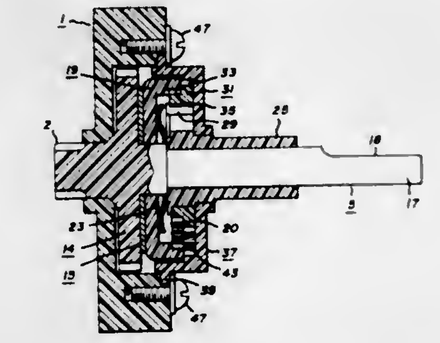
James E. Hiers, Mahtomedi, and Edward C. Grout, White Bear Lake, Minn., assignors, by mesne assignments, to Union Tank Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,824
U.S. Cl. 74—3.5 **15 Claims**
Int. Cl. F16h *3/74;* **D06f** *33/02*



A pair of drive trains driven from a constant speed output shaft for operating a water conditioning system. The first of said drive trains includes a clutch which normally disengages an operator. The second of said drive trains includes a timer selectively effective to release the clutch and engage the operator.

3,426,604
DIFFERENTIAL SPEED ROTARY DRIVE ASSEMBLY

Albert P. Weiner, Limerick, Ireland, assignor to General Electric Company, a corporation of New York
Filed Sept. 27, 1966, Ser. No. 582,300
U.S. Cl. 74—10.54 **2 Claims**
Int. Cl. F16h *35/18*

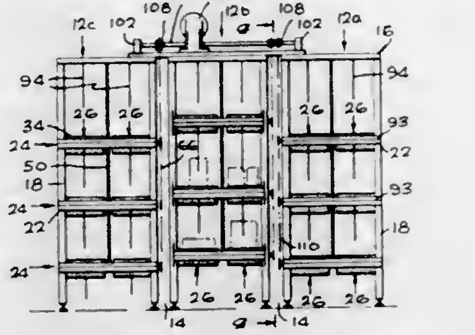


A differential speed rotary drive assembly is shown utilizing an internal epicyclic gear train for fine adjustment control. The fine adjustment control shaft operates the internal circular gears of the train by means of an eccentrically mounted pair of spring fingers on the shaft which urge the internal gears into engagement with the two outer gears of the train. A friction clutch is provided between the driving and driven gears to allow for operation of the fine adjustment shaft in both directions of rotation.

3,426,605
BELT COUPLED DRIVE MEANS

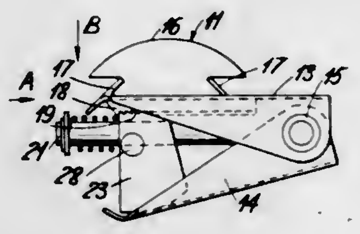
Donald G. Cowlin, 555 Riverdale Drive, Glendale, Calif. 91204
Continuation-in-part of application Ser. No. 490,182, Sept. 27, 1965. This application July 13, 1967, Ser. No. 653,169
U.S. Cl. 74—219 **4 Claims**
Int. Cl. F16h *7/62*

Associated with the conveyors in a combined article conveyor and storage apparatus are drive means for independently driving each of a number of generally parallel conveyors in a direction to move the articles thereon from the loading end to the delivery end of the apparatus. The ends of the conveyors are exposed at the loading and delivery ends, respectively, of the apparatus in such manner as to facilitate placement of the articles to be handled on the loading end of the conveyors and removal of selected articles from the delivery ends of the conveyors.



3,426,606
TENSIONING DEVICES FOR CHAINS, BELTS AND THE LIKE

John Edward Hopkins, Cheadle, England, assignor to Renold Limited, Manchester, England, a British company
Filed May 12, 1967, Ser. No. 638,106
Claims priority, application Great Britain, May 17, 1966, 21,966/66
U.S. Cl. 74—242.11 **12 Claims**
Int. Cl. F16b *7/22*

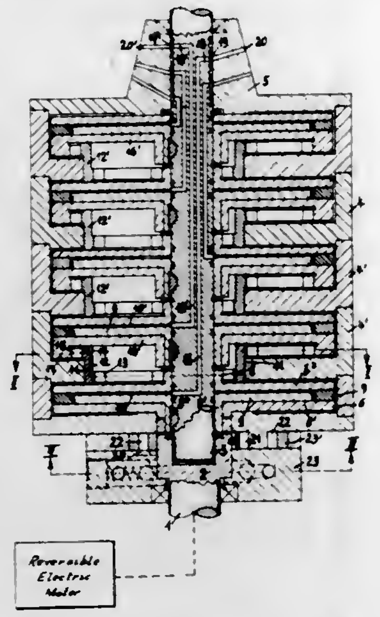


Chain tensioning device has two arms pivoted together. One arm carries a slipper head which engages against the chain. A wedge member is urged between the arms by a spring to bias the arms apart. One arm carries a slipper head and the other arm reacts against an abutment so that the wedging action causes tensioning pressure to be applied by the slipper head. The wedge member is mounted on a spindle and key and keyway arrangements provide for locking the device in cocked condition.

3,426,607
REMOTELY CONTROLLED VARIABLE SPEED TRANSMISSION

Ilie Chivari, Dusseldorf, Germany, assignor to Entwicklungsgesellschaft Eckerfeld KG, Langenberg, Rhineland, Germany
Filed Aug. 31, 1966, Ser. No. 576,306
Claims priority, application Germany, Sept. 3, 1965, C 36,798; Jan. 12, 1966, C 37,879
U.S. Cl. 74—330 **13 Claims**
Int. Cl. F16h *3/04, 3/08*

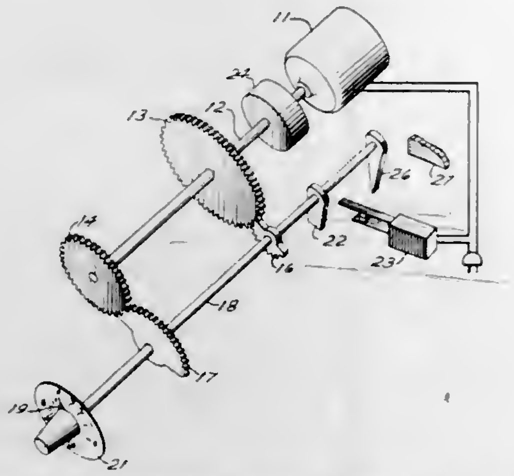
A step by step change speed device has a plurality of clutches. The output half of each clutch is connected to the output shaft. A first gearing means connects the input shaft to the input half of one clutch. A second gearing means drives from the first gearing means and connects to the input half of a second clutch. A third gearing means drives from the second gearing means and connects to the input half of a third clutch. The input and output shafts are coaxial and a fourth clutch directly connects these two shafts, being also coaxial with the shafts. In one embodiment all of the clutches are coaxial with the input and output shafts. In a second embodiment the first,



second and third clutches, with the respective gearing means, are mounted on auxiliary shafts spaced about the input and output shafts and parallel thereto.

3,426,608
INSTANTANEOUS SPEED SHIFT GEAR MECHANISM

Eugene F. Loughran, Oakville, and Joseph J. Balnis, Waterbury, Conn., assignors to Consolidated Electronics Industries Corporation
Filed Mar. 31, 1967, Ser. No. 627,469
U.S. Cl. 74—393 **9 Claims**
Int. Cl. F16h *17/08;* **H01h** *43/00*

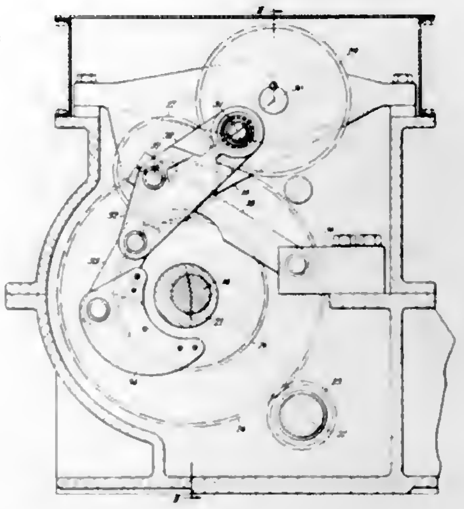


This invention is a gear transmission system with two gears of different diameter meshable, respectively, with two segment gears to provide two different transmission ratios. The effective angular relation between the segment gears is such that there is smooth but positive transfer of power from one gear and segment gear meshing pair at one transmission ratio to the other gear and segment gear meshing pair at the other transmission ratio.

3,426,609
TEXTILE COMBING MACHINES

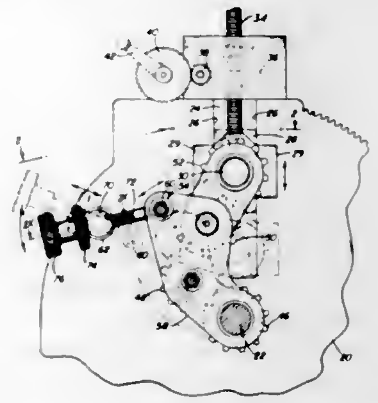
Ferdinand Princz, Oldham, and William Scott, Bury, England, assignors to T.M.M. (Research) Limited, Oldham, England, a British company
Filed Oct. 24, 1966, Ser. No. 588,998
Claims priority, application Great Britain, Oct. 22, 1965, 44,884/65
U.S. Cl. 74—394 **7 Claims**
Int. Cl. F16h *27/10, 35/02, 37/06*

A drive for the detaching rollers of a textile combing machine comprising a differential gear including a rotary motion-compounding element compounding a constant speed rotary motion of a first input drive to the gear with an oscillatory motion of a second input drive to the gear, said second input drive comprising a first pivotal element pivotally attached at one point thereof to an eccentrically located point on a rotary driving member arranged for rotation in one direction at constant speed and pivotally attached at a second point remote from said first point to a first point on a second pivotal element which is pivotally attached at a second point thereon remote from the first point thereon to an eccentrically located point on the rotary motion-compounding element of the differential gear, the first pivotal element being pivotally attached at a third point thereon intermediate said first and second points thereon to a first point on a third pivotal element which is pivotally attached at a second point thereon remote from the first point thereon to a stationary portion of the machine frame.



3,426,610
LOCKING DEVICE FOR ADJUSTABLE GEARING

Herman W. Scharer, Spring Valley, Calif., assignor to Neville T. Henkel, El Cajon, Calif.
Filed Apr. 25, 1967, Ser. No. 633,619
U.S. Cl. 74—397 **3 Claims**
Int. Cl. F16h *35/00*

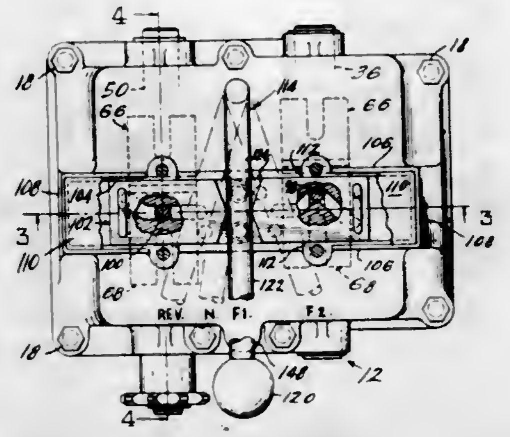


A locking device for retaining a gearing carrying lever in adjusted position with the gear in meshing relationship with a drive shaft and a driven shaft, one of which shafts being translatably movable relative to the other.

3,426,611
TRANSMISSION SHIFT MECHANISM

Hans Hauser, Fredericktown, Ohio, assignor to The J.B. Foundry Co., Fredericktown, Ohio, a corporation of Ohio
Filed July 10, 1967, Ser. No. 652,058
U.S. Cl. 74—475 **10 Claims**
Int. Cl. F16h *5/06;* **G05j** *9/14*

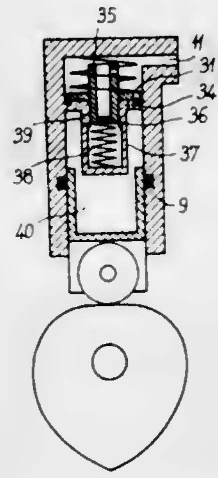
A transmission shift includes a pair of shifter forks operated by a single cam member which is moved in a direction transverse to the movement of the forks by a shift lever. The mounting arrangement of the shift lever can be altered to enable the transmission to be used for



either left-hand or right-hand operation. The transmission is particularly designed for use with small vehicles such as riding lawn mowers, tractors, or snow blowers.

3,426,612
SERVO-STEERING SYSTEMS FOR AUTOMOBILE VEHICLES

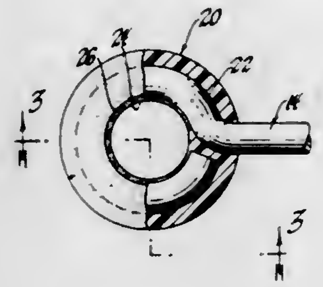
Edmond Henry-Biabaud, Paris, France, assignor to Société Anonyme André Citroen, Paris, France
Original application Oct. 22, 1965, Ser. No. 501,377, now Patent No. 3,373,631, dated Mar. 19, 1968. Divided and this application Nov. 16, 1967, Ser. No. 683,529
Claims priority, application France, Mar. 16, 1965, 9,475
U.S. Cl. 74—495 **4 Claims**
Int. Cl. B62d *1/16, 5/08*



A steering arrangement for an automotive vehicle comprising a steering shaft rotatably mounted upon the vehicle. A steering wheel is fixed to said shaft for rotating said shaft. A second shaft is rotatably mounted upon the vehicle extending parallel to the steering shaft having a cam thereon. Means are operatively connected to both said shafts for rotating said second shaft and said cam by the steering shaft at reduced speed. A thrust piston frictionally engages the cam and such piston is disposed in a cyclinder receiving a variable pressure fluid from a supply system to exert a resistance against rotation of the cam. A valve cooperates with a seat disposed inside the cylinder to open only in the direction of return whereby fluid may return to the supply system and a system comprising a sliding valve and a calibrated orifice is disposed through the seat of the first valve to regulate the action of the pressure during the return of the steering column, whatever the value of this pressure may be.

3,426,613
MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY

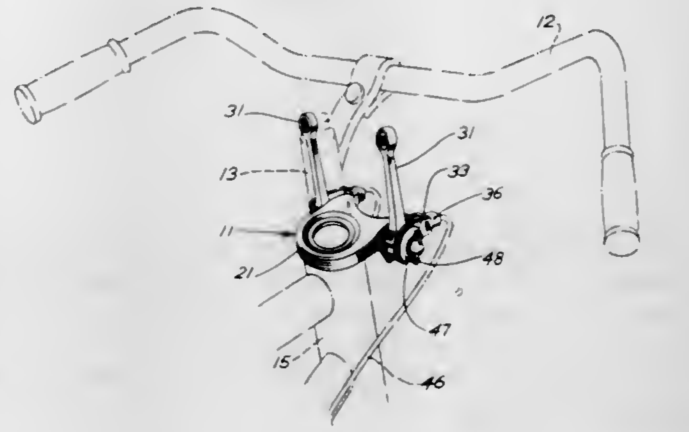
Winthrop B. Conrad, Franklin, Mich., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,900
U.S. Cl. 74—501 **12 Claims**
Int. Cl. F16c *1/12;* **F16f** *1/38;* **B29f** *1/10*



A motion transmitting remote control assembly including a flexible conduit with fittings of organic polymeric material secured thereto for attaching the conduit to a support structure and a wire-like motion transmitting core element movably supported by the conduit and extending therefrom with at least one loop in the end thereof and a terminal means of organic polymeric material in mechanical interlocking engagement with the loop, the terminal means being adapted by a hole therethrough to be connected to a control member.

3,426,614
TWIN CONTROL LEVER ASSEMBLY

Frank P. Brilando, Niles, Stanley R. Jameson, Chicago, and Rudolph G. Blaho, Franklin Park, Ill., assignors to Schwinn Bicycle Company, a corporation of Illinois
Filed Jan. 9, 1967, Ser. No. 608,073
U.S. Cl. 74—501 **9 Claims**
Int. Cl. F16c *1/10;* **G05g** *11/00*

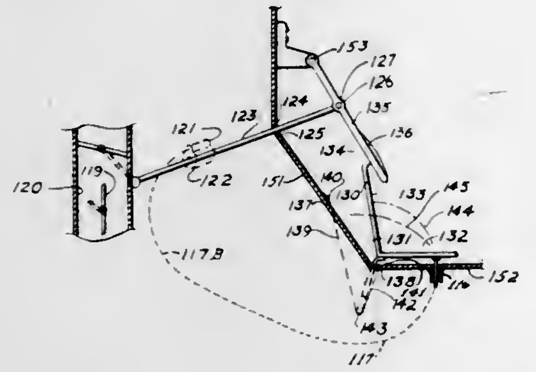


Control lever assembly for mounting on the upper portion of the head set of a bicycle convenient to the handle bar.

3,426,615
VEHICLE DRIVING CONTROLS

Raymond C. Strauss, 301 W. Lenawee St., Lansing, Mich. 48933
Filed May 29, 1967, Ser. No. 642,110
U.S. Cl. 74—513 **6 Claims**
Int. Cl. G05g *1/14, 1/18;* **B62d** *25/20*

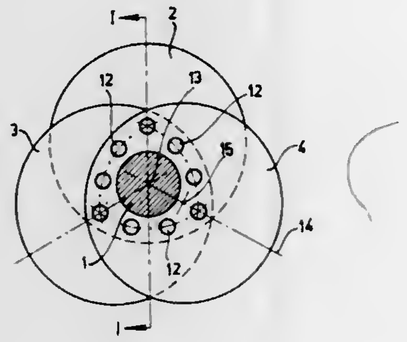
Pedal controls for a vehicle which include pendulum suspended pedals adapted for engagement with the toe portion of the vehicle operator's foot. In one embodiment the toe portions extend diagonally so that the toe of the foot can be shifted laterally to obtain different leverage. Heelrests are provided for the operator's foot which are independently pivotally supported to the vehicle floor board and which are connected to the pedal. Downward movement of the pedal causes movement of the heelrest at a rate to maintain the heel portion of the



operator's foot at its initial contact location during movement of the pedal. In a further embodiment, the heelrests are connected to a secondary throttle shutter in the engine carburetor.

3,426,616
ECCENTRIC SHAFT AND PLUNGER PUMP PROVIDED WITH SUCH A SHAFT

Johannes Bernardus van der Winden, Amstelveen, Netherlands, assignor to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands
Filed Aug. 31, 1966, Ser. No. 576,442
Claims priority, application Netherlands, Sept. 8, 1965, 6511694
U.S. Cl. 74—571 **3 Claims**
Int. Cl. G05g *3/00*

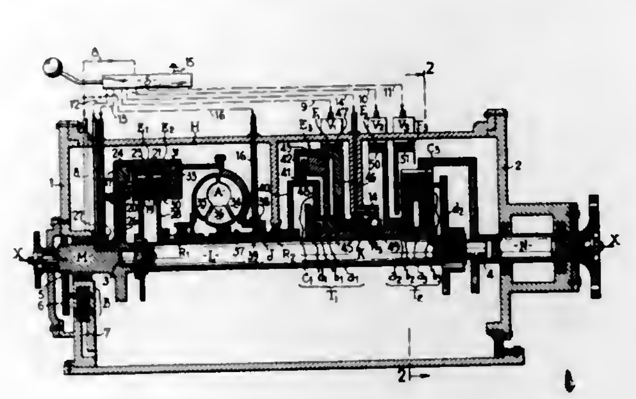


A sectional eccentric shaft for a pump, the shaft being composed of a number of annular eccentric slidably fitted on a core and secured together as a unitary assembly by tension bolts passing through the eccentrics outside the core and pressing the adjacent eccentrics against each other.

3,426,617
CHANGE-SPEED MECHANISM FOR AN AUTOMOBILE VEHICLE

Pierre Guy Tosi, Sens, France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson, France, a French body corporate
Filed Nov. 23, 1966, Ser. No. 596,616
Claims priority, application France, Nov. 29, 1965, 40,073/65
U.S. Cl. 74—688 **5 Claims**
Int. Cl. F16h *47/08, 57/10*

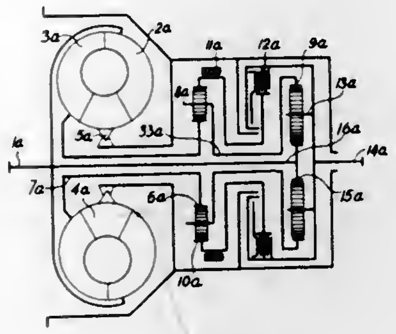
Change-speed mechanism comprising a torque converter and a double epicyclic train having an upstream and a downstream sun gear and a single ring gear connected to the output shaft of the mechanism. The turbine of the converter is connected in a single direction of rotation to the downstream sun gear by a first and a second hollow shaft rotatable on an intermediate shaft, a free wheel connecting the first hollow shaft to the turbine, the second hollow shaft being connected to



rotate with the downstream sun gear. At least one single epicyclic train interconnects the hollow shafts. Brakes and clutches are combined with the epicyclic trains and torque converter.

3,426,618
HYDROMECHANICAL MULTISPEED DRIVES

Antonin Hau, Prague, Czechoslovakia, assignor to Ustav pro Vyzkum motorovych Vozidel, Prague, Czechoslovakia
Filed Mar. 24, 1967, Ser. No. 626,372
Claims priority, application Czechoslovakia, Mar. 29, 1966, 2,070/66
U.S. Cl. 74—688 **11 Claims**
Int. Cl. F16h *47/08*



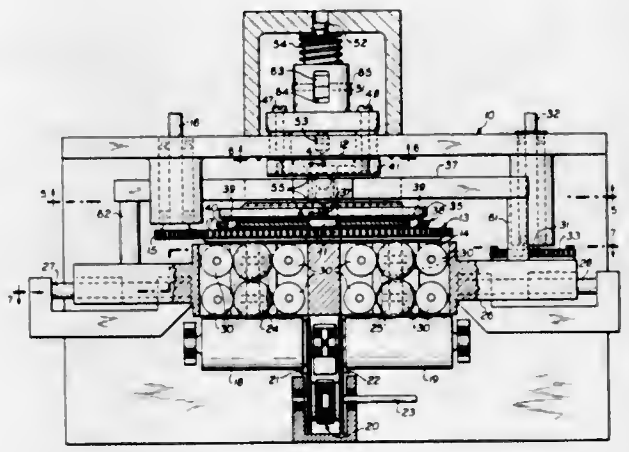
A multispeed drive having a hydrodynamic torque converter which is driven by the input shaft and drives a first differential gear set. A second or output differential gear set is connected to the first set by a transmission including a brake for arresting an element of the first set and a clutch. The second gear set is also connected to the input shaft for combining hydraulically and mechanically transmitted forces and drives the output shaft. Several modifications to achieve multiple forward and backward transmission ratios are disclosed.

3,426,619
INTEGRATOR

Theodore Weber, Jr., Nyack, N.Y., assignor to Cam Technology Incorporated, Elmsford, N.Y., a corporation of New York
Filed Nov. 8, 1966, Ser. No. 592,858
U.S. Cl. 74—690 **7 Claims**
Int. Cl. F16h *37/08, 15/14, 15/28*

1. An integrator comprising a disk with at least one planar surface mounted for rotation at one end of a shaft about an axis normal to said surface, means for rotating said disk, a pair of coaxial cylindrical members mounted for independent rotation about their respective axes, said cylinder axes being parallel to said planar surface but spaced therefrom and lying in a plane common to the

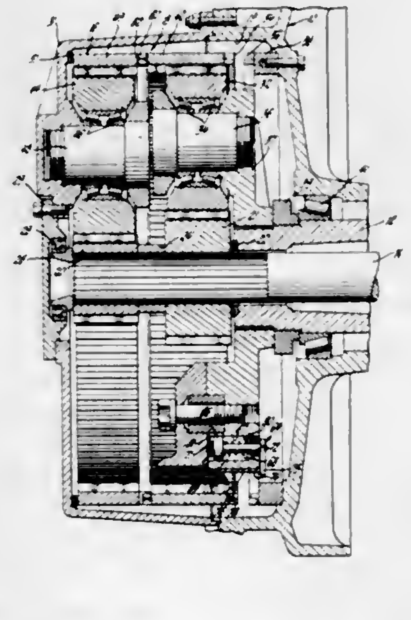
axis of said shaft, said members being located opposite diametrically opposed sides of said disk, differential means coupled to both of said members for providing an output proportional to the algebraic sum of the angular rotation thereof, a first pair of balls disposed in rolling contact between said disk and one of said cylindrical members, a second pair of balls disposed in rolling contact between said disk and the other of said cylindrical members, a ball carriage for positioning each of said pairs of balls with their centers on a line normal to said planar



surface, said carriage being mounted for controlled translation parallel to the axes of said cylindrical members for varying the relative radial distance of said ball pairs from the axis of rotation of said disk, said disk and said cylindrical members being mounted for relative movement toward and away from one another, and means for urging said disk and said cylindrical members toward each other to maintain equal frictional engagement with both of said pairs of balls.

3,426,620
WHEEL DRIVE

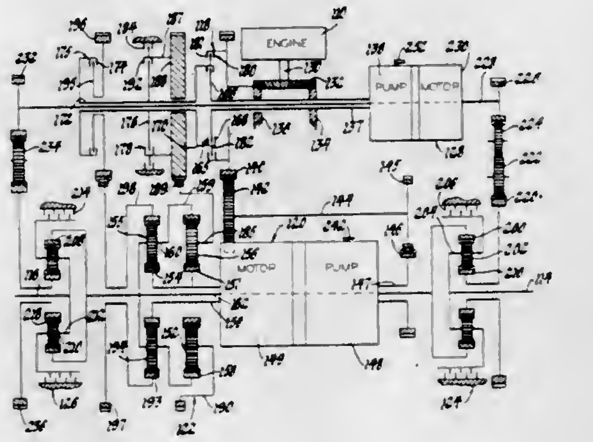
Paul Pleska, Lyndhurst, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,695
U.S. Cl. 74—705 **4 Claims**
Int. Cl. F16h *37/06;* **B60k** *17/16*



A wheel drive comprising a pair of gear sets is housed in a rotary wheel hub. The gear sets cooperatively provide one speed reduction drive and one gear set provides another speed reduction drive having less speed reduction with both drives established by clutch engagement accomplished by movement of an annular gear member of one of the gear sets.

3,426,621
POWER TRAIN

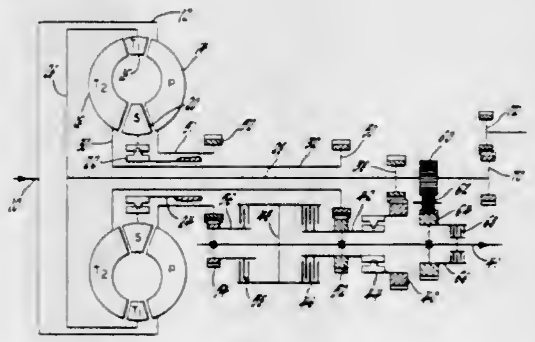
James J. Mooney, Jr. and Marion D. Smith, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Application Sept. 28, 1967, Ser. No. 671,464, which is a continuation of application Ser. No. 502,863, Oct. 23, 1965. Divided and this application Feb. 23, 1968, Ser. No. 707,633
U.S. Cl. 74—720.5 **2 Claims**
Int. Cl. F16h *37/06*



A single input, dual output power train which in the preferred embodiment has a single hydrostatic propulsion unit combined with planetary gearing to provide full hydrostatic drive and hydromechanical drive with synchronous drive establishing device shifting. A separate hydrostatic steer unit is combined with the gearing to provide steering.

3,426,622
TRANSMISSION

Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,952
U.S. Cl. 74—730 **4 Claims**
Int. Cl. F16b *47/00*

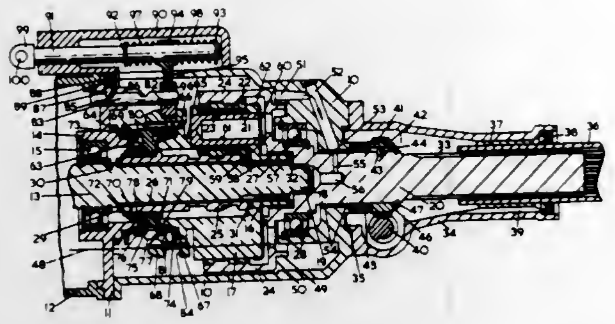


Dual turbine torque converter transmission in which each turbine drives separate forward-drive gear units which are drivingly connected to a transmission output by the engagement of a single, selectively engageable clutch unit. The transmission includes a geared direct mechanical drive, and also has first turbine drive of reverse drive gearing and a power takeoff.

3,426,623
CHANGE-SPEED EPICYCLIC GEARING AND ASSOCIATED CONTROL MEANS

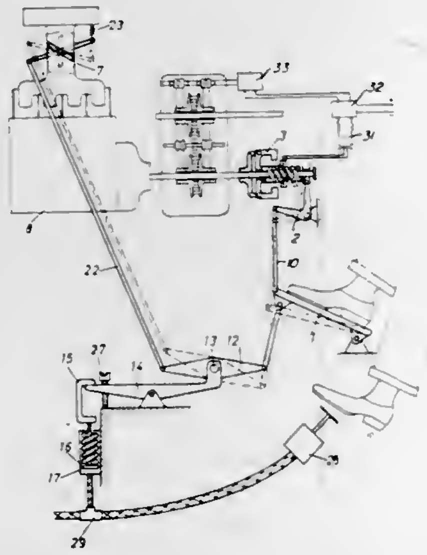
Randle Leslie Abbott, Leamington Spa, England, assignor to Auto Transmissions Limited, London, England
Filed Nov. 28, 1966, Ser. No. 597,463
Claims priority, application Great Britain, Jan. 12, 1966, 13,630/66
U.S. Cl. 74—781 **9 Claims**
Int. Cl. F16h *3/78, 57/10*

The invention concerns a change-speed epicyclic gearing having power input and output elements, a reaction member, and an axially movable toothed coupling rotatively fast and coaxial therewith. A coaxial first complementary toothed coupling is fast with a nonrotary casing, and a coaxial second complementary toothed coupling is rotatively fast with one of the said elements. Control means are provided for moving the axially movable toothed coupling optionally from a neutral position into engagement with the first complementary toothed coupling to provide the epicyclic ratio or into engagement with the second complementary toothed coupling to provide the direct drive ratio. Synchronising means are arranged to inhibit nonsynchronous engagement of the axially movable toothed coupling with either the first or the second complementary toothed coupling.



3,426,624
TRANSMISSION, MOTOR AND BRAKE CONTROL

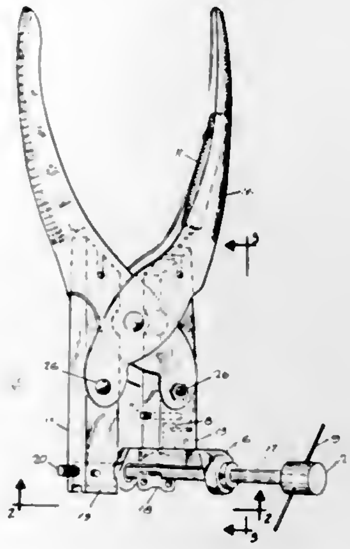
Erhardt Karig and Herbert Kirchner, Bad Homburg vor der Hohe, Germany, assignors, by mesne assignments, to Reimers-Getriebe K.G., Zug, Switzerland, a Swiss firm
Original application Mar. 12, 1965, Ser. No. 439,242, now Patent No. 3,368,426, dated Feb. 13, 1968. Divided and this application Aug. 14, 1967, Ser. No. 668,735
U.S. Cl. 74—846 **5 Claims**
Int. Cl. B60k *29/00;* **F02d** *11/00*



1. In combination with a drive unit of a vhicle comprising an engine, an infinitely variable transmission connected to said engine for driving, decelerating, and braking said vehicle, a fuel control element, and a governor influenced by the speed of said engine for controlling and varying the speed ratio of said transmission, a control mechanism for said drive unit comprising a first control member, means for connecting said first control member to said governor for adjusting the same, and means for also connecting said first control member to said fuel control element for opening and substantially closing the same for adjusting the amount of fuel to be supplied to said engine, said last means comprising an intermediate member connected at one end to said first control member and at the other end to said fuel control element, supporting means for said intermediate member, wheel-brake means for said vehicle, and a second driver-actuated control member for operating said wheel-brake means and for also moving said supporting means so that said fuel control element after being opened by said first control member will be moved toward its closed position independently of the movement of said first control member for further adjusting said governor for regulating the braking action of said engine while said engine is being driven by said vehicle.

3,426,625
ROUND HOODED CHAIN SAW SHARPENER

Joseph P. Faust, Sr., P.O. Box 321,
Woodville, Miss. 39669
Filed Apr. 13, 1966, Ser. No. 547,070
U.S. Cl. 76—37 **5 Claims**
Int. Cl. B23d *63/10, 63/16*

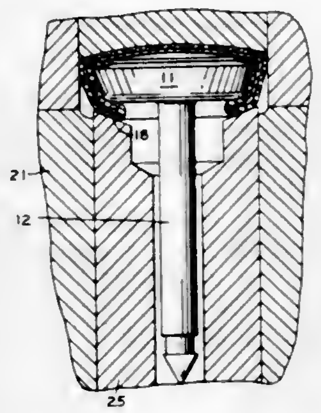


A chain saw sharpened in the form of pliers which is clamped onto a cutter tooth of the saw and while the tooth is so held a file is rotated in a depth gauge channel rack mounted on jaws of the pliers to remove metal from the tooth and sharpen it.

3,426,626
TRIM BUTTON MANUFACTURE

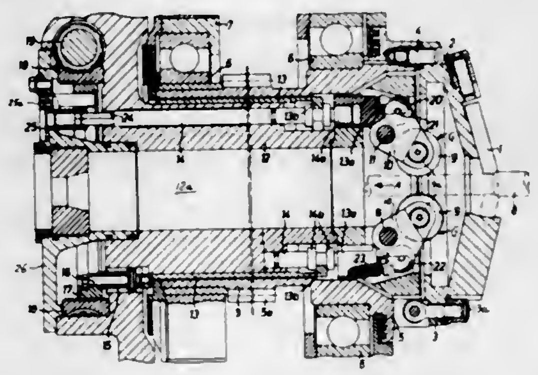
Ray E. Forsyth, Bloomfield Hills, Mich. 48013
Continuation of application Ser. No. 549,529, May 12, 1966, which is a division of application Ser. No. 368,269, May 18, 1964, now Patent No. 3,268,964, dated Aug. 30, 1966. This application Sept. 27, 1967, Ser. No. 674,080
U.S. Cl. 79—4 **2 Claims**
Int. Cl. D04d *7/04*

The method disclosed herein relates to making a trim button from a cup-shaped blank with annular side walls and a top wall and a collet having a stem extending laterally therefrom and an annular side surface spaced outwardly from said stem, the height of said collet being less than that of said side wall of said blank, said blank having a covering extending along the outer surfaces of said top wall and side wall, around the free edge of said side wall, along the inner surface of said side wall and along a portion of the inner surface of said top wall, to form a trim button wherein the side wall of the blank extends downwardly beyond the bottom wall of the collet and radially inwardly thereof. The method comprises the steps of moving said collet and stem into said cup-shaped blank with the stem extending outwardly, applying an axial force to the free edge of the side walls of the cup-shaped blank while laterally confining the side walls and the top wall against axial movement, simultaneously restraining the leading edge against axial movement to cause the leading edge of the side walls of the blank to deform radially inwardly around the periphery of the collet, and thereafter applying an axial force to the portion of the free edge of the side wall which has been moved radially inwardly to deform the free edge axially and radially against the collet to thereby provide an axially thickened portion adjacent the free edge while confining the side wall against lateral outward movement adjacent the area of juncture of the side wall of the blank to the top wall of the blank.



3,426,627
APPARATUS FOR GUIDING WORKPIECES IN MATERIAL REMOVING MACHINES

Horst Lorenz, Solingen, Germany, assignor to Th. Kieserling & Albrecht Werkgeugmaschinenfabrik, Solingen, Germany
Filed Mar. 14, 1966, Ser. No. 534,127
Claims priority, application Germany, Apr. 24, 1965, K 55,912
U.S. Cl. 82—20 **12 Claims**
Int. Cl. B23b *5/00, 25/00*

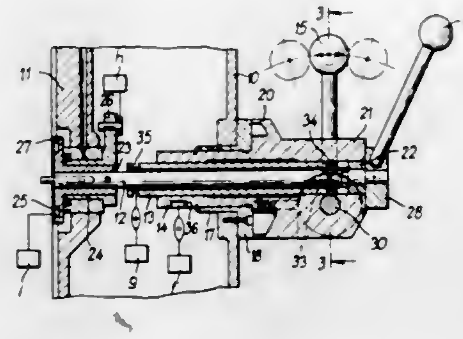


A material removing machine, particularly a machine for shaving the exterior of elongated workpieces which travel lengthwise, in which a plurality of guide members are mounted on a stationary support movable toward and away from the periphery of the travelling workpiece and in which first adjusting means cooperate with the guide members for moving all of the same simultaneously and in the same direction relative to the stationary support, and second adjusting means permit to individually move the guide members relative to each other and the support.

3,426,628
CONTROL MECHANISM FOR A LATHE

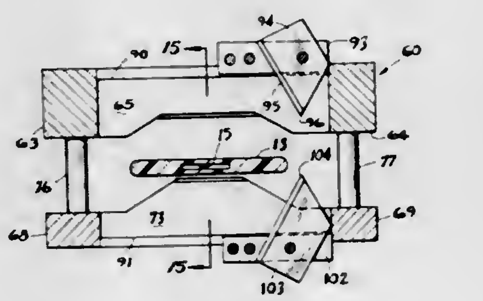
Hermann Schumacher, Faurndau, Germany, assignor to Gebr. Boehringer G.m.b.H., Goppingen, Wurttemberg, Germany, a limited-liability company of Germany
Filed July 20, 1966, Ser. No. 566,563
Claims priority, application Germany, July 23, 1965, B 82,978
U.S. Cl. 82—22 **3 Claims**
Int. Cl. B23b *21/00;* **G05g** *9/00, 13/00*

A pair of hand levers is carried by the bed slide of a lathe. One of these levers is mounted for universal motion. The levers are so connected with the feed control means of the lathe that forward and rearward rocking motion of the second lever causes forward and rearward feed of a cross-slide of the lathe, and rocking motion of the lever to the left or the right causes a corresponding feed motion of the bed slide. The first lever mounted in front of the second lever may be rocked to the right or to the left and, in response to such actuations, engages or disengages a clutch driving the feed spindles of the bed slide and of the cross-slide and engages or disengages the lead spindle of the lathe with the nut associated therewith.



3,426,629
METHOD OF CUTTING AND SCORING A SQUEEZE CONTAINER CLOSURE

Albert M. Herzig, 9465 Wilshire Blvd., Beverly Hills, Calif. 90212, and Benjamin David Menkin, % Menda Scientific Products, 11527 W. Washington Blvd., Los Angeles, Calif. 90066
Filed Jan. 25, 1967, Ser. No. 611,639
U.S. Cl. 83—7 **2 Claims**
Int. Cl. B26d *3/08, 7/08*

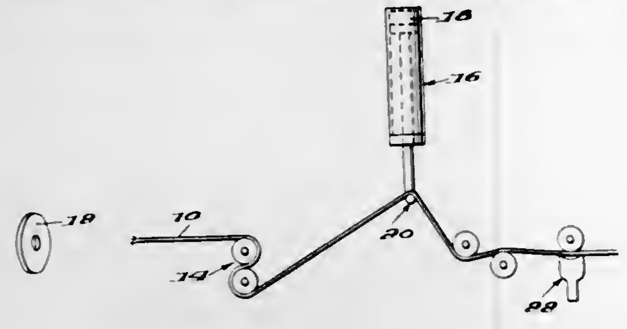


A method for making cuts and score lines in the closure of a squeeze container in order to provide a tear-off strip. Cuts are made through the side edges of the material aligned and score lines in the surface of the sealed two layers of material which form the closure. The material of the closure is held so as to deform side portions of it out of the plane of the intermediate part. Upper and lower knives are then moved transversely so that one knife provide side cuts and both knives cut partially through the thickness of the intermediate part to form scores in the upper and lower surfaces thereof.

3,426,630
TOW EJECTOR

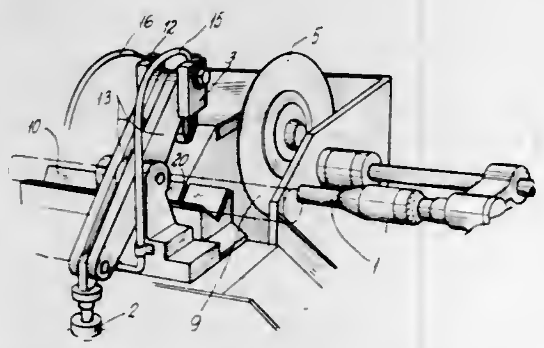
William Brand McCaskill, Waynesboro, Va., and James Preston Neal IV, Newburgh, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,261
U.S. Cl. 83—66 **5 Claims**
Int. Cl. B26d *5/38, 7/06*

An apparatus to remove tow from a cutter when the tow feed is interrupted due to a sensed irregularity in the tow. The apparatus includes a means for sensing irregularities in the tow as it advances to the cutter and a system of delayed action pneumatic or electrical relays that upon energization by the sensing means operate braking means and withdrawal means to simultaneously stop the advancing tow and withdraw it from the cutter. After an appropriate time delay, the apparatus automatically returns to its normal operating condition.



3,426,631
CUTTING MACHINE INCLUDING PRODUCT MOVING MEANS

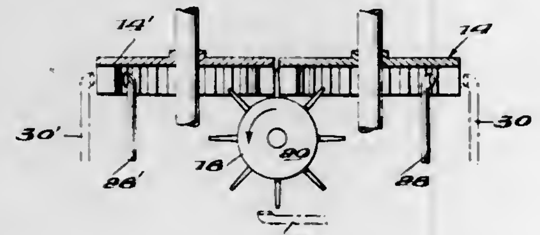
**Bert Ragnar Evert Sandberg, Mustagatan 17,
Varnamo, Sweden
Filed Aug. 15, 1966, Ser. No. 572,253
Claims priority, application Sweden, Aug. 24, 1965,
11,054/65
U.S. Cl. 83—82** **12 Claims**
Int. Cl. B26d *7/06, 5/28*



A machine for cutting rod and pipe material has means for clamping the material, means for advancing the material before cutting against an adjustable stop and operating means for the cutting means. An electrical circuit actuates the above means in sequence and passes through the clamping means and the material so that the circuit is broken by the cutting means when a cutting action has been completed. The cutting means are thereby automatically retracted from the material, the clamping is released and a new feed movement takes place.

3,426,632
STAPLE CUTTER VACUUM WASTE REMOVAL SYSTEM

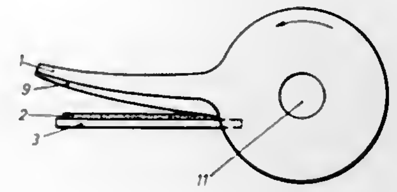
**Lavern James Ahles, Augusta County, and Leander Adair Sherbeck, Waynesboro, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 18, 1966, Ser. No. 535,580
U.S. Cl. 83—100** **5 Claims**
Int. Cl. B26d *5/20*



A vacuum waste removal system for a staple cutter of the type embodying a pair of tow-clamping disks having a series of flange-teeth that register to grip the tow which is fed therebetween and cut by a rotating knife passing between abutting pairs of teeth. Vacuum nozzles are mounted in close proximity to the flange teeth and the cutter to pick up and separately dispose, from the cut staple product, non-standard staple lengths which cling to the disks and cutter blades.

3,426,633
SHEET CUTTING DEVICE

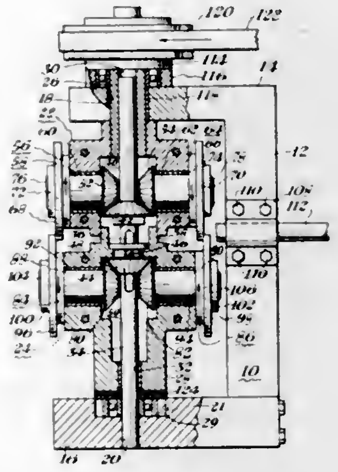
**Willi Jöres, Leverkusen, Germany, assignor to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 6, 1966, Ser. No. 519,088
Claims priority, application Germany, Jan. 12, 1965,
A 48,452
U.S. Cl. 83—341** **4 Claims**
Int. Cl. B23d *25/00;* **B26d** *5/20*



Sheet cutting device for cutting a continuously conveyed sheet by a cutting blade which is mounted on a rotating shaft to avoid damming of said sheet at said blade. The upper surface of said blade is inclined to the plane of said sheet in direction of the travel of said sheet at an angle at least equal to an angle the tan of which equals the velocity of said sheet divided by the velocity of said blade. Preferably, said blade is sickle-shaped. Furthermore, said blade may intersect the plane of said sheet at an angle deviating from the normal with respect to the direction of travel of said sheet to cut said sheet at a right angle.

3,426,634
SHEARING DEVICE

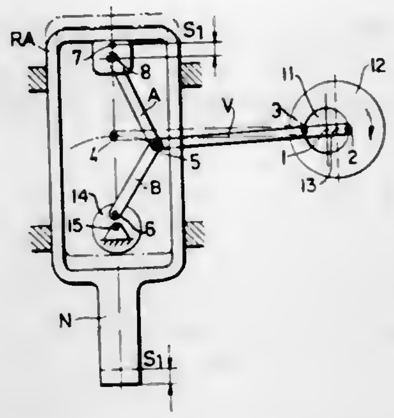
**John C. Richel, Leechburg, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1966, Ser. No. 545,654
U.S. Cl. 83—355** **7 Claims**
Int. Cl. B26d *1/14, 7/06*



Described herein is a shearing device which comprises a pair of cutting discs adapted to rotate about an axis perpendicular to the axis of the disc. The discs are carried by a casing which is also adapted to rotate. Means are provided for guiding strip materials to be cut into the path of the rotating discs along with means for driving the casing and the cutting discs to provide cutting action.

3,426,635
ARRANGEMENT IN SHEET METAL WORKING MACHINES, PARTICULARLY NIBBLING MACHINES

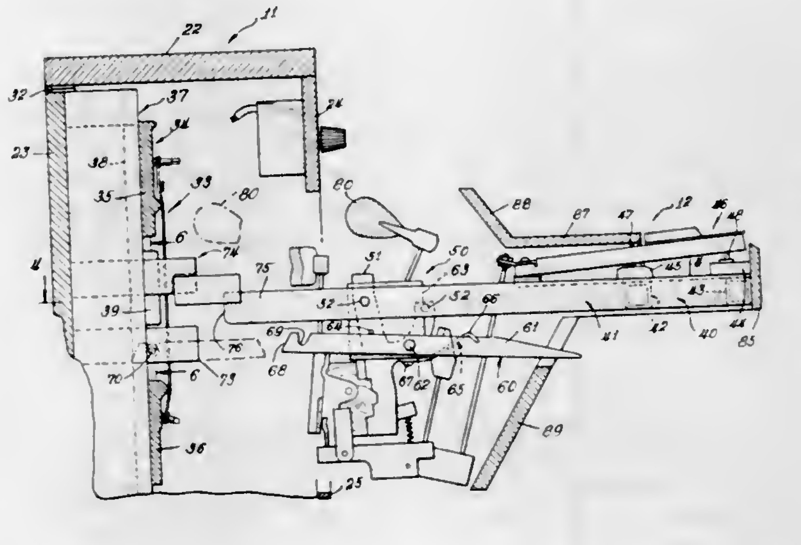
**Sven Nicklasson, Vastra Frolunda, near Goteborg, Sweden, assignor to Pullmax Aktiebolag, Goteborg, Sweden, a corporation of Sweden
Filed Aug. 29, 1966, Ser. No. 575,817
Claims priority, application Sweden, Aug. 27, 1965,
11,237/65
U.S. Cl. 83—530** **5 Claims**
Int. Cl. B26d *5/18;* **F16h** *21/26*



A toggle arrangement for sheet metal working machines wherein a toggle mechanism imparts a reciprocating movement to a tool. The toggle mechanism includes a pair of toggle levers pivotally connected adjacent one end thereof. The other end of one of the toggle levers is connected to the tool holder and the other end of the other toggle lever is connected to the machine frame by means of an adjustment device for permitting the position of the toggle pin to be adjusted. The toggle mechanism is moved by a drive means which causes the working stroke to occur when the remote ends of the toggle levers approach each other.

3,426,636
PORTABLE PIANO ASSEMBLY

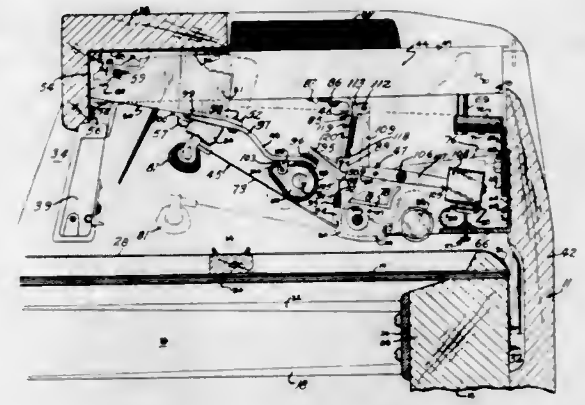
**Brent Starck, Wilmette, Melvin E. Johnson, Chicago, and Brent R. Starck, Wilmette, Ill., assignors to P. A. Starck Piano Company, Chicago, Ill., a corporation of Illinois
Filed June 6, 1967, Ser. No. 643,857
U.S. Cl. 84—176** **8 Claims**
Int. Cl. G10c *1/02*



A portable knock-down piano having a keyboard and associated key action assembled in a portable unitary combination capable of being manually fitted in playing relation to and removed from a string assembly supported within a portable upright piano back: the piano back and keyboard assembly being disassociated for transportation purposes.

3,426,637
PIANO HARPS

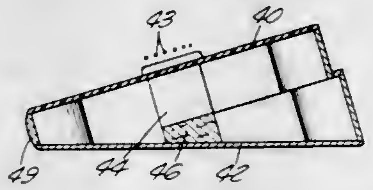
**Lyle M. Hartman, Rte. 1, Ohaton, Alberta, Canada
Filed Oct. 10, 1966, Ser. No. 585,567
U.S. Cl. 84—238** **12 Claims**
Int. Cl. G10c *3/18*



This is a playing action for piano harps and the like actuated by note bars and including means to return the hammer to the uppermost position with the minimum of rebound. It also includes means to disconnect the note bar from the hammer action once the note bar has been depressed, the hammer action returning independently of the note bar.

3,426,638
INCLINED GUITAR BODY

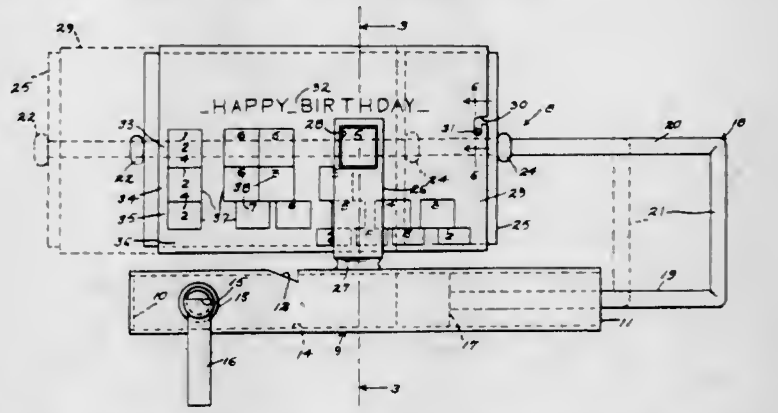
**Walter E. Smith, Caldwell, Idaho 83605
Filed May 2, 1966, Ser. No. 546,949
U.S. Cl. 84—291** **4 Claims**
Int. Cl. G10d *1/08, 3/00, 3/06*



A guitar adapted to be played by a standing musician has tensioned strings in a plane inclined downward and away from the musician and has a body wedge-shaped in cross-section transverse to the direction of the strings and neck, so that the thin side of the body may fit under the arm of the musician.

3,426,639
SLIDE TYPE MUSICAL WIND INSTRUMENT

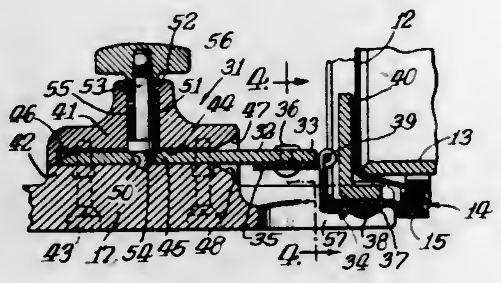
**Vernon R. Maxwell, 323½ E. 5th St.,
Marion, Ind. 46952
Filed June 1, 1967, Ser. No. 642,772
U.S. Cl. 84—330** **6 Claims**
Int. Cl. G10d *7/00, 7/10;* **G09b** *15/02*



A musical wind instrument of the slide type having a slide device for moving a piston to vary the effective size of a wind pipe whereby different notes can be sounded by blowing through the instrument. A guide which is attached to the slide device visually indicates successive positions to which said guide, the slide device and piston are to be moved as a unit to enable a person having no musical training or talent to readily play tunes on the instrument.

3,426,640
QUICK CONNECT PEDAL CONNECTOR

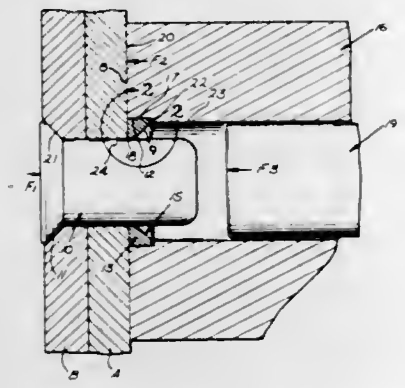
Henry H. Slingerland, Jr., 2800 Romona Court, Wilmette, Ill. 60091
Filed Feb. 9, 1965, Ser. No. 431,333
U.S. Cl. 84—422 **15 Claims**
Int. Cl. G10d *13/00, 13/02*



Means for connecting the foot pedal of a drum apparatus removably to the drum for facilitated assembly and disassembly. The connecting means includes a connector member swingably carried on the drum. The connector member movement may be controlled by means limiting the movement to a preselected retracted position. Further, the connector member may be releaseably held in the retracted position. The connector member alternatively may be secured to the drum shell by a bracket which is removably connected to the shell by cooperating interlocking shoulder means on the bracket and shell. The connector member may be pivotally mounted on the counterhoop. The means for securing the connector member may comprise a spring biased plunger.

3,426,641
FASTENER UNIT WITH FORMING DIE

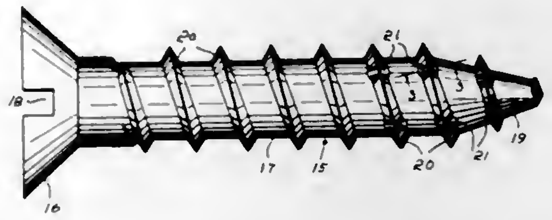
Irwin E. Rosman, 23710 Clarendon St., Woodland Hills, Calif. 91364
Continuation-in-part of application Ser. No. 633,331, Mar. 10, 1967. This application Dec. 6, 1967, Ser. No. 688,416
U.S. Cl. 85—37 **19 Claims**
Int. Cl. F16b *19/04;* **B21d** *39/00;* **B23p** *11/02*



The fastener unit comprises a high-strength rivet and a variable orifice forming die which is located around the rivet adjacent structural members to be fastened. A sleeve is placed around the forming die during the upset of the rivet to control the extrusion of the rivet through the forming die into the rivet holes in the structural members. The sleeve restrains expansion of the die, controls the configuration of the upset head, and provides a guide for an upsetting tool.

3,426,642
SELF-TAPPING SCREWS WITH THREAD-FORMING PROJECTIONS

Harvey F. Phipard, Jr., South Dartmouth, Mass., assignor to Research Engineering and Manufacturing, Inc., New Bedford, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 6,322, Feb. 2, 1960. This application Feb. 5, 1962, Ser. No. 172,057
U.S. Cl. 85—46 **8 Claims**
Int. Cl. F16b *33/02, 33/06, 39/28*



1. A self-tapping fastener including:

(a) a shank portion having an enlarged upset head at one end and a tapered work-entering portion terminating in a tip at the other end,

(b) said shank and work-entering portions being provided with a continuous helical rolled thread formation throughout substantially the full length thereof,

(c) the pitch diameter cross sections of said rolled helical thread formation being of circular shape throughout the full length of said shank and said work-entering end portions,

(d) a plurality of circumferentially spaced apart discrete thread forming protuberances expressed from the flanks of the helical thread formation on said work-entering end portion and throughout substantially the full length thereof,

(e) each of said protuberances in cross section taken in the plane intersecting said protuberance at the point of greatest offset of said protuberance from the helix of the thread and in a direction at right angles to the thread having a cross sectional boundary line along at least one side thereof extending substantially parallel with said substantially uniformly offset from the flank of the thread immediately forward thereof in the direction toward the tip of said work-entering end portion,

(f) the surface of the protuberance on at least the forward side thereof in the direction toward said tip sloping smoothly and gradually from the flank of said thread to said boundary line,

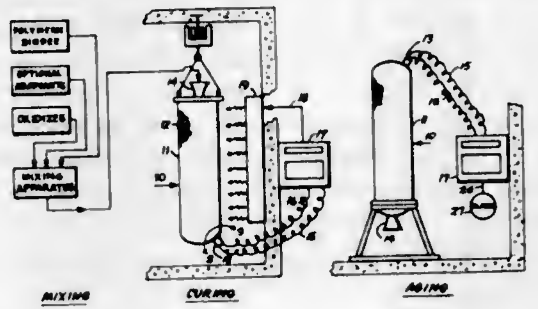
(g) the crests of said protuberances from said tip to said shank increasing in distance progressively radially outwardly from the screw axis and the crest of the protuberance next adjacent the shank portion being substantially the same distance radially outwardly from said axis as the crest of the thread on said shank portion and also of substantially the same cross-sectional shape and dimensions.

3,426,643
ELECTRO-MONITORING METHOD AND APPARATUS

David R. Dillebay, Marshall, Tex., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Original application May 11, 1965, Ser. No. 454,953. Divided and this application Aug. 24, 1967, Ser. No. 677,827
U.S. Cl. 86—1 **4 Claims**
Int. Cl. F42b *33/00*

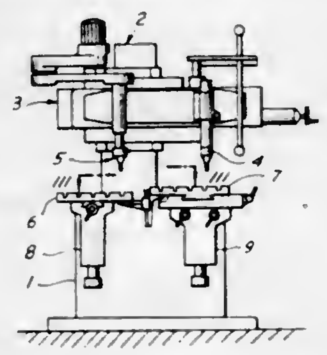
An apparatus for determining the state of cure of a solid propellant grain by measuring preselected electrical properties thereof during the curing cycle to maintain

a predetermined rate of cure. The electrical property measurements are in the form of one or more electrical signals which are thereafter utilized in a controlling device to vary a heating source producing the cure.



3,426,644
PANTOGRAPH MILLING MACHINE HAVING A WORKPIECE SUPPORTING TABLE AND A TEMPLATE SUPPORTING TABLE IS PROVIDED WITH CONNECTION

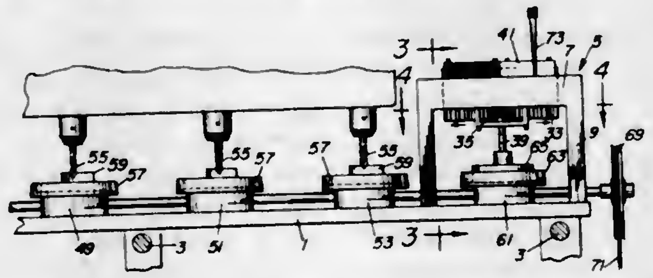
Arrigo Pecchioli, Via di Scandicci 223, Florence, Italy
Filed Jan. 31, 1967, Ser. No. 612,977
Claims priority, application Italy, Feb. 4, 1966, 2,494/66
U.S. Cl. 90—13.1 **9 Claims**
Int. Cl. B23c *1/16, 1/18;* **B23d** *7/08*



A pantograph milling machine having a workpiece supporting table and a template supporting table is provided with connection means for interconnecting the two tables. The interconnection means permits the tables to be adjusted relatively to one another and thereafter directly interconnects the two tables for interdependent horizontal movement and yet still permits free relative vertical movement.

3,426,645
ATTACHMENT FOR MAKING PERIPHERAL MASTER CAMS

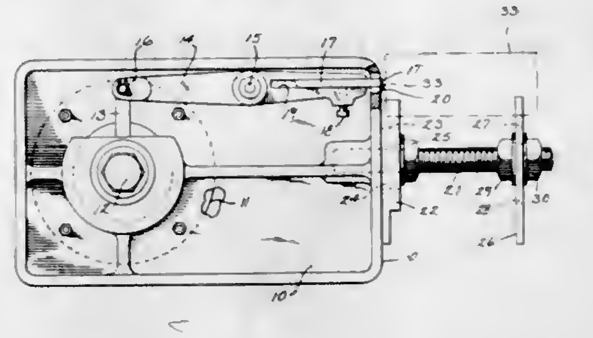
Judson Williams, deceased, late of Cornwells Heights, Pa., by Frankford Trust Company, executor, Philadelphia, Pa., assignor to Bertha Williams, Cornwells Heights, Pa.
Filed May 24, 1966, Ser. No. 552,641
U.S. Cl. 90—13.9 **5 Claims**
Int. Cl. B23c *1/16, 1/18;* **B24b** *17/00*



An attachment for milling machines for milling peripheral master cams from a constant motion pattern having linear pattern surfaces, a plurality of rotatable mounted work support means mounted on a movable table, the pattern being mounted on and movable with said table and the pattern being linearly movable in a direction perpendicular to the movement of the table, and means for transferring the linear pattern surfaces to the peripheries of the work.

3,426,646
BURR-REMOVING MACHINES

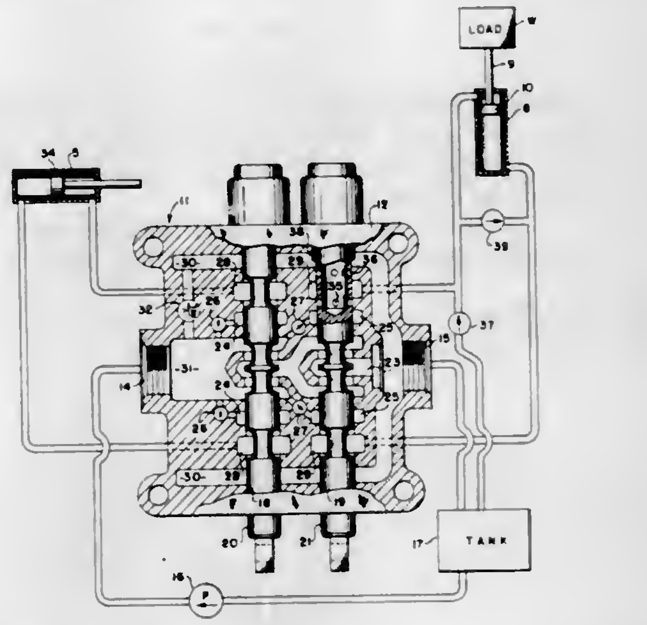
Richard J. Lee, Rte. 2, Hartford, Wis. 53027, and Jerome F. Golner, W 269 N1552 Highway G, Pewaukee, Wis. 53072
Filed Mar. 1, 1967, Ser. No. 619,845
U.S. Cl. 90—24 **8 Claims**
Int. Cl. B23d *1/18, 1/20*



To remove the unavoidable little protrusion or burr that is formed on a workpiece or part as a result of automatic screw machine or other machining operations thereon, the invention comprises a power-driven, high-speed cutting tool holder and specially-formed cutting tool designed to remove the burr instantly with a minimum of unnecessary gouging or scarring to the surface of the part.

3,426,647
DIRECTIONAL CONTROL VALVE

George J. Martin, Lyndhurst, and Hugh J. Stacey, Willoughby, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 14, 1966, Ser. No. 542,574
U.S. Cl. 91—29 **8 Claims**
Int. Cl. F15b *11/00, 13/00*

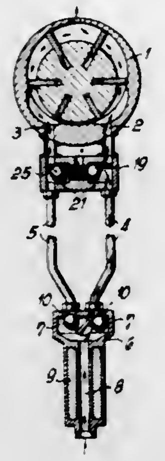


A directional control valve including a valve member movable to a position directing flow of high fluid pressure to the larger displacement portion of a fluid motor, and blocking the flow from the smaller displacement portion of the fluid motor to a return passage; and a check valve through which the returning fluid from the smaller displacement portion of the fluid motor is conducted to the larger displacement portion to obtain high speed operation of the fluid motor. A second check valve contained in a passage directly communicating the smaller displacement portion of the fluid motor with a tank is operative to conduct fluid directly to the motor from the tank bypassing the directional control valve in the event of negative fluid pressure in the smaller displacement portion of the fluid motor.

3,426,648

VALVE CONTROL ARRANGEMENT FOR REVERSIBLE MOTORS, ESPECIALLY FOR COMPRESSED-AIR ROTARY-PISTON MOTORS

Herbert Joseph Fehlings, Eltville (Rhine), Germany, assignor to Pressluftwerkzeug und Maschinenbau Premag G.m.b.H., Geisenheim (Rhine), Germany
Filed Sept. 23, 1965, Ser. No. 489,653
Claims priority, application Germany, Sept. 26, 1964, P 35,151
U.S. Cl. 91—121 **5 Claims**
Int. Cl. F01c *3/02;* **F15b** *11/10, 13/042*

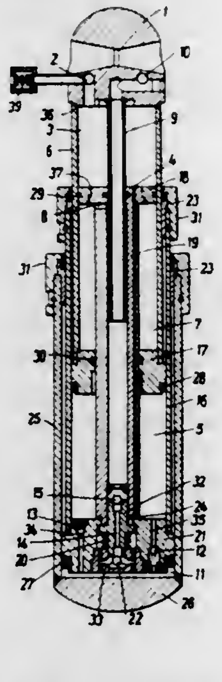


A reversible pneumatic rotary motor including a pair of ports one to each side of the motor, either port serving as an outlet for exhaust air from the motor upon selection of the other as an air inlet, having a live air feed control arrangement comprising a live air handle having an inlet control valve selectively operable to allow flow of operating air to a selected one of the ports, and a nonreturn spring loaded valve interposed between the inlet control valve and the motor operable in response to live air flowing in a selected passage to one port of the motor to allow exhaust of air from the other port of the motor.

3,426,649

MULTISTAGE HYDRAULIC MINE PROP

Manfred Koppers, Duisburg-Hamborn, Germany, assignor to Rheinstahl Wanheim G.m.b.H., Duisburg-Wanheim, Germany
Filed Aug. 8, 1966, Ser. No. 571,369
Claims priority, application Germany, Aug. 6, 1965, R 41,253
U.S. Cl. 91—173 **13 Claims**
Int. Cl. F01b *7/20;* **F15b** *13/02, 11/08*

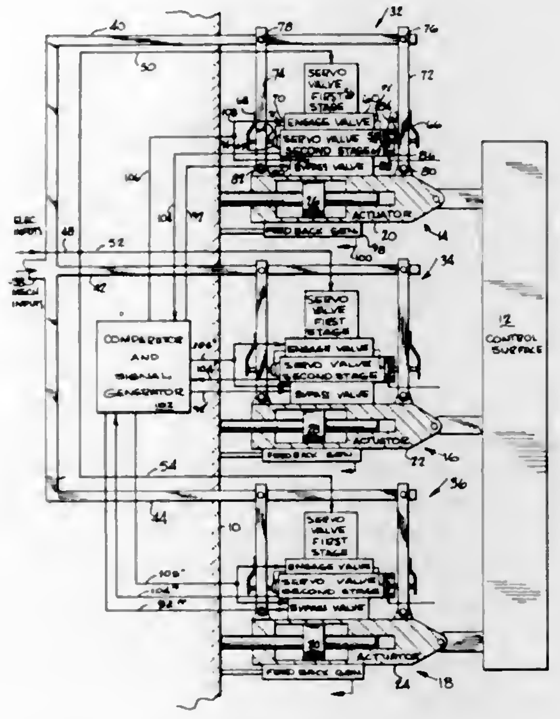


A multistage nine prop comprising at least three telescopically arranged tube sections movable with respect to each other between a collapsible and an extended position, passage means communicating with the interior of the tube sections for feeding pressure fluid into and out of the same to move the section between the positions thereof, and fluid operated means cooperating with the section of smallest diameter for moving the latter prior to the other sections from the collapsed to the extended position during extension of the mine prop, and from the extended to the collapsed position during removal of the prop and for moving the next largest tube section prior to the smallest tube section during partial collapse of the mine props on the load.

3,426,650

TRIPLE CHANNEL REDUNDANT HYDRAERIC CONTROL SYSTEM

Gavin D. Jenney, Arleta, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 515,816
U.S. Cl. 91—216 **8 Claims**
Int. Cl. F01b *15/00;* **F15b** *9/03, 9/09*



1. Redundant control system for force positioning a movable member in response to instructional control signals, the system comprising:

three functionally parallel control channels of the character to receive the instructional signals and each being connected to the movable member,

each said control channel including:

system input signal means for receiving the instructional signals;

hydraerically driven actuator means having piston means force coupled to said movable member;

second stage servo valve means having output ports normally hydaerically coupled to said piston means and having hydraeric signal input port, fail-safe signal input means, engage means and instructional signal input means coupled to said engage means for coupling said system input signal means to said second stage servo valve means in response to a predetermined fail-safe signal impressed upon said fail-safe signal input means;

first stage servo valve means having input signal receiving means coupled to said system input signal means and having hydraeric output port normally coupled to said hydraeric input port of said second stage servo valve means;

controllable engage valve means hydraerically intercoupled between said first and second stage servo valve means for selectively, responsive to a pretermined fail-safe signal, effecting decoupling of said normally coupled hydraeric output port of said first stage servo valve means from said second stage valve means; and

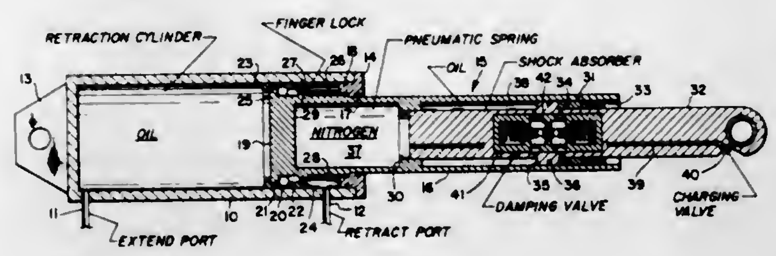
controllable bypass valve means hydraerically intercoupled between said second stage valve means and said piston means of said actuator means for selectively, responsive to a fail-operate signal, bypassing said actuator piston means while substantially coincidentally effecting decoupling of the normally coupled second stage valve output port from said piston means

and hydraeric comparator and signal generator means coupled to each second stage servo valve means for (1) monitoring and comparing signals therefrom indicative of the operational status of each said channel and for (2) generating a fail-operate signal when such status signals from one channel do not share a predetermined coincidence with those from the other two channels, for (3) impressing said fail-operate signal upon the said bypass valve means of said one channel means for causing its said bypassing and decoupling to occur, for (4) generating a fail-safe signal when the status signals from the two non-bypassed channels do not share a predetermined coincidence for (5) impressing said engage means of said second stage means and fail-safe signal upon each of said engage means of said second stage means and engage valve means for causing their respective said coupling and decoupling to occur and for (6) impressing said fail-safe signal upon said bypass valve means for causing each of said bypass valve means to operate again in its normal, non-bypassing mode whereby position of said movable member is achieved by operation of all said second stage servo valve means responsive to said instructional control signals impressed upon said instructional signal input means of each said second stage servo valve means.

3,426,651

AIR-OIL SUSPENSION

Marion Arendarski, Kalamazo, Mich., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed July 26, 1966, Ser. No. 568,050
U.S. Cl. 92—26 **1 Claim**
Int. Cl. F15b *15/26;* **F01b** *7/20;* **F16d** *57/00*

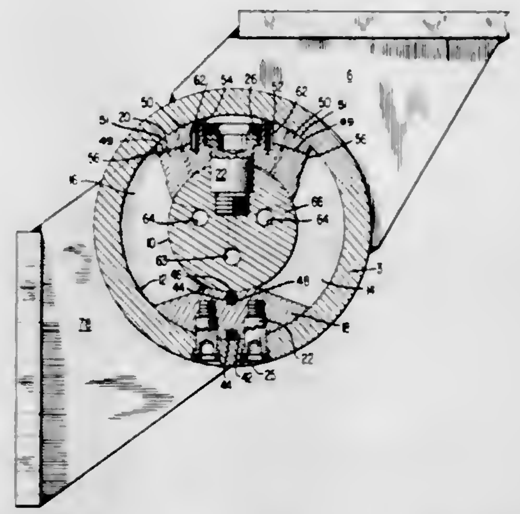


A suspension for a wheel assembly and the like having a shock cylinder and piston rod forming a variable volume air-oil chamber, with a rod having an intermediate enlarged section sealed to the cylinder and an internal bypass for displacement of the oil from one side of the enlargement to the other through a spool valve which operates to control the flow in both directions and provide positive damping for shock and rebound loads. The shock cylinder is supported reciprocably in a retraction cylinder which operates to extend and retract the shock cylinder hydraulically, and the two cylinders have cooperating locking devices for mechanically locking the shock cylinder in its fully extended condition, the locking members including spring lock fingers which bear against and enter a relief in the wall of the shock cylinder when the latter is extended and a finger lock sleeve carried by the head of the shock cylinder to engage about the fingers in this condition, the locking sleeve being moved hydraulically from such position when the shock cylinder is to be retracted to free the same.

3,426,652

ROTARY HYDRAULIC ACTUATOR WITH LOCKING MEANS

William L. Blake, Franklin Lakes, N.J., assignor to William Blake and Company Incorporated, Franklin Lakes, N.J.
Original application Feb. 2, 1965, Ser. No. 429,773, now Patent No. 3,318,201, dated May 9, 1967. Divided and this application Apr. 12, 1967, Ser. No. 649,383
U.S. Cl. 92—27 **5 Claims**
Int. Cl. F15b *15/26;* **F01b** *19/00;* **F01c** *9/00*

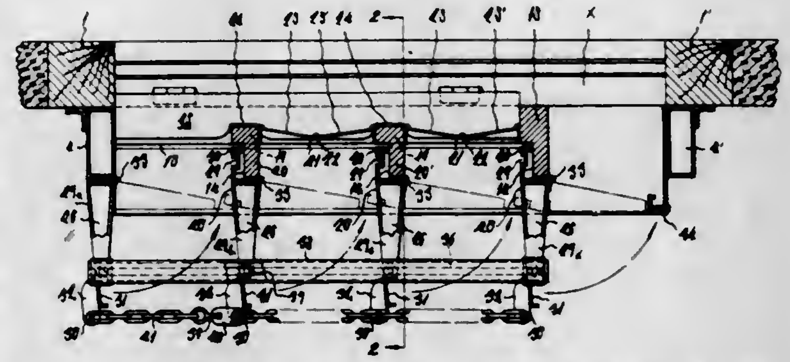


A rotary fluid actuator in which a rotor is mounted coaxially within a pressure cylinder with an annular pressure chamber extending around the rotor and divided into subchambers by vanes rigidly mounted on the rotor and cylinder. A fail-safe locking means carried by the rotor automatically locks the rotor against rotation within the cyclinder upon the absence of fluid pressure within the annular pressure chamber. Application of fluid pressure tending to rotate the rotor releases the locking means.

3,426,653

FOLDING LOUVERED CLOSURES

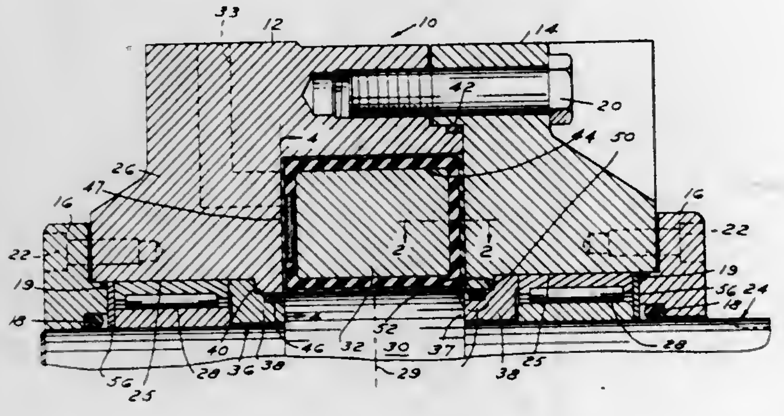
Hiroshi Kawamura, Toyonaka, Japan, assignor to Hanken Seisakusho Company, Limited, Osaka, Osaka-fu, Japan, a corporation of Japan
Filed Oct. 16, 1967, Ser. No. 675,391
U.S. Cl. 98—121 **5 Claims**
Int. Cl. F24 *13/08;* **E06b** *7/084*



A louvered attachment for windows, doors and the like, the louvers thereof being pivotally mounted for opening and closing of the same and being slidably supported so that they can be folded to one side of the window, door, etc., and thus substantially removed from the opening of the window, door, etc.

3,426,654
SHAFT MOUNTING AND SEALING CONSTRUCTION FOR ROTARY ACTUATORS

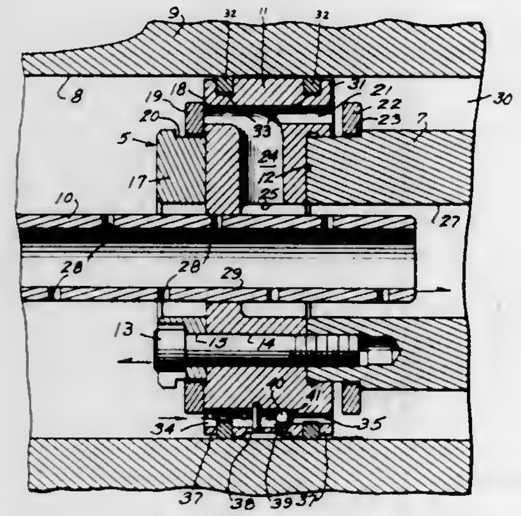
Ralph W. Laughman, Greenville, Mich., assignor to Ex-Cell-O Corporation, Greenville, Ohio
Filed Feb. 6, 1967, Ser. No. 614,366
U.S. Cl. 92—125 **10 Claims**
Int. Cl. F01c *9/00, 33/72;* **F16j** *9/12*



A rotary actuator shaft stepped thrust bearing and sealing structure registering within a stepped recess to sealingly position the shaft axially within the actuator chamber.

3,426,655
NON-SCORING HYDRODYNAMICALLY BALANCED BUFFER PISTON

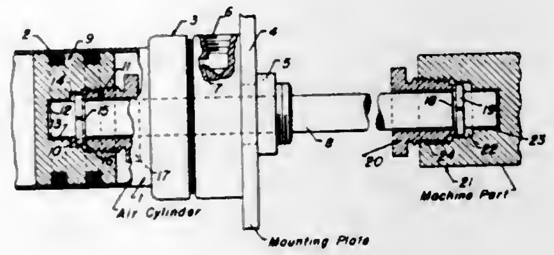
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Sept. 1, 1966, Ser. No. 576,625
U.S. Cl. 92—183 **6 Claims**
Int. Cl. F01b *31/00*



A piston has its perimeter of slightly smaller diameter than a cylindrical chamber wall, with circumferentially spaced shallow pressure pad pockets in the periphery and spaced from the opposite ends of the piston. Piston rings are mounted in grooves spaced from the pockets and from the respective opposite ends of the piston. Respective passages through the piston communicate with the piston rod grooves and the pockets and have respective check valves which cause the pressurized fluid on either end of the piston to bypass the pressurized piston ring and enter the pockets from which the fluid leaks under restraint past the piston ring near the low pressure end of the piston.

3,426,656
AIR CYLINDER WITH A REMOVABLY LOCKED PISTON ROD CONNECTION

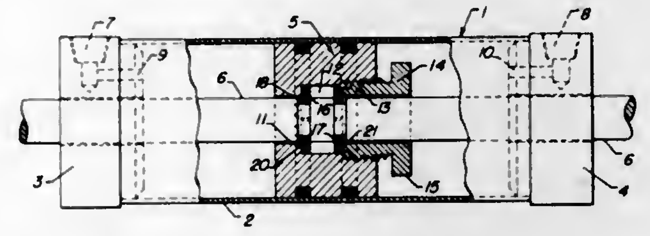
Charles W. Bimba, Crete, Ill.
(101 Main St., Monee, Ill. 60449)
Filed June 14, 1967, Ser. No. 646,052
U.S. Cl. 92—255 **4 Claims**
Int. Cl. F16j *1/12;* **F16b** *9/02;* **B25g** *3/20*



In an air cylinder unit, a special connection means which eliminates the problem of having threading on the piston rod itself and in lieu thereof has a split ring in a groove positioned near the end of the rod such that a "slip-on" threaded locking nut attachable to the piston can bear against the ring and clamp the rod tightly to the piston member. A preferred construction has the split-ring and clamping nut or bushing type connection means at both ends of the piston rod such that the exterior end of the rod is also readily attached to or disconnected from the particular machine part being moved by the air cylinder unit.

3,426,657
PISTON CONNECTION TO ROD IN DOUBLE END ROD TYPE CYLINDER

Charles W. Bimba, Crete, Ill.
(101 Main St., Monee, Ill. 60449)
Filed June 14, 1967, Ser. No. 646,053
U.S. Cl. 92—255 **3 Claims**
Int. Cl. F16j *1/12;* **F16b** *9/02;* **B25g** *3/20*

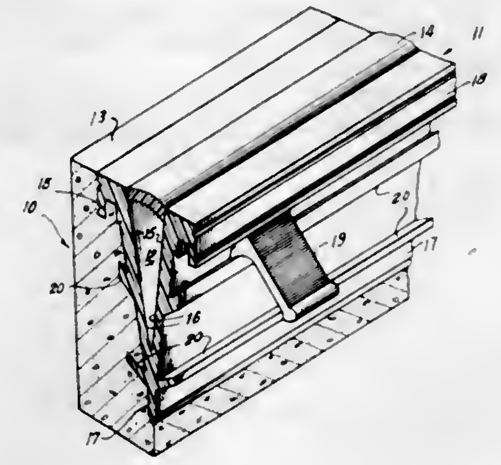


A double split ring and locking bushing connection of a straight through rod to the piston of an air cylinder or other type of fluid motor. Two sets of split retaining rings are used in spaced apart grooves of the rod and a threaded lock-bushing slipped around the rod effects a tight holding of the rod against the retaining rings and against an internally threaded seat portion of the piston.

3,426,658
CONTRACTION JOINT FOR PAVEMENTS

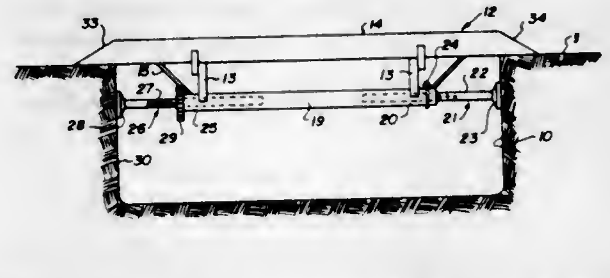
Albert J. Frederickson, 234 Barry Lane, Lancaster, Tex. 75146
Filed Jan. 26, 1967, Ser. No. 611,924
U.S. Cl. 94—18 **1 Claim**
Int. Cl. E01c *11/10*

A prefabricated strip material or expansion unit for interposition between sections of concrete in the pavement of streets and roads, and providing a seal between such sections to exclude moisture, and other deleterious substances, from the joints between such sections. The unit comprises an extruded strip of indeterminate length to be embedded in the pavement transversely thereof, and is preferably of plastic material which is capable of substantial flexibility whereby to compensate for the expansion and contraction of the pavement as affected by temperature differentials.



3,426,659
ROAD EXCAVATION COVER

Frederick Clarke, 744 Ingersoll St., Winnipeg, Manitoba, Canada, and Stephen Preston, 62 Westbrook Drive, Edmonton, Alberta, Canada
Filed Jan. 6, 1967, Ser. No. 607,686
U.S. Cl. 94—35 **5 Claims**
Int. Cl. E02d *29/14;* **E04g** *3/14*

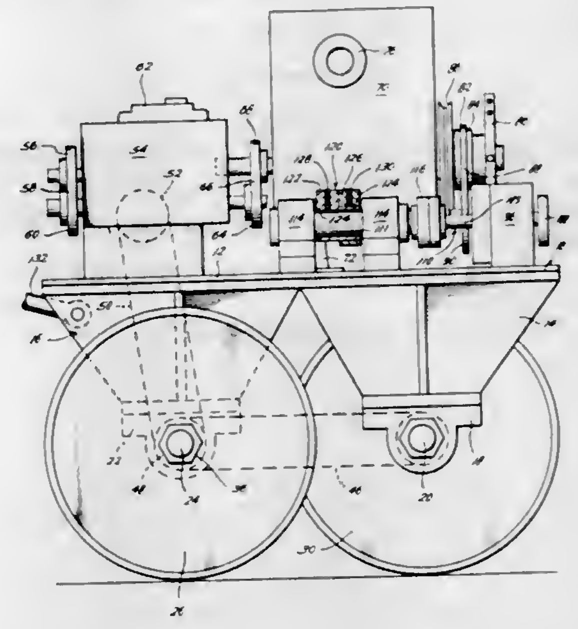


A metal cover for excavations which can be placed in position from above the excavation and including jacking means which adjusts the fitting of the cover to the excavation and holds same firmly in place, and comprising, generally, a grating component for spanning the excavation and resting on the road surface surrounding the excavation. Adjustable screw jack means are provided on the underside of the grating to stabilize the grating against movement relative to the excavation, the ends of the screw jacks engaging the side walls of the excavation. A plurality of grating components can be detachably secured together to form a larger grating if desired.

3,426,660
SOIL COMPACTOR

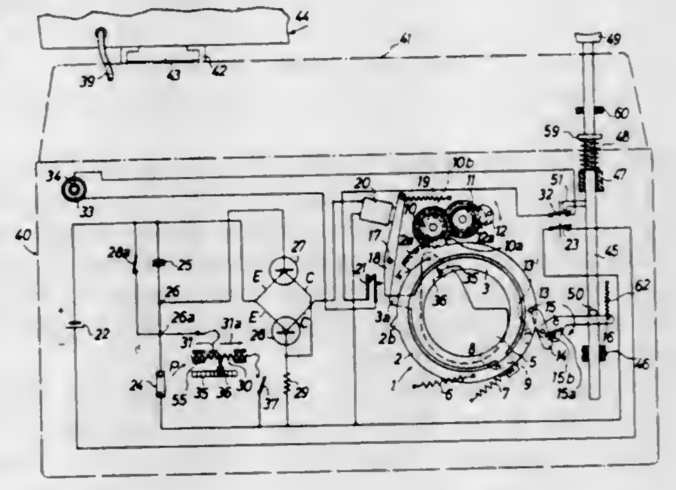
John Edward Scott, 12434 Boheme Drive, Houston, Tex. 77024
Filed Nov. 2, 1966, Ser. No. 591,600
U.S. Cl. 94—50 **6 Claims**
Int. Cl. E01c *19/26*

Apparatus is provided for earth compacting, including a couple of parallel axles on a frame, each axle having thereon spaced apart wheels. Wheels on one axle extend into the spaces formed between the wheels of the parallel axle. Eccentrics are provided on the frame for giving vibratory motion to the wheels, such motion being effective only in the vertical direction.



3,426,661
PHOTOGRAPHIC CAMERA WITH ELECTRONIC FLASH UNIT

Richard Wick, Gruenwald, near Munich, Friedrich Biedermann, Unterhaching, Munich, Alfred Winkler, Munich, Friedrich Bestenreiner, Gruenwald, near Munich, Gerd Kiper, Unterhaching, Munich, Guenter Pawlik, Munich, Reinhard von Sybel, Krailling, and Erwin von Wasielewski, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed July 5, 1966, Ser. No. 562,602
Claims priority, application Germany, July 14, 1965, A 49,742
U.S. Cl. 95—10 **11 Claims**
Int. Cl. G01j *1/00;* **G03b** *9/70, 9/02*



1. In a photographic camera, adjustable diaphragm means for providing different apertures; an exposure control including a source of electrical energy, a capacitor connected in series with said source, a light-sensitive resistor element connected in series with said capacitor so that, on completion of the circuit of said source, said capacitor is charged at a rate influenced by the resistance offered by said resistor element as a function of incident light, and a switching unit operatively connected with said diaphragm means and arranged to influence the size of said aperture as a function of the condition of said

capacitor; electronic flash means; and variable resistor means connected in parallel with said light-sensitive resistor element and in series with said capacitor to offer to the flow of electric current a resistance which is indicative of at least one characteristic, such as the guide number, of said flash means.

3,426,662

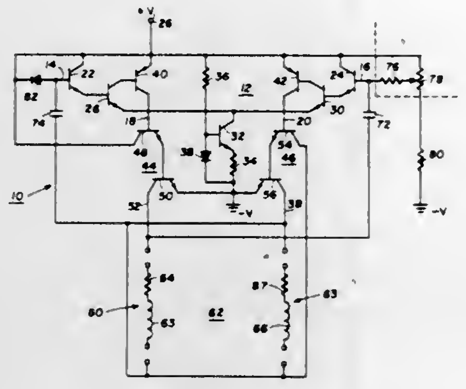
MOVIE CAMERA IRIS CONTROL DEVICE

Leonce J. Sevin, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 30, 1966, Ser. No. 561,945

U.S. Cl. 95—10 **5 Claims**

Int. Cl. G01j *1/00, 1/52;* **G03b** *7/08*



1. In an automatic iris control for a camera having a bidirectional motor for operating the iris of the camera, the motor having first and second windings and being adapted to close the iris during a period when the average current through the first winding exceeds the average current through the second winding, and to close the iris when the average current through the second winding exceeds the average current through the first winding, the combination of:

a high gain differential amplifier having first and second inputs and first and second outputs,

first switching means having an output transistor the base current of which is derived from the first output of the amplifier, the collector of the output transistor being the output of the first switching means and being connected through the first winding of the motor to a power supply, and the emitter being connected to ground,

second switching means having an output transistor the base current of which is derived from the second output of the amplifier, the collector of the output transistor being the output of the second switching means and being connected through the second winding of the motor to the power supply, and the emitter being connected to ground,

a first capacitor coupling the output of the first switching means to the second input of the amplifier,

a second capacitor coupling the output of the second switching means to the first input of the amplifier,

a current source connected to the second input of the amplifier for charging the first capacitor in a preselected, fixed period of time, and

a photodiode connected to the first input of the amplifier for charging the second capacitor with a current directly related to the incident light on the photodiode,

whereby the amplifier will be astable and will oscillate as a result of the inductive load provided by the windings of the motor and the capacitors cross-coupling the outputs of the switching means to the inputs of the amplifier, and the period of time current passes through the first winding will be constant while the period of time current passes through the second winding will be inversely related to the incident light on the photodiode.

3,426,663

INTRA-TUBULAR CAMERAS

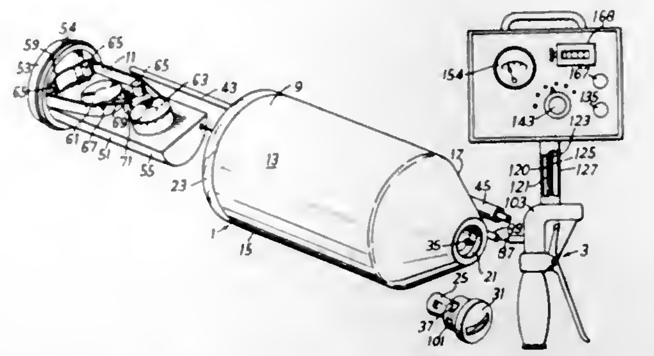
John A. Fox, London, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain

Filed Mar. 8, 1966, Ser. No. 532,693

Claims priority, application Great Britain, Mar. 15, 1965, 10,927/65

U.S. Cl. 95—11 **10 Claims**

Int. Cl. G03b *19/00;* **A61b** *1/06*



A camera for intra-tubular photography having an elongated body, a forwardly directed lens mounted on the forward end of the body, a lens aperture disposed rearwardly of the lens and a device for directing illumination forwardly in order to expose film. An open ended tubular guide is provided on the body so that it can be threaded on a guide rod disposed in the tube to be photographed to facilitate movement of the body relative to the guide rod along the tube being photographed.

3,426,664

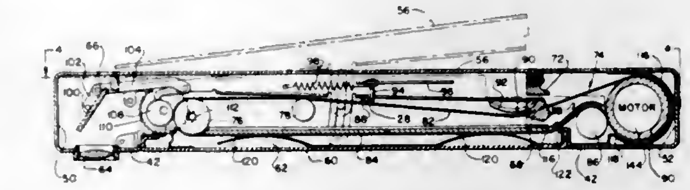
SELF-DEVELOPING CAMERA

Robert L. Norton, Norfolk, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 23, 1966, Ser. No. 604,304

U.S. Cl. 95—13 **14 Claims**

Int. Cl. G03b *17/48*



A self-developing camera for imaging a portion of a scene on a photosensitive recording medium and moving the image and recording medium simultaneously during exposure to form an image of the scene in the recording medium. The camera comprises a motor-driven film transport system including a conveyor for advancing successive film units from a film pack through an exposure station to expose each film unit and then between a pair of liquid spreading members and into a processing chamber in the camera; and an optical system for forming an image at the film unit in the exposure station and moving the image to hold the image stationary with respect to the moving film during exposure. The camera is very compact having a relatively small front-to-rear dimension as compared with the dimensions of the image and each film unit is transported lengthwise in opposite directions during exposure and processing.

3,426,665

APPARATUS ENABLING A CAMERA TO OPERATE WITH DIFFERENT LENGTHS AND THICKNESSES OF FILM

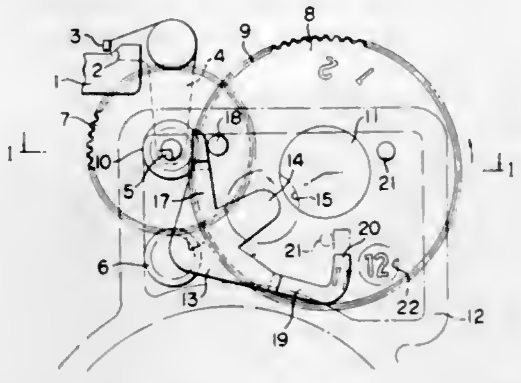
Keisuke Maeda, Osaka, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Dec. 1, 1965, Ser. No. 510,753

Claims priority, application Japan, Feb. 5, 1965, 40/6,461

U.S. Cl. 95—31 **7 Claims**

Int. Cl. G03b *19/04*



A camera for use with 12 exposure 120 film and 24 exposure 220 film which has a manually operated member for resetting the counter-mechanism to zero, after completion of the number of exposures corresponding to the highest number of the counter. A resilient film guide is supported in the camera for movement between two positions, in which different guide slots are provided for accommodating different thicknesses of film.

3,426,666

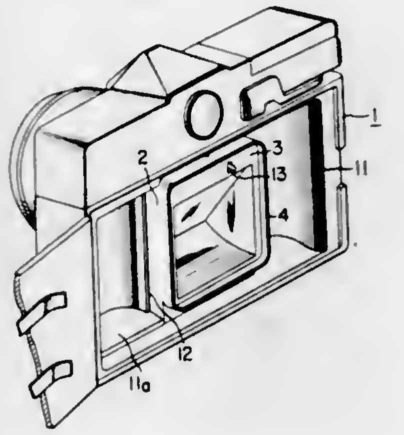
SINGLE-LENS REFLEX CAMERA USING CARTRIDGE FILM

Shigeaki Nagata, Tokyo-to, Japan, assignor to Mamiya Koki Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Mar. 14, 1966, Ser. No. 534,064

U.S. Cl. 95—42 **1 Claim**

Int. Cl. G03b *19/12, 19/02*



A single-lens reflex camera which has a continuous peripheral lip projecting rearwardly and parallel to the optical axis from the rear end of the mirror box and abutting tightly against the focus determining surface of a film cartridge loaded in the camera. This establishes the focusing position of the film cartridge and provides a seal against light leakage. Each of the recesses for accommodating the film roll casing parts of the film cartridge has a partially cylindrical wall which terminates at its inner end close to the side part of the mirror box with the inner end being cut off parallel to the lip of the mirror box at a position spaced forwardly from said lip part. There is thus no peripheral part surrounding the lip part and the adjacent film roll case can be positioned extremely close to the lip.

3,426,667

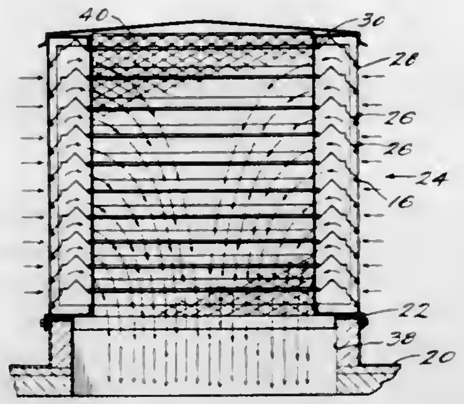
AIR INTAKE APPARATUS

Edward H. Johnson, Maumee, Ohio, assignor to The American Warming & Ventilating, Inc., Toledo, Ohio, a corporation of Ohio

Filed Mar. 17, 1967, Ser. No. 623,937

U.S. Cl. 98—37 **7 Claims**

Int. Cl. F24f *7/00, 13/08*



A penthouse through which air is drawn and directed downwardly. A considerable amount of turbulence is usually encountered in penthouses and this is overcome in part by employing direction vanes of the penthouse blades. Further, the blades are spaced closer together at the bottom of the penthouse than at the top so that air is drawn past all of the blades more uniformly. With this arrangement, the air intake volume is also less at the bottom than otherwise so that there is less tendency for rain, etc. to be drawn past the blades at the bottom.

3,426,668

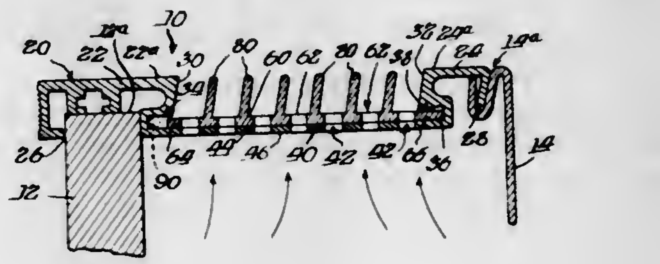
LOUVERED VALVE

Maurice H. Hofmeister, Park Ridge, and Joseph W. Komperda, Gurnee, Ill., assignors to Hofmeister Co., Park Ridge, Ill., a corporation of Illinois

Filed Apr. 12, 1967, Ser. No. 630,449

U.S. Cl. 98—41 **4 Claims**

Int. Cl. F24f *13/06, 13/08*



This invention generally relates to a valve assembly for regulating the flow in a fluid system. More particularly, this invention relates to a valve assembly especially adapted for controlling the air flow in convection or forced-air circulating systems. The valve assembly in accordance with this invention includes a valve body and louvered valve means which selectively co-operate to regulate the volume and direction of fluid flow through the valve assembly.

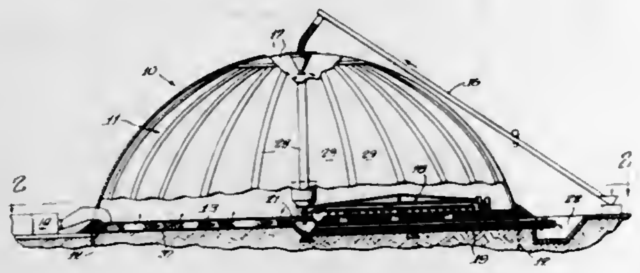
3,426,669
METHODS OF AND SYSTEMS FOR TREATING AGRICULTURE PRODUCTS

Paul L. Peterschmidt, Deerfield, Ill., assignor to Frigidome Corporation, Peoria, Ill., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,888

U.S. Cl. 98—55 **12 Claims**

Int. Cl. E04h *7/22;* **F26b** *7/06, 19/00*



A system is provided for storing and conditioning agricultural products including an enclosure including means for providing air flow throughout the support base and through agricultural products stored therein, along with transducer means for generating an air flow supply having preselected temperature and relative humidity characteristics. The transducer includes control means for distributing a substantially saturated, chilling air flow through the product to create a uniform keeping temperature and a second control means for distributing an only partially saturated air flow through the product at a temperature which is related to the keeping temperature of the product. In carrying out the process, a substantially saturated chilling air flow is distributed throughout the product to establish the proper keeping temperature at which the product can be stored for prolonged periods without spoilage, and thereafter the moisture content is reduced by distributing a partially saturated air flow throughout the product, the partially saturated air flow having controlled temperature and relative humidity related to the keeping temperature of the product.

ERRATUM

For Class 98—121 see:
Patent No. 3,426,653

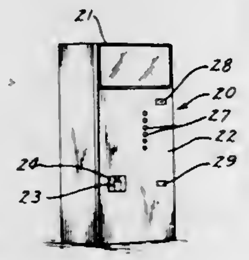
3,426,670
APPARATUS FOR INDIVIDUALLY PREPARING AND DISPENSING A CUP OF FRESH BREWED COFFEE

Francis Arthur Wittern, Des Moines, Iowa, assignor to Fawn Engineering Company, Des Moines, Iowa, a corporation of Iowa

Filed Oct. 23, 1965, Ser. No. 502,843

U.S. Cl. 99—298 **9 Claims**

Int. Cl. A47j *31/057, 31/40*



1. Apparatus for automatically preparing and dispensing a freshly brewed cup of coffee including:

(a) frame means,
(b) means on said frame means forming a closed cup container including a central section having upper and lower ends, and including further,
(c) an upper cover assembly and a lower cover assembly for opening and closing, respectively, the upper and lower ends of said central section,
(d) means movably supporting said cover assemblies on said frame for independent movement to open and closed positions relative to said central section,
(e) an air inlet means on said upper cover assembly open to said central section,
(f) a fluid outlet means on said lower cover assembly,
(g) valve means for opening and closing said outlet means,
(h) filter means of ribbon type movably supported on said frame means for movement between said lower cover assembly and the lower end of said central section when the lower cover assembly is in an open position,
(i) a heated water supply means,
(j) a ground coffee supply means,
(k) a pressurized air supply means, and
(l) means for controlling all of said supply means and said valve means, and for moving said two cover assemblies and filter means in a predetermined sequence whereby water and coffee, when the lower cover assembly is closed and said upper cover is opened, are admitted into the upper end of said center section and when said upper cover assembly is closed, pressurized air is admitted to the center section for a predetermined time period after which period, the outlet means is opened and the brewed coffee is moved through the filter means by the pressurized air.

3,426,671
AUTOMATIC TOASTER

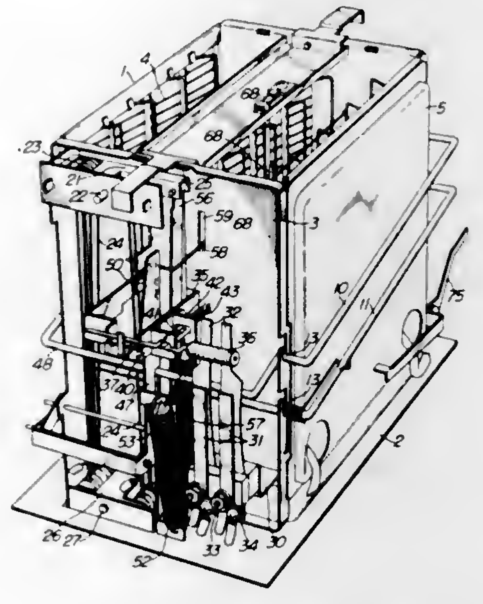
Hosei Sato, Nishinomiya-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Dec. 14, 1966, Ser. No. 601,690

Claims priority, application Japan, Dec. 20, 1965, 40/79,057; July 29, 1966, 41/50,905

U.S. Cl. 99—329 **9 Claims**

Int. Cl. A47j *37/08*



An automatic toaster having the usual toaster heating elements, a bread support means movable from a bread removing position to a bread toasting position and power circuit switching means for closing a power supply circuit when said bread support means moves down to the toasting position. To raise the bread support means at the end of the toasting cycle, an expansible and contractible resistance wire and an energy accumulating means coupled to said wire for accumulating energy as said wire stretches when a current is passed therethrough are provided for accumulating energy when said wire contracts as it cools after the current is cut off from said wire. Lifting means for lifting said bread support means to the bread removing position are driven by the energy accumulated in said energy accumulating means after a predetermined amount of energy has been accumulated. Control means are provided for said power circuit for supplying current to said resistance wire after a predetermined toasting condition has been reached and thereafter opening said power circuit switching means after said resistance wire has expanded a predetermined amount. The wire then cools, energy is accumulated, and then when the predetermined amount has been reached, the bread support means is lifted to the bread removing position.

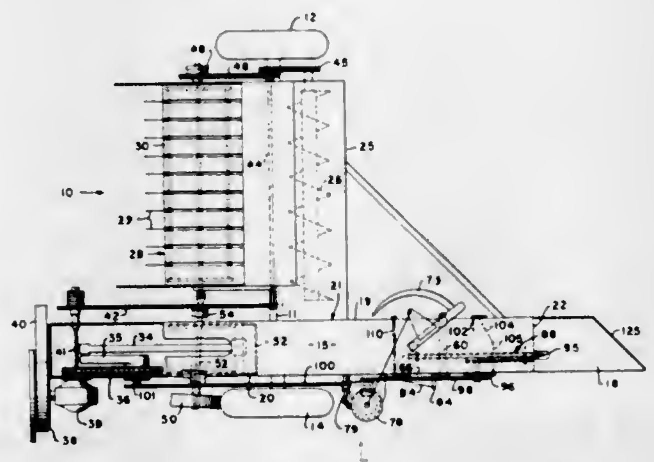
3,426,672
HAY BALER

Edwin B. Nolt, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 543,845

U.S. Cl. 100—4 **11 Claims**

Int. Cl. A01f *15/14;* **B65b** *57/10*



A hay baler having a bale case, a gate projecting across the bale case intermediate the ends thereof and against which bales of fixed length are successively formed, the bales having a rectilinear travel from one end of the bale case to the other, means responsive to pressure of a bale against the gate for instituting the operation of a mechanism which bands and ties the bale, the gate being movable out of the bale case after the bale has been banded and tied, there being ejector means engageable with each completed bale to continue its rectilinear travel and traject it from the bale case, and actuator means being provided rearwardly of the gate in the path of bale movement and engaged by each completed bale to operate the ejector means.

3,426,673
METHOD AND APPARATUS FOR PROCESSING WASTE MATERIAL

William W. Miner and Lynn F. Johnson, Cranbury, N.J., assignors, by direct and mesne assignments, to SFM Corporation, a corporation of New Jersey

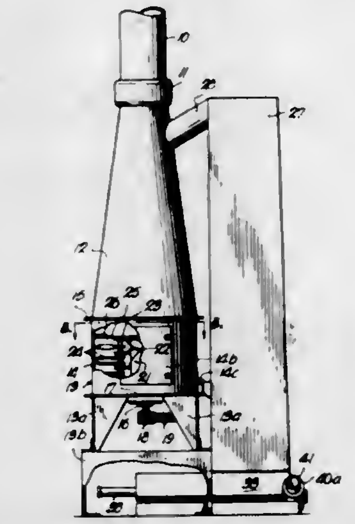
Filed Mar. 30, 1967, Ser. No. 627,100

U.S. Cl. 100—37 **12 Claims**

Int. Cl. B30b *9/04, 1/32;* **B02c** *9/04*

A method of processing waste materials such as garbage and trash which includes the steps of controlling the flow of the waste material to a grinder, grinding said waste material into substantially smaller particles, transferring the particles to a compacter, and compacting said particles into a substance having a volume substantially less than the original volume of said waste material.

This method is principally accomplished by use of a two-stage reduction mill in combination with a hydraulically operated compacter. The reduction mill operates as a self-contained unit to control the flow of waste material to a final grinding stage where hammermill flails comminute the waste material. The air draft created by the rotation of the hammermill flails assists the transfer of the comminuted material to a loading hopper of the compacter. A first hydraulic ram operates to load the packing chamber of a final compacter and a second hydraulic ram operates in a correlated manner with the first to effectively compact the comminuted waste material into a substance having a volume significantly less than the original volume of the waste material.



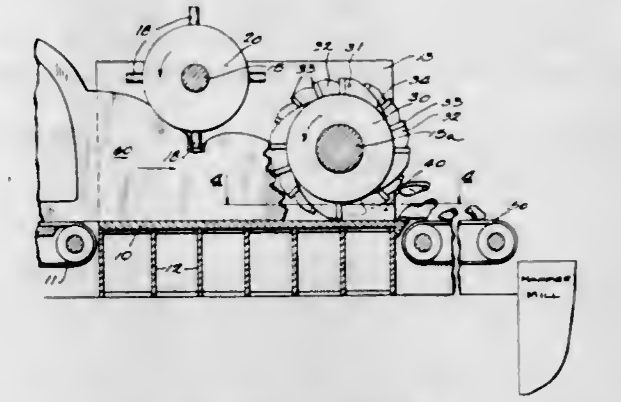
3,426,674
AUTO BODY SHREDDER

Alfeo A. Testolin, 1444 White Rock Ave., Waukesha, Wis. 53186

Filed July 11, 1966, Ser. No. 564,126

U.S. Cl. 100—95 **13 Claims**

Int. Cl. B30b *9/20;* **B02c** *23/02, 13/06*



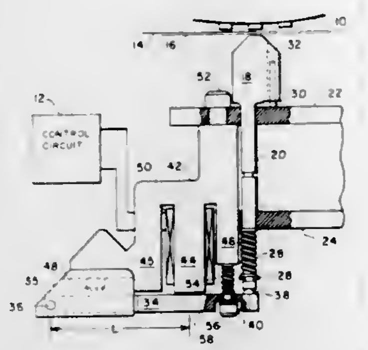
An auto body shredder for use with a hammer mill consists of an upper feeder roll provided with teeth which penetrate the auto body to feed it toward a shredder roll, the upper feeder roll being so located with respect to an underlying bed as to partially compress the auto body. The shredding roll is located lower than the feeder roll and is provided with shredding teeth having replaceable sharp-edged rectangular blocks at their front faces composed of hard material, the remainder of each tooth preferably tapering circumferentially rearwardly a substantial distance along the roll. The bed is provided with mating fixed teeth against which the teeth of the shredder roll work which are also provided with hard replaceable blocks on their working faces, the blocks being preferably trapezoidal in horizontal cross section to define a cutting edge and a throat on the respective sides.

ERRATUM

For Class 100—117 see:
Patent No. 3,426,677

3,426,675
PRINT HAMMER MODULE

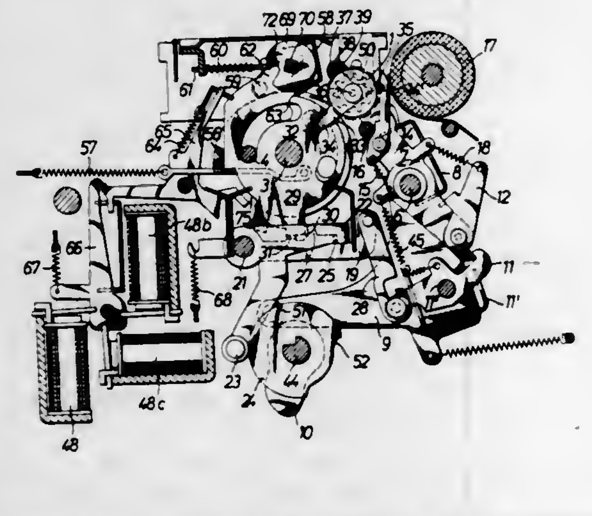
John F. Dalton, Worcester, Mass., assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Mar. 17, 1967, Ser. No. 623, 873
U.S. Cl. 101—93 **6 Claims**
Int. Cl. B41j *9/10*



A free-flight print hammer is propelled against a print surface by a pivoted actuating arm acted upon at its center of percussion by a solenoid. The pole piece of the solenoid serves as a stationary stop to arrest the travel of the atcuating arm before the hammer reaches the print surface, thus producing a true ballistic printing action. Since the pole piece acts, both in attracting and in arresting the arm, substantially on the arm's center of percussion, printing is achieved with minimum expenditure of energy and noise generation. Resilient washers are used to damp the impact produced upon return of the arm to its rest position stop.

3,426,676
DECIMAL POINT OR COMMA PRINTING MEANS IN MULTI-CIPHER DIGITAL PRINTERS

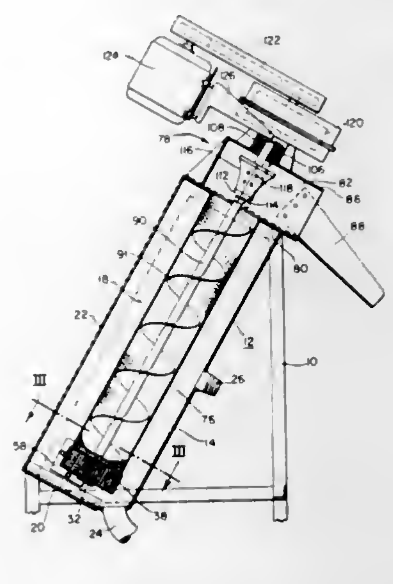
Alfred Zielke, Peine, Germany, assignor to Elmeg Elektro Mechanik G.m.b.H., Peine, Germany
Filed Mar. 23, 1967, Ser. No. 625,524
Claims priority, application Germany, Mar. 26, 1966, E 31,326
U.S. Cl. 101—93 **11 Claims**
Int. Cl. B41j *5/30;* **G06c** *19/04*



A high-speed multi-cipher digital printer which is to be electrically connected to and controlled by an electronic computer or similar apparatus for printing the numerical values which are transmitted thereto from the computer by means of current impulses, and which is designed for manually inserting a decimal point or comma in any desired decade position of the printer; for preventing the accidental insertion of additional points or commas; for transmitting a signal to the computer to indicate therein the particular position of this point or comma so that the computer will thereafter transmit the values to the printer with the decimal point or comma in the correct position in relation to its position as set in the printer; and for preventing the printing of any undesired zeros at the left of this point or comma, for instance, of all zeros in front of a zero at the first position at the left of this point or comma or of all zeros at the left of any first numeral other than a zero.

3,426,677
SCREW PRESS

William H. Combs, Wayne, Sam N. Craig, Devon, and Lance C. Barland, Coatesville, Pa., assignors to Wascon Systems, Incorporated, Hatboro, Pa., a corporation of Pennsylvania
Filed Sept. 20, 1966, Ser. No. 580,711
U.S. Cl. 100—117 **6 Claims**
Int. Cl. B30b *9/18*



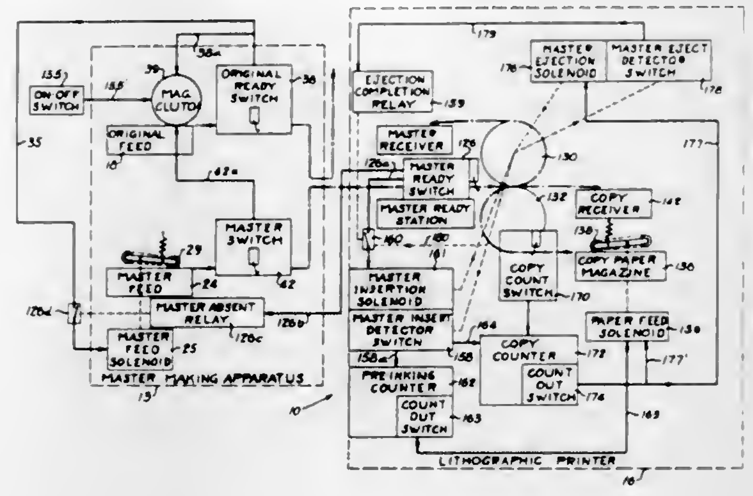
A press for extracting water from a wet solids is provided, wherein the wet solids enter a chamber through a slurry passage, and are contacted by a rotating lifting screw which forces the wet solids upwardly, against a foraminous shell, whereby the pulpy material undergoes a "squeezing" action, for removing water therefrom.

3,426,678
MASTER MAKING AND DUPLICATING MACHINE

Robert L. Carper, Eastlake, Juergen G. A. Lein, Cleveland, Donald J. Miller, Lakewood, and Raymond J. Schmidlin and Joseph A. Verderber, Lyndhurst, Ohio, assignors to Addressograph Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 25, 1966, Ser. No. 522,902
U.S. Cl. 101—132.5 **10 Claims**
Int. Cl. B41l *11/08;* **B41m** *5/20*

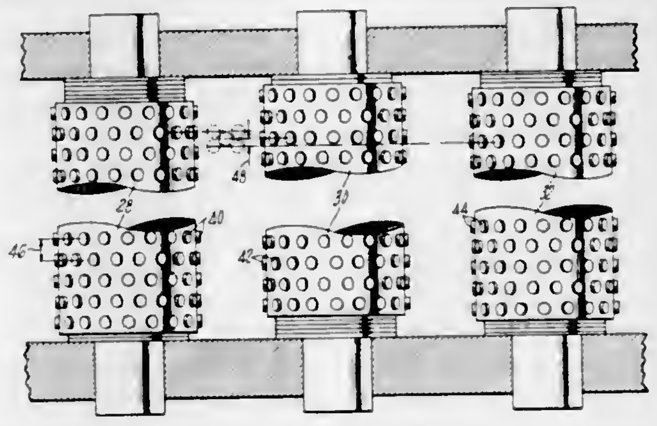
There is described an apparatus (and the method according to which it operates) for handling one or more original documents presented to the equipment, and rapidly producing from each original a desired number of printed duplicates. In particular the apparatus includes a master making portion which exposes a charged photoconductive sheet to a light and shadow image of the original to form a reverse reading latent electrostatic image thereon, develops the latent image thus formed on the sheet, and treats the sheet to convert the surface coating in the background areas to hydrophilic condition so that the sheet may perform as a lithographic master. The apparatus also includes an automated direct printing rotary lithographic duplicator which mechanically takes each master thus prepared, places it on the master cylinder, prints by direct contact between the master and receiving sheets, making the desired number of copies in accordance with a preset counter setting, discharges the master, and then triggers the master making section to

accept and process another waiting original. Also described is a sequencing control which provides for overlapping of cycles so that whenever there is a series of originals awaiting processing, a second original may have its master prepared and brought to a position awaiting use while the master from a first original is printing copies, and a third original is at a ready location where it will be automatically picked up and fed into the master making section to have a master prepared therefrom at the instant the first master is discharged from the master cylinder of the duplicator section and the second master placed thereon.



3,426,679
MULTI-COLOR PRINTING IN A SINGLE IMPRESSION

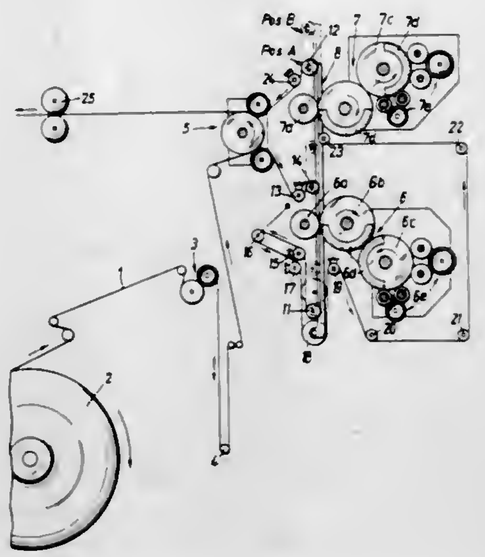
Thomas B. Rhines, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 585,919
U.S. Cl. 101—175 **11 Claims**
Int. Cl. B41f *5/18, 31/14*



Apparatus for printing full color reproductions in a single impression in a rotary printing press is described. A single printing plate is provided having a plurality of discrete projections provided thereon in the desired pattern of intelligence, the projections being provided in the basic plate in unit cells which are repetitive in an overall array. Ink transfer rollers lay down a complete ink pattern in three or more colors on a blanket cylinder in a pattern corresponding to the basic repetitive unit cell pattern provided on the printing plate and the printing plate projections are, accordingly, each inked with a single color which corresponds to their location in the unit cell, particular shades and color intensities as well as the requisite pattern being reproduced as a function of the intelligence provided on the printing plate.

3,426,680
ROTARY PRINTING PRESS FOR CHANGEABLE FORMATS

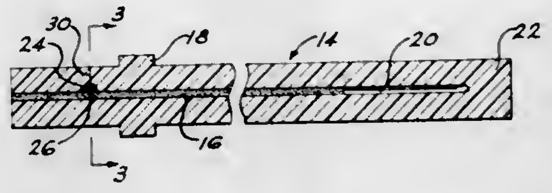
Curt Kaufmann, Berlin, Germany, assignor to Automatic Druckmaschinenfabrik Dr. W. Hinniger und Sohne, Berlin, Germany
Filed Feb. 28, 1966, Ser. No. 530,451
Claims priority, application Germany, Mar. 8, 1965, A 48,578
U.S. Cl. 101—181 **8 Claims**
Int. Cl. B41f *5/06, 13/04*



An improved rotary printing press is disclosed of the type incorporating printing or blanket cylinders which print along part of their circumference and a displaceable control carriage which accommodates the paper web to the peripheral or circumferential velocity of the printing cylinders which is returned or retracted into desired position during the pause in printing. An inner and an outer pair of control rollers are disposed on the displaceable control carriage and a separate printing unit is provided for each of the pairs of control rollers. The inventive arrangement is such that the forward and reverse sides of a paper web can be simultaneously printed. In an alternative embodiment of the subject invention, each pair of control rollers has delivered thereto its own paper web.

3,426,681
EXPANSION OF TUBES INTO TUBE SHEET BY USE OF EXPLOSIVES

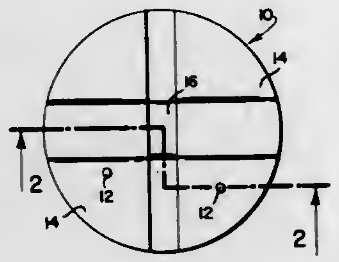
Richard M. Oliver, Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,220
U.S. Cl. 102—24 **3 Claims**
Int. Cl. F42b *3/00, 1/02*



A polyethylene tube which houses explosive means to be used for explosively expanding metallic tubes into a metallic tube sheet. The polyethylene tube is closed at its end which extends into the metallic tube, and has an air pocket therein to prevent the end from being ruptured, which would expose the interior of the metallic tube to the explosive residue.

3,426,682
EXPLODING FUSE

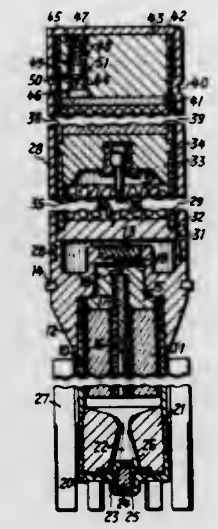
Sidney A. Corren, 163 Cherry St., Katonah, N.Y. 10536, and Myron A. Coler, 56 Secor Road, Scarsdale, N.Y. 10583
Continuation-in-part of application Ser. No. 463,441, May 19, 1965. This application Apr. 27, 1967, Ser. No. 642,993
U.S. Cl. 102—28 **8 Claims**
Int. Cl. F42b *37/00;* **C06c** *5/00, 5/04*



An electrical initiator employing a conductive plastic heating element to ignite a heat-sensitive explosive composition is disclosed. The conductive plastic element is supported by an insulator plastic base.

3,426,683
STAR SHELL

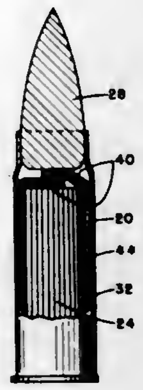
Hanspeter Schenk, Hargen, and Robert Apotheloz, Wallisellen, Switzerland, assignors to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed July 19, 1967, Ser. No. 654,491
Claims priority, application Switzerland, July 20, 1966, 10,497/66
U.S. Cl. 102—34.1 **9 Claims**
Int. Cl. C06d *1/04;* **F42b** *13/38, 13/40*



A star shell having a first sleeve in which is located an illuminating body and a second sleeve wherein there is accommodated a parachute secured to the first sleeve. Both sleeves are located in a casing. A charge for ejecting both sleeves out of the casing and for withdrawing the parachute out of its sleeve is located in the casing behind the two sleeves. A shoulder on the second sleeve and a bead on the casing prevent complete ejection of one of the two sleeves out of the casing.

3,426,684
WEAR REDUCTION ADDITIVES

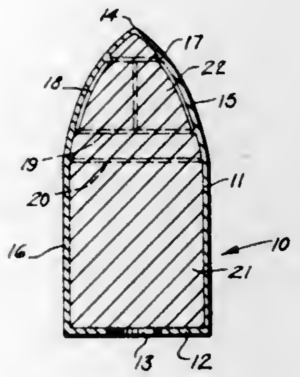
David Esriel Jacobson, Stockholm, and Stig Yngve Ek, Vallingby, Sweden, assignors to Wegematic Corporation, New York, N.Y., a corporation of Delaware
Application Mar. 22, 1967, Ser. No. 625,269, which is a continuation of application Ser. No. 377,278, June 23, 1964. Divided and this application Jan. 18, 1968, Ser. No. 698,789
U.S. Cl. 102—38 **44 Claims**
Int. Cl. F42b *9/14, 5/16*



The reduction of the erosion caused in gun barrels of relatively large caliber by associating an additive with the propellant charge. The additive is a finely divided, powdery, metal-containing inorganic substance capable of producing a temperature and erosion resistant layer on the inside of the gun barrel while the hot propellant gases flow therethrough without causing a material rise in the temperature of the gases. The additive is employed in an amount sufficient to produce the temperature and erosion resistant layer over the entire length of that portion of the gun barrel which is subject to erosion.

3,426,685
BULLET

Orace V. Stubbs, Golden Beach, Buchanan Dam, Tex. 78609
Filed Dec. 19, 1966, Ser. No. 602,736
U.S. Cl. 102—91 **1 Claim**
Int. Cl. F42b *11/10*



A mushrooming projectile comprising a jacketed lead filled bullet. The jacket has an internal rib pattern at the ogive portion of the projectile consisting of a series of annular ribs and longitudinal extending ribs intersecting some of the annular ribs

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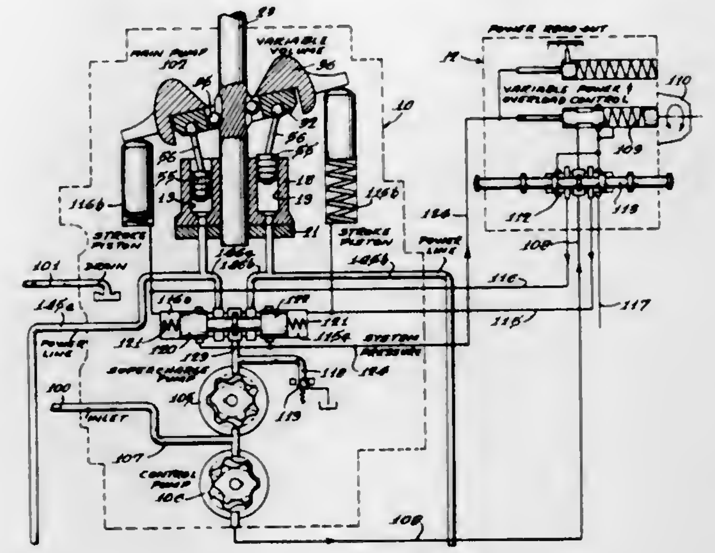
ERRATUM

For Class 102—93 see:
Patent No. 3,427,648

3,426,686
PUMP

Arthur F. Anderson, Elmhurst, Ill., assignor, by mesne assignments, to Ulrich Manufacturing Co., Roanoke, Ill., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,973
U.S. Cl. 103—3 **9 Claims**
Int. Cl. F04b *23/10, 1/14;* **F04d** *29/50*



A variable displacement piston pump of the swash plate or tilt box type is hereby provided that is characterized by an improved, simplified and economical structural assembly, notably an in-line insertion of piston pump subassemblies and components into one open end of an enclosing housing without necessity for individual mounting of the sub-assemblies or components in or to the housing, and completion of the assembly by simple attachment of an end cap. A particular feature resides in the improvement wherein the housing and end cap are separated on a line co-planar with the pivot axis of the swash plate or tilt box and are provided with mating pairs of semicircular recesses which together form two bearings or journals, and wherein the swash plate or tilt box has integral trunnions journalled in these bearings. This facilitates simple insertion of the swash plate into the housing and subsequent securement of the same by simple attachment of the cap without necessity for a separate mounting.

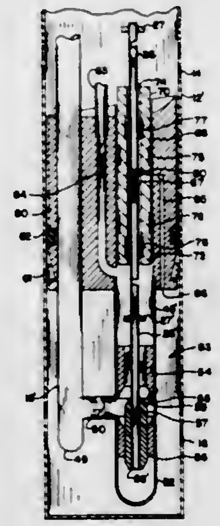
The assembly is further characterized by insertion into the end of the housing opposite said cap and onto a single drive shaft of a pair of compact rotary pumps, namely, a supercharger pump for pressure charging the inlet side of the piston pump and a control pump for controlling the direction and amount of fluid pumped by the piston pump.

A further feature resides in the provision of a manually adjustable overload control which automatically governs operation of the piston pump pursuant to the manual adjustment, said control sensing the output pressure of the piston pump and regulating as a function of said pressure the pressure of the fluid discharged by said control pump, thereby automatically to regulate the displacement and the output of the piston pump.

3,426,687
ZONE SELECTOR ACTUATED BY VENT LINE

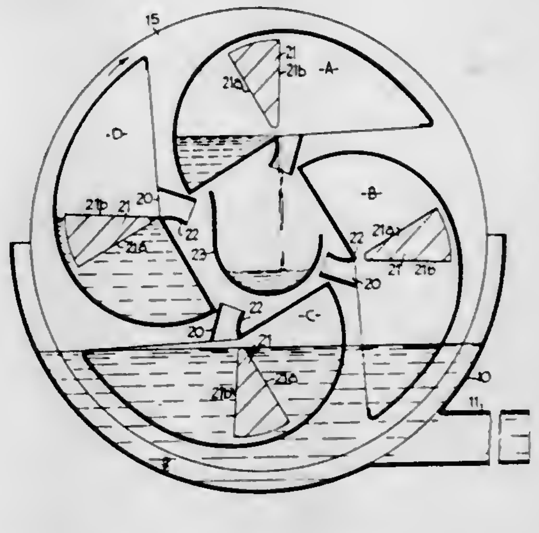
Clarence Murray, Jr., 708 Devonian, Midland, Tex. 79701
Filed Feb. 8, 1967, Ser. No. 614,659
U.S. Cl. 103—4 **10 Claims**
Int. Cl. F04b *23/00, 47/00;* **E21b** *43/14*

A flow system, including a valve means, for selectively flowing oil from either of two different producing well strata. The valve means which selectively flow connects the oil lifting means with either one of the oil producing strata is positioned in accordance with the vertical position of the vent line. The vent line serves the dual function of venting the lower stratum as well as actuating the valve means.



3,426,688
DISPENSING APPARATUS

Eric Harding Jones, 30 Moss Lane, Bramhall, England
Filed Nov. 1, 1966, Ser. No. 591,251
Claims priority, application Great Britain, Nov. 6, 1965, 47,153/65
U.S. Cl. 103—85 **12 Claims**
Int. Cl. F04d *11/00;* **B67d** *5/64;* **G01f** *11/22*

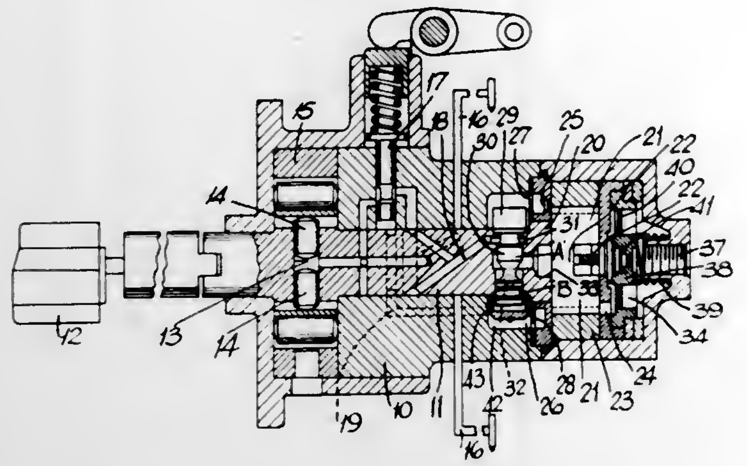


Apparatus for dispensing liquid or finely divided solid comprising a rotary wheel carrying material holding units which plunge into a reservoir of the liquid or solid during the lower portions of their path of movement and deliver the liquid or solid to a trough during the upper portions of their path of movement the arrangement being such that the volume delivered is proportional to angular movement.

3,426,689
LIQUID FUEL PUMPING APPARATUS FOR SUPPLYING FUEL TO INTERNAL COMBUSTION ENGINES

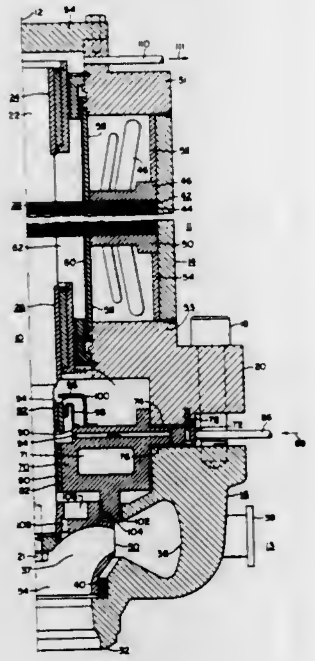
Moshe Drori, East Twickenham, England, assignor to C.A.V. Limited, London, England, a British company
Filed Feb. 16, 1967, Ser. No. 616,707
Claims priority, application Great Britain, Feb. 28, 1966, 8,589/66
U.S. Cl. 103—41 **5 Claims**
Int. Cl. F04d *15/00;* **F04b** *13/00, 23/12*

Fuel injection apparatus of the rotary distributor type and incorporating a feed pump which supplies fuel to the injection pump of the apparatus. The output pressure of the feed pump being controlled by a valve member which is movable under the action of centrifugal force to close a spill port from the outlet of the feed pump, and which is movable in the opposite direction by a force developed by the output pressure of the feed pump. A pressurizing valve is provided downstream of the spill port to prevent the flow of fuel therethrough until the output pressure of the feed pump attains a predetermined value.



3,426,690
MOTOR-PUMP UNIT

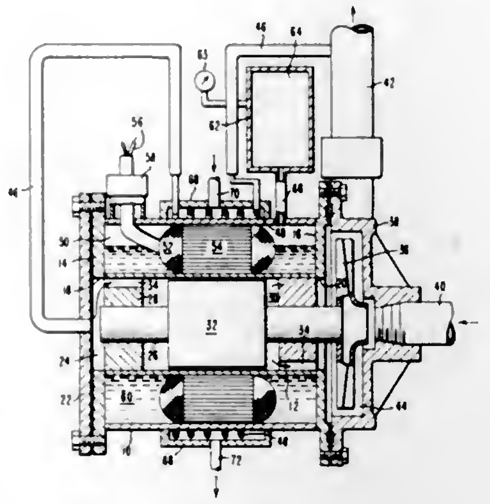
Eugene J. Cattabiani, Export, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1967, Ser. No. 616,582
U.S. Cl. 103—87 **14 Claims**
Int. Cl. F04d *13/06, 29/08;* **H02k** *5/12*



A motor-pump unit for pumping fluids and slurries having elevated temperatures, in which the housings of the motor and pump are connected and sealed to form a common housing structure. The rotor and stator of the motor are in hermetically sealed enclosures, and the volute of the pump is separated from the motor by a thermal and slurry barrier which restricts the flow of heat from the heated fluids into the motor, and prevents leakage of the fluids into the motor.

3,426,691
PUMP EXPANSION CHAMBER

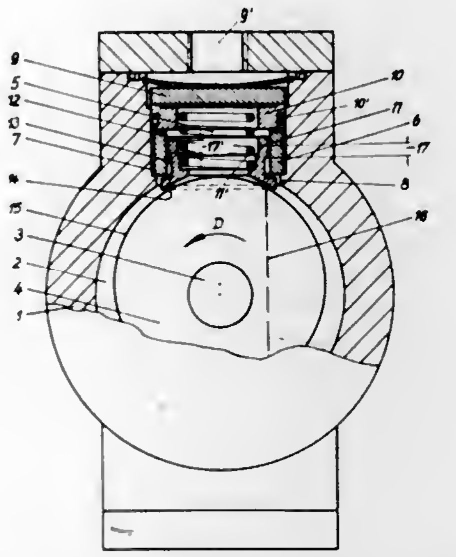
Howard Irvine Anderson, Petersburg, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 4, 1967, Ser. No. 628,468
U.S. Cl. 103—87 **2 Claims**
Int. Cl. F04d *3/06, 29/58;* **H02k** *5/12*



An expansion chamber for use with a combination motor driven pump arrangement wherein the pumped fluid is circulated through the motor for cooling and bearing lubrication. The chamber is in communication with a sealed dielectric fluid containing stator cavity in the motor housing for the dual purpose of absorbing pressure developed in the cavity due to thermal expansion of the dielectric fluid and containing pumped fluid in the event of an internal rupture of the motor housing permitting pumped fluid to flow into the stator cavity.

3,426,692
ROTARY PISTON MACHINE

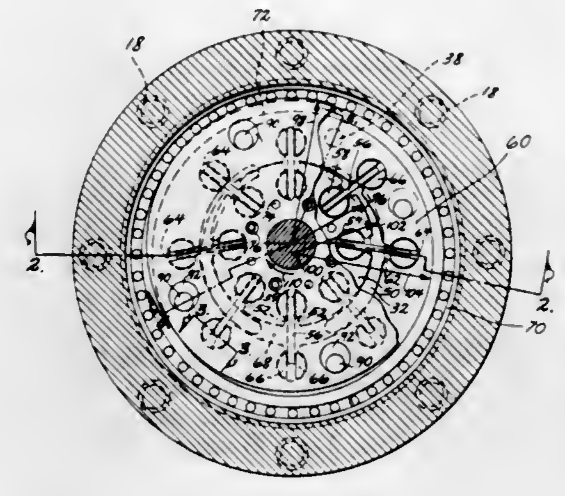
Hanns-Peter Paschke, Olgaweg 6, Neckarsulm, Germany
Filed June 19, 1967, Ser. No. 646,919
Claims priority, application Germany, June 20, 1966, P 39,750
U.S. Cl. 103—116 **2 Claims**
Int. Cl. F04b *9/04, 19/22;* **F01b** *9/06*



A rotary mechanism capable of generating a variable volume, and thus is capable of being employed as a pump or motor for liquid or gaseous media. It generally comprises an outer body having a cavity and an inner body formed as a spherical eccentric and mounted on a shaft for rotation within the cavity with respect to the outer body. The outer body comprises at least one working chamber open toward the inner body and provided with a liner having a cylindrical internal wall. An annular seal element is arranged for tilting and reciprocating movement within the liner and has a spherical outer surface for sealing cooperation with the cylindrical wall of the liner. One of the annular end faces of the seal element is slidable on the outer peripheral surface of the inner body.

3,426,693
PUMP

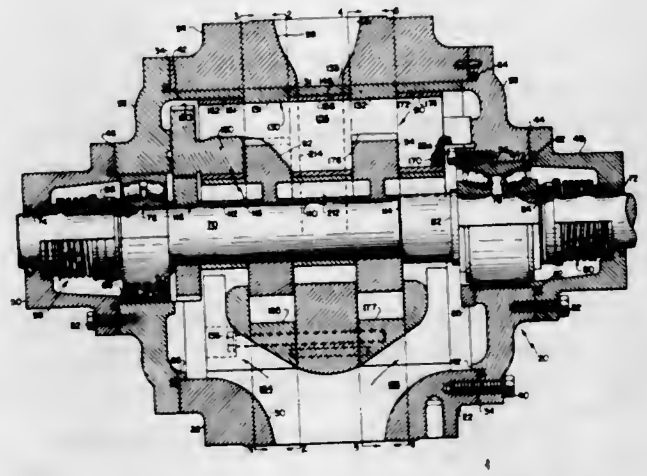
John W. Palmer, 7026 Sarpy Ave., Omaha, Nebr. 68147
Filed May 2, 1966, Ser. No. 546,789
U.S. Cl. 103—121 **3 Claims**
Int. Cl. F04c *3/00*



A pump is comprised of a housing, a drive shaft for imparting drive to a rotor within the housing, a ring loosely embracing the rotor to form a passageway therebetween, a plurality of vanes extending across the passageway between the rotor and the ring, and inlet and outlet openings in the housing in communication with the passageway.

3,426,694
HYDRAULIC MECHANISM

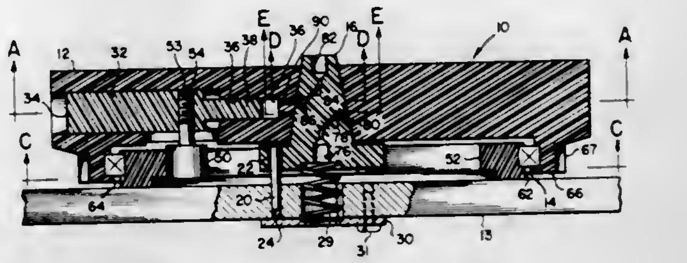
Walter H. Marsh, Pittsburgh, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1966, Ser. No. 537,393
U.S. Cl. 103—125 **10 Claims**
Int. Cl. F04c *1/16, 17/02;* **F01c** *11/00*



A rotary hydraulic mechanism capable of functioning as either a motor or a pump and having a pair of energy transferring rotors mounted on a common shaft for rotation in separate fluid working spaces and each coacting with shaft-driven, rotary abutment members for alternately expanding and contracting each space to provide for a transfer of energy relative to the fluid admitted to the spaces. High and low pressure openings or ports are connected to these working spaces to provide for fluid flow through the housing of the mechanism. Fluid entering through either opening is divided, and the divided streams are so directed in opposite directions through passages in the rotors that the axially directed fluid forces acting on the rotors and, consequently, on the rotory-mounting shaft are substantially balanced.

3,426,695
METERING PUMP

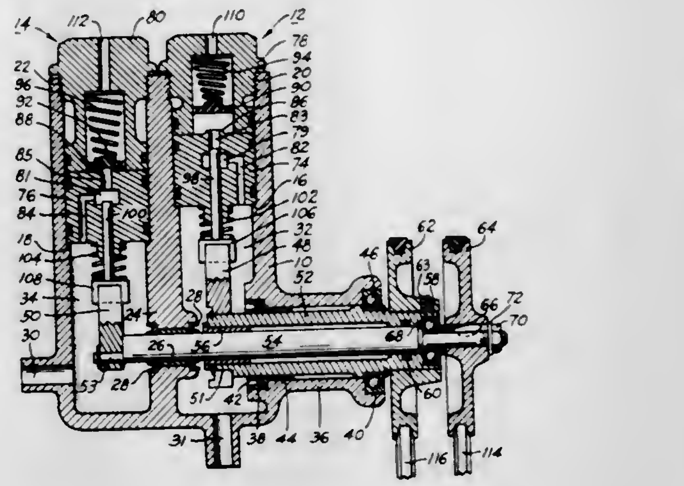
Lee E. Klaus, Sunnyvale, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed May 24, 1966, Ser. No. 552,482
U.S. Cl. 103—161 **7 Claims**
Int. Cl. F04b *1/10*



A metering pump of the rotary radial piston type having a valve core loosely connected to a base member to allow it to automatically align itself with the rotor axis. The valve core and rotor bore have conical surfaces to facilitate alignment in response to spring biasing force urging the valve against the rotor.

3,426,696
TANDEM PUMP

Kay Stanley Poynter, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 27, 1967, Ser. No. 626,147
U.S. Cl. 103—169 **3 Claims**
Int. Cl. F04b *1/02*

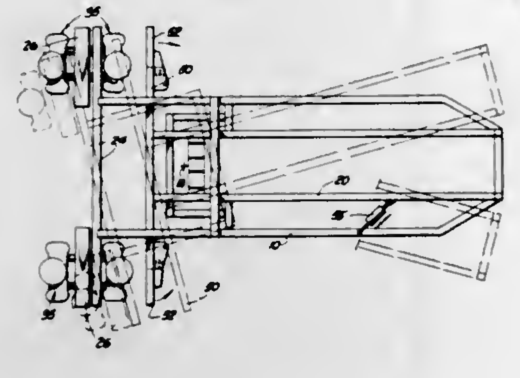


Separate drive means for two pumps in one housing employing coaxial shafts normally rotatable together and adapted to rotate independent of each other.

3,426,697
SWITCH TAMPERS

John K. Stewart, Columbia, S.C., assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada
Filed Jan. 24, 1967, Ser. No. 611,281
U.S. Cl. 104—12 **5 Claims**
Int. Cl. E01b *27/16*

Apparatus for tamping the ballast beneath the rails of a railway track at switches, which apparatus has a pair of ballast penetrating tamping heads mounted on a transversely extending frame on the front of a track travelling vehicle, the heads being mounted so as to be independently movable to and fro across the frame and the frame being swingable in an arc about a vertical axis pivot mounting on the vehicle chassis, whereby to enable the heads to vary their spacing and position relative to the vehicle chassis, enter the spaces between the rails and tracks in the switches and follow the curve of the tracks in the switch.



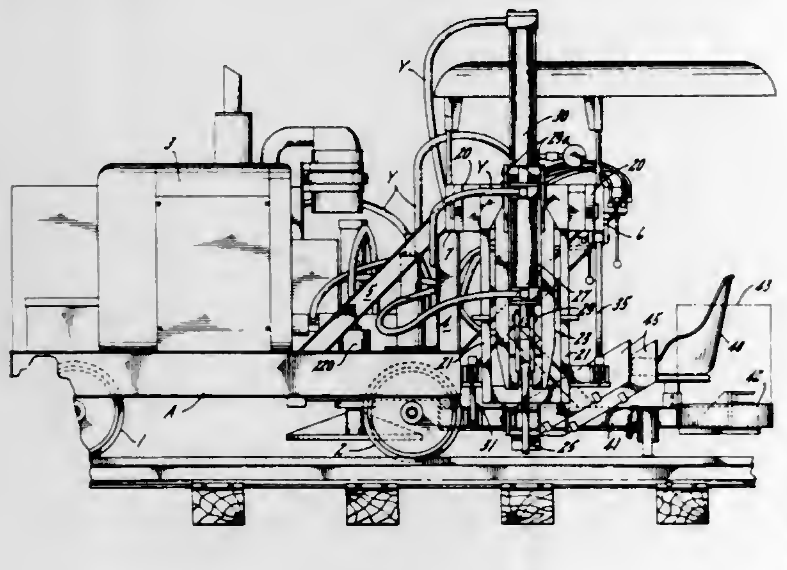
3,426,698
SPIKE DRIVER

Robert J. Foxx, Metuchen, N.J., and Edward H. Krause, Jr., New Berlin, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed June 28, 1965, Ser. No. 467,500

U.S. Cl. 104—17 15 Claims

Int. Cl. E01b *29/16, 29/26*



A spike driving machine which is hydraulically operated and constructed to drive spikes on a selected basis into the ties of railroad track while gripping the ties to prevent the ties from being forced further into the ballast. The machine has an accurate positioning mechanism so that the spikes can be accurately positioned over the previously drilled spike holes.

3,426,699
OVERHEAD RAIL SYSTEMS

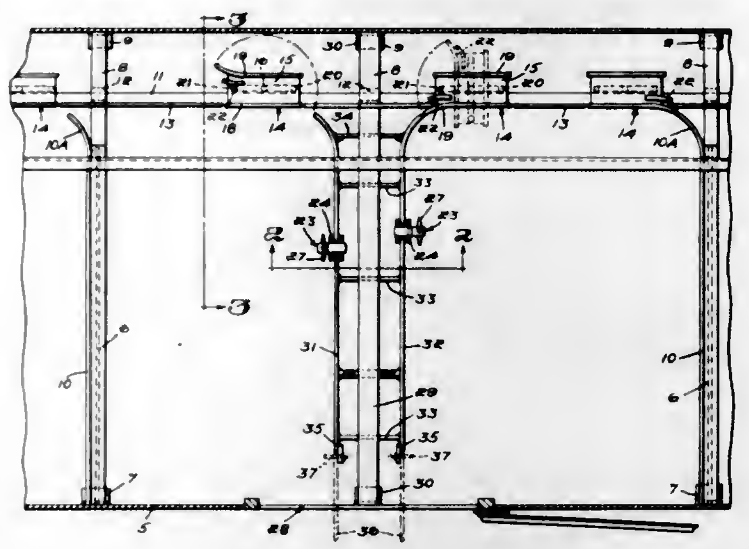
James W. O'Donnell, Main St., Plympton, Mass. 02367

Filed Nov. 29, 1966, Ser. No. 597,748

U.S. Cl. 104—93 2 Claims

Int. Cl. B61b *13/04;* **E01b** *25/26*

The invention involves an overhead rail system adapted to be used in a railway car for the insertion and removal of animal carcasses and the like. The system includes a series of rails upon which article-carrying trolleys may be stored during transit and which may be inserted or removed through a main rail and switch system



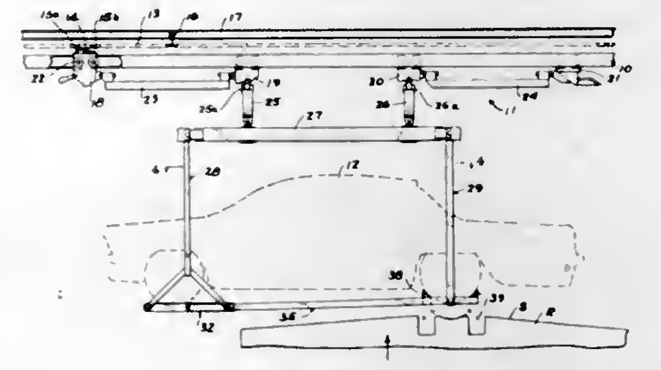
3,426,700
CARRIER FOR POWER AND FREE CONVEYOR SYSTEMS

Paul Klamp, St. Clair Shores, Mich., assignor to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan

Filed Nov. 22, 1966, Ser. No. 596,302

U.S. Cl. 104—94 8 Claims

Int. Cl. B61b *3/00, 9/00;* **E01b** *25/22*



A power and free conveyor system for carrying automobiles and similar vehicles comprising a carrier movable along a track. The carrier has first and second longitudinally spaced downwardly extending hangers thereon. A first support is fixed to the first hanger and has horizontal wheel engaging surfaces thereon and a second support is pivoted to the second hanger and to the first support and has wheel engaging surfaces thereon.

3,426,701
TOWLINE CART SWITCHING DEVICE

Edwin C. Braun, Jr., Smithsburg, Md., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Dec. 22, 1964, Ser. No. 420,322

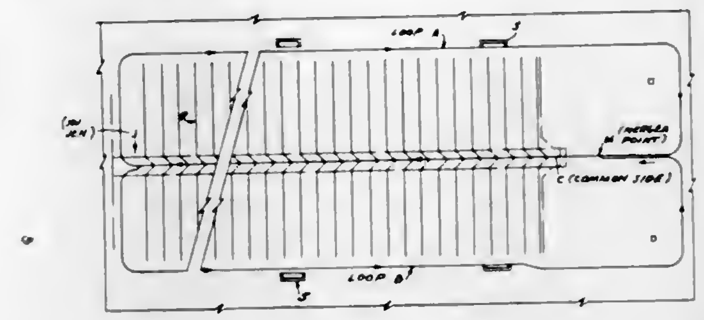
U.S. Cl. 104—172 19 Claims

Int. Cl. B61b *9/00;* **B61j** *3/04*

This invention relates to towline systems in which carts are pulled along a floor by means of towpins carried by the carts and guided in slots in the floor wherein the towpins engage towlines disposed below the slots.

The present invention provides switching of carts from one towline loop or track to another, the tracks having a common side upstream of the switching mechanism, and the cars being alternated between downstream tracks at a switch junction. Thus, a common side is effected by

running a track of one loop below the track of another so that all carts from two loops merge to be moved along the common side leading to the junction. This common side arrangement enables cart movement to be readily achieved to and from transverse storage or loading spurs joining the common side, such carts coming originally from either loop.



3,426,702
DEVICES FOR MOVING OR CONTROLLING THE MOVEMENT OF RAIL WAGONS AND THE LIKE

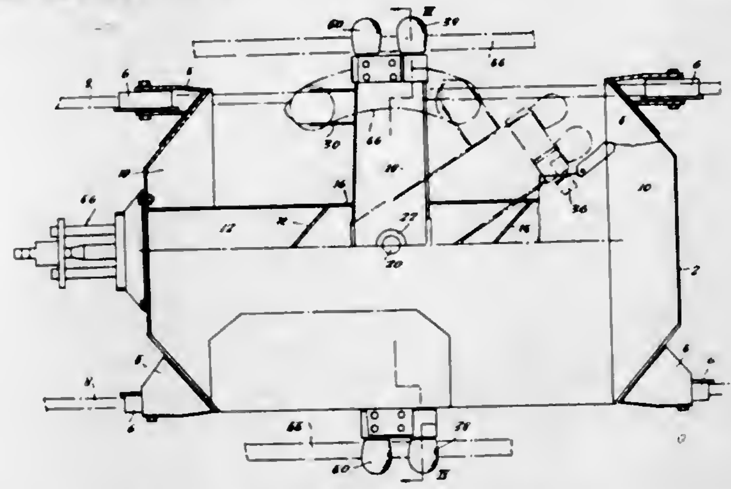
Ronald Bellinger, James Alfred Sperring, and Charles Edward White, Bristol, England, assignors to Strachan & Henshaw Limited, Bristol, England, a company of Great Britain and Northern Ireland

Filed Dec. 23, 1966, Ser. No. 604,448

Claims priority, application Great Britain, Jan. 3, 1966, 62/66

U.S. Cl. 104—176 6 Claims

Int. Cl. B61b *13/12*



Apparatus for effecting and controlling the movement of a railway wagon on a railway track by means of a carriage mounted on a separate track for movement parallel to said railway track said carriage having at least one arm movable to and from an operable position for contact with a wagon on said railway track by means of a movable actuating member on said carriage wherein movement of said arm is effected frictionally by contact between a first friction surface on said actuating member and any part of a second friction surface extending parallel to said railway track. Said second friction surface may be a rail on which said carriage is movably supported.

3,426,703
MONORAIL VEHICLE SYSTEM

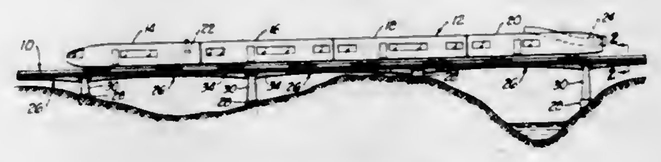
Raymond L. Morris, 1028 15th Ave., Honolulu, Hawaii 96816

Filed July 28, 1966, Ser. No. 568,535

U.S. Cl. 105—145 7 Claims

Int. Cl. B61b *13/04;* **B61c** *11/06;* **B61f** *13/00*

A monorail system comprising a track having laterally spaced track surfaces separated by a central guide rail provided on opposite sides thereof with laterally spaced guide surfaces. The system includes a vehicle supported by two trucks pivotable about vertical axes. Two laterally spaced supporting wheels mounted on each truck respectively engage the track surfaces, and rotate about an axis perpendicular to the truck pivot axis so that the supporting wheels negotiate curves without skidding. Two pairs of guide wheels on each truck follow the central guide rail, one pair of guide wheels being located ahead of the supporting wheels and the other pair being located an equal distance behind the supporting wheels. Switches shunt the vehicle from one track to another.



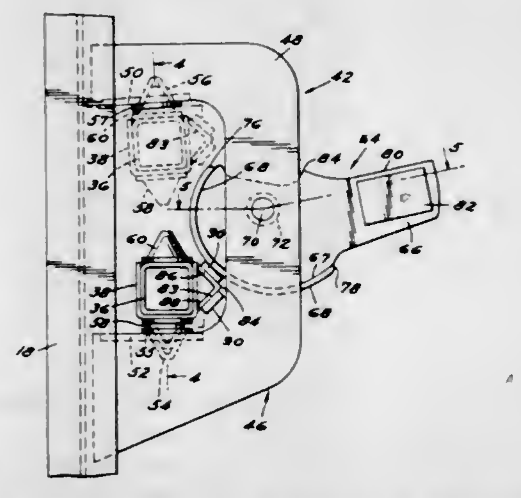
3,426,704
DECK SECTION LOCK STRUCTURE

Donald J. Blunden, Southfield, Mich., assignor to Whitehead & Kales Company, River Rouge, Mich., a corporation of Michigan

Filed Feb. 14, 1967, Ser. No. 616,022

U.S. Cl. 105—368 14 Claims

Int. Cl. B61d *3/02;* **B65j** *1/22*



The lock structure of my invention is adapted for use with a vertically movable deck section of a transport vehicle. The transport vehicle may, for example, be a railroad flat car having vertically spaced upper, lower and middle decks adapted to carry vehicles. The middle deck has a deck section which is hinged to permit vertical swinging movement in order to facilitate loading and unloading the transport vehicle. The hinged deck section is swingable between upper and lower limiting positions, stops being provided to determine the locations of such upper and lower positions.

Cam members are provided for locking the deck section in its upper and lower positions. Each cam member is pivoted to the transport vehicle near the swinging end of the deck section. The cam member has an arcuate shoe which is eccentric with respect to the axis of pivotal movement of the cam member. The cam member is adapted to lock the deck section in its lower position (FIG. 3), to lock the deck section in its upper position (FIG. 6), and to release or unlock the deck section (FIG. 7).

The cam member is weighted so that it is urged by gravity to turn in one direction about its pivot axis and increase the wedging engagement of the eccentric shoe, whereby the cam member is self-tightening.

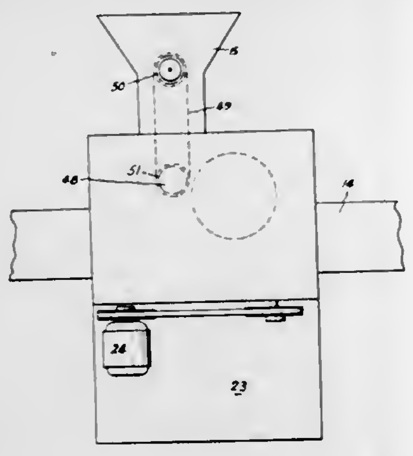
In the released position of the cam member (FIG. 7), the cam member is in a slightly over center position so that it will remain in the released position for the convenience of the operator. Should the cam member inadvertently be left in the released position, the vibration of the transport vehicle when in motion will be sufficient to swing the cam member from its released position to lock the deck section either in its upper or its lower position. The cam member also has a projecting part adapted to be engaged by the deck section when the latter swings upwardly to positively move the cam member from its released position.

ERRATUM

For Class 107—8 see:
Patent No. 3,427,649

3,426,705
DEPOSITOR

Hans Arthur Faerber, Castle Cove, New South Wales, Australia, assignor to Nid Pty. Limited, Alexandria, near Sydney, New South Wales, Australia, a corporation of New South Wales, Australia
Filed June 8, 1966, Ser. No. 556,037
U.S. Cl. 107—15 **9 Claims**
Int. Cl. A21c *11/18;* **A23g** *5/02;* **A01j** *21/00*



An apparatus for dispensing successive measured quantities of a plastic or semi-liquid material from a supply thereof. A cylinder block having a bore therein is mounted for movement to alternately position the bore in communication with the supply and in a dispensing position. A piston is mounted within the bore, and a rack and pinion drive is provided to reciprocate the piston within the bore to alternately receive and dispense the material.

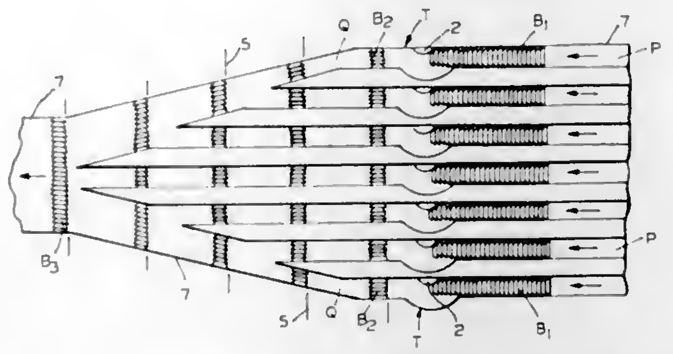
ERRATUM

For Class 107—27 see:
Patent No. 3,427,650

3,426,706
METHOD OF COUNTING AND TURNING FLAT BODIES

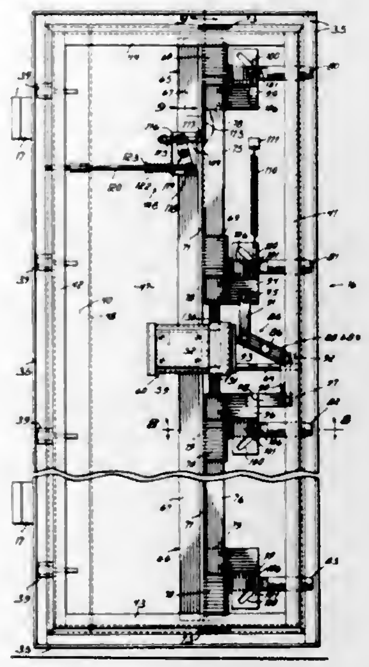
Fumio Sato, Koza-gun, Japan, assignor to Morinaga Confectionery Company Ltd., Tokyo, Japan
Filed Aug. 21, 1967, Ser. No. 662,038
Claims priority, application Japan, Sept. 14, 1966, 41/60,339
U.S. Cl. 107—45 **4 Claims**
Int. Cl. A21c *9/00;* **B65g** *47/26*

A method of simultaneously counting and turning flat bodies moving in a plurality of parallel lines with the flat bodies in the lines being face to face against each other, said method comprising the steps of moving a group of a preselected number of flat bodies from each of said lines transversely of the lines, and while maintaining the bodies in each group in face to face relationship, moving the bodies linearly in a direction transverse to the plane of the faces of the bodies while blocking one edge of the bodies in the group, thereby turning the group of bodies while maintaining them in face to face relationship, continuing to so move them until they have turned 90 degrees, and thereafter moving the groups of turned bodies along converging paths until the groups abut each other to form a continuous transverse line of flat bodies.



3,426,707
SECURITY FILE

Leo W. Heyl and Robert W. Maynard, Cincinnati, Ohio, assignors to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Sept. 9, 1966, Ser. No. 578,277
U.S. Cl. 109—59 **8 Claims**
Int. Cl. E05g *1/04;* **E05b** *65/52, 63/00*

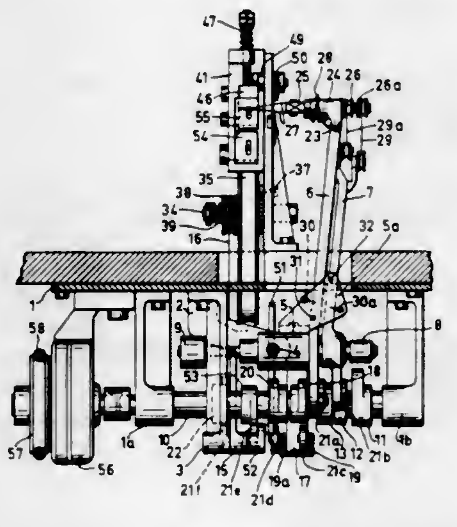


A security file for resisting both forced and surreptitious entry. To secure the door of the file, a locking mechanism is attached thereto which comprises a pair of vertically movable lock bars, laterally movable door bolts, and a lock bolt movable between the lock bars when they are extended and the door is locked to prevent the lock bars from being moved together upon a forced entry. To unlock the door, the lock bolt is moved out of longitudinal alignment with the lock bars so that they are free to be moved together into endwise juxtaposition.

3,426,708
APPARATUS FOR AUTOMATIC MANUFACTURING OF AN ANNULAR RIBBON

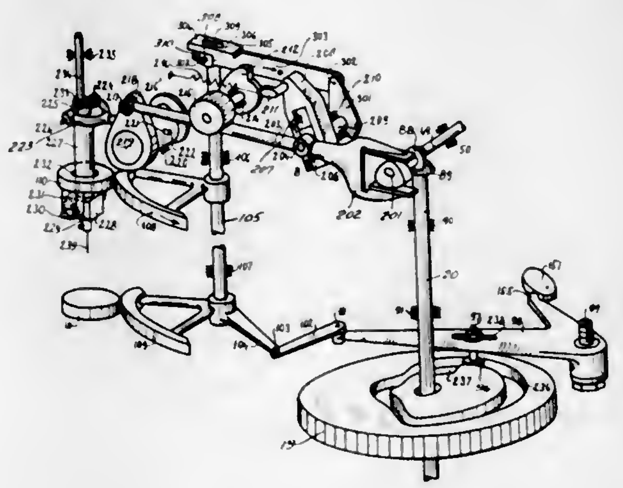
Sven Gerhard Andersson, Ljungskile, Sweden
Filed Apr. 14, 1967, Ser. No. 631,065
Claims priority, application Sweden, Apr. 14, 1966, 5,106/66
U.S. Cl. 112—2 **13 Claims**
Int. Cl. D05b *23/00*

A method and apparatus for forming a closed annular loop from a ribbon, preferably of elastic material, fed from a roll; wherein, the ribbon is fed from the roll by rotating the roll for a predetermined period of time; simultaneously with the feeding of the ribbon a first free end of the ribbon is gripped adjacent the end but leaving a portion extending beyond the gripper, this first gripper is then turned 180° to reverse the free end of the ribbon, thereafter, toward the end of the feeding period, the ribbon is cut from the roll and gripped adjacent the cut end, while again leaving a free end extending beyond the second gripper, and the second gripper is rotated to turn the second free end 180° to overlap the first-mentioned end; and, finally, the grippers carrying the overlapped free ends of the ribbon between them are rocked to position the overlapped end under a mechanism for joining the ends of the ribbon, such as the presser foot of a sewing machine. The sequence of timed operations is carried out, preferably, by a plurality of cams mounted on a rotatable shaft and mechanically coupled to the respective operating elements.



3,426,709
DEVICE FOR AUTOMATICALLY VARYING THE STITCH LENGTH IN A ZIG-ZAG SEWING MACHINE

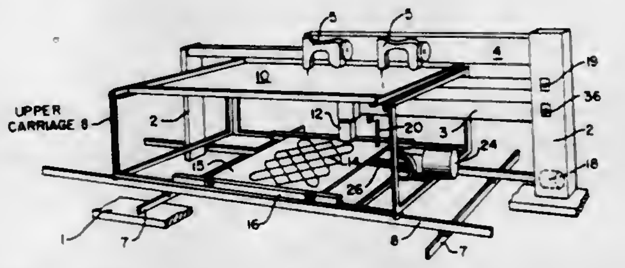
Emil Jindrich and Frantisek Bajer, Prostejov, Czechoslovakia, assignors to Elitex, Zavody Textilniho Strojirenstvi, Generalni Reditelstvi, Liberec, Czechoslovakia
Filed Jan. 16, 1967, Ser. No. 609,552
Claims priority, application Czechoslovakia, Jan. 19, 1966, 321/66
U.S. Cl. 112—73 **5 Claims**
Int. Cl. D05b *3/06, 3/02*



A control device for automatically varying the stitch length in a zig-zag buttonhole sewing machine which automatically forms barring stitches and covering stitches at the narrow end of the buttonhole has a mechanism for turning the plane of needle bar oscillation during the forming of the barring stitches, and provisions for manually varying the stitch length. The device includes a linkage between the needle bar turning mechanism and the stitch length varying arrangement for operating the latter automatically in response to the turning of the needle bar by the former.

3,426,710
QUILTING MACHINE OF THE SHIFTABLE GUIDE-TRACK TYPE

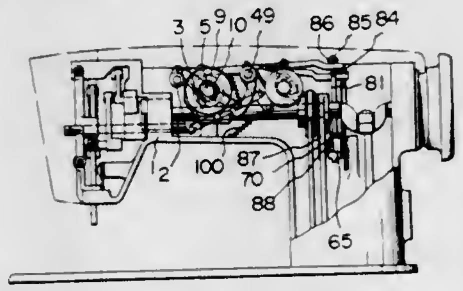
David R. Cash, Louisville, Ky., assignor to James Cash Machine Co., Louisville, Ky., a corporation of Kentucky
Filed Jan. 26, 1967, Ser. No. 611,922
U.S. Cl. 112—118 **4 Claims**
Int. Cl. D05b *11/00;* **D23c** *1/16*



A quilting machine wherein a frame-mounted follower drives a carriage-mounted guide-track to move a carriage-mounted quilt along a path reproducing a sewing line design while a frame-mounted sewing machine sews that design into the quilt. At the end of one sewing cycle, the relative position of the guide-track on the carriage is changed by motorized shifting means so that an identical but offset reproduction of the same sewing line design may be sewn into the same quilt during the next sewing cycle.

3,426,711
AUTOMATIC ZIGZAG SEWING MACHINE

Shinichi Kawaguchi, Tokyo, Japan, assignor to Riccar Sewing Machine Co., Ltd., Tokyo, Japan, a corporation
Filed Feb. 1, 1966, Ser. No. 524,249
Claims priority, application Japan, Oct. 7, 1965, 40/61,002
U.S. Cl. 112—158 **12 Claims**
Int. Cl. D05b *3/02, 3/04*

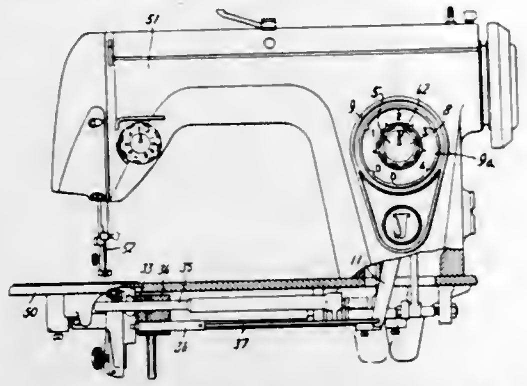


Automatic sewing machine making composite pattern stitching by simultaneously changing automatically amplitude of needle swing and feed amount of cloth including first means varying amplitude of needle, second means varying feed of cloth, dual pattern cam means moving simultaneously with operation of machine and dual follower means mounted to slide on dual cam means and interconnected with first and second means for simultaneously varying same.

3,426,712
FEED CONTROL APPARATUS FOR A SEWING MACHINE

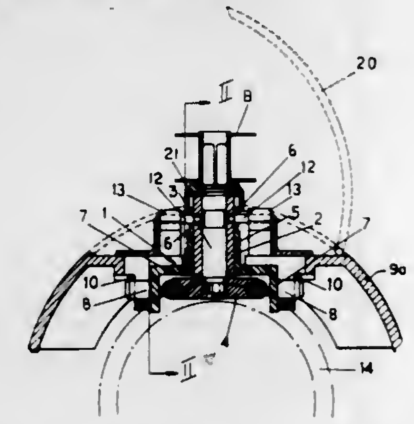
Susumu Hanyu and Noboru Kasuga, Tokyo, Japan, assignors to Janome Sewing Machine Co. Ltd., Tokyo, Japan
Filed May 25, 1966, Ser. No. 552,832
Claims priority, application Japan, May 25, 1965, 40/30,385
U.S. Cl. 112—210 **14 Claims**
Int. Cl. D05b *27/02*

A knob is manually turned to a plurality of first control positions in which the feeding means of a sewing machine feed forward at different speeds, and is axially depressed from each first control position to a second control position in which rearward feeding at corresponding speeds takes place. The knob can also be turned to a third control position in which no feeding takes place.



3,426,713
REELING MECHANISM FOR SEWING MACHINES

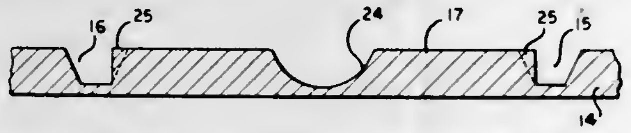
Antonio Moro, Piazza Po 6, Milan, Italy
Filed July 15, 1964, Ser. No. 382,704
Claims priority, application Italy, July 24, 1963, 37,457
U.S. Cl. 112—218 **5 Claims**
Int. Cl. D05b *59/00;* **B65h** *54/18*



1. A sewing machine having a hand wheel with a control ring, wherein the improvement comprises a reeling mechanism comprising a T-shaped support, means mounting the support on the sewing machine for vertical swinging movement about a horizontal axis, a hollow cylindrical portion forming the upright of the T, a hollow sleeve at least partially disposed within said cylindrical portion for axial sliding movement in and relative to said cylindrical portion, a pair of pins projecting laterally from the outer surface of the sleeve beyond said cylindrical portion, a bobbin shaft mounted for rotation in the sleeve, a friction wheel fixed to one end of the shaft, and resilient means acting on said pins urging the sleeve and the shaft in a direction to press the friction wheel into driving engagement with said control ring for imparting rotary motion to the friction wheel upon turning of the hand wheel.

3,426,714
METHOD OF FORMING BLOW-OFF RESISTANT EASY OPENING BEVERAGE CAN

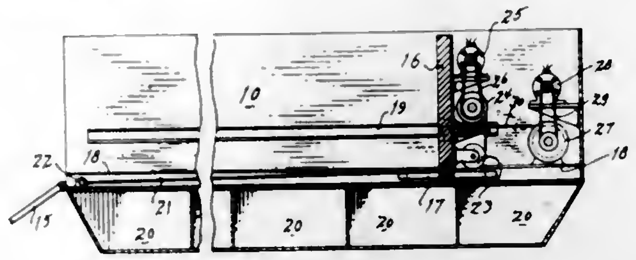
Arnold R. Boik, Chicago, and Frederick J. Stec, Oak Lawn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Nov. 25, 1964, Ser. No. 413,938, now Patent No. 3,315,837, dated Apr. 25, 1967. Divided and this application Feb. 6, 1967, Ser. No. 614,077
U.S. Cl. 113—121 **6 Claims**
Int. Cl. B21d *51/44, 51/40*



Deformation of tear strip portions under the influence of differential gaseous pressure during the opening of an easy opening can is prevented by deforming a portion of the end panel in a manner so as to both force certain of the deformed metal into a score line defining the tear strip portion to thus increaese the resistance of the can end end panel to tearing and at the same time weakening the tear strip portion to effect a folding thereof under pressure.

3,426,715
REFUSE DISPOSAL SYSTEM AND APPARATUS

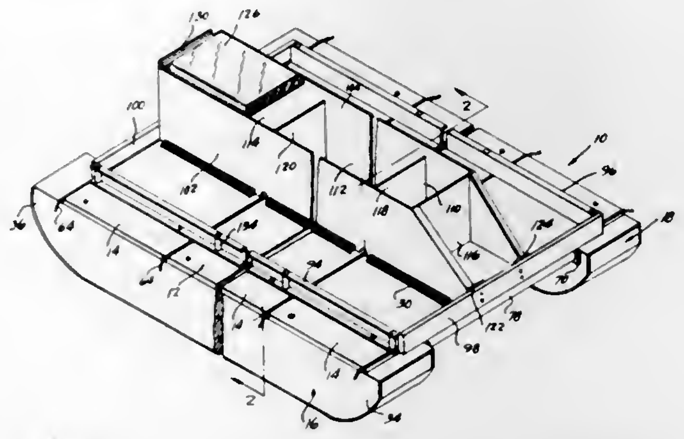
Valentino L. Balbi, 52 W. Market St., Daly City, Calif. 94014
Filed Aug. 29, 1967, Ser. No. 664,003
U.S. Cl. 114—27 **5 Claims**
Int. Cl. B63b *35/30*



This invention relates to an improved method and apparatus for the burial at sea of garbage and other refuse in a safe, economical and sanitary manner. It involves a special form of barge having a body portion with an open gate at one end and a traveling bulkhead for discharging the contents of the barge into the sea at a safe distance from the shore and in which the barge has a false or pontoon bottom which can be flooded to change the draft and trim of the barge as an assist in the discharge of the refuse at the burial point. To prevent the return of buoyant garbage and other refuse, such as empty containers, in the form of cans and bottles to an adjacent beach these are crushed and broken and the entire contents of the barge is contained as a unit by a wrapping of open mesh wire screen or other suitable material so packed and wetted as to insure a sinking thereof to the bottom of the sea.

3,426,716
PONTOON BOAT CONSTRUCTION

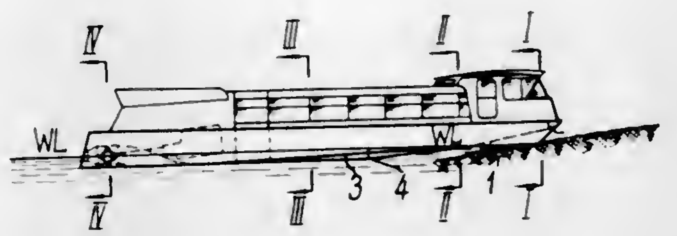
Andrew T. Hackworth, R.F. 2, Linesville, Pa. 16424
Filed July 28, 1967, Ser. No. 656,727
U.S. Cl. 114—61 **10 Claims**
Int. Cl. B63b *3/00*



A boat construction having a plurality of generally flat deck plates supported on buoyant pontoon assemblies. The pontoon assemblies are held together in spaced relation by tie rods removably received in aligned pocket-forming brackets secured to the facing sides of the pontoon assemblies. The deck plates include opposed, depending arcuate flanges which are snap-fitted into complemental tubes in axial alignment on the pontoon assemblies and tie rods. Expanded rubber stock further clamp the arcuate flanges on the deck plates in their supporting tubes and render the joints water-tight. A center beam assembly consisting of upright, braced walls are connected to the deck plates, tie rods, and pontoon assemblies to rigidify the construction.

3,426,717
SHALLOW-DRAUGHT VESSEL

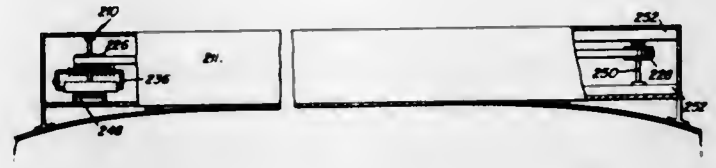
Asaf Alexandrovich Oskolsky, B. Pushkarskaya ulitsa 40/16, kv. 4; Nikolai Melitonovich Ivashkov, Primorsky prospekt 53, kv. 11; Vladislav Vladimirovich Rastorguev, Sosnovaya polyana, ul. Georgievskaya 52, kv. 15; Nikolai Leonidovich Shmuilov, ul. Trefoleva 6/30, kv. 15; and Lev Vasilievich Zhavoronkov, ul. Zaitseva 32, kv. 60, all of Leningrad, U.S.S.R.
Filed Feb. 28, 1967, Ser. No. 619,293
U.S. Cl. 114—62 **2 Claims**
Int. Cl. B63b *1/02*



A small-draught vessel having a bottom which is concave in the bow section and flat or substantially flat in the stern section. The bottom is keel-shaped amidships and turns smoothly into concave lines in the bow section and flat lines in the stern section.

3,426,718
VESSEL STABILIZER

John J. Slager, Silver Spring, and William C. Webster, Glenelg, Md., assignors to Hydronautics, Inc., Laurel, Md., a corporation of Maryland
Original application Sept. 16, 1966, Ser. No. 579,888. Divided and this application Feb. 27, 1968, Ser. No. 714,395
U.S. Cl. 114—124 **4 Claims**
Int. Cl. B63b *39/02, 43/08*

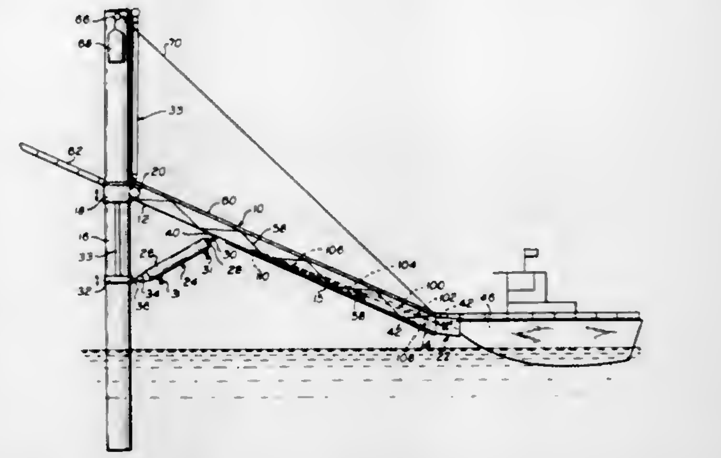


A vessel stabilizer wherein a weighted mass moves upon inclination of the vessel to operate an endless traveler interconnecting its ends including resonant tuned spring means operable through the traveler to exert equal and opposite forces on the weighted mass when centered, and a closed loop pressure establishing means operable by movement of the traveler.

3,426,719
MARINE TRANSFER DEVICE

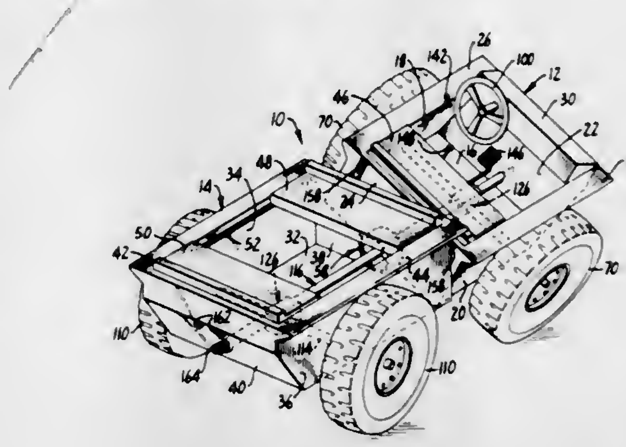
Leonard Mizell, P.O. Box 1191, Liberty, Tex. 77575
Filed May 3, 1966, Ser. No. 547,334
U.S. Cl. 114—230 **6 Claims**
Int. Cl. B63b *21/00, 29/02*

Marine transfer device. Includes ramp with inboard end pivotally mounted to a support and snugging device mounted at outboard end of support. Snugging device includes member rotatably mounted thereon and having a notch for receiving a marine device. Ramp may be raised or lowered by hydraulic ram, one end of which is secured to a support, the other end being secured to the ramp. Ramp also carries a hydraulic ram therewithin, one end being secured to the ramp. Ramp also carries a hydraulic ram therewithin, one end being secured to ramp and the other being slideable along ramp. Cable is secured to slideable end of ram, disposed about snugging device, and has free end for securement to marine vessel.



3,426,720
HIGH TRACTION VEHICLE

Carl E. Enos, Orland, Calif., assignor to Coot, Inc., Orland, Calif., a corporation of California
Filed Oct. 10, 1966, Ser. No. 585,640
U.S. Cl. 115—1 **9 Claims**
Int. Cl. B60f *3/00;* **B60g** *7/00*

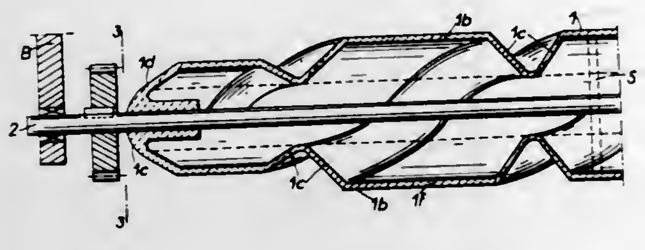


An amphibious vehicle comprised of a pair of hull-like body sections coupled together in longitudinally aligned end-to-end relationship for pivotal movement relative to each other about a longitudinally extending axis. Each section is provided with a pair of drive wheels driven by an axle extending transversely through and within the confines of the section. Power is supplied to the axles by a drive shaft extending longitudinally through and between the sections in substantially coaxial relationship with the longitudinally extending axis about which the sections are adapted to pivot relative to each other. The drive shaft is driven by an engine mounted in one of the sections.

3,426,721
ROTARY HELICAL BODY ADAPTED FOR USE ON BOARD WATER CRAFTS

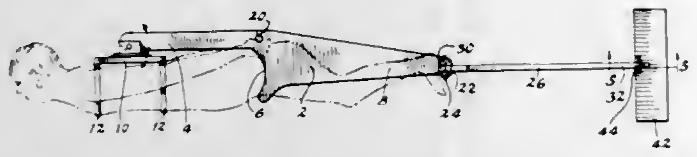
Marcel Justinien, 20 bis Rue Jouvenet, Paris 16ᵉ, France
Filed Nov. 21, 1966, Ser. No. 595,874
Claims priority, application France, Nov. 30, 1965, 9,331
U.S. Cl. 115—19 **21 Claims**
Int. Cl. B63h *1/00;* **B60f** *3/00*

A floating member comprising a helicoidal winding with adjacent turns connected together to define a hollow body of generally cylindrical shape with closed ends. The



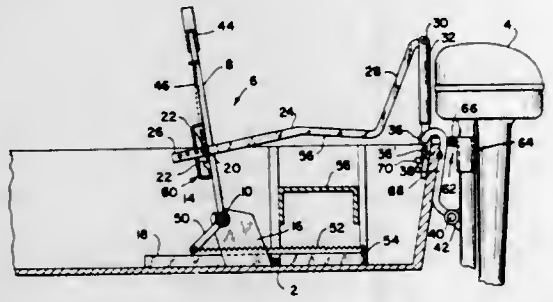
body has an enclosed interior space which is continuous within the bounds of the helicoidal winding.

3,426,722
SWIMMING AID
Nicholas Dragich, 98 Riverdale Ave., Buffalo, N.Y. 14207
Filed Dec. 11, 1967, Ser. No. 689,656
U.S. Cl. 115—26.3 **5 Claims**
Int. Cl. B63d *3/12;* **B63h** *1/30, 5/00*



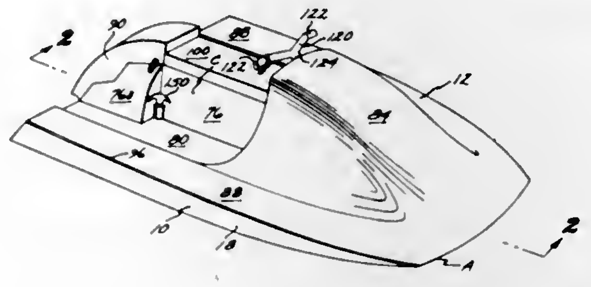
An elongated swimming aid device adapted to be attached at its front end to a user's back with rearward extending portions including a crotch-fitting area with adjacent hand grips, a pivoted tail section provided with foot rests and a freely pivoted fin at the rear of the tail to propel the user forward.

3,426,723
MECHANISM FOR RAISING AND LOWERING OUTBOARD MOTORS
Theodore R. Specht, 4609 Butler St., Pittsburgh, Pa. 15201
Filed Aug. 17, 1966, Ser. No. 573,090
U.S. Cl. 115—41 **1 Claim**
Int. Cl. B63h *21/26*



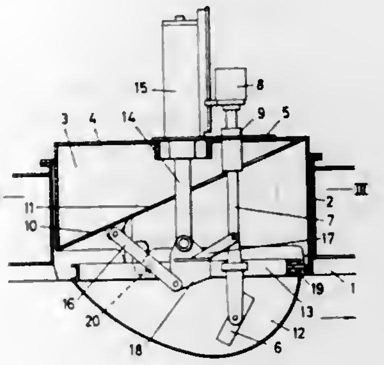
A mechanism for tiltably raising and lowering an outboard motor by pivotally mounting it on the rear wall of a boat and including an operating lever with an intermediate rack for selective engagement with the end of a lever system. The operating lever is counterbalanced by a spring to facilitate pivoting of the outboard motor and to enable the operating lever to be moved substantially parallel to the floor of the boat when the motor is tiltably lifted.

3,426,724
POWER-DRIVEN AQUATIC VEHICLE
Clayton J. Jacobson, 5403 Seacrest, Rolling Hills, Calif. 90274
Filed Feb. 19, 1968, Ser. No. 706,393
U.S. Cl. 115—70 **10 Claims**
Int. Cl. A63h *5/08, 15/00;* **B63h** *11/00*



A low draft aquatic vehicle that is power-driven by a jet of water, the direction of which may be varied at will by the operator when seated at the controls of the vehicle to regulate the direction of travel thereof.

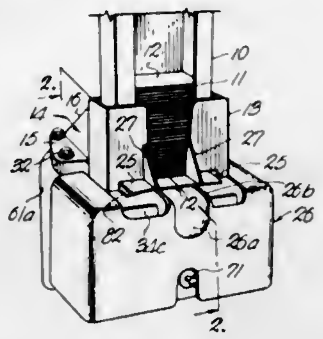
3,426,725
SONAR SYSTEMS IN VESSELS
Torvald S. Gerhardsen, Horten, Norway, assignor to Simonsen & Mustad A.S., Horten, Norway
Filed July 7, 1967, Ser. No. 651,774
U.S. Cl. 116—27 **6 Claims**
Int. Cl. B63b *45/04*



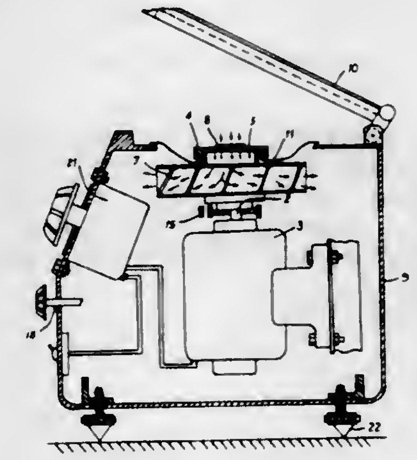
A sonar system for fishing vessels in which a transducer is mounted for rectilinear movement into and out of a protective well in the vessel bottom, the transducer being surrounded by a streamlined liquid filled cup of sound permeable material which is constructed in such a way, and so connected to an inclined, apertured partition within the protective well, that the upper edge of the cup may be drawn into a sealing relation with said partition as the transducer is moved upwardly into the well, whereby the transducer may be accessible from the interior of the vessel. The cup may be locked in its lower position.

3,426,726
APPARATUS FOR AUTOMATICALLY DISPENSING TAGS AND APPLYING GLUE THERETO
Frederick N. Stephens, Leawood, Kans., and Charles C. Krug, Kansas City, Mo., assignors to Stephens Industries, Inc., Kansas City, Mo., a corporation of Missouri
Continuation-in-part of applications Ser. No. 217,866, Aug. 20, 1962, and Ser. No. 294,817, July 15, 1963. This application June 9, 1965, Ser. No. 462,670
U.S. Cl. 118—2 **15 Claims**
Int. Cl. B05c *11/14, 11/10*

A machine for holding and selectively dispensing thin ticket-like elements stored in stacked relationship. During the dispensing operation, a selected number of strips of liquid adhesive may be applied to the undersides of the ticket-like elements at preselected and variable positions. An electrically operated reciprocable shuttle plate displaces the lowermost ticket-like element into contact with the upper surface of a glue applicator dauber member during the synchronous upward movement of same. The removal of the displaced ticket-like element is utilized to reinstitute the cyclic process.



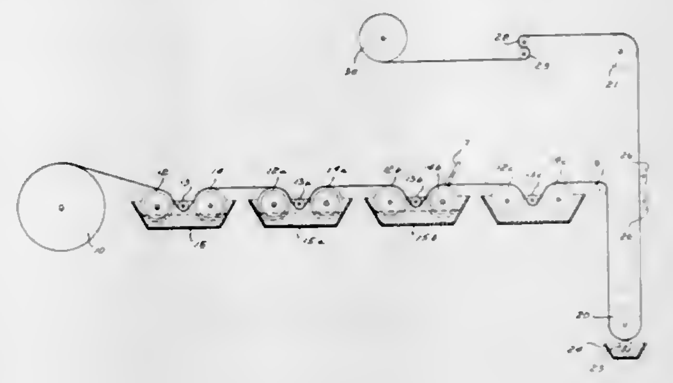
3,426,727
VACUUM WHIRLER FOR APPLYING THIN AND UNIFORM COATING OF AN EMULSION ON A WAFER
Kanwal Singh Balain and Inderjeet Singh, Pilani, Rajasthan, India, assignors to Council of Scientific and Industrial Research, New Delhi, India, an Indian body corporate
Filed Oct. 21, 1965, Ser. No. 500,077
U.S. Cl. 118—52 **1 Claim**
Int. Cl. B05c *5/00, 9/02, 11/14*



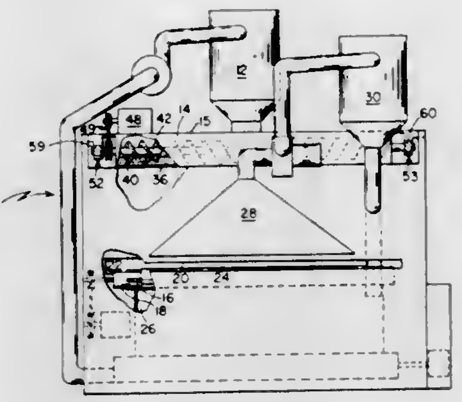
A vacuum whirler for applying a thin and uniform coating of an emulsion on a wafer, in which a rotor having a horizontal, perforated top member is carried on a vertically mounted spindle rotatively driven by a motor, wherein the rotor is provided with fan blades for creating, when the spindle is driven in rotation, a vacuum within the rotor causing a suction effect on the perforations in the rotor top member for holding the wafer to be coated, thus enabling a single motor to serve both for rotating the spindle and for creating the required vacuum.

3,426,728
APPARATUS FOR PRODUCING ORIENTED PATTERNS
John F. Dreyer and Lawrence H. Hutfles, Cincinnati, Ohio, assignors to John F. Dreyer, Cincinnati, Ohio
Filed Oct. 15, 1964, Ser. No. 404,139
U.S. Cl. 118—73 **2 Claims**
Int. Cl. B05c *1/12, 3/02*

Apparatus for producing polarizing devices comprising, in combination, means for brushing the surface of a carrier sheet, including means for supplying an abrasive slurry to the sheet during brushing; washing means; means for removing excess wash liquid; and a roller fountain for applying dye to the brushed and washed surface.



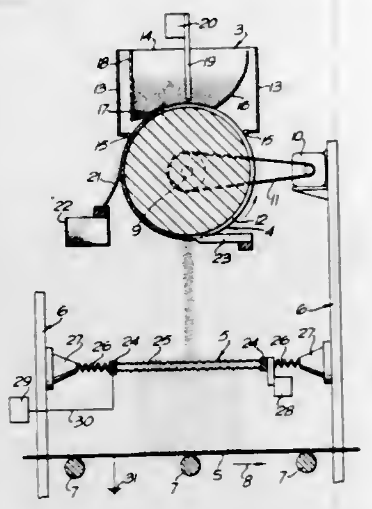
3,426,729
APPARATUS FOR FLOCKING ARTICLES
Arthur D. Hawkins, Cumberland, R.I., assignor to Indev, Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed May 25, 1967, Ser. No. 641,259
U.S. Cl. 118—312 **7 Claims**
Int. Cl. B05b *7/14, 15/04*



A flocking machine in which the flock distributor includes a trough having a smooth perforated surface (such as perforated sheet brass) for passing flock from a supply through the perforations to the article to be flocked, and a spreader, such as a rotary brush, for uniformly distributing flock over the perforated surface.

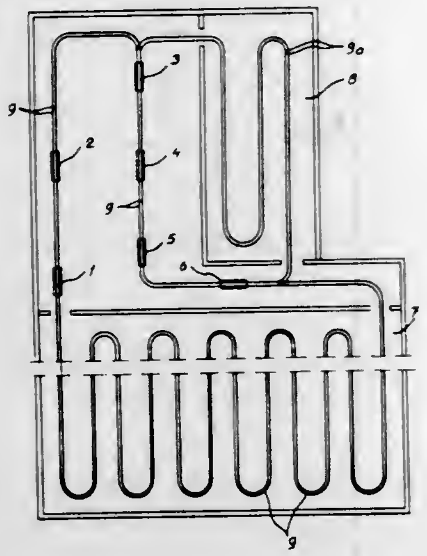
3,426,730
APPARATUS FOR COATING CONTINUOUSLY MOVING STRIP MATERIAL WITH POWDER
Kenneth Thomas Lawson, Marton, and Keith Judge Ascough, Levensdale, England, assignors to Head, Wrightson and Company, Limited, Thornaby-on-Tees, England, a United Kingdom corporation
Filed Sept. 22, 1965, Ser. No. 489,132
Claims priority, application Great Britain, Sept. 28, 1964, 39,393/64
U.S. Cl. 118—636 **5 Claims**
Int. Cl. B05b *5/04*

Powder to be coated upon a moving strip is discharged from a hopper by way of a rotating metering roll formed with spaced circumferential grooves which receive the powder from the hopper and from which the powder is scraped out to produce a plurality of streams of powder across the width of the strip to be coated. The powder streams encounter a diffusion device which converts the streams into a diffused cloud of particles which are then charged electrostatically before being deposited upon the strip being coated.



3,426,731
METHOD AND APPARATUS FOR RAISING ANIMAL STOCK

Nils H. Skoglösa, Uttran, Sweden, assignor to Alfa-Laval AB., Tumba, Sweden, a corporation of Sweden
Filed Sept. 13, 1966, Ser. No. 579,135
Claims priority, application Sweden, Sept. 27, 1965, 12,522/65
U.S. Cl. 119—15 **9 Claims**
Int. Cl. A01k *1/00*

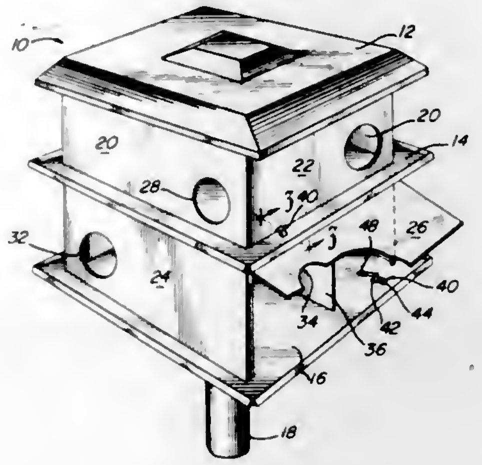


The cows or other stock animals are maintained on a series of transport devices where the animals normally live, at least one on each device, and each transport device is moved independently of the others to and from a series of separate tending stations where different normal tending operations are performed. Each transport device has service means for supplementing the tending stations to accommodate an animal in normal living, and a special station is provided to which each transport device is movable selectively for treatment of an irregularity, such as illness, experienced by an animal.

3,426,732
BIRDHOUSE CLEAN-OUT DOOR LATCH

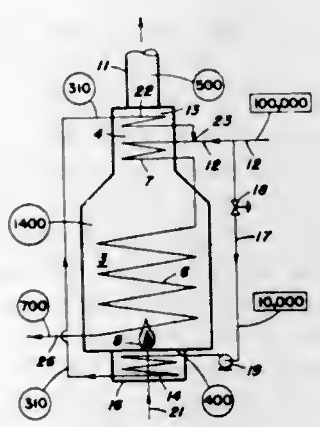
Jesse L. Wade, Griggsville, Ill., assignor to Trio Manufacturing Company, Griggsville, Ill., a corporation of Illinois
Filed Oct. 25, 1966, Ser. No. 589,278
U.S. Cl. 119—23 **3 Claims**
Int. Cl. A01k *31/02*

A birdhouse which includes a hingedly mounted door for providing access to the nesting compartments of said house, and latch means for releasably securing the door in the closed condition. The latch means is defined by a leaf spring having one end secured to the floor of the house and including a camming portion and a reverse bend portion, the latter defining a U-shaped channel which is adapted to receive the bottom door edge when same is in the closed condition. A pair of apertures formed in the floor, and one of said pair being disposed approximate the camming portion and the reverse bend portion, respectively, to permit said portions to move below the upper surface of the floor member when the leaf spring is depressed. Accordingly, movement of the door from the open condition to a closed condition will cause the bottom edge of said door to engage the camming portion thus depressing said spring and moving the entrance to said channel clear of said bottom edge so that when said edge is aligned with said channel the spring is permitted to return from the depressed condition with said bottom edge releasably secured in said U-shaped channel.



3,426,733
FURNACE AND RELATED PROCESS INVOLVING COMBUSTION AIR PREHEATING

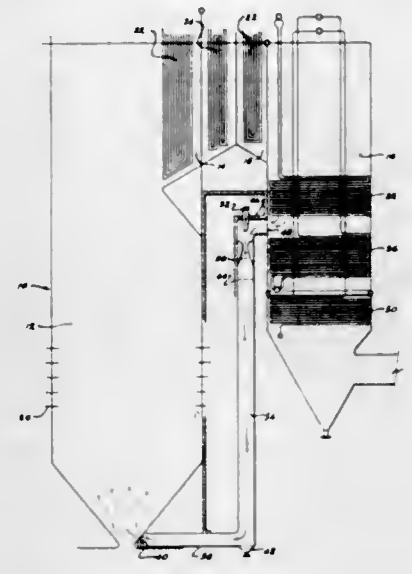
Peter von Wiesenthal, 17 E. 89th St., New York, N.Y. 10028
Filed Sept. 19, 1967, Ser. No. 668,860
U.S. Cl. 122—1 **11 Claims**
Int. Cl. F22d *33/04, 37/12*



This disclosure relates to furnaces. The invention teaches the use of an auxiliary stream at super-ambient temperature for heat donation to combustion air and subsequent heat collection from flue gases in order that overall thermal efficiency of the furnace may be improved. The auxiliary stream can be a slip stream or an independent service so long as it is not a closed loop. According to this teaching fuel economy and overall efficiency are promoted at a much lower cost than would be incident to conventional air preheating systems.

3,426,734
VAPOR GENERATOR HAVING GAS RECIRCULATION SYSTEM USING GAS EJECTOR

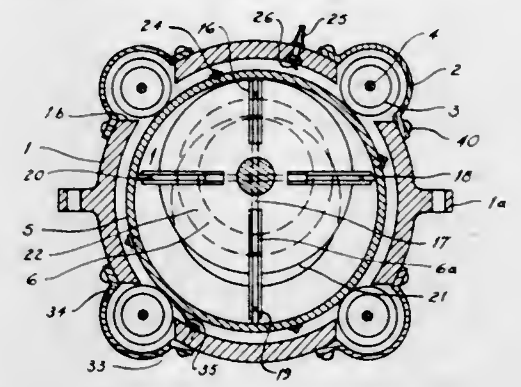
Earl K. Rickard, East Granby, and Orlando Martinez, Jr., East Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,203
U.S. Cl. 122—478 **2 Claims**
Int. Cl. F22g *7/14;* **F23j** *5/02*



A gas recirculation system for a vapor generator having a combustion gas pump in the form of a gas ejector for inducing recirculating flow of combustion gases from the convection heating section of the vapor generator to the furnace.

3,426,735
COMPOUND ROTARY ENGINES

Donald A. Kelly, 58—06 69th Place, Maspeth, N.Y. 11378
Filed July 26, 1967, Ser. No. 656,172
U.S. Cl. 123—16 **10 Claims**
Int. Cl. F02b *53/08;* **F01c** *3/02;* **F04c** *17/18*

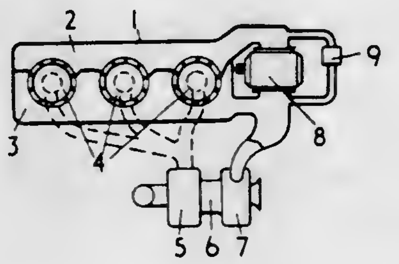


A rotary internal combustion engine comprising two rotating elements which together with multiple sealed vanes form the continuous compression and combustion volumes. The eccentric rotor is in tangent contact with a large diameter flanged cylinder which has large diameter openings at the ends in order to provide for the intake and exhaust gasses. The rotating flanged cylinder is concentric to the basic cylindrical housing and is supported by multiple rollers for high speed, low friction rotation. The flanged cylinder is forced air cooled by impellers on each of the multiple ball bearings. The flanged cylinder is fitted with multiple spark plugs which contact a high tension wiper off top dead center to fire the gas mixture. This arrangement of commutated ignition assures accurate spark timing.

Four vane and seal assemblies are ideal for most applications of moderate horsepower with six to eight being suitable for large engines.

3,426,736
TWO-STROKE CYCLE INTERNAL COMBUSTION ENGINE

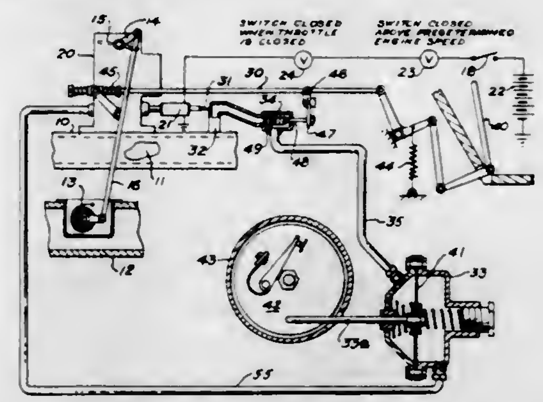
Donald Wilfred Tryhorn, Slough, England, assignor to Sir W. G. Armstrong Whitworth & Company (Engineerings) Limited, Slough, England, a British company
Filed May 31, 1967, Ser. No. 642,413
Claims priority, application Great Britain, June 13, 1966, 26,247/66
U.S. Cl. 123—65 **4 Claims**
Int. Cl. F02b *25/14*



An exhaust gas driven turbocharged multi-cylinder two-stroke cycle internal combustion engine having at least two air chests, at least one supplied directly and at least one supplied by way of a series charger.

3,426,737
SPARK RETARD CONTROL

Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Oct. 23, 1965, Ser. No. 503,689
U.S. Cl. 123—97 **8 Claims**
Int. Cl. F02p *5/06, 5/10, 5/12*

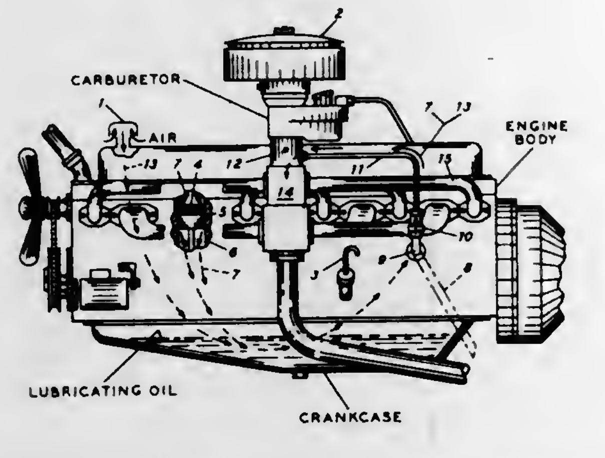

SWITCH CLOSED WHEN THROTTLE IS CLOSED
SWITCH CLOSED ABOVE PREDETERMINED ENGINE SPEED

A device for temporarily retarding the spark timing automatically when the throttle is closed above a preselected engine speed. A valve operated by the throttle mechanism is opened to connect the intake manifold pressure to the retard mechanism. In one form of the invention the intake manifold is opened to atmosphere to render the retard mechanism inoperative. In a second form of the invention the pressure in the intake manifold operates a valve to remove the manifold pressure from the retard mechanism.

3,426,738
METHOD OF OPERATION AND LUBRICANT FOR CLOSED EMISSION INTERNAL COMBUSTION ENGINES

James K. Goodwine, Jr., San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a Corporation of Delaware
Continuation-in-part of application Ser. No. 580,892, Sept. 21, 1966, which is a continuation-in-part of application Ser. No. 468,517, June 30, 1965, now abandoned. This application Oct. 16, 1967, Ser. No. 681,041
U.S. Cl. 123—119 **4 Claims**
Int. Cl. F02m *7/10;* **F02b** *29/02;* **C10m** *1/32*

Spark ignition internal combustion engine equipped with valve-controlled positive crankcase ventilation system is operated with crankcase lubricating oil composition containing diethylene glycol monobutyl ether whereby said diethylene glycol monobutyl ether is withdrawn continuously in vapor form and introduced into the positive crankcase ventilation system. Mineral lubricating oil composition contains the combination of nitrogenous ashless detergent and ethylene glycol monoalkyl ether.



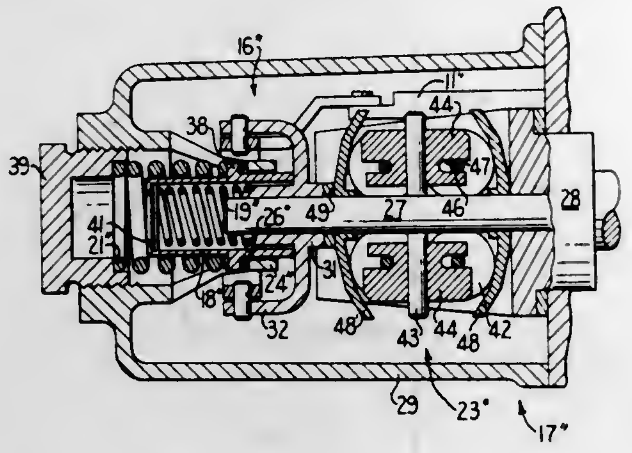
3,426,739
MAXIMUM-MINIMUM GOVERNOR WITH TORQUE SPRING FOR IMPROVING ENGINE PERFORMANCE DURING OVERLOADING

John M. Bailey, Dunlap, and Marvin A. Gates, Chillicothe, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Aug. 3, 1967, Ser. No. 658,114

U.S. Cl. 123—140 **4 Claims**

Int. Cl. F02d *1/04*



A maximum-minimum governor has a torque spring establishing a full load governed speed well below the maximum torque capacity of the associated engine whereby torque increases as engine speed decreases during an overload. Owing to a unique positioning relative to the other governor elements, the torque spring is only lightly loaded while the engine operates at rated speed thereby providing for greater durability and less maintenance problems.

3,426,740
DISTRIBUTOR

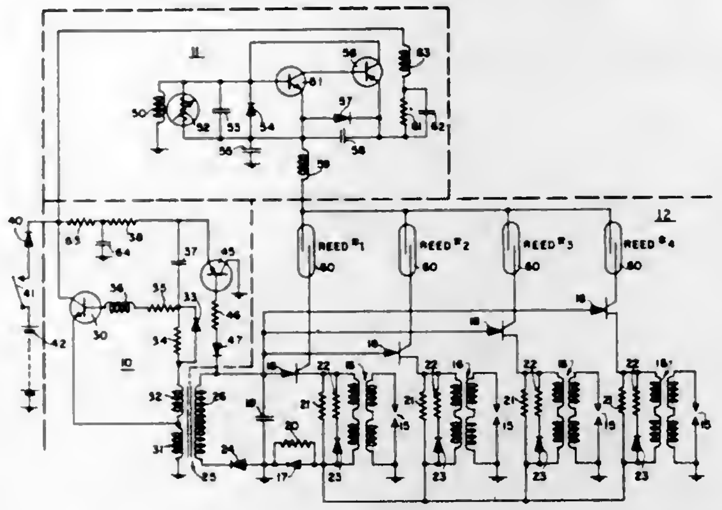
Arthur G. Hufton, Villa Park, and Robert J. Reddel, Elmhurst, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Oct. 21, 1966, Ser. No. 588,361

U.S. Cl. 123—148 **6 Claims**

Int. Cl. F02p *3/00, 7/10;* **H01h** *9/00*

A capacitor discharge ignition system for a multicylinder internal combustion engine which utilizes a main pickup unit and a plurality of reed switches placed on a mounting plate in spaced relation to the positions of shaped pole elements and a magnet spaced on a steering disc. The steering disc is rotated by the engine and the magnet sequentially closes the reed switches, each one of which is coordinated to a respective cylinder. The shaped pole elements which are driven past the main pickup unit produce a pulse in that unit, which is connected by the reed switch to trigger a silicon controlled rectifier (SCR) for discharging the capacitor to provide a spark at an associated spark plug for firing the same. In another embodiment individual pickups replace the reed switches and the magnet generates a pulse in the pickup which gates on a transistor to trigger the SCR.



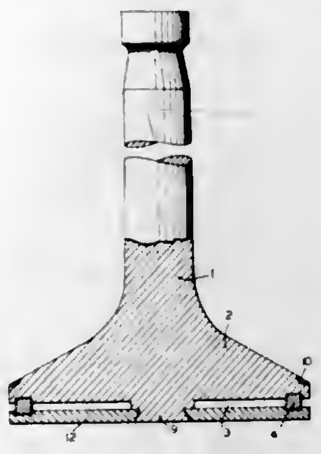
3,426,741
DIESEL ENGINE POPPET VALVE

Thomas E. Haagen, Box 13, Nynashamn, Sweden

Continuation-in-part of application Ser. No. 540,661, Apr. 6, 1966. This application Apr. 3, 1968, Ser. No. 718,594

U.S. Cl. 123—188 **4 Claims**

Int. Cl. F01l *3/20;* **F16k** *25/00, 51/00*



This invention relates to a diesel engine poppet valve that includes a stem portion, a head portion connected to the stem portion, at least one completely enclosed and annularly disposed chamber located within the mass of metal that comprises the head portion and at least one annular ceramic ring positioned in said head so as to completely enclose and seal said chamber against the entrance of hot combustion gases.

3,426,742
COMBINED INTAKE AND EXHAUST MECHANISM FOR HEATING UNIT

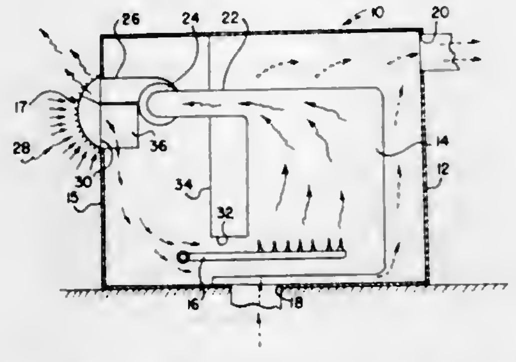
Anthony R. Passarello, Bellevue, Ohio, assignor to Johnson Corporation, Bellevue, Ohio, a corporation of Ohio

Filed Dec. 5, 1966, Ser. No. 599,144

U.S. Cl. 126—85 **6 Claims**

Int. Cl. F24c *3/00;* **F23l** *17/04*

1. In a heating unit comprising a housing having a generally vertical exterior wall, a combustion chamber in said housing, a combustion air inlet in said wall communicating with said chamber, means for exhausting the gas of combustion from said chamber, the last mentioned means comprising a combustion gas passageway from said chamber toward said wall to substantially the same location on said wall as said air inlet, blower means for causing circulation of combustion air through said air inlet to the combustion chamber and circulation of the gas of combustion out said combustion gas passageway to the exterior of said housing, said passageway including a duct terminating adjacent the exterior of said wall at said air inlet, and means at said location for maintaining separate the inlet air from the exhaust combustion gas during ingress and egress of respectively said air and combustion gas, the last mentioned means comprising a shield-like member secured to the exterior of said housing at said location and encompassing said air inlet and the exit end of said duct, said member being adapted for exposure to the atmosphere, said member comprising, an arcuate-shaped apertured front wall and generally vertically oriented laterally spaced side walls connected to said front wall, imperforate means extending between said front and side walls and dividing the interior of said member into an upper exhaust section and a lower air intake section, said imperforate means coacting with the exit end of said duct for separating the gas of combustion exiting via said passageway into said member from inlet air adapted to enter said member, said front wall comprising a plurality of generally transversely extending louvers providing said apertures in said front wall, said member being generally symmetrical about the horizontal centerplane of said member except for said imperforate means, with generally equal numbers of said louvers being disposed on opposite sides of said horizontal center plane and in corresponding locations with respect to the arcuate periphery of said front wall, said louvers in the exhaust section portion of said front wall being disposed obliquely with respect to the horizontal and sloping generally upwardly in a direction outwardly of said member, said louvers in the intake section portion of said front wall being disposed generally obliquely with respect to the horizontal and sloping generally downwardly in a direction outwardly from said member, for respectively urging the incoming inlet air and the outgoing combustion gases into generally radial separation with respect to one another, said exhaust section of said member being substantially smaller than said inlet section for increasing the exiting velocity of combustion gas from said member.



3,426,743
HEART PUMP AUGMENTATION SYSTEM

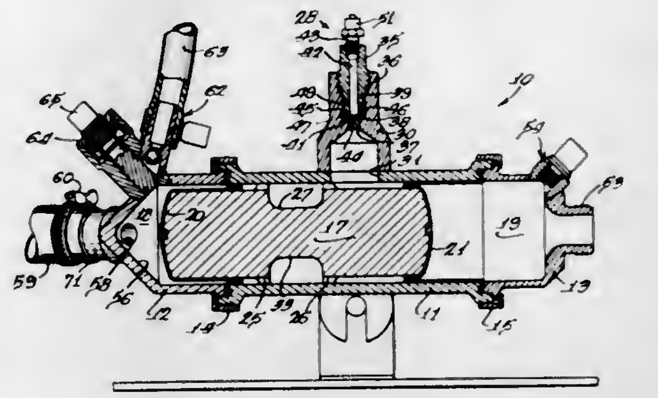
Merrill Gaines Chesnut, Arvada, and Phillip B. Callaghan, Westminster, Colo., assignors, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Filed Oct. 27, 1964, Ser. No. 406,722

U.S. Cl. 128—1 **30 Claims**

Int. Cl. A61h *31/00;* **A61m** *5/14, 29/02*

A catheter communicates blood with the patient's circulatory system in response to a blood pump which responds in turn to a hydraulic actuator system that is electrically driven in response to electronic control means. The electronic control means are timed to the patient's natural heart action to control the pumping cycle. The electronic control means includes a pair of binary counters for counting timing signals indicative of the time duration of heart cycles of the patient, with a master flip-flop for selecting one counting channel to control the pump while the other counting channel is counting the time of the heart cycle, alternatively. Reduced augmentation, and pump strokes without withdraw strokes are also selectively controlled by the electronic circuits. The pump speed as well as times of initiating the push and withdraw phases are controlled in response to the patient's heart action. Pump rates may be manually selected in dependence upon the size of catheter in use.



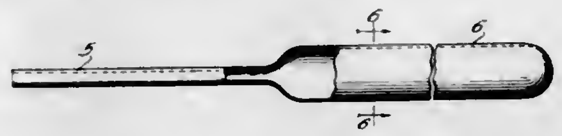
3,426,744
HEART PUMP CANNULA

Richard H. Ball, Boulder, Colo., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Filed Feb. 27, 1964, Ser. No. 347,807

U.S. Cl. 128—1 **1 Claim**

Int. Cl. A61h *31/00;* **A61m** *5/14, 29/02*



A heart pump cannula is provided which includes a closed end radially inflatable tubular portion connected to a reinforced, noninflatable tubular portion. The closed end inflatable portion is provided with longitudinal reinforcement cords for the purpose of preventing longitudinal expansion of the inflatable portion, while the noninflatable portion is provided with a reinforcing cord sleeve which prevents any expansion thereof. In use, the cannula is inserted through the femoral artery until the inflatable portion is within the descending aorta. The cannula is then connected to a reciprocating heart pump system which alternately pumps and withdraws fluid from the inflation portion thereof, thereby causing a pulsating action of the inflatable portion within the descending aorta of the body, radial expansion of the cannula within the femoral artery being prevented.

3,426,745
BAG MEANS FOR COLLECTING BREATHING AND REBREATHING AIR SAMPLES

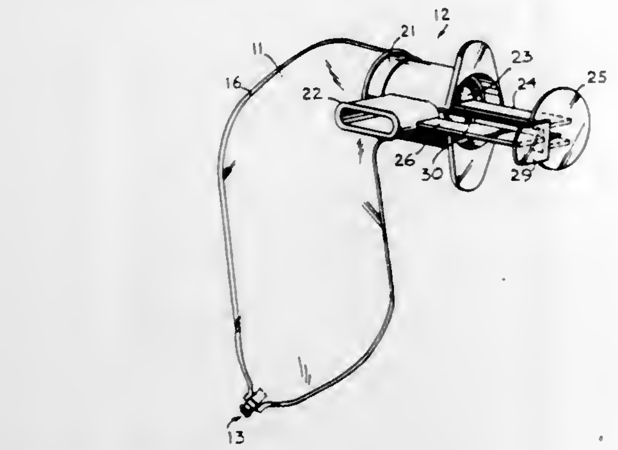
Andrew F. Farr, South Gate, Calif., assignor to Bioconsultants, Inc., Glendale, Calif., a corporation of California

Continuation-in-part of application Ser. No. 295,058, July 15, 1963. This application Mar. 27, 1967, Ser. No. 626,280

U.S. Cl. 128—2 **8 Claims**

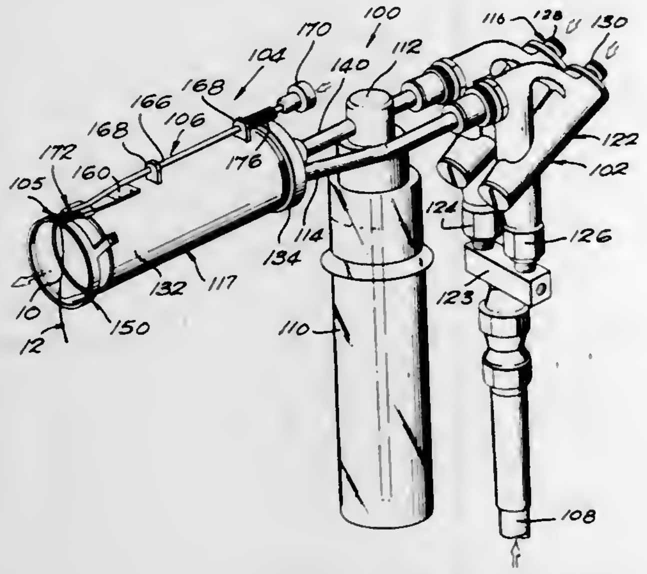
Int. Cl. G01n *1/22;* **A61b** *5/10;* **A61f** *5/44*

A pliable gas-impervious bag having a two-way nonrestrictive valve, including a mouthpiece, by means of which samples of air from free breathing and rebreathing of a person may be collected for analysis. The device is light-weight for portability, and of low cost to permit discarding after one use.



3,426,746
METHOD AND APPARATUS FOR ATTACHING PHYSIOLOGICAL MONITORING ELECTRODES

Robert C. Seamans, Jr., Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of John M. Keating, Montclair, James A. Roman, Palmdale, and Robert G. Green and Charles W. Patten, both of Lancaster, Calif.
Filed Oct. 10, 1966, Ser. No. 586,324
U.S. Cl. 128—2.06 **20 Claims**
Int. Cl. A61b *5/05;* **B05b** *15/04*

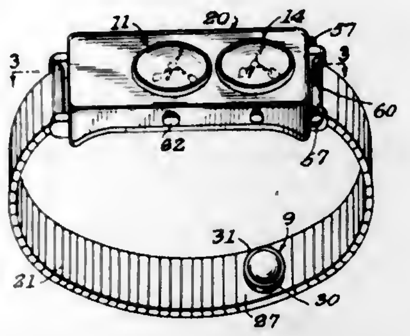


14. Spray apparatus for applying a biomedical electrode to the surface of the skin by locating the bare end of an electrode lead over and in close proximity to a local area of the skin and thereafter spraying a relatively fast-drying electrically conductive adhesive over said bare lead end and onto said skin area in such manner as to form on said area a patch-like layer of said adhesive which adheres to the skin and encapsulates said bare lead end, said apparatus comprising:

a spray device for discharging a confined spray of said adhesive;
said spray device being adapted to be placed in a spraying position relative to said skin area, wherein said skin area is located in the path of the adhesive spray from said spray device;
means on said spray device for releasably locating a bare end of said electrode lead relative to said device in an initial position wherein said lead end is located in said adhesive spray path and is disposed in close proximity to said skin area by placement of said spray device in said spraying position; and
means for selectively conditioning said spray device to discharge said adhesive spray.

3,426,747
METHOD AND WATCH MECHANISM FOR ACTUATION BY A CARDIAC PULSE

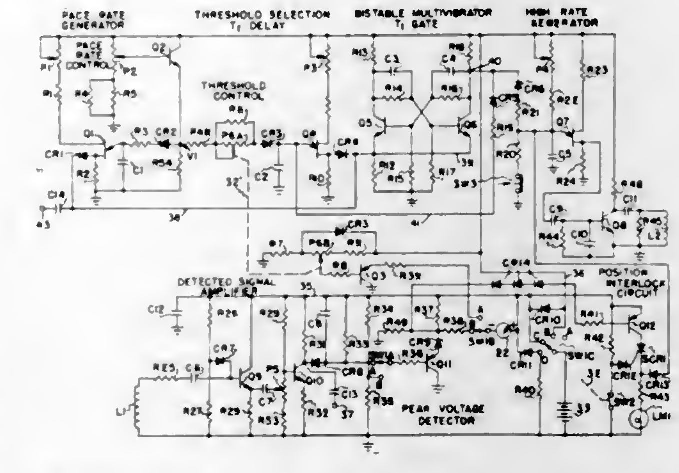
Albert Dale Herman, 5149 Amestoy Ave., Encino, Calif. 91316, and Herbert Zeppo Marx, Tamarisk Country Club, Palm Springs, Calif. 92262
Continuation-in-part of application Ser. No. 582,337, Sept. 27, 1966. This application Nov. 20, 1967, Ser. No. 684,162
U.S. Cl. 128—2.05 **9 Claims**
Int. Cl. A61b *5/02;* **G04b** *23/12, 5/20*



Means for driving a watch my means of a cardiac pulse at a rate that varies according to the frequency, strength and regularity of the pulse, and, by comparing the rate of operation thereof with a reference watch that operates at a constant and known rate, apprising the user by the deviant reading between the two watches of a corresponding variation in the functioning of the heart.

3,426,748
STIMULATOR ANALYZER AND LOCATER

David L. Bowers, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York
Filed Nov. 23, 1965, Ser. No. 509,390
U.S. Cl. 128—2.06 **9 Claims**
Int. Cl. A61b *5/04;* **H03k** *3/26;* **G01r** *19/16*

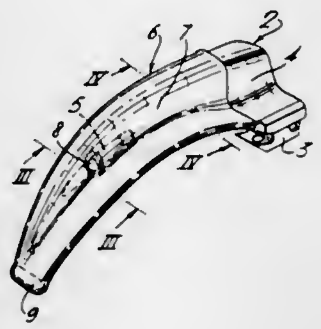


The minimum electric pulse energy required for stimulating the heart with an implanted stimulator, is determined with an external analyzer that indicates the threshold energy for stimulation as a percentage of the energy that is available from the stimulator. The pacing pulses from the stimulator are coupled to the heart through a capacitor. The analyzer induces the capacitor to charge quickly and stimulate the heart with a pacing pulse. It then induces a controlled series of small high rate pulses which maintain the charge on the capacitor so it discharges only patrially between pacing pulses. Since the capacitor remains partially charged, the charging current of the capacitor can be progressively reduced until it is insufficient to stimulate the heart. The ratio of the number of high rate pulses to the total number of such pulses that

can be induced between pacing pulses represents the energy needed to stimulate the heat as compared with the energy that is available from the stimulator.

3,426,749
DISPOSABLE COVER FOR LARYNGOSCOPE BLADE

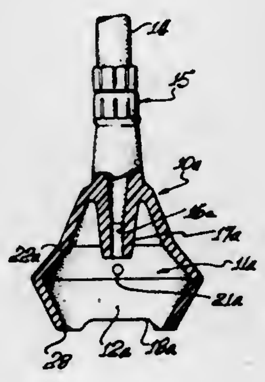
John A. Jephcott, Abingdon, England, assignor to Longworth Scientific Instrument Company Limited, Abingdon, England, a British company
Filed May 13, 1966, Ser. No. 549,879
Claims priority, application Great Britain, May 20, 1965, 21,425/65
U.S. Cl. 128—11 **5 Claims**
Int. Cl. A61b *1/06, 13/00, 1/26*



A sterile, disposable generally tubular cover of plastic for a laryngoscope blade having an intubation channel and a light source in a wall of the channel. The cover is of light transmitting plastic sufficiently rigid to conform closely to the walls of the channel and has a closed end and an open end to receive the blade. A sterile envelope containing the cover has a rupturable portion through which the blade can be inserted into the open end of the cover while still in the envelope.

3,426,750
HYDROTHERAPEUTIC MASSAGE DEVICE

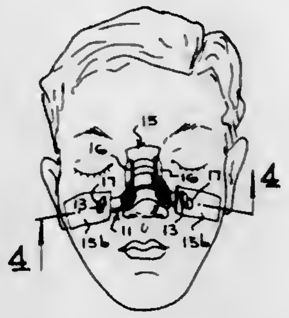
Edwin F. Clements, 680 Alexander Way, Palm Springs, Calif. 92262
Filed Sept. 23, 1966, Ser. No. 581,555
U.S. Cl. 128—66 **7 Claims**
Int. Cl. A61h *9/00, 23/04*



1. A therapeutic massage device comprising:
a generally bell-shaped housing defining and partly enclosing an agitation chamber open at one side to the area to be massaged;
means connecting the housing to a source of fluid under pressure;
nozzle means inside the chamber directing a continuous jet of fluid toward the open side of the housing;
and means at the rim of the housing to allow escape of fluid from the chamber when the housing is in contact with the body of a patient, whereby the chamber is filled with fluid and agitated by the incoming jet to massage the area of a patient's body exposed to said opening.

3,426,751
POST-OPERATIVE NOSE STENT

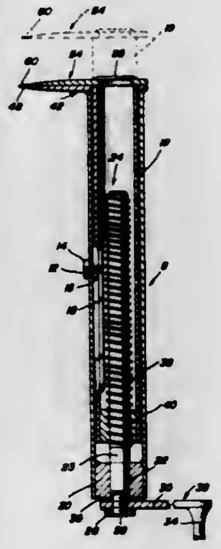
Milton G. Radewan, 931 Bryan St., Wenatchee, Wash. 98801
Filed Jan. 3, 1967, Ser. No. 606,699
U.S. Cl. 128—76 **3 Claims**
Int. Cl. A61f *5/08, 13/12;* **A61b** *17/12*



1. A post-operative stent for rhinoplasty patients adapted to be mounted upon the patient's nose comprising a substantially U shaped leaf spring member having two legs interconnected by an arcuate member to thereby form the U shaped spring member, each leg having one freely disposed end, an intermediate portion on each leg disposed between the arcuate member and the freely disposed end, the intermediate portions having a concave curvature that flares the freely disposed ends outwardly from one another, the intermediate portions normally being positioned immediately adjacent the patient's nose in flanking relation thereto, means integral with the freely disposed ends to secure the spring member to the patient.

3,426,752
CAST SPREADER AND BREAKER

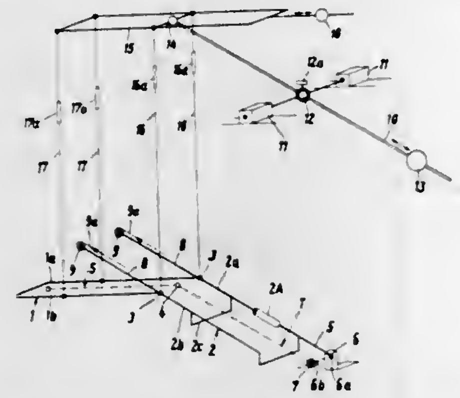
Andrew J. Laico, 1313 2nd St., Port Angeles, Wash. 98362
Filed Jan. 3, 1967, Ser. No. 606,793
U.S. Cl. 128—83 **4 Claims**
Int. Cl. A61f *5/04;* **B23p** *19/04*



A jack screw, turned by a conveniently located handcrank, projects an inner cylinder beyond a complemental outer cylinder. Upper ends of both cylinders have mated jaws whose beveled companion lips can be wedged between spreadable edges of a leg, body, or arm cast. To operate: insert jaws and hold outer cylinder with left hand. Turn crank with right hand to open jaws. The slitted cast is thus expanded, broken and quickly removed.

3,426,753
SURGICAL OR ORTHOPEDIC SPLINT HAVING MEANS FOR EXERCISING UNINJURED LEG PORTIONS TO PREVENT MUSCULAR ATROPHY AND JOINT STIFFNESS

Hans Streckfuss, Tannenweg 47, Kunsell uber Fulda, Germany
Filed Sept. 21, 1966, Ser. No. 580,952
Claims priority, application Germany, Sept. 22, 1965, S 24,415
U.S. Cl. 128—85 **10 Claims**
Int. Cl. A61f *5/04, 5/37;* **A61h** *1/02*



1. A surgical or orthopedic leg splint, particularly for use by patients in dorsal position, comprising a support; a first brace adapted to be applied to a patient's thigh and having an end portion articulately joined with said support in alignment with the hip joint; a second brace adapted to be applied to the shin; first pivot means articulately connecting said braces to each other in registry with the knee joint; a two-armed balance beam fulcrumed in said support at a level above the hip joint; a first counterweight provided on one arm of said first beam; a second two-armed balance beam; second pivot means connecting said second beam with the other arm of said first beam at a level above the knee joint; a second counterweight provided on one arm of said second beam; first connector means connecting said first and second pivot means; and second connector means connecting said second brace with the other arm of said second beam.

3,426,754
BREATHABLE MEDICAL DRESSING

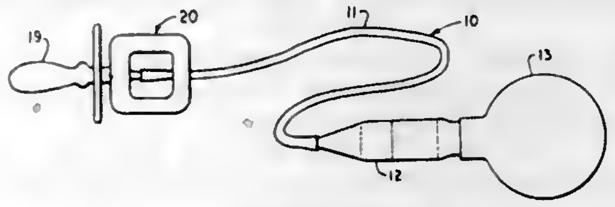
Harvey S. Bierenbaum, Plainfield, Robert B. Isaacson, Rahway, and Peter R. Lantos, Plainfield, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 14, 1966, Ser. No. 579,219
U.S. Cl. 128—156 **13 Claims**
Int. Cl. A61l *15/06;* **A61f** *13/02;* **C09j** *7/00*

1. A microporous breathable dressing comprising a film of a polymer: said film being characterized by an apparent density lower than the actual density of said polymer from which said film is prepared and by a microporous structure wherein the pore spaces of said structure accessible to the outside of said film range from about 100 to 5000 angstrom units, as porosimetrically determined by mercury penetration.

3,426,755
MEDICINE FEEDER

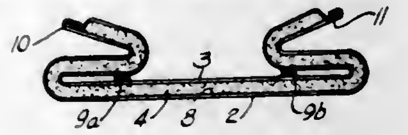
Jesse M. Clegg, De Quincy, La., assignor to Lenora Swope Inc., Baton Rouge, La.
Filed May 20, 1966, Ser. No. 551,635
U.S. Cl. 128—252 **7 Claims**
Int. Cl. A61j *11/00, 17/00;* **A61m** *1/06*

This invention relates to apparatus for oral administration of medicine. In particular, it relates to new and novel apparatus suitable for administering medicine to children, especially to infants and small children. The device is a pacifier provided with a tubular member having a flanged portion, or enlarged projecting surface, over an end of which an open end nipple is fitted. The tubular member is provided with a stirrup or surrounding ring portion. The stirrup is provided with an opening, and a flexible tube is fitted through the opening and connected to the tubular member. The flexible tube is connected to a vial, appropriately scribed with indicia marks, and an oversized squeeze bulb is fitted thereon for forcing medicine from the vial, through the tube and nipple. Preferably, at the delivery end, the opening through the nipple is located to the side and medicine injected therethrough to the mouth of an infant or child who normally eagerly accepts the pacifier and nipple, while lying or sitting in virtually any position.



3,426,756
DISPOSABLE DIAPER

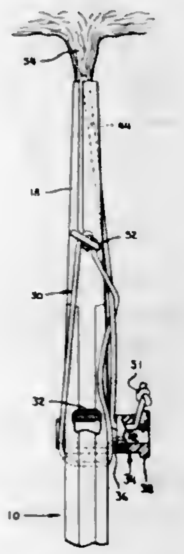
Gerald A. Romanek, East Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 16, 1965, Ser. No. 464,454
U.S. Cl. 128—287 **5 Claims**
Int. Cl. A61f *13/16, 5/44;* **A61l** *15/00*



A disposable rectangular diaper defined by an absorbent pad covered by a liquid absorbent facing sheet constructed and positioned to provide greater widthwise diaper strength and a liquid impervious backing sheet secured to said absorbent pad, said diaper having its widthwise edges specifically closed to preclude fiber dusting and the lengthwise edges extending beyond the absorbent pad and engulfed by said backing sheet to provide a repellent dam effect therealong.

3,426,757
LIGATING HEMOSTAT FOR APPLYING A NOOSE WITH A LOCKING DISC

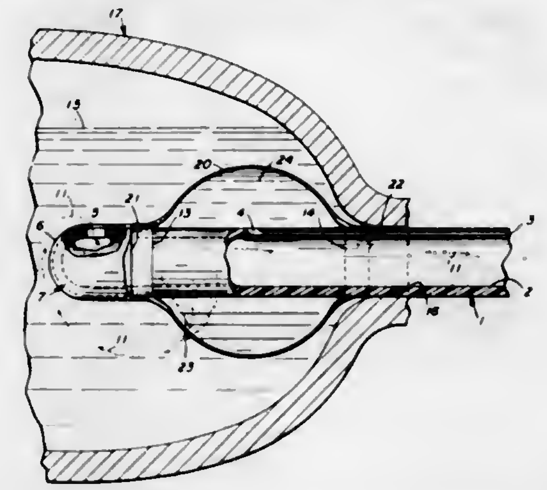
Suel Grant Shannon and Norwood Claude Graeff, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 8, 1965, Ser. No. 506,692
U.S. Cl. 128—326 **13 Claims**
Int. Cl. A61b *17/12, 17/06;* **F16g** *11/00*



A ligating device is disclosed for tying off blood vessels during a surgical procedure and comprises a length of surgical ligature for encircling a vessel, an apertured disc carried by the ligature, the ligature being threaded through the disc in a manner to produce a one way knot, and means for applying the ligature and disc to the severed vessel and for tightening the ligature about the vessel.

3,426,758
MEDICAL CATHETER WITH BALLOON LEAKAGE INDICATOR

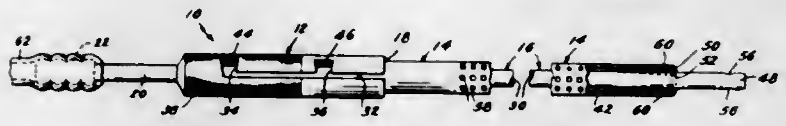
Andrew Harautunelan, Gardena, Calif., assignor, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois
Continuation-in-part of application Ser. No. 267,723, Mar. 25, 1963. This application Oct. 10, 1966, Ser. No. 585,636
U.S. Cl. 128—349 **6 Claims**
Int. Cl. G01d *21/00;* **A61m** *25/00*



4. In a medical catheter having an elongated tube with a wall defining two longitudinal lumens therein, one lumen communicating with an exterior surface of the tube through an inflation opening, which catheter has an inflatable elastic balloon layer surrounding the tube with opposite ends of the balloon layer bonded to the tube wall's outer surface on opposite sides of the inflation opening, the improvement comprising a nontoxic colored dye integrally encased between the balloon and tube prior to inflation of the balloon, said colored dye being dispersible throughout an inflation media used to inflate the balloon, whereby the colored dye draining out of the catheter gives a visual indication of balloon leakage.

3,426,759
ABDOMINAL SUCTION DRAINAGE TUBE

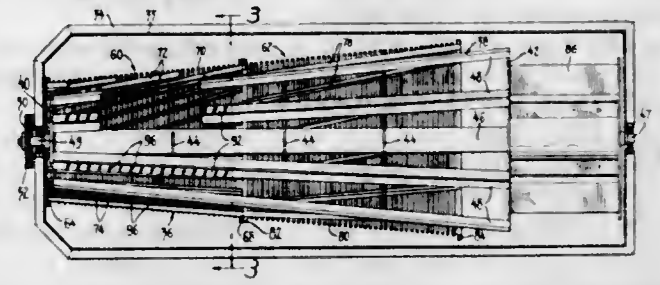
William L. Smith, Warwick, R.I., assignor to Davol Inc., Providence, R.I., a corporation of Rhode Island
Filed Apr. 4, 1966, Ser. No. 539,855
U.S. Cl. 128—350 **4 Claims**
Int. Cl. A61m *27/00, 1/00;* **A61l** *27/00*



An abdominal suction tube comprising a minimum number of parts, each of which may be molded, whereupon the tube may be of the throw-away variety, said tube having an outer sleeve and an inner tube concentrically mounted therein, said outer sleeve being movable with respect to said inner tube whereupon the tip of the latter may be exposed when fine suctioning is desired, said sleeve being movable to a second position wherein said inner tube is completely contained therein, said outer sleeve having a plurality of apertures therein for effecting gross suctioning when the inner tube is retracted into said outer sleeve.

3,426,760
TOOTHED CONICAL THRESHING ASSEMBLY

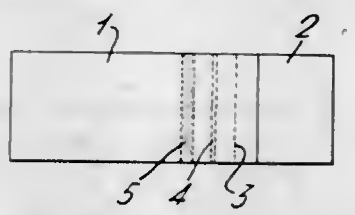
Alexander H. Mark, Livonia, Mich., and Joseph Necas, Toronto, Ontario, Canada, assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Nov. 23, 1965, Ser. No. 509,395
U.S. Cl. 130—27 **4 Claims**
Int. Cl. A01f *7/02, 12/22;* **A01d** *41/12*



A threshing assembly includes a conical concave enclosing a conical cylinder having axially extending peripheral bars provided with angled spike teeth. Straight flights, which may include spike teeth, are provided on a portion of the small end of the concave adjacent the crop material opening. These teeth cooperate with the straight flights to thresh most of the crop material. Spiral flights are mounted on the remainder of the concave inner surface and cooperate with the cylinder bars in propelling the crop material axially of the concave with increased centrifugal force to further separate the grain from the crop material.

3,426,761
CIGARETTE WITH COOLING AND SMOKE CONDENSING MEANS AND METHOD OF MAKING IT

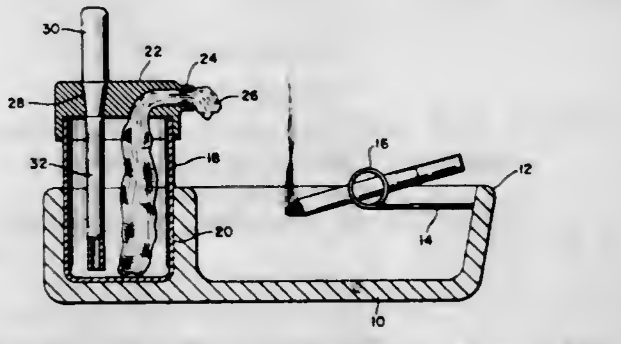
José Salvado Fernandez, 15 Pareto St. at Hospitalet de Llobregat, Barcelona, Spain
Filed June 1, 1965, Ser. No. 460,148
U.S. Cl. 131—9 **1 Claim**
Int. Cl. A24d *1/00*



The paper envelope of a cigarette is provided with small openings having a diameter of at most 0.04 millimeter in at least one annular zone located between the two ends of the cigarette and having a width of at least 3 millimeters, the openings being made by multiple static electrical discharges.

3,426,762
TOBACCO ASH RECEIVER

Charles Vitale, 131 Fairview Ave., Somerville, N.J. 08876
Filed Mar. 28, 1967, Ser. No. 626,548
U.S. Cl. 131—236 **2 Claims**
Int. Cl. A24f *19/14*



Ash tray having coil cigarette clamps spaced inward from the rim to insure that any butt falling therefrom will land within the rim, with a quench receptacle having a lid with a wick and a dropper tube passing therethrough.

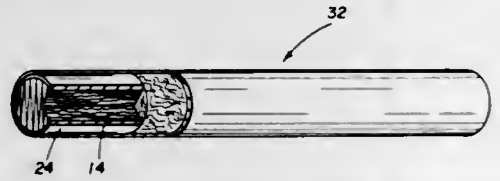
3,426,763
TOBACCO SMOKE FILTER HAVING A COATED CARBON ADDITIVE

Cephas H. Sloan and Bobby J. Sublett, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 447,093, Apr. 9, 1965. This application July 21, 1965, Ser. No. 473,809
U.S. Cl. 131—266 **2 Claims**
Int. Cl. A24d *1/06;* **B01d** *27/02*

A new filter for tobacco smoke in which hydrogen cyanide is effectively removed comprises a core or carrier of continuous cellulose acetate filaments which carry as an addition thereon a nonactivated carbon coated with a water soluble salt. Sodium carbonate, potassium carbonate, sodium phosphite, potassium phosphite, sodium phosphate, potassium phosphate, sodium silicate, and potassium silicate constitute the effective water soluble salts. The nonactivated carbon base does not absorb volatile taste producing vapors to the extent that the activated carbons do.

3,426,764
CIGARETTE FILTERS OF PAPER CONTAINING CELLULOSE ACETATE FIBERS

James R. G. Pearman, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 4, 1965, Ser. No. 492,714
U.S. Cl. 131—267 **3 Claims**
Int. Cl. A24d *1/06;* **B01d** *27/04*



A paper cigarette filter for extracting deleterious ingredients including carcinogenic substances. The paper composition of the invention has incorporated therein fibers of acyl esters of cellulose. The paper composition may be masticated to form a larger surface area to effect filtration and in addition separates individual filaments which serve as points of impingement for particulate materials in the cigarette smoke.

3,426,765
TOBACCO SMOKE FILTERS

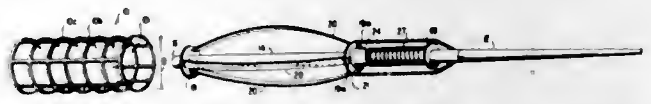
James R. Misenheimer and Charles H. Keith, Charlotte, N.C., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 21, 1967, Ser. No. 617,500
U.S. Cl. 131—267 **12 Claims**
Int. Cl. A24b *15/02*

A tobacco smoke filter capable of removing numerous undesirable components from a tobacco smoke stream comprising a carrier material and a minor amount of certain di-substituted amides.

3,426,766
DEVICE FOR MANIPULATING HAIR ROLLERS

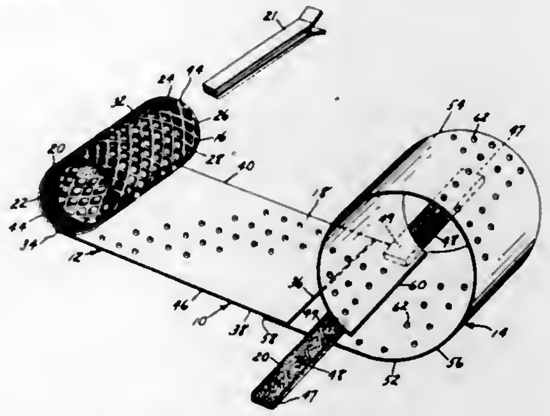
Angelo C. Castellano, 2320 Spruce St., Tampa, Fla. 33607
Filed Dec. 6, 1966, Ser. No. 599,560
U.S. Cl. 132—34 **6 Claims**
Int. Cl. A45d *2/12, 44/00*

A hair roller apparatus having a shaft and a plurality of flexible staves circumferentially arranged about the shaft and held by a pair of spaced washer-like members axially centered on the shaft. A spring biases one of the washer-like members in a direction to cause the staves to bow radially outwardly from the shaft and thus frictionally engage and grip the inner circumferential surface of the roller. A slide member integral with or affixed to the movable washer-like member, is used to manually compress the spring and straighten the staves so that they release their frictional grip from the hair roller.



3,426,767
HAIR CURLER

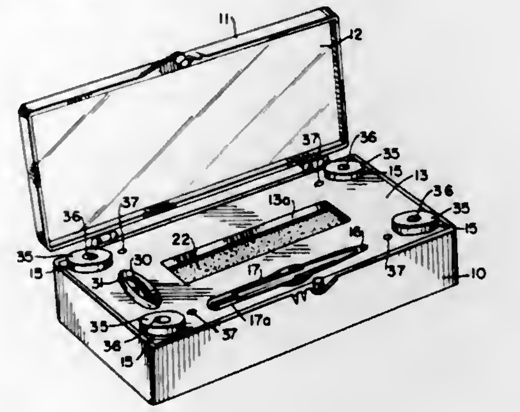
Dominic J. Mercorella, 12 E. 57th St., New York, N.Y. 10022
Filed Jan. 11, 1967, Ser. No. 608,694
U.S. Cl. 132—40 **5 Claims**
Int. Cl. A45d *2/00*



Haircurling construction including a bobbin element and elongated curler element including first and second curler numbers, the bobbin element having a general cylindrical form, the first curler member having a confining body and being a flexible material and connected at one end thereof to the bobbin element, the second curler member being composed of stiff flexible material, interconnecting means having first and second elements on the curler element for connecting the curler element upon itself and clip means for detachably securing an outer portion of the second curler member to another portion thereof which is closer to the bottom member for retaining the second curler member in desired position.

3,426,768
COSMETIC KITS

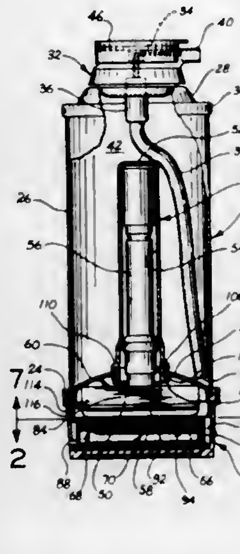
John Vardaros New York, N.Y.
(85 Cornell Lane, Hicksville, N.Y. 11801)
Filed Aug. 26, 1966, Ser. No. 575,394
U.S. Cl. 132—79 **4 Claims**
Int. Cl. A45d *40/24*



A cosmetic kit in the form of a hollow box with a plurality of differently colored lipsticks or mascara disposed in cavities in a rotatable cylindrical body. Individual brushes are also provided. The user rotates the body to select the desired color and uses it by drawing a brush in the desired cavity.

3,426,769
CONTAINER FOR A DISPENSABLE MATERIAL HAVING AN AUXILIARY RECESS EXTENDING THEREINTO

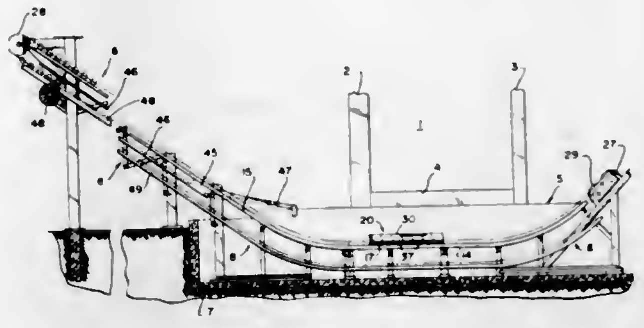
Merle R. Slewing, Lake Arrowhead, Calif., assignor of one-half to R. W. Hodgson, Sherman Oaks, Calif.
Filed June 6, 1966, Ser. No. 561,654
U.S. Cl. 132—80 **24 Claims**
Int. Cl. A45d *27/22*



A container for dispensable material having an auxiliary recess extending thereinto which is physically separated from and isolated from the dispensable material, and which has an outer and usually bottom-positioned access opening providing convenient access into the auxiliary recess which may mount an auxiliary object therein until it is to be removed and used. The dispensable material may comprise shaving cream and the auxiliary object may comprise a razor. In one form, a closure cap may define another storage chamber adapted to mount another auxiliary object such as fresh, unused razor blade means or the like.

3,426,770
APRON CONVEYOR TANK WIPER

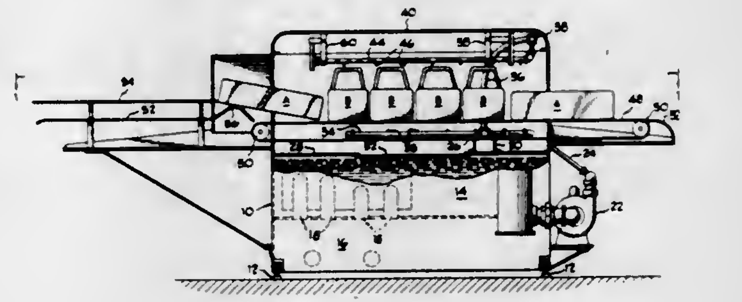
Clifford A. Dennison, Itasca, Ill., assignor to Pemco, Inc., Hampshire, Ill., a corporation of Illinois
Filed Feb. 16, 1967, Ser. No. 616,628
U.S. Cl. 134—104 **9 Claims**
Int. Cl. B65g *45/00*



An articulated or segmented apron conveyor for carrying incinerated refuse through a water quench tank and to a remote point for collection and removal. Members are secured to the underside of the conveyor in spaced depending relationship in a manner which permits the members to continuously skim ash residue from the bottom of the quench tank during operation of the conveyor.

3,426,771
WASHING MACHINE

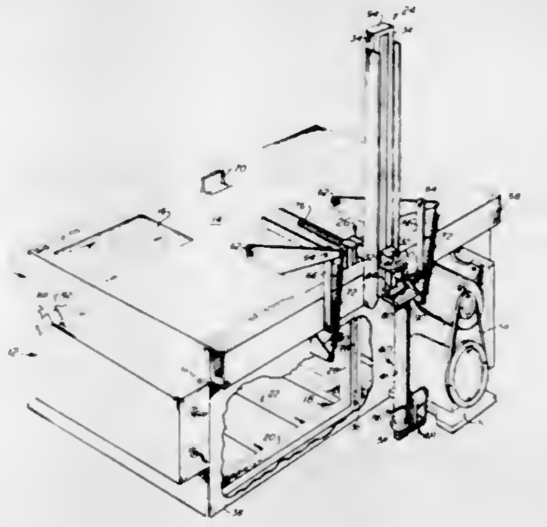
Grover C. Evans and Thomas J. Evans, Little Rock, Ark., assignors to G. C. Evans Products Corporation, Little Rock, Ark., a corporation of Arkansas
Filed Apr. 18, 1967, Ser. No. 631,663
U.S. Cl. 134—111 **3 Claims**
Int. Cl. B08b *3/02*



A machine for washing bottle-holding containers, the machine being housed in a cabinet with a reservoir for a cleaning liquid in the lower portion of the cabinet, and guide rails in the upper part of the cabinet for supporting the containers. A pump moves the heated liquid to nozzles which spray the liquid on the containers as they pass along the guide rails.

3,426,772
PARTS CLEANING MACHINE

Stephen C. Foster, Minnetonka, Minn., assignor to Practical Manufacturing Company, Hopkins, Minn., a corporation of Minnesota
Filed Apr. 6, 1967, Ser. No. 628,952
U.S. Cl. 134—141 **6 Claims**
Int. Cl. B08b *3/10*

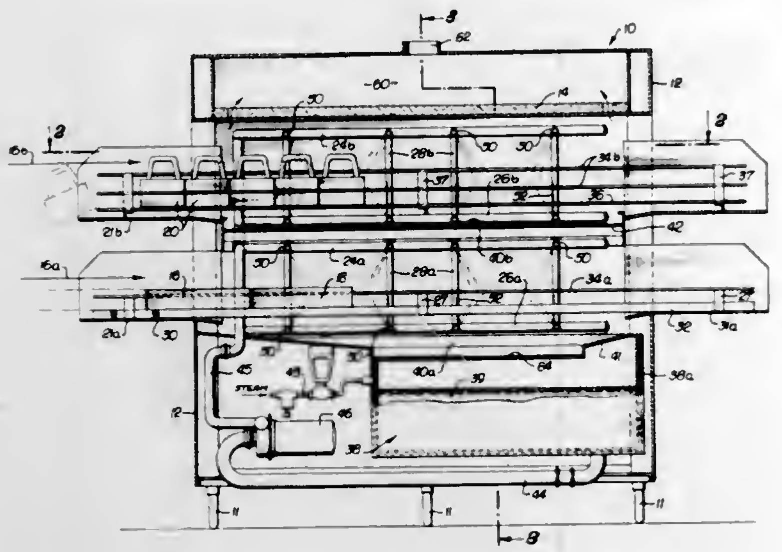


A carrier for articles to be cleaned is supported for movement in a tank of cleaning solvent. A dual purpose piston-cylinder serves (1) (when retracted) as a connecting rod between the carrier and a motor driven eccentric, and (2) (when fluid activated to extend and retract) to raise and lower the carrier for loading.

3,426,773
CASE WASHER APPARATUS

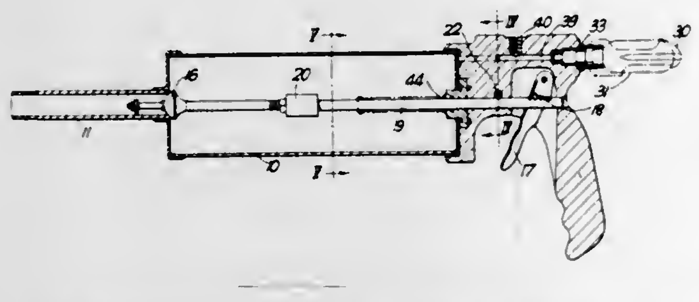
Raymond A. Yatuni, Whittier, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed June 22, 1966, Ser. No. 559,619
U.S. Cl. 134—148 **11 Claims**
Int. Cl. B67c *1/00;* **B08b** *3/08, 9/08*

A case washer of the recirculating type having a manifold for jetting cleaning solution against cases to be washed, said manifold being constructed to direct a plurality of cleaning solution spray patterns which vary transversely of the path of advancement of the cases through the washer.



3,426,774
HYDRAULIC RAMS

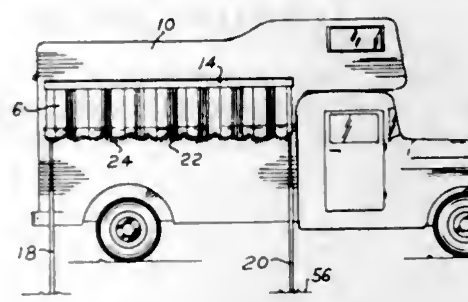
Jack Samuel Conn., Walton-on-Thames, Surrey, England, assignor to Surrey Steel Components Limited, Richmond, Surrey, England, a British company
Filed Oct. 24, 1966, Ser. No. 588,942
Claims priority, application Great Britain, Oct. 25, 1965, 45,117/65
U.S. Cl. 134—166 **2 Claims**
Int. Cl. B08b *3/02, 9/00;* **B67b** *7/24*



1. A hydraulic apparatus for use in clearing a blocked conduit through the ram effect of liquid comprising a chamber with an inlet and an outlet, a valve normally closing the outlet and manually operable for opening, support means for a compressed gas cartridge at the inlet, the cartridge having a neck entering the inlet, means for sealing the neck to the inlet, a fixed piercer within the inlet against which a portion of the cartridge is adapted to be forced for puncturing a portion of the cartridge and for conducting the gas through the inlet into the chamber, a non-return valve at the discharge end of the cartridge preventing return of the gas through the inlet in the event of the use of two cartridges, an outlet conduit leading from the outlet, a liquid inlet connection to the outlet conduit outwardly of said outlet with a non-return valve therein, the volume of the chamber and the gas contents of the cartridge being such that a pressure of 60 to 100 lbs./sq. inch is developed in the chamber when the cartridge is pierced, and spring means to urge said valve to closed position of a strength to prevent the entry of liquid from the conduit into the chamber through its outlet.

3,426,775
CAMPER TRUCK MOUNTED AWNING

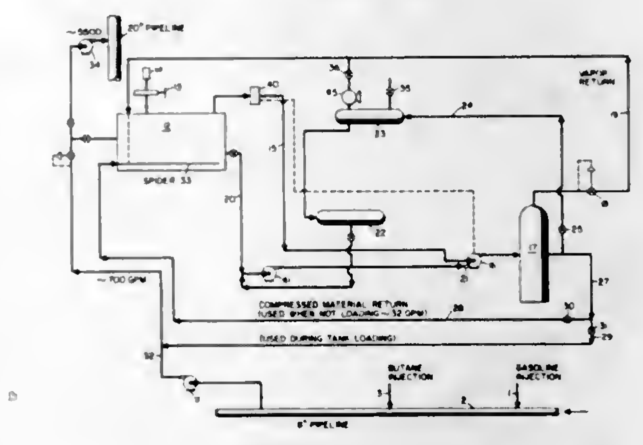
Jacob A. de Jonckheere and Ruth A. de Jonckheere, both of 3815 Melody Lane, Riverside, Calif. 92504
Filed Nov. 25, 1966, Ser. No. 596,901
U.S. Cl. 135—5 **2 Claims**
Int. Cl. E04f *10/04*



1. A camper having an awning comprising:
a horizontally disposed protective housing secured along at least one side, of the camper, and being open at the bottom thereof;
said housing having end plates provided with opposed apertures;
a first awning attaching rod detachably secured in said end plate apertures;
a second manually expansible and retractible awning attaching rod disposable under said housing;
an awning attached at its camper end to the first rod and at its outer end to the second rod and rollable thereabout; and
plural detachable awning and rod securing members supported in the outer edge of the housing and against the slide of the camper whereby the awning may be manually withdrawn from the housing to an extended position upon removal of said securing members; and retained by said securing means in the housed position during travel.

3,426,776
METHODS AND APPARATUS FOR STORAGE AND TRANSPORTATION OF VOLATILE MATERIALS

Morris W. Nicholas, Findlay, Ohio, assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Nov. 22, 1966, Ser. No. 596,277
U.S. Cl. 137—12 **10 Claims**
Int. Cl. F17d *1/16;* **B67d** *5/60*



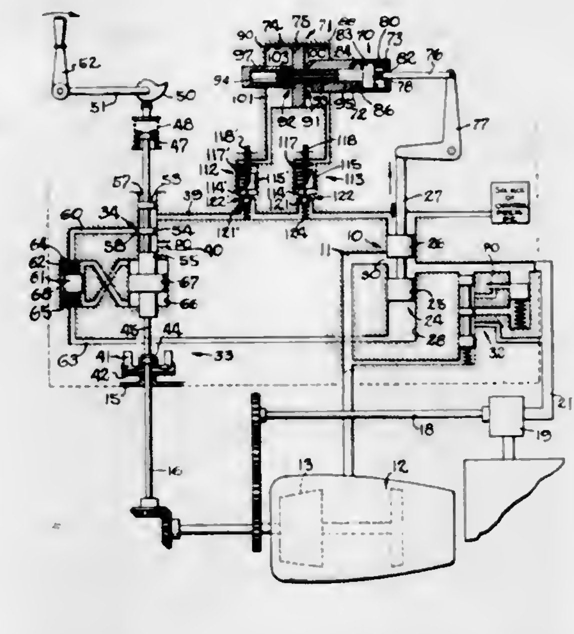
1. A system for the transportation of a highly volatile material and of a less volatile material successively through a smaller pipeline and a larger pipeline while maintaining a minimum rate of injection of materials into said larger pipeline; said system comprising in combination, an inlet to said smaller pipeline connected to a source of lower volatile hydrocarbons and a second inlet to said smaller pipeline for receiving quantities of said

more volatile hydrocarbon, a juncture point between said larger and said smaller pipeline, said juncture point being remote from either of said inlets for hydrocarbons; a storage tank having a vapor space and a liquid space and located at said juncture point, said storage tank having a pressure capacity sufficient to contain said less volatile hydrocarbon, but not sufficient to contain said more volatile hydrocarbon, means for loading said storage tank from said smaller pipeline and for unloading said storage tank at said minimum rate into said larger pipeline, and means for withdrawing vapor from the vapor space of said storage tank and returning said vapor or liquid condensed therefrom to the liquid space in said storage tank.

10. A process for the use of the system of claim 1 comprising in combination the steps of (a) injecting a less volatile hydrocarbon into a smaller pipeline, (b) injecting a more volatile hydrocarbon into said smaller pipeline at a point downstream from the point of injection of the less volatile hydrocarbon so that said more and said less volatile hydrocarbons form a mixture, (c) causing said mixture to flow into a storage tank capable of withstanding the vapor pressure of the less volatile hydrocarbon but incapable of withstanding the vapor pressure of the more volatile hydrocarbon, (d) withdrawing vapors from said storage tank at times when the vapor pressure in said storage tank exceeds a preset maximum pressure, (e) returning said vapors or liquids condensed therefrom to the liquid space in said storage tank, (f) withdrawing liquid from said storage tank at a rate substantially greater than the maximum capacity of said smaller pipeline.

3,426,777
SPEED GOVERNOR WITH RATE LIMITER

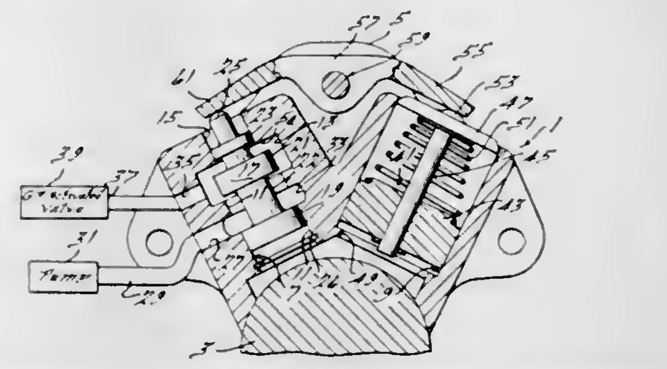
Harland C. Plummer, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 398,901, Sept. 24, 1964. This application July 17, 1967, Ser. No. 659,833
U.S. Cl. 137—18 **32 Claims**
Int. Cl. F01b *25/04;* **F01d** *17/02;* **F16k** *31/12*



A selectively adjustable all-speed hydraulic speed governor varies the energization of a fuel valve servo to maintain operation of a gas turbine at a steady state speed determined by the governor speed setting. Associated with the governor is a device which acts automatically after a wide change in the governor speed setting or a large change in load on the prime mover to permit, as illustrated in FIG. 2, rapid movement of the fuel valve to a position which is a small speed increment (*b*) short of the position determined by the newly selected speed setting, this being followed by a slow rate (*e*) of fuel change until the prime mover has been brought to the new speed (*f*). The rapid fuel changes are determined by lost motions between a member which moves in unison with the valve and stops which are of the mechanical type in the species shown in FIGS. 1 through 4 and of the hydraulic type in FIGS. 5 through 10. After a rapid movement, the movement of the member to limit the slow and progressive change in fuel flow to the new speed setting is regulated by subjecting the member to the pressure of hydraulic fluid which leaks through a rate determining orifice until the member has been returned to its steady state position.

3,426,778
CENTRIFUGAL FORCE OPERATED HYDRAULIC GOVERNOR

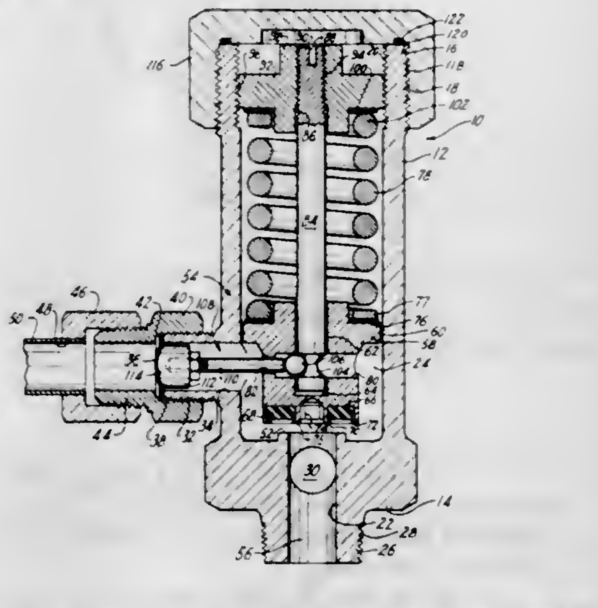
Alfred P. Blomquist, Farmington, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,449
U.S. Cl. 137—56 **5 Claims**
Int. Cl. G05d *13/10;* **G05g** *5/06*



A governor having a piston valve reciprocably mounted in a cylinder and having spaced lands for controlling the passage of fluid by the valve. The valve is under the influence of centrifugal force and a weight, also under centrifugal force, opposes the outward movement of the valve by means of a double armed lever pivoted about a point intermediate the weight and valve.

3,426,779
PRESSURE ACTUATED RELIEF VALVE

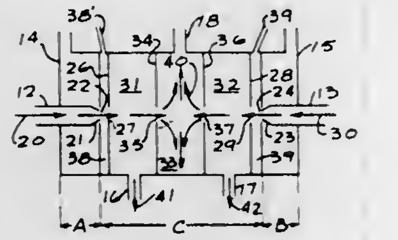
Robert C. Corbin, Pittsburgh, Pa., assignor to Kerotest Manufacturing Corp., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1967, Ser. No. 614,653
U.S. Cl. 137—68 **8 Claims**
Int. Cl. F16k *17/40, 13/04*



Apparatus for venting a container above a predetermined pressure by rupturing a frangible disc and thereafter sealing the container at a lower pressure to retain at least a portion of the material in the container at the lower pressure. A valve member is positioned in a passageway between inlet and outlet ports of a valve housing. The valve is maintained in an open position against the urging force of a spring by a latching means. The latching means is controlled by the frangible disc so that it is disengaged upon rupture of the frangible disc. The passageway between the inlet and outlet ports of the valve housing remains open so that the frangible disc is subjected to substantially the same pressure as that in the container.

3,426,780
PURE FLUID PUSH-PULL SUMMING AMPLIFIER OF THE IMPACT TYPE

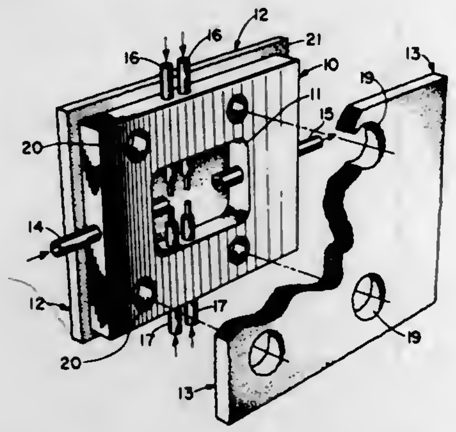
Samuel A. Gray, Sun Valley, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 562,338, July 1, 1966. This application Sept. 16, 1966, Ser. No. 579,973
U.S. Cl. 137—81.5 **12 Claims**
Int. Cl. F15c ***1/14***



Disclosed is a fluidic amplifier which utilizes the impact type proportional amplifier principle, both direct and transverse, to provide a push-pull output signal which is proportional to the difference between the momentum flux of the impacting input streams.

3,426,781
FLUID LOGIC DIFFUSION UNIT ASSEMBLY

Herbert A. Neuman, Wrentham, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Jan. 20, 1967, Ser. No. 610,678
U.S. Cl. 137—81.5 **5 Claims**
Int. Cl. F15c ***1/14***

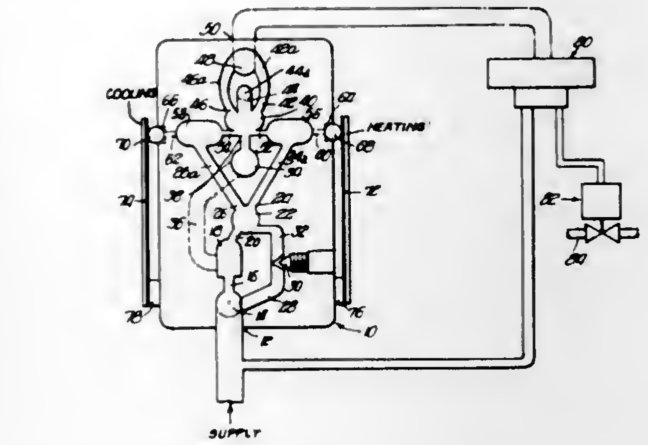


A fluid logic diffusion unit with an operating chamber walled by porous material to provide fluid escape while protecting the unit from external disturbance.

3,426,782
FLUID CONTROLLING UNIT

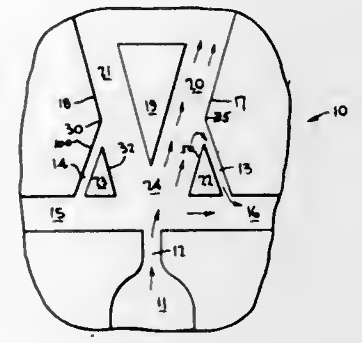
David H. Thorburn, Oak Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed Jan. 7, 1966, Ser. No. 519,204
U.S. Cl. 137—81.5 **9 Claims**
Int. Cl. F15c ***1/14, 3/09;*** **G05d** ***23/275***

A fluid amplifier for providing signals proportional to sensed temperature conditions, selectively operable during both heating and cooling cycles. An inlet port is selectively connected to high and low pressure sources, the low pressure being used during heating and the high during cooling. A first orifice normally projects a first stream into a second orifice. Adjustable deflector means are provided to deflect the first stream into a third orifice when the high pressure source is used. A fourth orifice, also connected to a supply, provides a signal stream which normally exhausts to atmosphere, but which may be selectively switched to either of two signal orifices. During the heating cycle the first stream, which is in the second orifice, is directed against the signal stream by a second deflector means to deflect the signal stream into one of the signal orifices. During cooling the first stream, which has been switched to the third orifice, is directed by a third deflector means against the signal stream to switch it into the other signal orifice. Temperature responsive means are provided for each of the second and third deflector means to vary the momentum of the first stream in a manner proportional to the sensed temperature. Thus, the signal stream is deflected from atmosphere to one of the signal orifices in a manner which is likewise proportional to the temperature.



3,426,783
HIGH IMPEDANCE DIGITAL AMPLIFIER

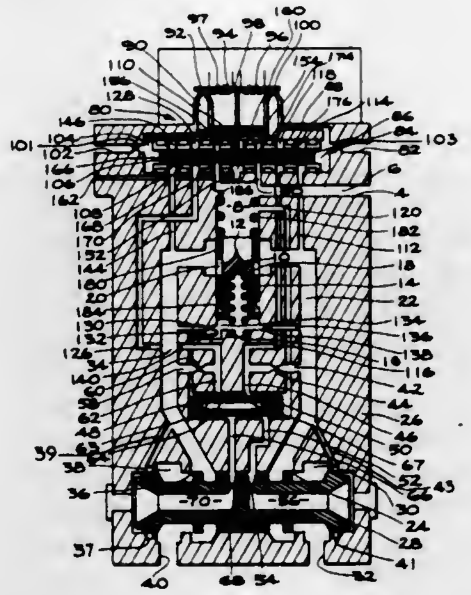
Carl J. Campagnuolo, Chevy Chase, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 26, 1967, Ser. No. 634,809
U.S. Cl. 137—81.5 **6 Claims**
Int. Cl. F15c ***1/00***



A digital fluid amplifier is provided with high impedance characteristics by having a slot communicate part of the fluid in the output channel with the control channel. The fluid in the control channel is vented to atmosphere creating a low pressure region in the interaction chamber adjacent the control channel. This draws the power stream to the side wall adjacent the control channel improving the lock-on of the power stream to the side wall. The fluid exhausting from the control channel to atmosphere provides high impedance characteristics for the fluid amplifier and improves the gain thereof.

3,426,784
FLOW EQUALIZER AND PROPORTIONER VALVE

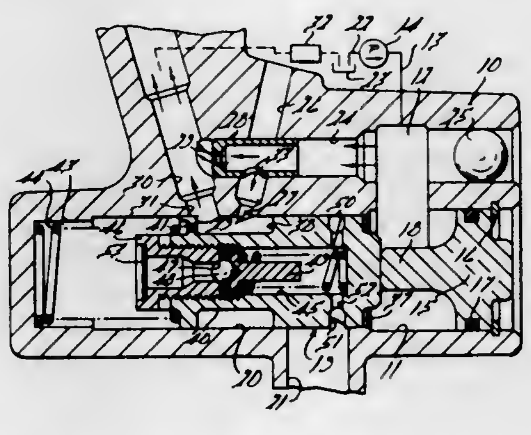
Ralph L. Vick, Granada Hills, Calif., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,713
U.S. Cl. 137—99 **6 Claims**
Int. Cl. G05d ***11/035, 16/20;*** **F16k** ***11/02***



A flow equalizer valve structure including a pair of equal area orifices for dividing inlet flow into two paths, and a multiland spool valve connected between the paths and across the outlets to each path to control its effective orifice area. A second spool is connected between each of the paths and conduits connecting each end of the first spool such that it senses pressure differentials between said paths and moves to adjust compensating fluid pressures acting on the ends of the first spool to cause it to seek a position adjusting flow across the outlet orifices until the pressures are equal. A servo valve connected in the inlet also has fluid connections to the second spool to cause the second spool to be positioned to provide a desired proportional flow across the outlet orifices. The valve is also reversible to combine two flows into a single flow in equal quantities or a desired proportion.

3,426,785
POWER STEERING FLOW CONTROL DEVICE

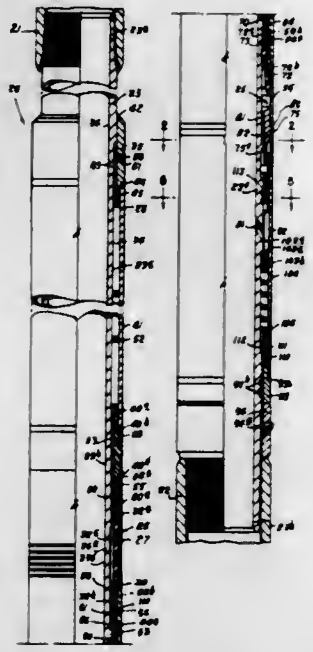
Charles E. Brady, Bloomfield Hills, and Christopher Nuss, Warren, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,236
U.S. Cl. 137—117 **11 Claims**
Int. Cl. F15b ***9/08***



A fluid flow control device for an automobile power steering gear comprises a pressure operated valve spool shiftable axially in a housing having a valve port and a bypass port connected respectively with a pump outlet and inlet. A bypass land on the spool controls bypass flow from the pump outlet to the pump inlet in excess of the steering requirements. The pump outlet also communicates with an upstream surface area of the spool to urge axial bypass opening movement of the latter to increase the bypass flow between the valve port and bypass port, and communicates via a metering orifice and a parallel second orifice with the high pressure side of the steering gear. The latter also communicates with a downstream surface area of the spool via a restricted trigger orifice to cooperate with a valve biasing spring to oppose said bypass opening movement, such that the pressure differential across the metering orifice is a constant determined by the reaction of the biasing spring. A second land on the valve spool operates to restrict the second orifice and thereby reducing the fluid flow to the steering gear upon said bypass opening movement corresponding to a predetermined high speed operation of the pump. A pressure relief valve in communication with said downstream surface area operates to exhaust fluid pressure therefrom at a predetermined maximum safe operating pressure, whereby in consequence of the restricted trigger orifice, a small pressure relief flow from the downstream surface area results in a large pressure drop thereat and a corresponding large increase in said bypass flow.

3,426,786
GAS LIFT VALVE

Carlos R. Canalizo, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,389
U.S. Cl. 137—155 **15 Claims**
Int. Cl. F04f ***1/20;*** **E21b** ***43/00***

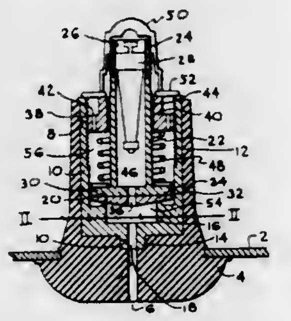


An annular gas lift valve having a central longitudinal flow passage, a lifting fluid pressure responsive valve, and a tubing or fluid pressure responsive valve, in series, for controlling admission of lifting fluid in the longitudinal flow passage of the valve.

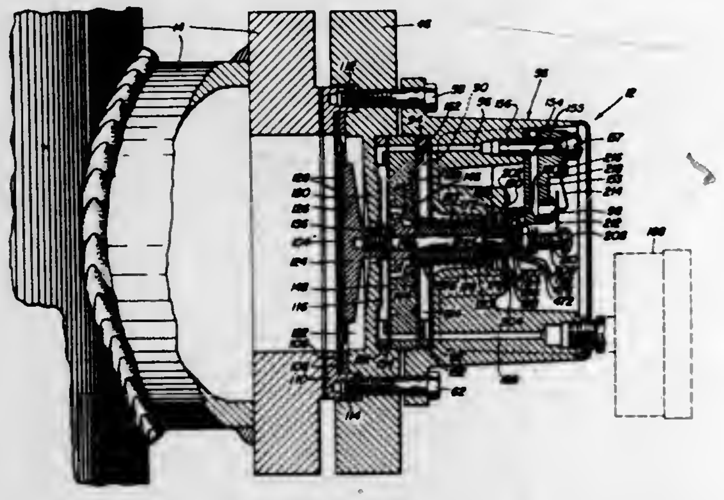
3,426,787
TIRE VALVE ASSEMBLY

Leonard H. Fuller, 6011 Drexel Road, Cordova W., Pensacola, Fla. 32504
Filed Mar. 21, 1967, Ser. No. 624,818
U.S. Cl. 137—226 **10 Claims**
Int. Cl. F16k ***15/20, 17/168, 11/04***

A valve for preventing blowouts due to excess tire pressure utilizing a conventional tire inflation stem and check valve arranged for sliding movement in a cylinder having a valve seat at its lower end engageable with a valve member at the lower end of the stem. The cylinder carries substantially completely therewithin an adjustment plug screw-threadedly engaged with the inner surface of the cylinder and compressing a coil spring which seats the valve member against the valve seat. Porting is around the valve member and through ports in the adjustment plug to provide for release of air at a greater rate than normal tire inflation to cope with the almost instantaneous type of pressure buildup encountered with aircraft landings.

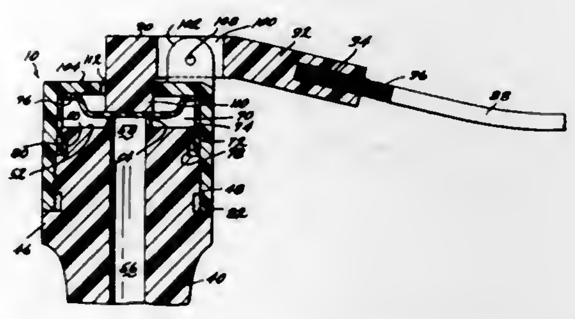


3,426,788
FLUID REGULATING APPARATUS
William W. Bassett, Wyncote, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Original application June 24, 1964, Ser. No. 377,562. Divided and this application Aug. 15, 1966, Ser. No. 590,116
U.S. Cl. 137—270 **5 Claims**
Int. Cl. G05d *9/00;* **F16k** *17/40, 21/18*



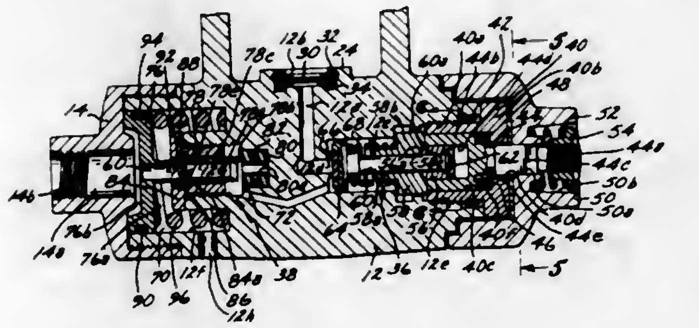
1. A liquid level regulating apparatus, comprising a unitary direct-reverse acting force balance transmitter for generating a control pressure, comprising a first flexible diaphragm forming a side wall portion of a vessel constructed to produce different amounts of force in response to changes in the height of a liquid in the vessel applied thereto, a rebalancing diaphragm spaced from the first flexible diaphragm, a diaphragm plate in physical contact with one side of the rebalancing diaphragm, a spring positioned to apply a force to the rebalancing diaphragm that opposes the movement of the first flexible diaphragm, a fluid pressure valve regulating means constructed for selective retention in a direct or a reverse operating position and for joint movement with the diaphragms, said valve regulating means being operable when positioned in a first one of the operating positions to produce an output fluid pressure of increasing magnitude on one side of the rebalancing diaphragm upon an increase in the magnitude of the pressure applied to the first flexible diaphragm, the rebalancing diaphragm being positioned on the other side of the diaphragm plate when the valve regulating means is retained in its other position, the valve regulating means being further operable when retained in its other position to produce an output pressure of decreasing magnitude on the rebalancing diaphragm upon an increase in the magnitude of the pressure applied to the first flexible diaphragm, a valve connected to a fluid transferring passageway to regulate the liquid level of the liquid retained within the vessel, a fluid pressure actuator having a diaphragm and diaphragm plate means operably connected for movement with the valve, a liquid level regulating unit comprising an adjustable first and second chamber, a common diaphragm forming a flexible wall portion between the first and second chamber, a second diaphragm forming a second flexible wall portion of the first chamber, a connecting rod extending out of the first chamber at one end and into a second chamber at its other end, a spring positioned in the second chamber, one of the ends of the spring being connected for movement with the rod, the other end of the spring being positioned to apply a force to the actuator diaphragm forming a second wall of the second chamber, a bleed valve in the second chamber operably connected for movement with the rod to regulate the magnitude of a control pressure that is applied to the second chamber, a passageway to transmit the output fluid pressure of the transmitter to the first chamber, a manually-adjustable dial mounted for movement on a stationary member, a spring positioned between the dial and the diaphragm plate, the rotation of the dial to a selected position in one direction being operable to compress the spring and to alter the magnitude of the control fluid pressure in the second chamber in a first direction, and the rotation of the dial in an opposite direction being operable to progressively release the compressive force on the spring and to alter the magnitude of the control fluid pressure in the second chamber in an opposite direction.

3,426,789
FLUID FLOW CONTROL DEVICE
Hugh M. Connealy, Los Angeles, Calif., assignor to Gardena Rubber Company, a corporation of California
Continuation-in-part of application Ser. No. 354,871, Mar. 26, 1964. This application Feb. 1, 1965, Ser. No. 429,538
U.S. Cl. 137—451 **3 Claims**
Int. Cl. F16k *7/16;* **E03d** *1/32, 1/33*



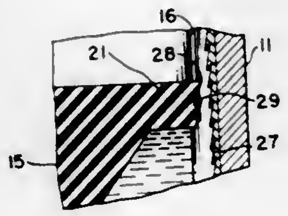
1. A float-actuated flow control device comprising: a head member having an outer periphery and an upper face; inlet and outlet ports in said upper face in side-by-side spaced relation; a flexible diaphragm of inverted cup shape having its side wall embracing said outer periphery and its upper wall overlying said upper face; a substantially rigid inverted cup shaped cap having its side wall embracing said side wall of said diaphragm and clamping the same against said outer periphery, said cap side wall being secured to the outer periphery of said head member; the upper wall of said cap having an opening therethrough aligned with said inlet port; a float-actuated arm pivoted to the top of said cap upper wall and having a plunger portion extending downwardly through said opening for pressing said diaphragm over said inlet port and closing the same when said arm is pivotally swung in one direction; a circumferential groove in said outer periphery, said diaphragm side wall having an inwardly directed annular flanges lockingly engaged in said groove, said cap side wall extending downwardly past said annular flange.

3,426,790
SOURCE OF REGULATED PRESSURE AND PRESSURE REGULATOR FOR USE THEREIN
Leland S. Dey, Huntington Beach, Calif., assignor to U.S. Divers Company, Santa Ana, Calif., a corporation of California
Filed Jan. 5, 1965, Ser. No. 423,471
U.S. Cl. 137—505.18 **2 Claims**
Int. Cl. G05d *16/16;* **F16k** *31/38;* **A61m** *16/02*



This invention teaches a highly sensitive pressure regulator having a balanced piston which carries a hollow stem integrally formed therewith. Said stem cooperates with a relatively stationary valve seat for controlling the flow of fluid pressure, and said piston is formed with a relatively thick or heavy marginal portion for cooperation with a cylinder chamber while the intermediate portion of such piston is relatively thin for increasing the response of such piston to variations in pressure.

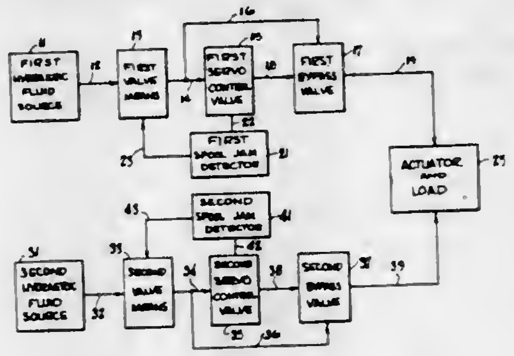
3,426,791
SLOSH ALLEVIATOR
Wallace J. Nelson, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 8, 1967, Ser. No. 621,714
U.S. Cl. 137—582 **7 Claims**
Int. Cl. E03c *1/18*



The combination of a liquid container adapted to transport liquid from one site to another and a floating slosh and swirl alleviator carried on the surface of the liquid wherein a retention mechanism will maintain and guide the floating slosh alleviator on the liquid surface as the surface moves relative to the top of the tank and will minimize liquid vibration, agitation, slosh and swirl when shock inducing forces are imparted to the container and as the liquid is drained therefrom.

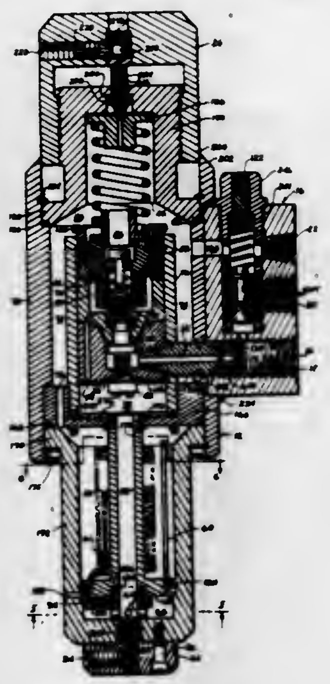
3,426,792
APPARATUS FOR DETECTING SLIDABLE MEMBER SEIZURE AND AUTOMATICALLY DISABLING THE SAME
Derek Wood, Sun Valley, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,435
U.S. Cl. 137—596.12 **7 Claims**
Int. Cl. F15c *3/14;* **F16k** *31/42, 37/00*

Disclosed is a detector unit which detects spool valve seizure to the wall of the cylinder within which it is slidably disposed. Upon the occurrence of the seizure, apparatus is actuated which renders the spool valve ineffective for the purposes intended. As disclosed, the spool


FIRST HYDRAULIC FLUID SOURCE
FIRST VALVE MEANS
FIRST SERVO CONTROL VALVE
FIRST BYPASS VALVE
FIRST SPOOL JAM DETECTOR
ACTUATOR AND LOAD
SECOND SPOOL JAM DETECTOR
SECOND HYDRAULIC FLUID SOURCE
SECOND VALVE MEANS
SECOND SERVO CONTROL VALVE
SECOND BYPASS VALVE

valve is the control valve of an electro-hydraeric servo valve. Also as disclosed, upon seizure of the spool valve fluid pressure is removed from the system and the output of the spool valve is bypassed.

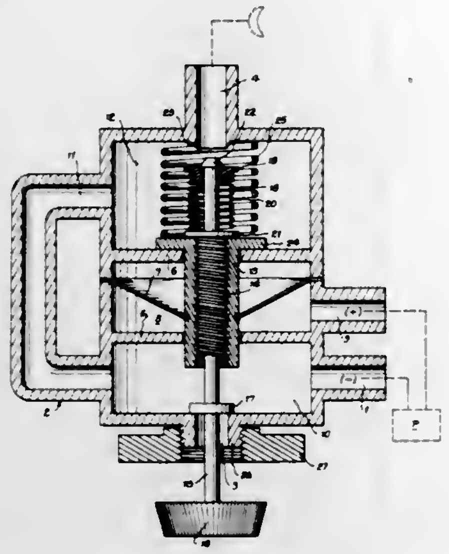
3,426,793
BALANCED CONTROL FOR METERED FLOW WITH SERIALLY ARRANGED PRESSURE REGULATING VALVE AND RESTRICTOR TUBES
William F. Klemm, Nutley, and Hans Alber, Mountainside, N.J., assignors of one-third to Henry B. Peter, Union, N.J.
Filed Dec. 20, 1965, Ser. No. 514,809
U.S. Cl. 137—599 **10 Claims**
Int. Cl. F16k *47/12;* **G05d** *16/02, 16/06*



For adjustable slow flow a friction tube is used which is large enough in bore to avoid clogging, and long enough to produce the desired slow flow. The flow is accurately regulated by adjusting a pressure regulator ahead of the restrictor tube. The regulator is balanced to accommodate wide variations in supply pressure. The restrictor comprises a cluster of collateral restrictor tubes, all terminating at one end of a flat circular header. A rotatable sector valve is slidable on the header and is moved by a control knob for making effective desired ones of the restrictor tubes, while blocking the others. The diaphragm assembly has a safety valve which opens under excessive pressure which might injure the diaphragm.

3,426,794
CONTROL APPARATUS FOR BREATHING APPARATUS

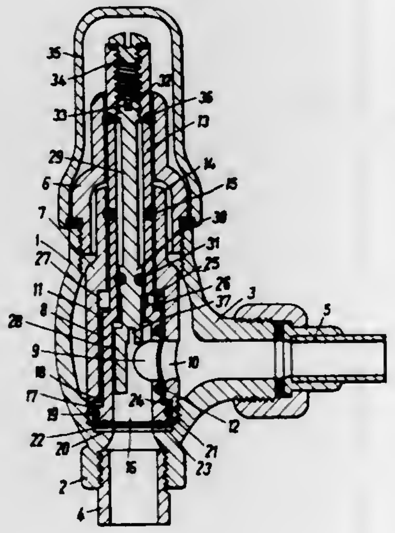
Klaus Freytag, Lubeck, Germany, assignor to Otto Heinrich Drager, Lubeck, Germany
Filed Sept. 26, 1966, Ser. No. 582,005
Claims priority, application Germany, Sept. 29, 1965, D 48,312
U.S. Cl. 137—607 **6 Claims**
Int. Cl. A62b *9/02, 7/00*



In a breathing apparatus, a control valve is placed in the exhaled air line between the face mask and positive and negative pressure pump. This valve is adjustable so that the resistance to exhaling of air is increased and some air remains in the lungs. The following positive inhaling pressure then produces the effect of a deep breath in the patient.

3,426,795
ADJUSTABLE STOPCOCK

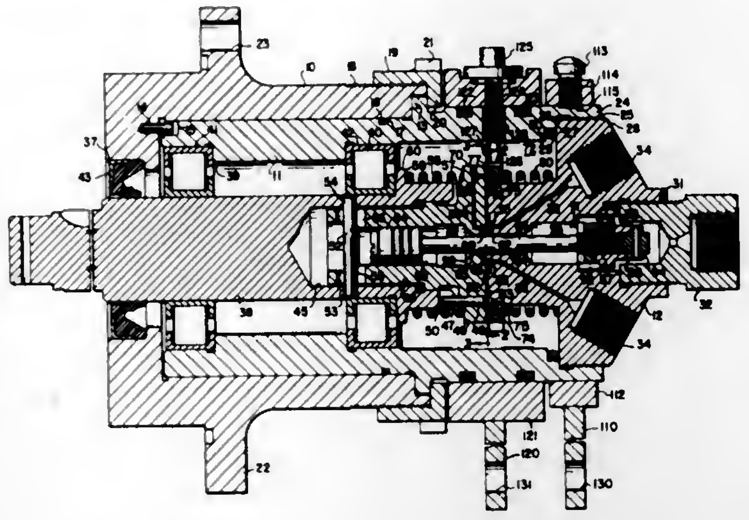
Adolf Muller, Gerberngasse 26, Bern, Switzerland
Filed Sept. 16, 1965, Ser. No. 487,723
Claims priority, application Switzerland, Sept. 17, 1964, 12,094/64
U.S. Cl. 137—614.17 **7 Claims**
Int. Cl. F16k *5/10, 5/04*



A stopcock having a hollow cylindrical member fitting into a bore formed in an outer member with flow openings being formed through said members which are aligned when the stopcock is open. The outer surface of the cylindrical member and the bore define an annular space and a sealing member is disposed in said space.

3,426,796
CONTROL VALVE PRESSURIZING PORT

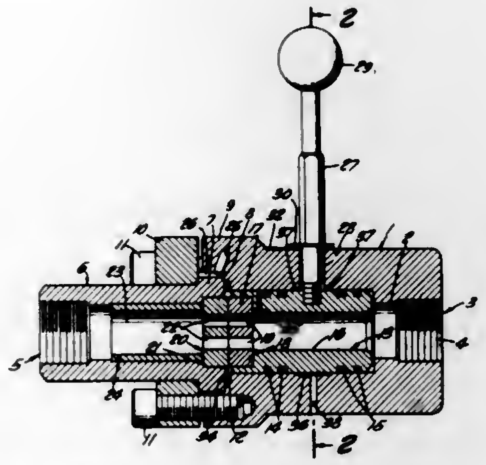
Richard P. Heintz and Robert D. Vanderlaan, Kalamazoo, Mich., assignors to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 503,490, Oct. 23, 1965. This application Oct. 14, 1966, Ser. No. 586,875
U.S. Cl. 137—625.21 **5 Claims**
Int. Cl. F16k *11/06;* **F01l** *7/06*



A fuel control valve having fuel inlet and outlet passages and a pressure plate formed with a dump passage for sequentially communicating each of the outlet passages with an area of low pressure for initiating the fuel injection cycle. Also formed in the pressure plate is a pressure port for establishing continual communication between the fuel inlet and the dump passage for preventing a premature drop in pressure in the fuel outlet passages.

3,426,797
MULTIPLE ORIFICE VALVE

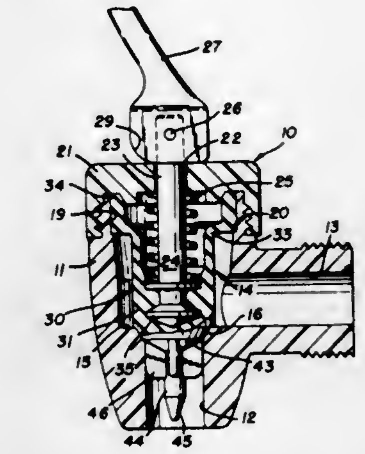
William J. Baker, Garden Grove, Calif., assignor to Willis Oil Tool Co., Long Beach, Calif., a corporation of California
Filed Oct. 20, 1965, Ser. No. 498,755
U.S. Cl. 137—625.31 **6 Claims**
Int. Cl. F16k *3/08, 3/30*



A fluid flow control valve having an axially aligned inlet and outlet with relatively rotatable flow controlling disks in face engagement containing respectively a pair of similarly positioned diametrically opposed orifices, a cylindrical disk carrier fixedly mounting one of the disks having a central passage containing a separate sleeve liner connecting the disk orifices with the outlet, a rotatable cylindrical disk carrier mounting the other disk and having an actuator handle extending outwardly through an arcuate slot in the valve body, this carrier being sealed on opposite sides of the slot and the body being grooved between the seals and provided with a drain port, the rotatable carrier having a central passage connecting its disk orifices with the inlet and being connected through a port passage with an annular chamber extending about the interface of the disks.

3,426,798
RESILIENT SEAT CUP WITH FINS

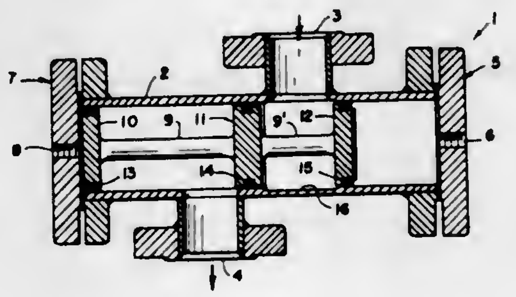
John A. Chernak, Lyndhurst, Ohio, assignor to Tomlinson Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 13, 1966, Ser. No. 579,140
U.S. Cl. 137—625.33 **6 Claims**
Int. Cl. B67d *3/00;* **F16k** *1/06, 1/12*



Disclosed is a faucet for use in the dispensing of beer or other carbonated beverages. The faucet is defined by a faucet body having inlet and outlet ports. A fluid passageway in the faucet body interconnects the ports and a seal chamber is defined intermediate the ends of the passageway. A sealing seat is defined in the seal chamber. A resilient seat cup is disposed in the seal chamber having one end thereof fixed with respect to the faucet body. A stem protrudes from the seat cup and in cooperation with a faucet handle provides actuating means for moving the end of the seat cup into and out of engagement with the sealing seat. A plurality of angularly spaced depending fins radiate from the longitudinal axis of the seat cup at the sealing end thereof. The fins extend into the outlet port and cooperate with the walls of the port to divide the port into a plurality of flow paths to thus reduce the tendency of the liquid to spin or turn as it passes from the faucet. A cylindrical tip depends from the seat cup and extends below the fins in order to break the surface tension of any liquid which may be retained in the faucet to thus eliminate afterdrip.

3,426,799
AUTOMATIC VALVE

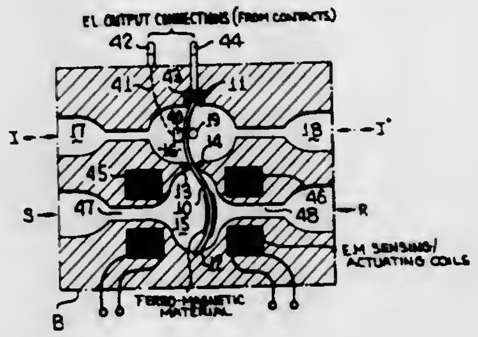
Edwin K. Kintner, Pittsburgh, Pa., assignor to Kinwell Development Company, Johnstown, Pa.
Filed Oct. 7, 1964, Ser. No. 402,099
U.S. Cl. 137—625.48 **3 Claims**
Int. Cl. F16k *11/07, 31/143, 3/22*



1. A valve for controlling high volume flow of liquid under high pressure comprising a cylindrical valve body having an inlet opening at the side thereof of a diameter of at least ⅓ of that of the valve body and having a correspondingly sized, longitudinally spaced, outlet opening, a valve stem, coaxially disposed in said valve body, having three longitudinally spaced pistons rigidly secured thereto having diameters several times that of said valve stem, the intermediate piston having a peripherally extending grooved seat, an O-ring having a cross-section of about one inch in diameter of a material of about 90 durometer hardness under tension while in said seat and projecting beyond the perimeter of said intermediate piston to form a liquid-tight seal with said valve body, said intermediate piston and O-ring being movable across the entire width of only said inlet opening against the high incoming pressure thereof so as to become confined against expansion and thus prevent abnormal wear thereof as a consequence of such movement, said intermediate piston cooperating with a seat formed on the inner wall of said valve body between said outlet and inlet openings to a consequence of such movement, said intermediate piston being spaced from one of said other pistons by a distance substantially the same but greater than the width of said inlet opening and being longitudinally movable by said stem to a position beyond said inlet opening to permit maximum flow through said inlet and outlet openings, and means for selectively introducing fluid under pressure between another of said pistons and the end wall of said valve body to effect said movement of said valve stem.

3,426,800
BISTABLE FLUID VALVES

Peter Bauer, Germantown, Md., assignor to Bowles Engineering Corp., Silver Spring, Md., a corporation of Maryland
Filed Oct. 15, 1965, Ser. No. 496,307
U.S. Cl. 137—608 **19 Claims**
Int. Cl. F15c *3/04;* **F16k** *11/24, 7/14*


EL OUTPUT CONNECTIONS (FROM CONTACTS)
42
44
41
43
11
40
19
14
I
17
18
I'
45
13
46
S
47
10
48
R
15
E.M. SENSING/ ACTUATING COILS
FERRO-MAGNETIC MATERIAL
B

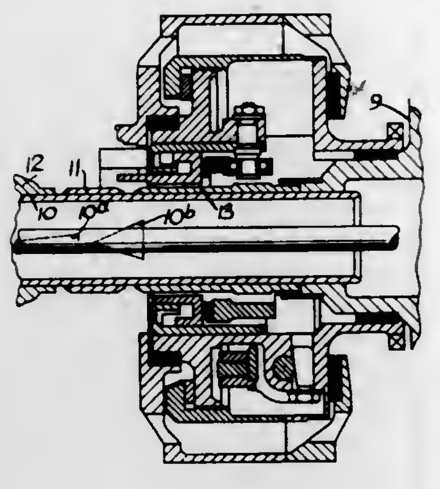
A pre-stressed leaf spring is constrained at its ends so as to be capable of assuming either of two stable configurations to and from which it may be switched upon application of pressure across its thickness. The spring includes ferromagnetic material so that it may be electromagnetically switched between its stable state, or, alternatively, so that its stable states may be sensed electromagnetically. The spring may be electrically conductive so that an electrical circuit is opened or closed in accordance with the position of the spring. In a preferred embodiment the spring is substantially S-shaped, compressed at its ends and pivoted at its center with opposite halves of the S extending through different fluid isolated chambers.

3,426,801
VARIABLE FLOW METERING DEVICES

John Patrick Stewart Curran, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 20, 1966, Ser. No. 566,532
U.S. Cl. 138—46 **2 Claims**
Int. Cl. F16k *3/34, 3/26*

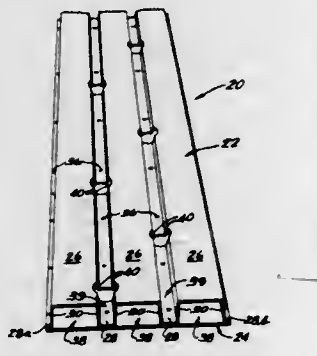
1. A variable flow fluid metering device comprising an inner tube, a pair of fixed outer sleeves within which the

inner tube is slidable axially, a movable outer sleeve coaxial with and disposed between the mutually presented ends of the fixed outer sleeves, said movable outer sleeve also being axially slidable relatively to the inner tube, the inner tube having two axially spaced axially tapering openings of different circumferential dimensions and of equal lengths, the length of the movable outer sleeve being equal to the distance between the wider ends of the two openings respectively, one of the mutually presented pairs of ends of the fixed and movable sleeves having different radial depth to the radial depth of the other of the pairs of ends, the pair with the smaller radial depth being arranged to be adjacent to the opening with the wider circumferential dimension at its wider end, and when the spaces between the movable and the respective fixed sleeves are equal, the relationship between the exposed areas of the openings and the radial depths of the sleeve ends tends to create a balance of forces acting axially upon the movable sleeve at opposite ends thereof.



3,426,802
METAL RACEWAY SECTION

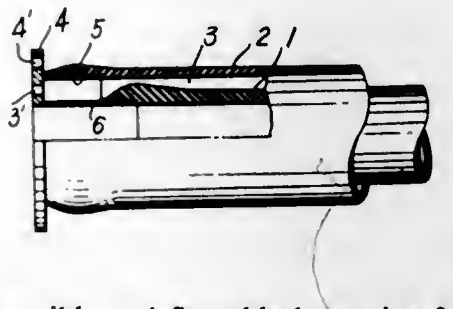
Frank W. Fork, Allison Park, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 587,509, Oct. 18, 1966. This application Mar. 24, 1967, Ser. No. 625,755
U.S. Cl. 138—92 **7 Claims**
Int. Cl. E04b *5/48;* **E04f** *17/08, 19/08*



A metal raceway section of the type embedded in a concrete floor construction to provide plural enclosed cells and serve in electrical wiring distributing systems. The enclosed cells remain active as passageways for electrical wiring which may be installed prior to or after the completion of the floor construction. Pairs of factory installed opposed openings are formed at certain locations in the raceway section, each pair of openings permitting relatively easy access through the concrete and simultaneously to the interiors of selected adjacent cells at one location in the raceway section.

3,426,803
SUBMERGED FLOATABLE HOSES FOR TRANSPORTING OIL AND OTHER LIQUIDS ON THE SEA

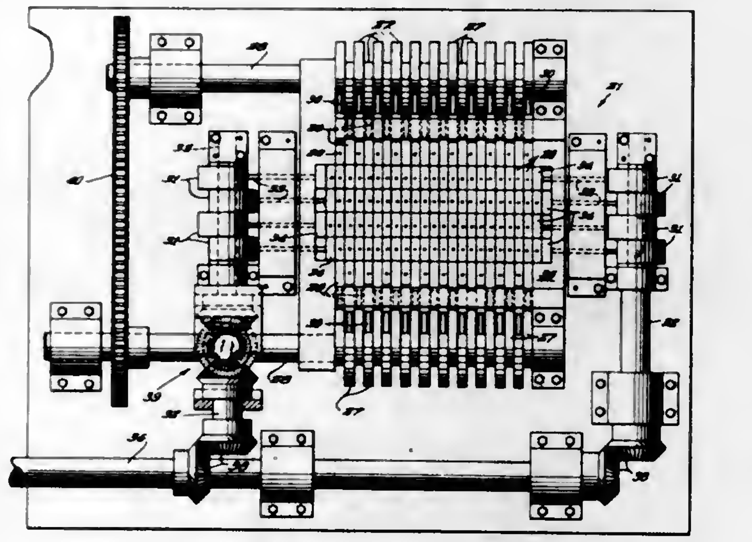
Ryosuke Kikukawa, Yokohama, Japan, assignor to Bridgestone Tire Company Limited, Tokyo, Japan, a corporation of Japan
Original application Feb. 6, 1964, Ser. No. 342,900, now Patent No. 3,346,015, dated Oct. 10, 1967. Divided and this application Apr. 24, 1967, Ser. No. 633,090
Claims priority, application Japan, Feb. 13, 1963, 38/9,045, 38/9,046
U.S. Cl. 138—114 **4 Claims**
Int. Cl. F16l *9/12, 11/12;* **B65b** *27/24*



A submergible and floatable hose pipe for transporting liquid comprising two coaxially positioned flexible hoses forming a sealed annular air space therebetween, the inner hose serving as a liquid carrier, the outer hose maintaining said air space between the said hoses to form a floatation means, a coupling means on each end of said hose pipe comprising a sleeve connected to the end of the inner hose and a flange to be connected to the flange of other hose pipe, and means for introducing fluid into the air space.

3,426,804
HIGH SPEED BIAS WEAVING AND BRAIDING

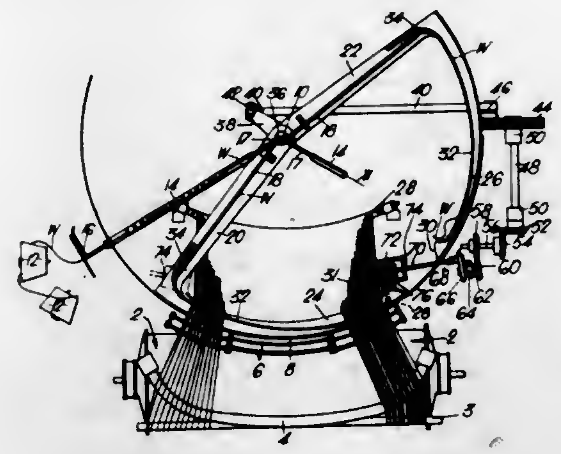
Raymond M. Bluck, Winona, Minn., assignor to Product & Process Development Associates, Inc., Winona, Minn., a corporation of Minnesota
Filed Dec. 20, 1966, Ser. No. 603,304
U.S. Cl. 139—11 **19 Claims**
Int. Cl. D03d *49/20, 41/00;* **D04c** *5/06*



Continuous high speed bias weaving and braiding, with or without longitudinal weaving elements, and with the angle of the bias elements extending selectively from nearly perpendicular to nearly parallel to the weaving direction. Each bias element runs through an individual mobile guide member in a nest of such members cooperatively controlled to follow given weaving pattern paths.

3,426,805
LOOMS

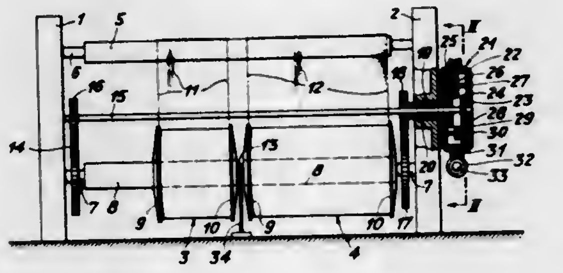
Derrick Walter Shimwell, Jurby, Isle-of-Man, England, assignor to Weaving Research & Textile Commission Agents Limited, Jurby, Isle-of-Man, England, a British company
Filed Mar. 23, 1967, Ser. No. 625,479
Claims priority, application Great Britain, Mar. 30, 1966, 14,099/66
U.S. Cl. 139—12 **16 Claims**
Int. Cl. D03d *41/00, 47/00;* **D03j** *1/22*



A loom of the type in which two weft yarns are carried into a warp shed from opposite sides from stationary weft supplies thereof by reciprocated spears which follow each other across the warp shed and in which the warp threads are shedded progressively across the warp between the said spears as they pass between the warp threads so that the weft threads can be laid in different sheds wherein the spears are arcuate and reciprocated in an arcuate path about an axis which is substantially perpendicular to the plane of the mean position of the warp shed at the fell along the arcuate path so that weft threads inserted into the warp lie in the cloth in an arc.

3,426,806
WARP LET-OFF MOTION

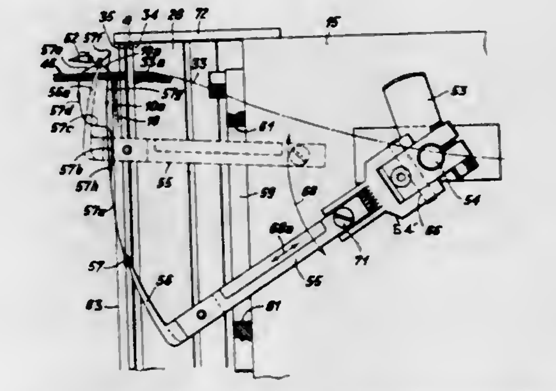
Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Apr. 13, 1967, Ser. No. 630,759
Claims priority, application Switzerland, Apr. 13, 1966, 5,341/66
U.S. Cl. 139—101 **6 Claims**
Int. Cl. D03d *49/06, 48/10;* **D04b** *27/12*



There is disclosed a warp let-off motion for the let-off of warp threads from a plurality of warp beams which may have equal or unequal numbers of threads thereon, the let off maintaining as desired either equal or unequal tensions in the warps from the individual beams. The let-off motion includes a differential gear train. The let-off motion proper is applied through a non-reversing worm and worm gear to the cage of this differential and each of the beams is coupled directly or indirectly to one of the other driving points of the differential. A transmission, in the form of gears or sprockets for example, having a non-unity drive ratio between its two ends, is connected between one of the beams and the addition of motions in the differential, this transmission being thus either inside or outside the differential. By means of this non-unity drive ratio, equilibrium in the differential may be established for unlike torques at two of the warp beams. Plural such arrangements may be provided to permit maintenance of two different torques among three or more beams.

3,426,807
LOOM

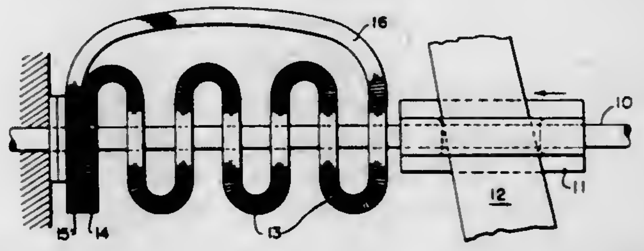
Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed May 26, 1967, Ser. No. 641,664
Claims priority, application Switzerland, May 27, 1966, 7,790/66
U.S. Cl. 139—122 **5 Claims**
Int. Cl. D03d *47/48;* **D03j** *1/22*



There is disclosed, in a loom of the gripper shuttle type including tuck-in needles for tucking into the edge warps of the shed the cut-off ends of the weft so as to form selvages, a mechanism for moving the needles between a rearward, lowered position wherein they penetrate the shed to perform their tuck-in function substantially in the weaving plane and a raised, forward position where they are out of the way of the reed and are also high enough to clear a temple extending across the entire width of the fabric. There is also disclosed such a temple, comprising a bar extending crosswise of the loom, a cover plate defining with the bar a slot also extending crosswise of the loom, and a rod disposed in that slot and around the major portion of whose periphery the cloth is led, to be gripped between the rod and the mouth of the slot when the cloth is tightened and to be released when the cloth is slackened, as at beat-up by the reed.

3,426,808
BUMPER FOR PICKER STICK CONTROL

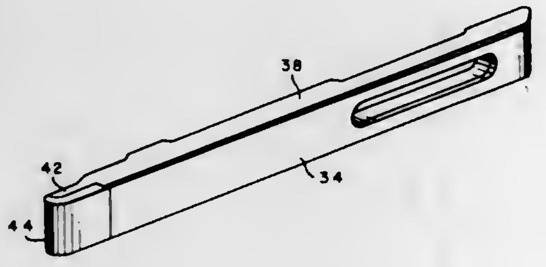
Chester R. Messer, Concord, N.H., assignor to Page Belting Company, Concord, N.H., a corporation of New Hampshire
Filed May 29, 1967, Ser. No. 642,014
U.S. Cl. 139—166 **2 Claims**
Int. Cl. D03d *49/40, 49/48*



A picker stick bumper of woven fabric including a bowed bridge portion enclosing an inner reenforcing portion, either or both of which being stiffened in separate areas by impregnation of polyurethane or the like.

3,426,809
LOOM BOX FRONT

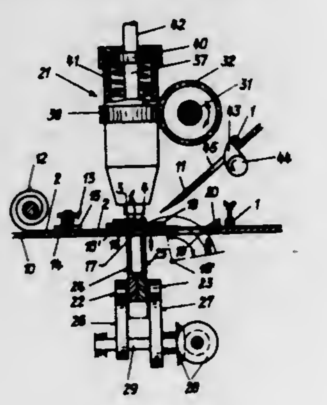
Furman S. Cox, Seneca, S.C., assignor to Deering Milliken Research Corporation, a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,906
U.S. Cl. 139—183 **1 Claim**
Int. Cl. D03d *49/54, 49/02*



A loom box front which has a hardened steel tip at the position where the shuttle enters the box front.

3,426,810
METHOD OF PRODUCING A GRID REINFORCEMENT FOR CONCRETE

Hans Schoch, Lugano, and Carlo Gaggini, Elgg, Zurich, Switzerland, assignors to Ernst Schoch Aktiengesellschaft, Basel, Switzerland
Filed June 27, 1966, Ser. No. 560,625
U.S. Cl. 140—93 **8 Claims**
Int. Cl. B21f *27/20, 15/04, 27/06*

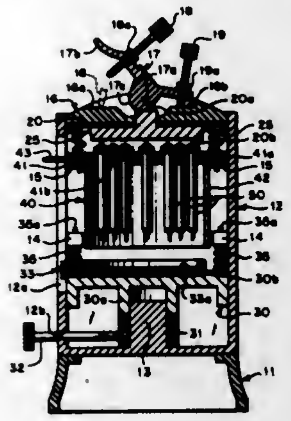


Method and apparatus for producing a reinforcement network for concrete by forming each of a plurality of parallel flexible spacer strings into U-shaped loops extending upwardly one at each side of each one of a plurality of rigid reinforcement rods disposed in parallel across said spacer strings, and twisting each pair of U-shaped loops together through 1¾, 2¼ or 3¼ revolutions while causing the extreme end portions of the untwisted parts of the loops to retain their loop shape.

3,426,811
DROP DISPENSING MEANS

Stanley W. Wolfson, 15 Barone Road, West Orange, N.J. 07052
Filed Mar. 31, 1967, Ser. No. 632,497
U.S. Cl. 141—234 **8 Claims**
Int. Cl. B65b *37/16, 3/04*

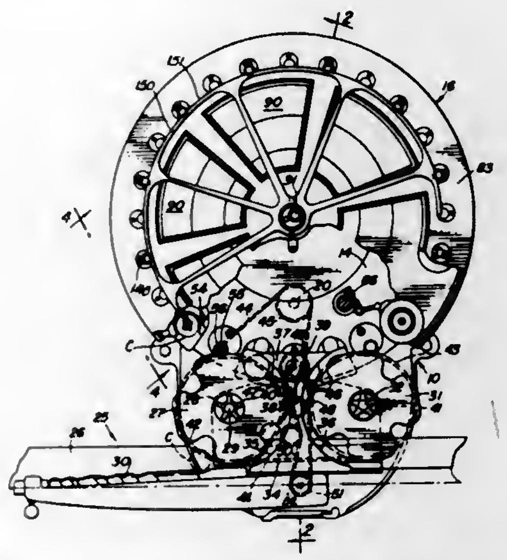
An apparatus for simultaneously dropping approximately equal drops of liquid from each of a number of vials onto a surface. The vials generally contain different bacterial phages, and the surface is generally the surface



of a petri dish containing Staphylococcus on a solid medium.

3,426,812
CONTAINER FILLING MACHINE

Earl Brinkley and John R. Doyle, Davenport, Iowa, assignors to The Kartridg Pak Co., Davenport, Iowa, a corporation of Iowa
Filed Aug. 11, 1966, Ser. No. 571,913
U.S. Cl. 141—140 **14 Claims**
Int. Cl. B65b *57/02;* **G01f** *11/16;* **B65d** *3/26*

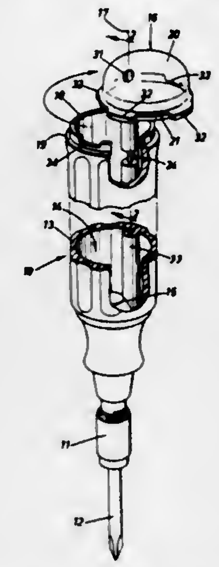


A rotary multi-station container filling machine characterized by a plurality of open topped measuring cups mounted for reciprocation in apertures in the bottom of a circular bowl which is filled with a liquid product to a predetermined level, the cups being reciprocated by engagement with containers which are to be filled, between a cup filling position, where the open top of a cup is below the level of the liquid in the bowl, and a discharge position, where the top of the cup is above the liquid level, and each cup having a bottom forming dispensing nozzle with a discharge valve operated to empty the filled cup into a container which is in engagement with the bottom of the cup, which dispensing nozzle is telescoped within the cup so as to be adjustable axially, and each cup having an additional nozzle fixed on its bottom end which is normally closed and which is opened upon engagement with the open top of a container positioned beneath the cup.

3,426,813
TOOL HANDLE WITH ROTATABLE CAPTIVE LID

Harold J. Robertson, 95 Cyprus Drive, Kitchener, Ontario, Canada
Filed Nov. 13, 1967, Ser. No. 682,040
U.S. Cl. 145—62 **8 Claims**
Int. Cl. B25q *1/08;* **B65d** *43/18*

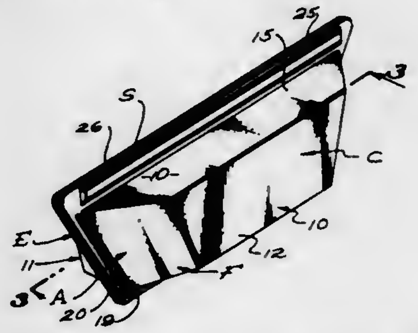
A captive lid container or hollow tool handle which can contain components such as spare drill or screwdriver bits. The container lid is attached to an open end of the container in a manner which permits it to be manually rotated between open positions and a closed position. The lid is also movable in a direction substantially perpendicular to the plane of rotation thereof and is spring-



biased towards the container opening. The lid and/or container are formed with restraining means which prevents rotation of the lid from its closed position to an open position unless the lid is axially moved a predetermined distance away from the opening.

3,426,814
CONTAINER CONSTRUCTION

William C. Bundy, Playa del Rey, Calif. (507 S. Douglas St., El Segundo, Calif. 90245)
Filed July 26, 1967, Ser. No. 656,169
U.S. Cl. 150—42 **9 Claims**
Int. Cl. B65d *51/00;* **A44b** *21/00*

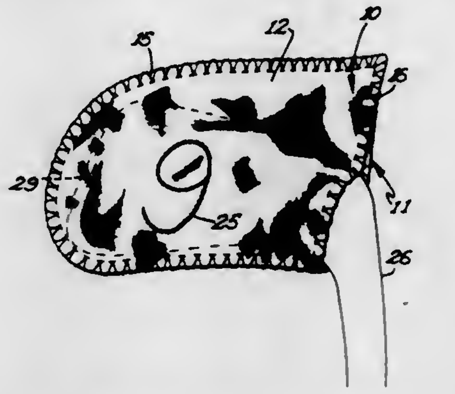


An elongate, horizontally disposed uniting tubular pouch-type container of flexible plastic material having a central longitudinal slot opening along its top side, central longitudinal hinge means along the bottom side and manually operable pressure responsive opening means, said opening means including like oppositely disposed finger engaging means at the opposite ends of the container, each of said finger engaging means including flat, downwardly and longitudinally outwardly convergent flanges projecting longitudinally from an end of the container and intersecting and pivoting to define an upwardly and longitudinally outwardly inclined finger engaging edge, said slot opening, hinge means and finger engaging edges occurring on a common central longitudinal plane.

3,426,815
GOLF CLUB COVER

David L. Ashlin, Brooklyn Park, Minn. (8617 Mattson Brooklane, Minneapolis, Minn. 55430), and Allan J. Fehn, Fridley, Minn. (7829 Alden Way, Minneapolis, Minn. 55432)
Filed Mar. 13, 1967, Ser. No. 622,621
U.S. Cl. 150—52 **6 Claims**
Int. Cl. A63b *57/00;* **B65d** *65/02*

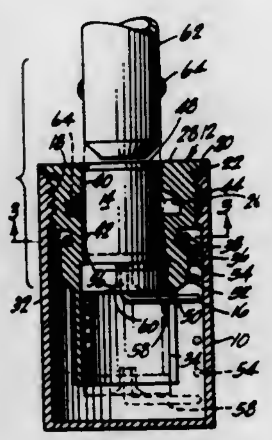
A golf club cover consisting of a casing of flexible material having an open end in which a golf club is inserted and in which the casing has secured to its inner surfaces adjacent to the opening a pair of flexible strips of fastening material having mating interlocking portions,



such as "Velcro," so that when the walls of the casing are pressed together with the golf club head in the casing, the opening is closed sufficiently to prevent removal of the head.

3,426,816
FASTENER RECEPTACLE

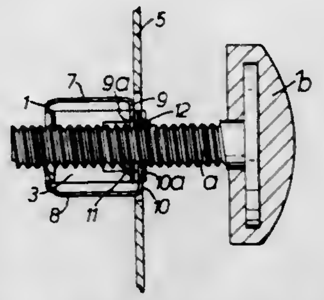
Kenneth D. McIntire, Jr., Norwalk, Calif., and Bruce W. Wallace, Seattle, Wash., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Nov. 22, 1966, Ser. No. 596,306
U.S. Cl. 151—41.7 **3 Claims**
Int. Cl. F16b *39/00, 19/00, 37/00*



A fastener receptacle having removable inserts to accommodate a plurality of types of fasteners and wherein the receptacle opening is closed during non-use.

3,426,817
SHEET METAL NUT DEVICE

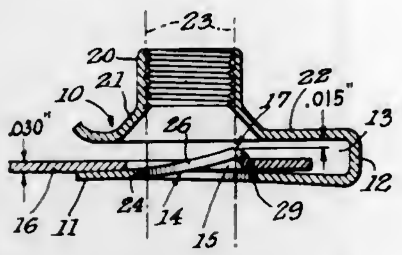
Leslie Parkin, Bobbers Hills, and Sydney Alan Andrews, Stapleford, England, assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Mar. 21, 1967, Ser. No. 624,768
Claims priority, application Great Britain, Mar. 25, 1966, 13,352/66
U.S. Cl. 151—41.75 **1 Claim**
Int. Cl. F16b *39/00, 39/32, 13/04*



A fastening device having a pair of arms with means of engaging the wall of an apertured support and a second pair of arms having their terminal ends bent inwardly toward each other having apertures formed therethrough. The terminal ends of the second pair of arms are in overlapping spaced relationship with each other.

3,426,818
YIELDING NUT RETAINER

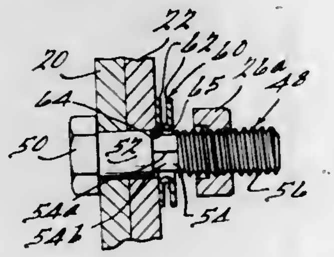
Marshall T. Derby, Downey, Calif., assignor to California Industrial Products, Inc., Santa Fe Springs, Calif., a corporation of California
Filed May 8, 1967, Ser. No. 636,895
U.S. Cl. 151—41.75 **4 Claims**
Int. Cl. F16b *39/00*



A sheet metal nut formed of thin-gauge metal with a resilient retainer for engaging in a hole in any panel of a group having different thicknesses. When so engaged, the screw that is applied to the nut for securing the panel in place is in proper register with said panel hole, so it will pass through said hole in either direction without interference. To this end, the retainer is formed to have an effective thickness sufficiently large to obviate misalignment of the nut and panel holes.

3,426,819
BOLT WITH DEFORMABLE WASHER

Ronald Estes, Garden City, and Harold A. Storch, Birmingham, Mich., assignors to Federal Screw Works, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 394,443, Sept. 4, 1964. This application Feb. 20, 1967, Ser. No. 617,421
U.S. Cl. 151—69 **2 Claims**
Int. Cl. F16b *43/00, 29/00*

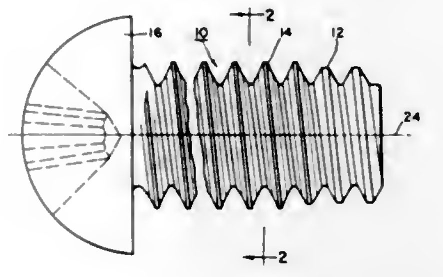


A fastener assembly including a bolt having a head, a thread shank, and a non-circular locking portion intermediate the head and the thread. A deformable washer which is U-shaped in cross-section is deformed into nonrotatable locking engagement with the non-circular portion upon tightening down of a counterbored nut member.

3,426,820
HIGH FRICTION SCREW

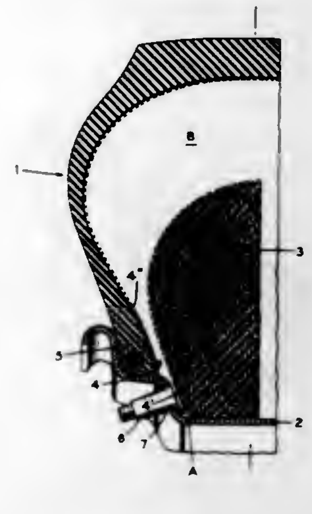
Harvey F. Phipard, Jr., South Dartmouth, Mass., assignor to Research Engineering & Manufacturing, Inc., New Bedford, Mass., a corporation of Massachusetts
Filed Oct. 5, 1967, Ser. No. 673,125
U.S. Cl. 151—22 **2 Claims**
Int. Cl. F16b *39/28, 33/02*

A fastener of noncircular cross section is provided having predetermined interference with a female thread of circular cross section and of substantially uniform dimensions throughout. The fastener is of arcuate, polygonal cross section having circumferentially spaced apart lobes, the thread extending continuously over both the work-entering end and shank portions of the fastener. One or more thread turns on the work-entering end fit smoothly, with no interference, with the female thread. The succeeding turns on the shank portion of the fastener, however, are provided with circumferentially spaced apart lobular portions which outwardly of the pitch line have a greater height in the radial direction than the adjacent portions of the female thread outwardly of the pitch line thereof, providing interference between the outer portions of the lobes of the male thread and the root of the female thread.



3,426,821
SAFETY DEVICES FOR TIRE COVERS

Jacques Boileau, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin raison Sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France
Filed June 27, 1966, Ser. No. 560,646
Claims priority, application France, June 29, 1965, 22,830; Sept. 28, 1965, 33,021
U.S. Cl. 152—155 **11 Claims**
Int. Cl. B60c *17/04*

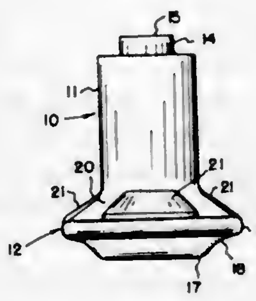


A safety tire is provided with a filling ring consisting of a resilient mass having gas-tight cells containing a gas under pressure. One or more flexible gas impervious membranes are provided for isolating the inner portion of the filling ring from the remainder thereof to enable the inner portion of the filling ring to be maintained at a pressure not substantially exceeding atmospheric pressure when the tire casing is inflated. In this way, a substantial differential pressure is developed across the filling ring. Even at high speeds, this differential pressure prevents the filling ring from expanding radially (because of centrifugal force) and coming into abrasive contact with the casing in the tread area.

3,426,822
TIRE STUD

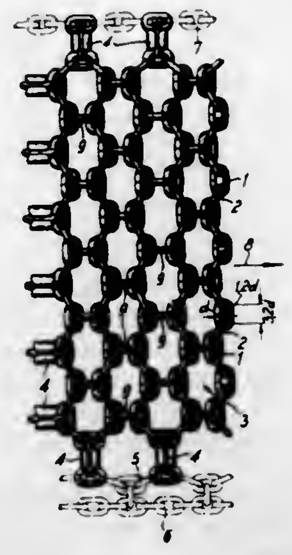
Thomas William Trendowski, Detroit, Mich., assignor to General Electric Company, a corporation of New York
Filed Dec. 1, 1966, Ser. No. 598,338
U.S. Cl. 152—210 **2 Claims**
Int. Cl. B60c *11/16*

A traction-increasing tire stud, for embedding in the peripheral surface of a rubber-like vehicle tire, having a head with a configured cross-section so that the rubber displaced by and surrounding the head applies to it compressive forces in all directions, i.e., radially and axially inwardly and outwardly, to thereby stabilize and hold the stud against excessive movement relative to the tire.



3,426,823
PROTECTIVE TIRE CHAINS

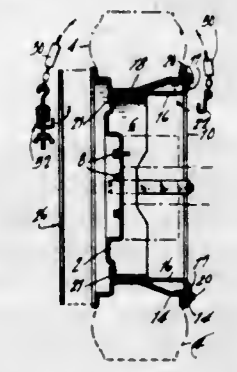
Werner Helmut Rieger, Haus Haeselbach, Unterkochen, Wurttemberg, Germany
Filed June 2, 1966, Ser. No. 554,733
Claims priority, application Germany, June 11, 1965, R 40,847
U.S. Cl. 152—[illegible] **5 Claims**
Int. Cl. B60[illegible]06



A protective tire chain consisting of a network of contiguous hexagons including oval chain links wherein the links at the sides of the hexagons are in a plane at right angles to the tire surface, and the links at the corners thereof are in a plane parallel to the tire surface, the long axis of the corner links are all positioned transversely to the direction of travel of the vehicle.

3,426,824
TIRE ADAPTER ASSEMBLY

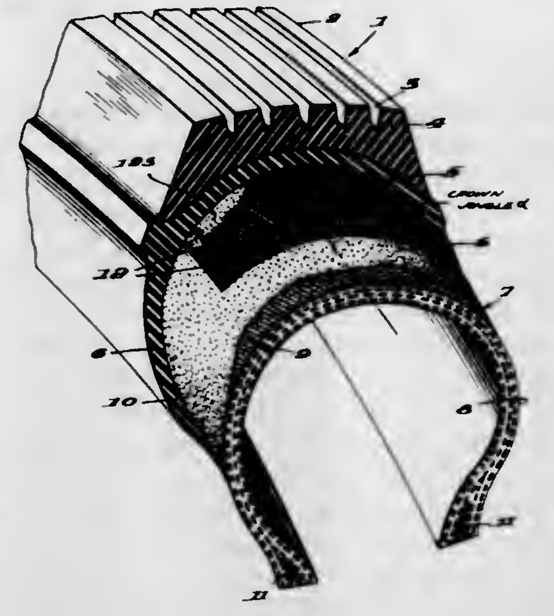
Salvatore Mazzella, 517 Clinton St., Brooklyn, N.Y. 11231
Filed Mar. 30, 1967, Ser. No. 627,084
U.S. Cl. 152—242 **5 Claims**
Int. Cl. B60c *27/20, 27/02*



This invention and this disclosure are directed to a tire chain adapter assembly. More particularly, this invention and this disclosure are directed to an improved tire chain adapter assembly which permits tire chains facilitating snow driving to be placed about the car without the necessity of jacking up the car. In a particularly desirable embodiment this invention contemplates such a tire chain assembly in combination with the tire chain, the tire chain having suitably arranged lugs, spikes or cleats for gripping the snow. The adapter assembly comprises means affixed to either side of a tire wheel and hook means affixed to said means adaptable to engage the hooked end of a tire chain.

3,426,825
ARTICLE OF MANUFACTURE

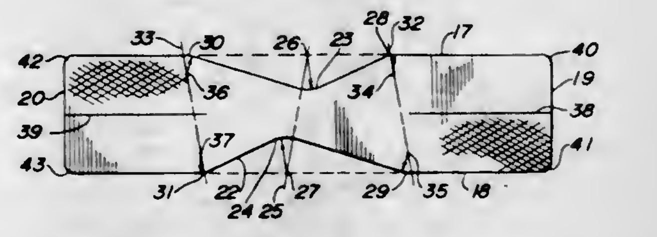
Joseph Bruce Leibee, Westminster, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,061
U.S. Cl. 152—361 **3 Claims**
Int. Cl. B60c *9/10*



A bias construction tire in which a combination of breaker ply features gives exceptional tread wear. Each breaker ply has high modulus textile cords disposed at low breaker crown angles and embedded in high modulus skim stock.

3,426,826
TIRE-REPAIR PLUG

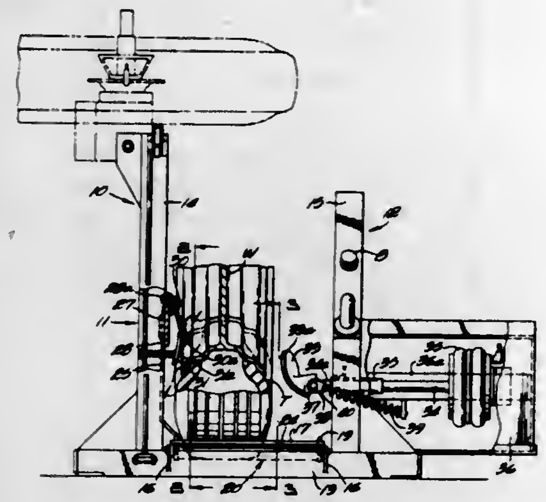
Don K. Warsaw, 2031 Wilshire Drive SE. 49506, and Carl E. Brandt, 2142 Madison Ave. SE. 49507, both of Grand Rapids, Mich.
Filed Dec. 12, 1966, Ser. No. 601,121
U.S. Cl. 152—370 **3 Claims**
Int. Cl. B60c *21/06*



A tire-repair plug made of a substantially flat sheet of material bondable to a tire, and having a peripheral configuration inducing a pattern of folding that results in improved filling of a hole in the tire in which the plug is inserted.

3,426,827
TIRE-CHANGING MACHINE

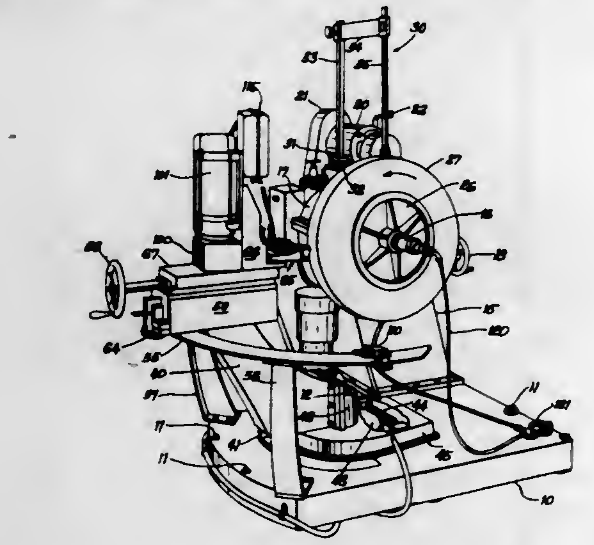
Harry H. Whited, 1314 Midland Ave., Barberton, Ohio 44203, and John E. Lydle, P.O. Box 1094, Akron, Ohio 44309
Filed Nov. 18, 1966, Ser. No. 595,460
U.S. Cl. 157—1.26 **9 Claims**
Int. Cl. B60c *25/06*



1. A machine for breaking the seals between pneumatic tire beads and the wheel rim seats thereof, in a tire and wheel assembly in which the rim has axially opposite rim flange portions, comprising: a framework; a relatively fixed stop member on said framework and having a rim-engaging part thereon; a tire engaging tool; power means on said framework for reciprocation of said tool in directions toward and from a point laterally spaced from said rim-engaging part; a vertically movable cradle for supporting the tire and wheel assembly thereon in upright relation intermediate said stop member and said tool to have a peripheral rim flange portion positioned below said rim-engaging part; means for elevating said cradle while said assembly is retained thereon in upright relation until said rim flange portion comes into stop engagement with said rim-engaging part, thereby to align said reciprocable tool with an exposed given portion of the tire sidewall adjacent the opposite rim flange portion; whereby upon reciprocation of said tool the same is engageable with said given portion of the tire sidewall to break the seal of the corresponding bead with its rim seat.

3,426,828
TIRE TREAD CUTTING APPARATUS AND METHOD

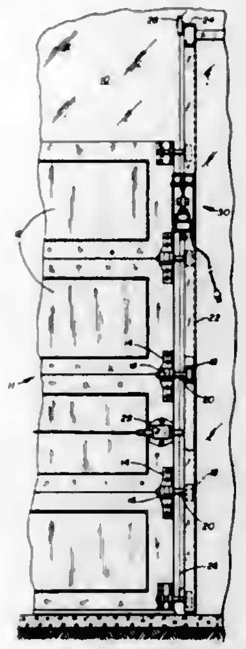
Peter C. Neilsen, Lake Elmo, Minn. 55042
Filed Apr. 11, 1966, Ser. No. 541,609
U.S. Cl. 157—13 **9 Claims**
Int. Cl. B29h *19/02, 3/06;* **B23b** *5/36*



Apparatus and method for removing a portion of the crown of a worn tire preparatory to application of tread stock in the recapping process. An inflated tire is rotated on its axis at predetermined speed, and a knife-type cutter traverses the crown of the tire. The cutter is a frusto-conical tubular member tapering at the larger diameter end from the inside out to form an annular cutting edge, and the portion thereof engaging the tire is spaced a small distance in the direction opposite the direction of tire rotation from the tire diameter parallel to the plane of cutter movement, the axis of the cutter being slightly inclined toward the tire.

3,426,829
RELAY ACTUATED OVERHEAD DOOR SAFETY CATCH

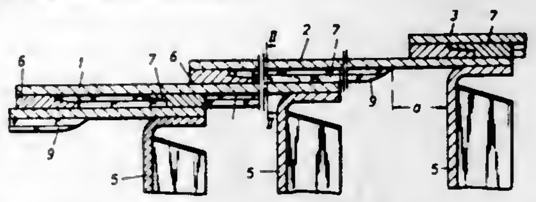
Herman M. McDaniel and Eugene O. Koening, Tulsa, Okla., assignors to Lucian T. Lambert
Filed Jan. 2, 1968, Ser. No. 695,168
U.S. Cl. 160—201 **3 Claims**
Int. Cl. E05d *17/00, 15/38*



A time-delay relay released safety catch is adapted to intercede across the travel path of overhead guide rollers and/or their support shafts, to prevent the fall of the door in the event of failure of the counterbalancing system.

3,426,830
COVERING DEVICE FOR GUIDING TRACKS, ESPECIALLY ON MACHINE TOOLS

Friedrich Haschek, Weidenau (Sieg), and Kurt Loos, Dreis, Tiefenbach (Sieg), Germany, assignors to Kabelschlepp G.m.b.H., Siegen, Westphalia, Germany
Filed Jan. 9, 1967, Ser. No. 608,044
Claims priority, application Germany, Jan. 11, 1966, K 58,116
U.S. Cl. 160—228 **5 Claims**
Int. Cl. E06b *3/92, 3/48*



The present invention concerns a covering device for guiding tracks, especially on machine tools, which includes a plurality of overlapping cover plates which are adapted to be displaced one above the other and in which for purposes of preventing the lifting off or bucking of the cover plates there are guiding strips connected to the bottom of each cover strip while the respective next lower cover strip has connected thereto means with a passage therethrough through which the guiding strip of the next higher plate extends thereby displaceably interlocking each cover plate with the respective next lower cover plate.

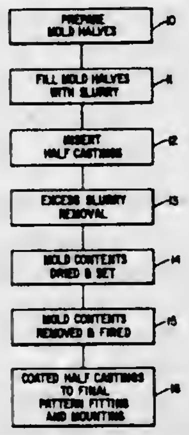
3,426,831
METHOD OF FORMING A SAND CORE

Janis Robins, St. Paul, and Robert J. Schafer, Edina, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Filed June 8, 1966, Ser. No. 555,951
U.S. Cl. 164—43 **3 Claims**
Int. Cl. B22c *1/22;* **B28b** *7/28;* **C08f** *21/04*

Foundry cores and/or molds capable of curing at room temperature to give cores and/or molds of excellent strength are obtained by mixing foundry sand with a binder comprising two packages, the first package comprising polyisocyanate and the second package comprising oil-modified alkyd resin, said second package containing linseed oil as a replacement for solvent normally required. By replacing solvent with linseed oil defects in the cores and/or molds such as scabbing, erosion and pinholing are substantially eliminated.

3,426,832
METHOD OF MAKING METAL PATTERNS AND CORE BOXES FOR SHELL MOLDING

William J. Phillips, Las Cruces, N. Mex., and Donald B. Barron, Lakewood, Ohio, assignors to Crucible Steel Castings Co., Division of Consolidated Foundries and Manufacturing Company, Cleveland, Ohio
Filed Dec. 28, 1966, Ser. No. 605,385
U.S. Cl. 164—45 **7 Claims**
Int. Cl. B22c *7/04, 7/06, 9/12*


PREPARE MOLD HALVES
10
FILL MOLD HALVES WITH SLURRY
11
INSERT HALF CASTINGS
12
EXCESS SLURRY REMOVAL
13
MOLD CONTENTS DRIED & SET
14
MOLD CONTENTS REMOVED & FIRED
15
COATED HALF CASTINGS TO FINAL PATTERN FITTING AND MOUNTING
16

1. In a method for making shell molding pattern equipment which is compensated for shrinkage including the steps of producing half castings from drag and cope molds with an original pattern, the combination of steps comprising:

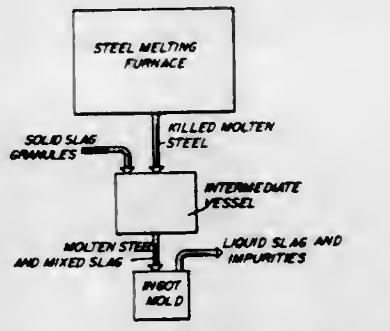
- pouring a slurry of metal powder and a metal silicate into said drag and cope molds,
- inserting said half castings into said drag and cope molds, respectively, and removing excess slurry,
- drying the mold and contents until the slurry forms a coating on said castings,
- removing and firing the coated castings at a temperature in the range of 1,000° F. to 1,700 °F. in a controlled atmosphere for a period sufficient to insure rigid and permanent adherence of the dried slurry to the half castings; and

mounting the coated half castings on metal plates.

3,426,833
PROCESS FOR THE MANUFACTURE OF STEEL INGOTS

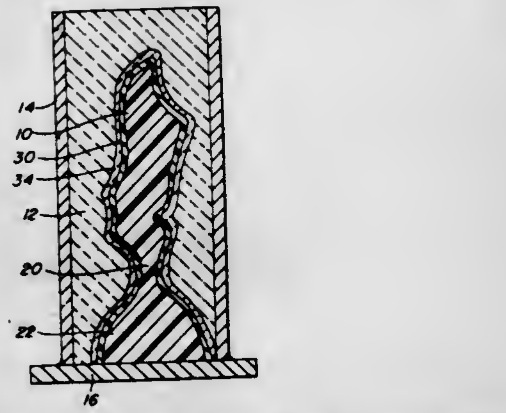
Alfred Randak, Ahornweg 5; Reinhold Eberbach, Kiefernweg 28; Heinz Rinker, Harkortplatz 2; and Helmut Treppschuh, Felstrasse, 2, all of Geisweid, Germany
Filed Nov. 12, 1964, Ser. No. 410,755
U.S. Cl. 164—56 **7 Claims**
Int. Cl. B22d *27/18, 27/20;* **C21c** *7/00*

1. A process for the manufacture of steel ingots having a high degree of purity, which comprises pouring molten steel in a substantially killed condition into an ingot mold, and adding a slag material in a divided solid condition to said molten steel for intimate contact therewith to react with non-metallic impurities therein and to cool said molten steel to separate such impurities from the molten steel within the mold by floatation with the slag, said slag including at least one material species taken from the group consisting of silicon dioxide, ferrous oxide, manganous oxide, aluminum oxide, calcium oxide, magnesium oxide and titanium dioxide.



3,426,834
EXPENDABLE PATTERN FOR PRECISION INVESTMENT CASTING

Louis J. Jacobs and Bela Klaudinyi, Chicago, and Robert Earl Fisher, Clarendon Hills, Ill., assignors to The S. Obermayer Company, a corporation of Ohio
Filed Mar. 16, 1967, Ser. No. 623,743
U.S. Cl. 164—235 **12 Claims**
Int. Cl. B22c *7/00, 9/12, 1/22*

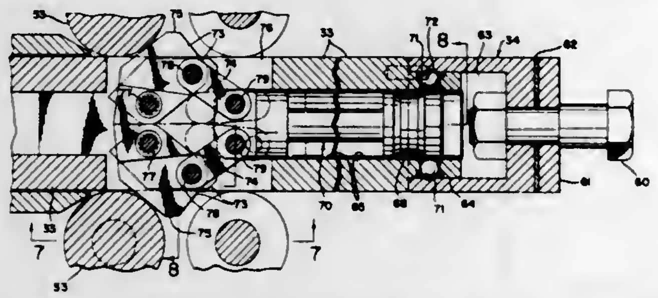


Improved coating techniques including compositions and methods for preparing expendable patterns to be used in full mold casting processes and including applying to casting-defining surfaces of a combustible foamed plastic pattern a rapidly drying two-coat envelope system to provide castings having superior surface characteristics, the first coating comprising an organic film-forming preparation applied as a non-aqueous coating composition, and the second coating of the system comprising a refractory shell applied from a slurry. In preferred embodiments of the invention a non-flammable, volatile vehicle is used as a carrier in the refractory slurry.

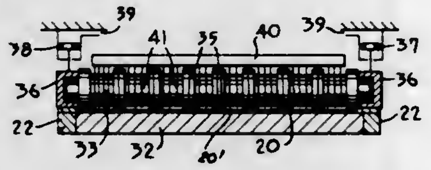
3,426,835
STARTING MECHANISM FOR CONTINUOUS CASTING MACHINE

Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,232
U.S. Cl. 164—274 **2 Claims**
Int. Cl. B22d *11/08;* **F16b** *9/00*

A starting mechanism for use with a continuous casting machine including a mold into which molten metal is poured at one end and an ingot emerges from the other. The mechanism includes a flexible carrier member chain-like in construction and including a first link connected to a series of interconnected, independently movable links. A starting head, receivable in the mold to provide a temporary bottom therefor, is releasably connected to the carrier means by a connecting means including a recess in the starting head which is adapted to receive an end portion carried on the first link. In the recess a ball set is formed and carries a plurality of locking balls each freely and radially movable between locked and unlocked positions. Operating means are provided including a disconnect rod slidably movable longitudinally of the first link within the end portion for preventing radial movement of the balls from the locked to the unlocked position prior to reaching a predetermined position of withdrawal. Cam means extend outwardly of the first link for contact with a cam engaging means at the predetermined position of withdrawal to move the disconnect rod to a release position.

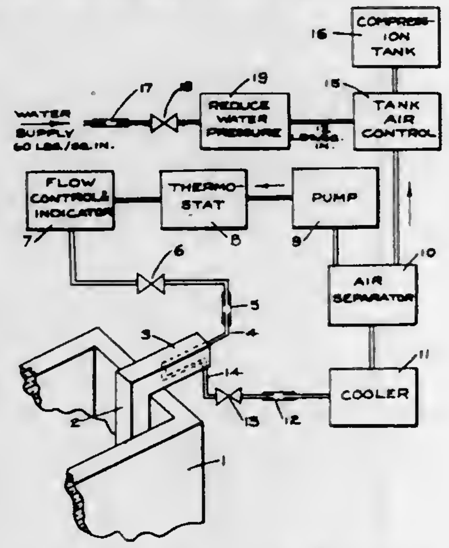


3,426,836
MACHINE FOR THE CONTINUOUS CASTING OF SLABS BETWEEN BANDS
Dietrich Altenpohl, Feldmeilen, Zurich, and Ivan Gyöngyös, Liebefeld, Bern, Switzerland, assignors to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland
Filed Dec. 13, 1965, Ser. No. 513,506
Claims priority, application Switzerland, Dec. 11, 1964, 16,058/64
U.S. Cl. 164—278 **9 Claims**
Int. Cl. B22d *11/06*



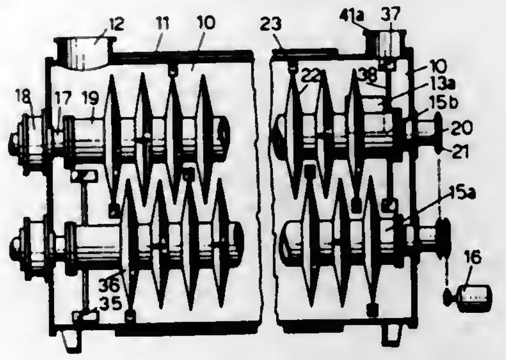
The continuous casting of slabs in a belt-type mold provides for pressing of the belt against the solidified casting to preclude the occurrence of shrink spaces. The pressure is exerted elastically by mechanical means, such as backup rolls united in two endless circulating chains.

3,426,837
SEALED RECIRCULATING COOLING SYSTEM
George E. Moore and Al E. Richardson, Farmington, Mich., assignors to Sun Steel Treating Incorporated, Farmington, Mich.
Filed Dec. 27, 1966, Ser. No. 605,069
U.S. Cl. 165—47 **4 Claims**
Int. Cl. F28f *27/00;* **F28d** *7/00;* **F28c** *3/04*



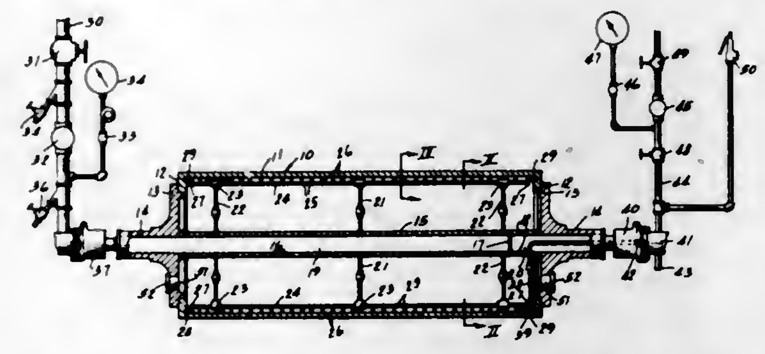
A closed or sealed liquid cooling system including in series a cooler; air separating means connected to a compression tank to provide the desired pressure in the system; a pump to circulate the liquid; flow control means to regulate circulation of the cooled and deaerated liquid to the heated member whereinafter the cycle is completed by returning the heated liquid to the cooler.

3,426,838
DRYING APPARATUS FOR DRYING MOIST ORGANIC OR INORGANIC MATERIALS
Thor Onarheim, Hop, near Bergen, Norway, assignor to Stord Bartz Industri A/S, Bergen, Norway
Filed Feb. 21, 1967, Ser. No. 617,701
Claims priority, application Norway, Feb. 24, 1966, 161,833
U.S. Cl. 165—87 **2 Claims**
Int. Cl. F28f *5/04, 1/26, 9/00*



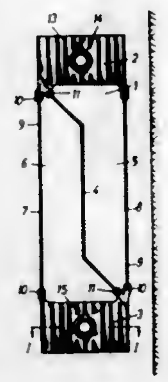
A pair of hollow cylinders carrying disc shaped heating members are arranged side by side within a drying chamber with their axes of rotation extending from the inlet to the outlet end. The spacing between the axes of rotation is less than the diameter of said heating members.

3,426,839
DRYING CYLINDER
Glen Overton, Allegan, Mich. 49010
Continuation-in-part of application Ser. No. 559,693, June 22, 1966, which is a continuation of application Ser. No. 375,035, June 15. 1964, now abandoned. This application Dec. 5, 1966, Ser. No. 599,060
The portion of the term of the patent subsequent to Mar. 14, 1984, has been disclaimed
U.S. Cl.165—89 **7 Claims**
Int. Cl. F28f *5/02;* **F26b** *11/02;* **F28d** *7/00*



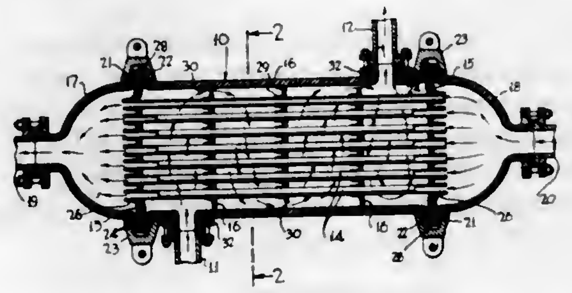
A dryer drum or drying cylinder heated efficiently and uniformly with internal steam jets closely adjacent the inside surface of the cylinder wall and fed with more steam than can be completely condensed in the cylinder to provide jet streams which mechanically scour the inner surface of the cylinder wall to break up and remove condensate film thereby increasing the heat transfer through the cylinder wall and lessening the amount of condensate to be removed. Uncondensed steam is discharged from the cylinder for use elsewhere. The steam jets are provided by longitudinally extending pipes inside the cylinder closely adjacent the cylinder wall and carried by spoke pipes radiating from a central pipe or axle of the cylinder to revolve with the cylinder. The live steam is fed into this central axle or pipe through one end of the cylinder and exited at the other end of the cylinder. Pressure regulators maintain a desired differential steam pressure drop between the inlet and outlet ends of the cylinder.

3,426,840
SPACE HEATER AND HEATING UNITS
Karl Heinz Markowz, 18 Gutentag-Loben-Strasse, 5657 Haan, Rhineland, Germany
Filed Nov. 14, 1966, Ser. No. 594,277
Claims priority, application Germany, Nov. 13, 1965, M 67,260
U.S. Cl. 165—131 **9 Claims**
Int. Cl. F24h *3/00*



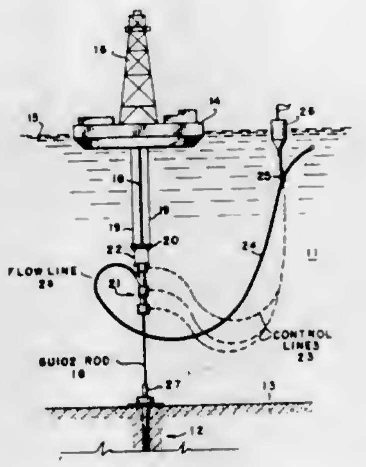
The invention concerns a space heater and its units. Regarding the space units that form the heater, each heating unit is for use together with similar heating units in a row forming a space heater adjacent a build-wall, and has an upper and a lower heating element spaced apart from each other, said upper and lower heating elements being similar to each other and being heatable, two heat conducting and heat radiating outer walls connected to said heating elements and defining therewith an air chamber, a partition dividing said chamber substantially diagonally into two chamber parts, one of said outer walls being adapted to face the interior of the space to be heated and having in its upper one-third portion air outlet means for said chamber, and the other outer wall being adapted to be disposed near said building wall and having in its lower one-third portion air inlet means for said chamber.

3,426,841
HEAT EXCHANGERS HAVING PLASTIC COMPONENTS
Herbert G. Johnson, 17 N. Drexel Ave., Havertown, Pa. 19083
Filed May 18, 1966, Ser. No. 559,672
U.S. Cl. 165—178 **7 Claims**
Int. Cl. F28f *9/04;* **F16l** *41/00, 7/00*



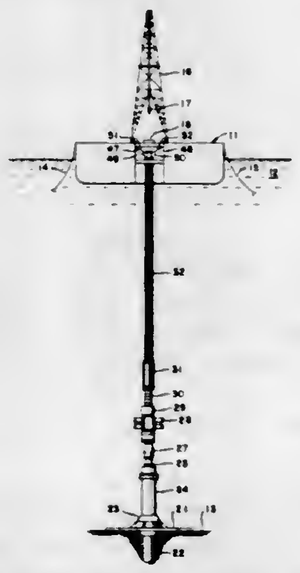
This application discloses heat exchangers having plastic components and method of making them, particularly heat exchangers having tubes of cold-work-strengthened fiber-oriented tubes of plastic material which have very thin walls and relatively very large diameters to provide great heat exchange capacity with adequate strength in easily workable commercial sizes; and provides stable connections of the tubes to a tube sheet of compatible plastic material, particularly a connection comprising an interiorly tapered integral conformable sleeve on the tube sheet engaging a tube only at the end to provide for bending of the tubes with expansion, and the end of the sleeve being heat shrunk on the tube and fused to the end of the tube. Also a drum of compatible plastic material surrounding the tubes and having approximately the same length change with temperature change as the tubes so as to minimize heat-change stresses. Also drum heads of compatible plastic material.

3,426,842
INSTALLATION OF CONTROL LINES ON UNDERWATER WELL
Charles B. Corley, Jr., New Orleans, La., and Willy F. Bohlmann, Jr., Sydney, New South Wales, Australia, assignors to Esso Production Research Company
Filed Feb. 1, 1966, Ser. No. 524,182
U.S. Cl. 166—.5 **3 Claims**
Int. Cl. E21b *43/01;* **F16l** *55/00*



A plurality of control lines and a flow line for introducing fluid into an underwater well and recovering hydrocarbons from said well are attached to a valved wellhead above water surface prior to lowering the wellhead to water bottom with a free end of the control lines being maintained at an accessible location above water bottom After the wellhead is attached to the wellhead on water bottom, the flow line is remotely attached to the free end of a pipe line on water bottom from the accessible location and fluid is flowed through the flow line by controlling the valved wellhead through the control lines.

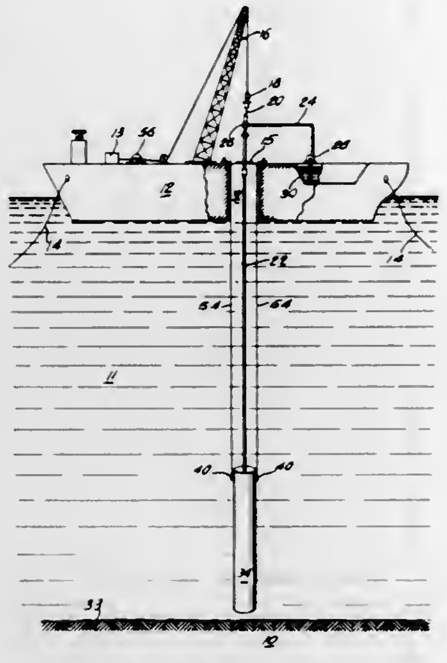
3,426,843
MARINE CONDUCTOR PIPE ASSEMBLY
Robert C. Visser, San Dimas, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,645
U.S. Cl. 166—.5 **5 Claims**
Int. Cl. E21b *43/01;* **F16l** *55/00*



Apparatus for drilling, completing and working over an underwater well including a marine conductor made up of individual pipe sections connectible in end-to-end relationship and incorporating track guide means on each section. The track guide means is adapted to cooperate with pipe guide means secured to auxiliary conduit means thereby maintaining said auxiliary conduit means longitudinally parallel with said marine conductor means and closely adjacent thereto.

3,426,844
METHOD OF DRILLING UNDERWATER WELLS

Alan R. McDaniel, Morgan City, La., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,202
U.S. Cl. 166—.5 **8 Claims**
Int. Cl. E21b *33/035, 15/02, 43/114*



An improved method for inserting conductor pipe in an unconsolidated underwater location by detachably connecting a drill string carrying a drill bit to the inside of a relatively short length of conductor pipe and jetting the pipe into the unconsolidated underwater formations. After the conductor pipe is in place the drill string is detached from the conductor pipe and the hole drilled for receiving a further length of smaller diameter conductor pipe. The smaller length of conductor pipe is cemented to the formation and the annular space between the conductor pipe and the smaller diameter conductor pipe is filled with cement. The well head equipment is attached to the top of the smaller diameter conductor pipe.

ERRATA

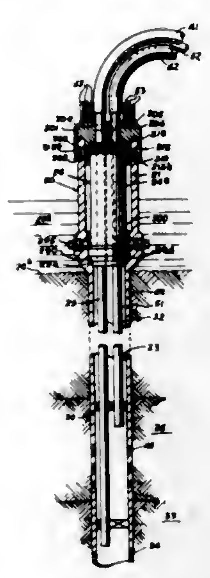
For Class 166—1 see:
Patent No. 3,427,651

For Class 166—3 see:
Patent No. 3,427,653

3,426,845
WELL HEAD SYSTEM AND METHOD OF INSTALLING THE SAME

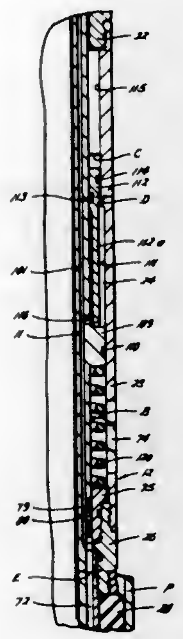
William W. Dollison, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,189
U.S. Cl. 166—72 **27 Claims**
Int. Cl. E21b *33/03, 33/035, 7/12*

The well head apparatus for suspending tubing in a well at a remote point, particularly adapted for submarine wells, having a cartridge for supporting in flow communication therewith the tubing flow strings in the well and valve means in the passages of the cartridge communicating with the tubing flow strings for controlling flow from the well, said valve means being remotely controlled to control flow from the well, said valve means for controlling the well thus being enclosed within the casing head of the well, together with the method of installing the same.



3,426,846
RETRIEVABLE WELL PACKER

David E. Young, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Aug. 10, 1967, Ser. No. 659,664
U.S. Cl. 166—129 **8 Claims**
Int. Cl. E21b *23/00, 33/12*

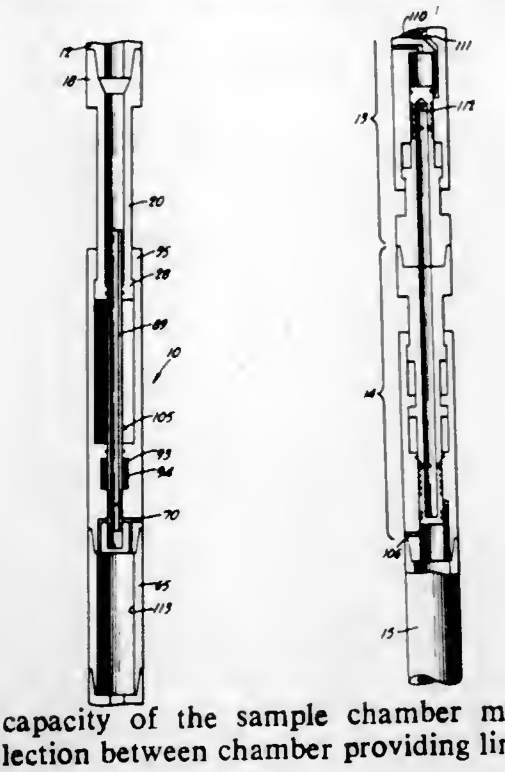


The particular embodiment described herein as illustrative of one form of the invention is a well packer apparatus having a mandrel which is subject to fluid pressure in a well. A force balancing system for the mandrel includes piston and cylinder means for minimizing the net force on the mandrel when the high pressure is in favor of either the tubing or the annulus.

3,426,847
FINAL FLOW PERIOD SAMPLE CAPTURING TOOL

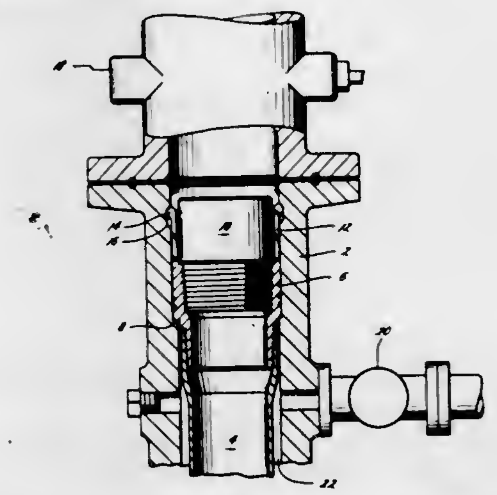
Daniel R. Reardon, Garden Grove, Calif., assignor to Cook Testing Co., a corporation of Nevada
Filed June 6, 1966, Ser. No. 555,519
U.S. Cl. 166—150 **1 Claim**
Int. Cl. G01n *1/10*

A final flow period sample capturing tool assembly in which the sample is collected in a tubular link in the tool assembly which is independent of the telescopic valve between said chamber and the packer and is also independent of the telescopic valve between said chamber and the tool string supporting the assembly so that in making up the assembly, substantial variations may be made in the volumetric capacity of the sample chamber merely by making a selection between chamber providing links varying in length.



3,426,848
REMOTE HANGER

Edwin W. Kearns, Houston, and Stephen T. Cutlip, Bellaire, Tex., assignors to Rockwell Manufacturing Company, Houston, Tex., a corporation of Pennsylvania
Filed Dec. 5, 1966, Ser. No. 599,116
U.S. Cl. 166—214 **5 Claims**
Int. Cl. E21b *23/00, 33/03;* **F16l** *37/18*

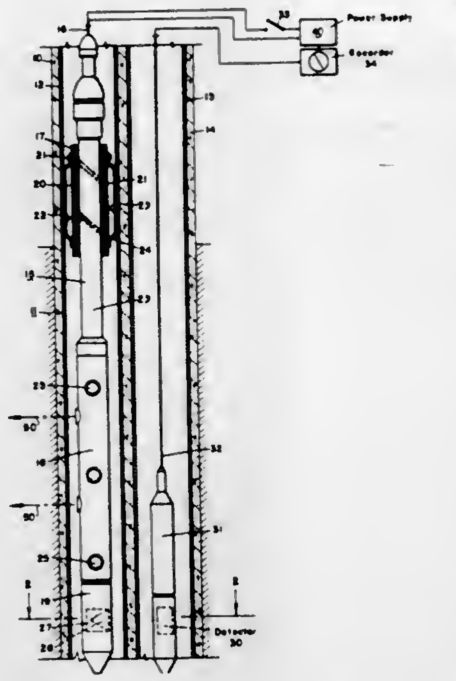


The specification discloses a combination of wellhead with a hanger received within the wellhead for supporting a well pipe. The hanger disclosed is supported on a shoulder and has resilient arms which engage an annular groove in the bore of the wellhead and thereby hold the hanger down against any forces which may tend to push the hanger upwardly in the wellhead. A plug element is used to hold the arms in the groove.

3,426,849
METHOD AND APPARATUS FOR WELL OPERATIONS

James T. Brumble, Jr., Beaumont, Tex., assignor to Esso Production Research Company
Continuation of abandoned application Ser. No. 780,517, Dec. 15, 1958. This application May 13, 1966, Ser. No. 565,639
U.S. Cl. 166—255 **13 Claims**
Int. Cl. E21b *47/00, 43/119, 43/116*

A method for perforating in a well bore which contains at least two spaced-apart pipe strings. In one of the pipe strings a directional perforator is arranged together with a source of radiation capable of transmitting radiation to a radiation detector located in another of the pipe strings to provide, upon rotation of the perforator and source of radiation, indications of the angular position of the radiation detector, and thereby the other pipe string, relative to the direction of perforation.

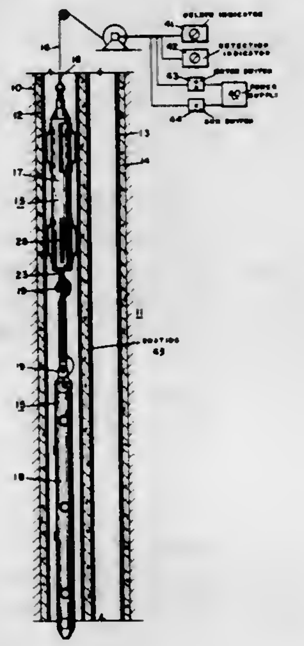


ERRATUM

For Class 166—250 see:
Patent No. 3,427,652

3,426,850
METHOD AND APPARATUS FOR PERFORATING IN WELLS

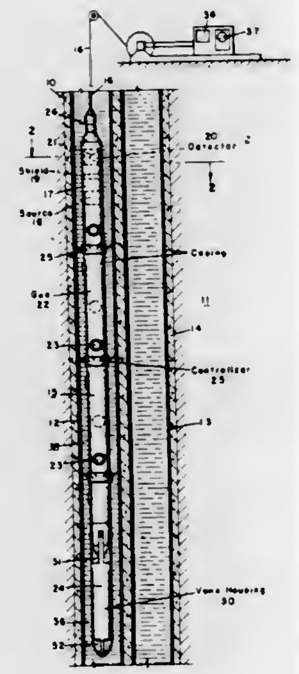
John C. McDuffie, Jr., Houston, Tex., assignor to Esso Production Research Company
Continuation of abandoned application Ser. No. 780,387, Dec. 15, 1958. This application June 20, 1966, Ser. No. 567,794
U.S. Cl. 166—255 **13 Claims**
Int. Cl. E21b *47/00, 43/119, 43/116*



A method for perforating in a well bore which contains at least two spaced-apart pipe strings. In one of the pipe strings a directional perforator is arranged together with a radiation detector capable of detecting radiation from a radiation source located in another of the pipe strings to provide, upon rotation of the perforator and radiation detector, indications of the angular position of the radiation source, and thereby the other pipe string, relative to the direction of perforation.

3,426,851
METHOD AND APPARATUS FOR OPERATING IN WELLS

Harry S. Arendt, Bellaire, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Dec. 15, 1958, Ser. No. 780,524
U.S. Cl. 166—255 **12 Claims**
Int. Cl. E21b *43/11, 47/00, 43/119*



11. A method for perforating in a well bore having a plurality of pipe strings arranged therein in side-by-side relationship comprising the steps of:

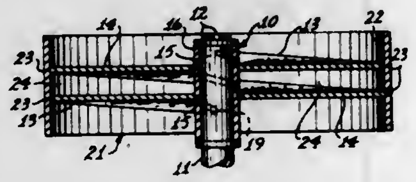
arranging in one of said pipe strings a rotatable tool provided with a perforator having a selected radial direction of perforation and with pipe locator means having a selected radial direction of pipe detection fixed relative to said direction of perforation and capable of locating the radial position of at least one other of said pipe strings relative to a selected angular position of said tool;

orienting said tool to a desired radial direction of perforation as determined by said locator means; and

actuating said perforator.

3,426,852
PROPELLER STRUCTURE

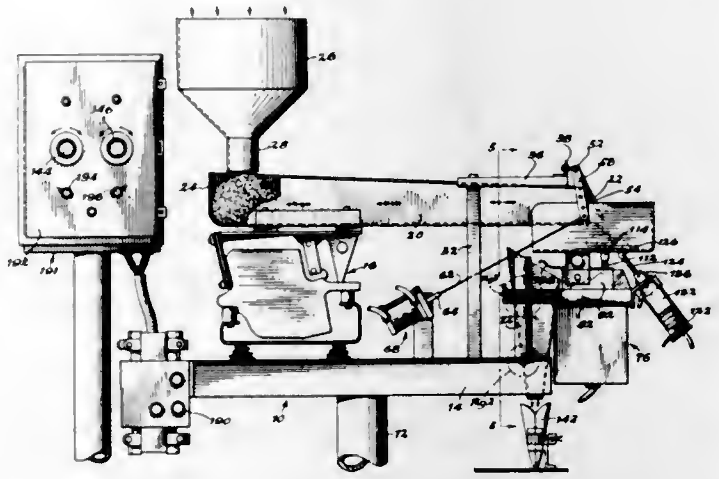
Lewis R. Kinsey, 108 S. 25th St., Phoenix, Ariz. 85034
Filed Mar. 13, 1967, Ser. No. 622,602
U.S. Cl. 170—156 **1 Claim**
Int. Cl. F04d *29/32;* **B64c** *11/00*



A propeller structure particularly adapted for use as a lift fan in vertical take-off and landing aircraft and helicopter types of aircraft that is completely enclosed on all sides and all air going in at the top stays inside the propeller periphery in which the propeller structure having a large area of lifting surface formed by a specially constructed overlapping helical blade surfaces.

3,426,853
HORIZONTAL VIBRATORY DISPENSER WITH WEIGHING AND TILTING DISCHARGER

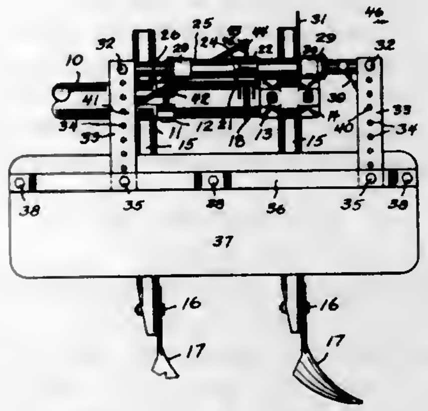
Victor Del Rosso, 138 Bundy Road, Ithaca, N.Y. 14850
Continuation-in-part of application Ser. No. 470,462, July 8, 1965. This application Feb. 2, 1968, Ser. No. 704,504
U.S. Cl. 177—103 **10 Claims**
Int. Cl. G01g *13/02, 13/22*



A weighing pan having a smooth and unobstructed interior mounted for tilting movement between a material-receiving position and a dumping position so that cyclic operation may be effected by relatively lightweight mechanism, product buildup is avoided, and the movement of the material during dumping is a pouring, self-cleaning action. Further, the weighing pan is adjustably mounted for vertical movement toward the material feeding apparatus so as to minimize the amount of material which is not sensed by the weighing pan at the time of feed cut-off but which nevertheless ultimately reaches the weighing pan and thereby contributes to the net weight of material on the pan.

3,426,854
SELF-CLEANING ADJUSTABLE CULTIVATOR SHIELD

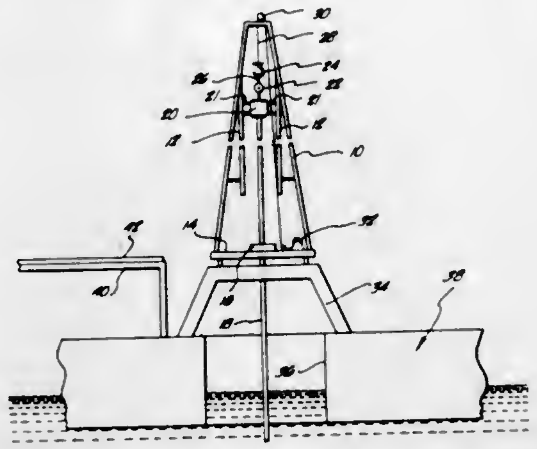
Bill Schomaker, Sioux Rapids, Iowa 50585
Filed Oct. 1, 1965, Ser. No. 492,075
U.S. Cl. 172—509 **4 Claims**
Int. Cl. A01b *17/00;* **A01c** *5/04*



A shield for a farm cultivator being useable with nearly any type of such machine. Said shield is attached to the cultivator and is provided with a mounting which allows limited lateral movement relative to the cultivator and is resiliently held against said movement resulting in a shield which is self-cleaning.

3,426,855
DRILLING APPARATUS

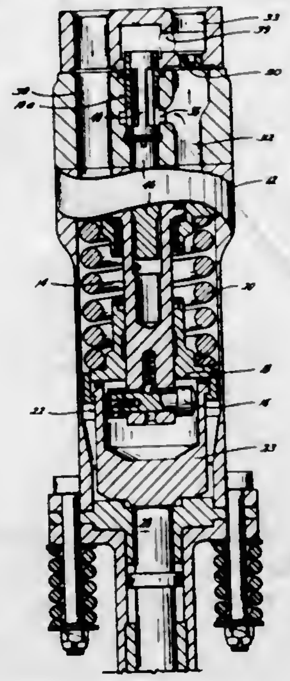
Robert Curtis Crooke, Corona del Mar, and Nick Koot, South Laguna, Calif., assignors to Global Marine Inc., Los Angeles, Calif., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,204
U.S. Cl. 173—57 **3 Claims**
Int. Cl. E21c *7/04, 7/00;* **E21b** *3/04*



A well drilling apparatus employing an electric motor as the motive force for a drill string. The motor is carried for vertical movement in a derrick by a traveling block. The stator of the motor is constrained against rotation by a pair of vertical block guides while the rotor is adapted for coupling with a drill string.

3,426,856
CONTROL VALVE FOR LIMITING HYDRAULIC MOTOR SPEEDUP

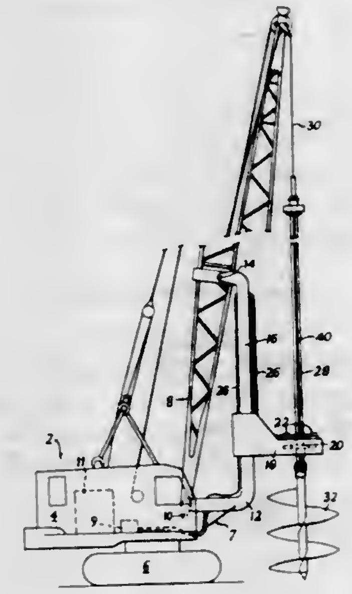
Jack A. Roll, Bryan, Tex., and Cecil E. Adams, Columbus, Ohio, assignors, by direct and mesne assignments, to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed June 9, 1967, Ser. No. 644,850
U.S. Cl. 173—119 **7 Claims**
Int. Cl. E21c *3/04;* **F01l** *15/10;* **F01c** *21/12*



A control valve positioned in the fluid outlet of a hydraulic motor and synchronized with the operation of the hydraulic motor restricting the flow of fluid through the motor when the motor is unloaded, thereby limiting the motor speedup. In a hydraulically driven impact tool controlled by a cam follower riding up an inclined cam surface and releasing a hammer by rolling over a cam shoulder, a control valve synchronized with the cam follower so that the valve is closed when the cam follower reaches the cam shoulder, thus restricting fluid flow and reducing speedup of the hydraulic motor, and a restricted passageway in parallel with the control valve allowing limited fluid flow from the hydraulic motor at all times.

3,426,857
EARTH DRILLING EQUIPMENT

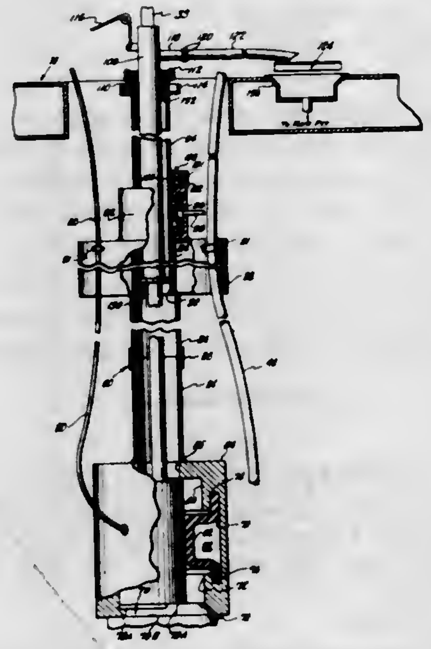
John Bland, Epping, England, assignor to Sir Robert McAlpine & Sons Limited, London, England
Filed June 6, 1966, Ser. No. 555,359
U.S. Cl. 173—163 **6 Claims**
Int. Cl. E21c *1/02;* **E21b** *3/04*



An earth boring rig having a jib with a supporting frame detachably secured thereto and a platform adjustably mounted on said frame. The platform is provided with a rotatable guide member for driving a drilling rod or bar that has a bit or auger connected to an end thereof. The platform is secured on said frame in such a manner as to provide a secure support for the drilling rod or bar while permitting said rod or bar to move vertically with respect to the platform.

3,426,858
DRILLING

Robert F. Bauer, Whittier, and Hal Stratton, Pasadena, Calif., assignors, by direct and mesne assignments, to Shell Oil Company
Filed July 12, 1957, Ser. No. 671,494
U.S. Cl. 175—7 **7 Claims**
Int. Cl. E21b *15/02, 7/12, 33/035*



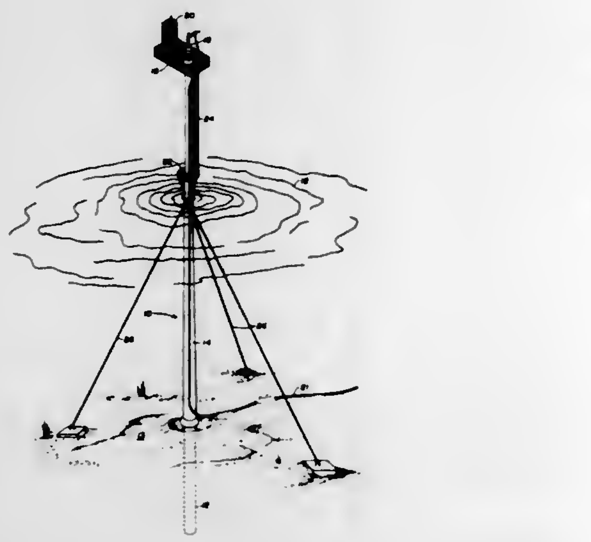
6. Apparatus to facilitate operations such as drilling and working in a well in a formation underlying a body

of water comprising a floating vessel, means for keeping the vessel over the vicinity of the well, a generally upright elongated hollow conductor disposed beneath the vessel so the upper end of the conductor terminates at the vessel, a casing in the upper end of the well, means securing the casing to the formation, releasable coupling means for sealing the lower end of the conductor to the casing to form a continuous conduit between the well and the vessel, an elongated guide member extending down from the vessel through the conductor and into the casing, means for supporting the guide member in a generally upright position, means for lowering or raising the conductor with respect to the casing to move it into or out of sealing position with the casing while the guide member is disposed in the casing to constrain and guide the conductor, and remote control means external of the conductor for releasing the coupling means from the water surface to permit the conductor and casing to be separated from each other so the conductor can be raised from the casing while the guide member is in the casing.

3,426,859

TELESCOPED CAISSON

William F. Manning, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 2, 1966, Ser. No. 577,040
U.S. Cl. 175—9 **7 Claims**
Int. Cl. E21b *15/02, 17/04*



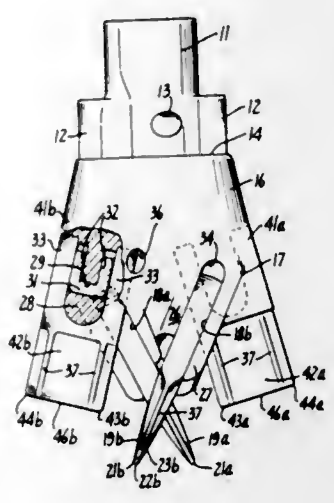
This specification discloses a method and apparatus for drilling and completing an offshore well above the surface of a body of relatively shallow water. A two-piece well protector is utilized, the well protector comprising interconnecting lower pile and upper caisson sections. The lower pile section is first driven into the formations underlying the marine bottom with one of the recently developed underwater pile drivers. The caisson section is then lowered into the water and stabbed into or over the pile section to form the composite well protector. A well is drilled through the well protector and is completed by a wellhead supported on the upper end of the well protector.

3,426,860

PILOT BIT WITH REPLACEABLE TEETH

Gerald A. Petersen, Cupertino, Calif. (Petersen Engineering Co. Inc., 950 Kifer Road, Sunnyvale, Calif. 94086)
Filed Dec. 27, 1966, Ser. No. 604,726
U.S. Cl. 175—392 **11 Claims**
Int. Cl. E21c *13/00*

A pilot bit has replaceable teeth, the lowermost teeth being directed to cut close to the axis of rotation of the bit, oher teeth being outward directed to insure that the hole dug is as large as the bit body. Teeth may have tungsten carbide tip inserts in a steel body, the inserts being side-by-side in a line and wearing to provide projecting fingers.



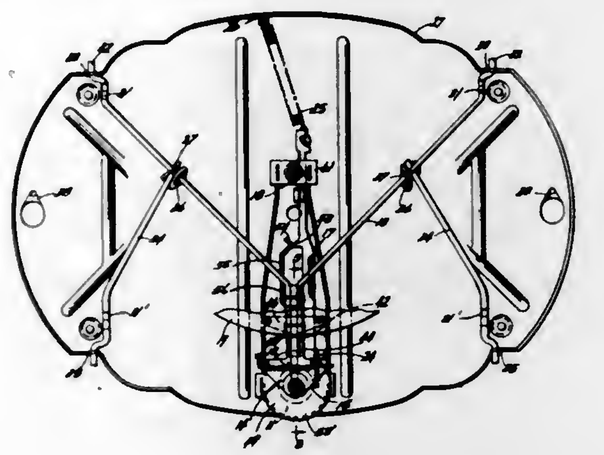
ERRATUM

For Class 177—103 see:
Patent No. 3,426,853

3,426,861

BATHROOM SCALES

Mike A. Provi, Rockford, Ill., assignor to The Brearley Company, Rockford, Ill., a corporation of Illinois
Filed Aug. 30, 1965, Ser. No. 483,724
U.S. Cl. 177—164 **18 Claims**
Int. Cl. G01g *23/14*

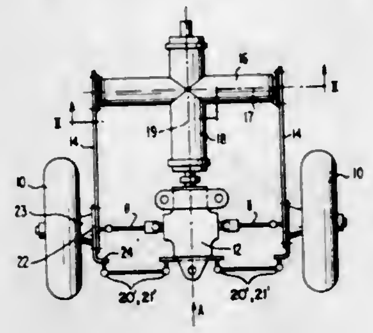


This bathroom scale combines back-to-zero movement of the dial by magnetic means with a customer operable high-low reading adjustment means, each means being specially designed for operation so as not to interfere with the proper functioning of the other means. Thus, the rack that operates the dial rotating pinion has a projection on the inner or toothed side which engages a V-shaped cam when the scale parts come to rest after a weighing operation to force the rack radially outwardly relative to the pinion, without disconnecting these parts but allowing greater play therebetween, so that the permanent magnet properly located in the scale base relative to a pole portion on a magnetizable plate secured to the underside of the non-magnetic dial at its periphery will be certain of bringing the dial back to zero reading after each weighing operation.

3,426,862

DRIVE AXLE FOR VEHICLES, ESPECIALLY MOTOR VEHICLES

Karl Wilfert, Gerlingen-Waldstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 1, 1966, Ser. No. 598,482
Claims priority, application Germany, Dec. 2, 1965, D 48,800
U.S. Cl. 180—73 **21 Claims**
Int. Cl. B60k *17/00;* **B60g** *11/06*

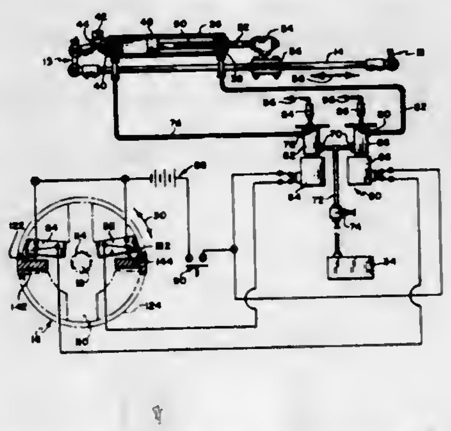


A drive axle for vehicles, especially motor vehicles, in which the wheels are driven from an axle gear by way of pivoted or jointed driving half-shafts, and in which each wheel is guided in the vehicle transverse direction by transverse guide members; additionally, each wheel is guided in the longitudinal direction by means of a longitudinal guide link, and the two longitudinal guide links are so connected by means of a common support that they can pivot about a transverse vehicle axis independently of one another and that they pivot in unison about a longitudinal vehicle axis, whereby the axle support is suspended from the vehicle body or frame independently of the axle gear.

3,426,863

POWER STEERING APPARATUS

Eugene E. Hanson, Fort Lauderdale, Fla., assignor to Ceepo Manufacturing Company, Hialeah, Fla., a corporation of Florida
Filed May 11, 1967, Ser. No. 637,774
U.S. Cl. 180—79.2 **8 Claims**
Int. Cl. B62d *5/00*

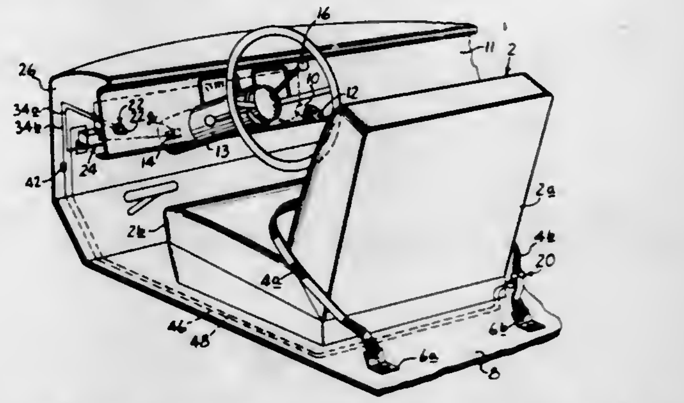


A power steering apparatus comprising fluid-actuated means for controllably pivoting conventional knuckle assemblies, electrically-operated valve means for controlling said fluid-actuated means, and switch means dominating said valve means, the switch means being arranged so that rotation of the steering wheel causes operation of the valve means. In a preferred embodiment, means are provided for permitting relative, resiliently resisted rotation of the steering wheel on the steering column, the switch means being operated by such relative rotation.

3,426,864

SEAT BELT CONTROLLED MOTOR STARTER SYSTEM

Jack S. Halperin, 2820 W. Glen Lake Ave., Chicago, Ill. 60645
Filed Nov. 29, 1966, Ser. No. 597,772
U.S. Cl. 180—82 **1 Claim**
Int. Cl. B60k *27/00*

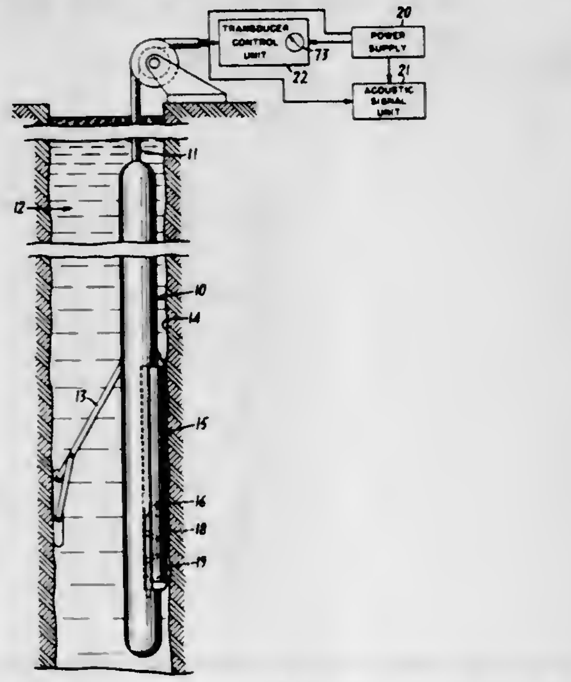


An interlock system for preventing starting of an automobile motor when a seat belt is not properly applied around the driver, the interlock system including a first motor start inhibiting switch having an initial position for normally preventing the starting of the motor on actuation of the motor start switch from an initial stable starting position to a second unstable force maintained position which is maintained only when the seat belt is pulled into and held in a position where the tension therein would normally indicate that the belt is secured around the driver, and a second motor start inhibiting switch having a manually-operable control means positioned opposite the driver's seat to be actuated by the hand of the driver while sitting upright in his seat other than the hand used to operate the motor start switch, the second motor start inhibiting switch having a stable normal position for preventing the starting of the motor and a second unstable manual force maintained position which is maintained only by application of manual force on the associated manually-operable control means.

3,426,865

BOREHOLE SURVEYING APPARATUS WITH COMPLEMENTARY ROTATION OF PAIRED TRANSDUCERS

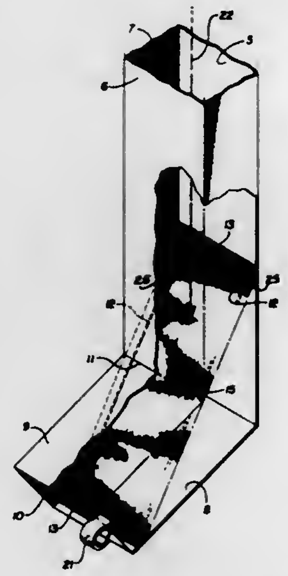
Louis Henry, Chevilly-Larue, Val-de-Marne, France, assignor to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France
Filed July 22, 1966, Ser. No. 567,117
U.S. Cl. 181—.5 **7 Claims**
Int. Cl. G10k *11/00;* **G01v** *1/40, 1/00*



In the particular embodiment of the invention described herein, a well logging instrument includes two pairs of angularly movable transducer assemblies directed at symmetric angles toward the wall of the well. One pair is positioned for angular motion in a vertical plane and the other is positioned for angular motion in a horizontal plane, each assembly including two transducers. A control mechanism actuated by signals from the surface of the earth controls the angular positions of the assemblies.

3,426,866
MUFFLER FOR DOWNSPOUTS AND MUFFLED DOWNSPOUT

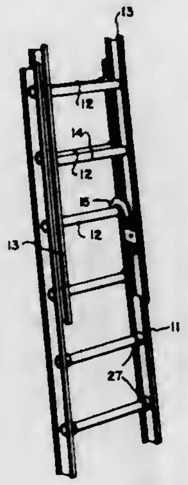
Floyd J. Jensen, 20755 Trinity Ave., Saratoga, Calif. 95070
Filed Mar. 2, 1967, Ser. No. 620,008
U.S. Cl. 181—33 **10 Claims**
Int. Cl. B05b *1/14;* **F01n** *3/06;* **F23d** *13/44*



The noise caused by water falling through the upright conduit of a downspout having a discharge conduit angularly related thereto at the bottom is muffled by a muffler comprising a frame carrying at least one and, preferably, two layers of a sieve screen, disposed in an inclined position with its ends engaging respectively the rear wall of the upright conduit and the bottom wall of the discharge conduit, and preferably engaging at an intermediate point the junction of the front wall of the vertical and the top wall of the discharge conduit.

3,426,867
LADDER

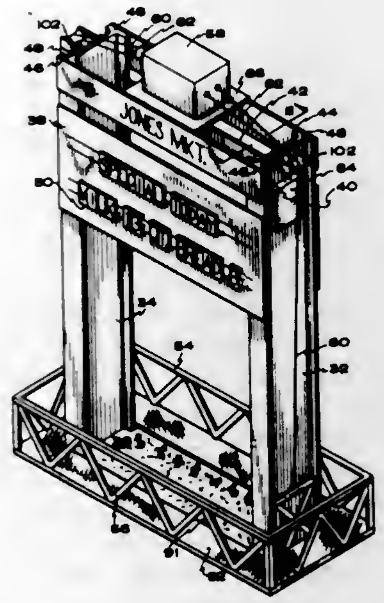
Lewis W. Berger, % Louisville Ladder Co., 1163 Algonquin Parkway, Louisville, Ky. 40208
Filed June 9, 1967, Ser. No. 645,014
U.S. Cl. 182—46 **6 Claims**
Int. Cl. E06c *1/00, 7/08;* **A62b** *3/00*



A ladder having a non-metallic side rail, or a side rail with insufficient resistance to torque for conventional methods of ladder assembly, with an opening therethrough and a rung extending into the opening. A pair of beads are formed in the rung to sandwich the rail therebetween and secure the rung thereto. An annular element is disposed between the rail and at least one of the beads. The element has projections to engage the bead and the rail to prevent rotation of the rung relative to the rail.

3,426,868
ELEVATOR FOR SIGN

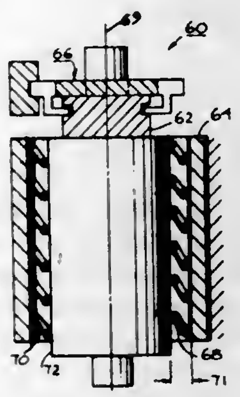
Benjamin F. Jones, Sr., Salt Lake City, Utah, assignor to Young Electric Sign Company, Salt Lake City, Utah, a corporation of Utah
Filed Jan. 9, 1967, Ser. No. 608,022
U.S. Cl. 182—129 **11 Claims**
Int. Cl. E06c *5/32;* **E04g** *1/18, 3/10*



An elevator, for signs with a plurality of change panel advertising faces secured at their opposite ends to vertical support poles, having a walkway which completely surrounds the sign and which is sized to move upwardly and downwardly on the sign, and lifting means for raising and lowering the walkway. I-beams are used as support poles when the sign is a two face one and positioning carriages are attached to the walkway which ride in the outside channels formed between the opposite ends of the I-beams for preventing lateral walkway movement.

3,426,869
ENERGY ABSORBING ARRANGEMENT

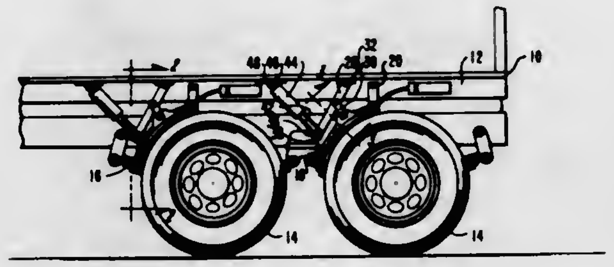
David L. Platus, Covina, and Ronald C. Gularte, Los Angeles, Calif., assignors to Mechanics Research, Inc., a corporation of California
Filed Jan. 3, 1967, Ser. No. 606,633
U.S. Cl. 188—1 **19 Claims**
Int. Cl. F16f *7/12;* **F16d** *61/00;* **B60t** *7/12*



A resettable energy absorbing arrangement as disclosed herein. In some of the embodiments energy is absorbed by the cyclic plastic deformation of ductible metal members by providing relative motion between two means that cyclically deform the ductile metal members. A slip clutch and a drive means are also provided so that energy will be absorbed for movement of the slip clutch in one direction to allow comparatively free movement back to the original position after the energy absorbing stroke. A return means is also included so that the drive means is returned to the initial condition after each energy absorbing cycle.

3,426,870
SAFETY BRAKES

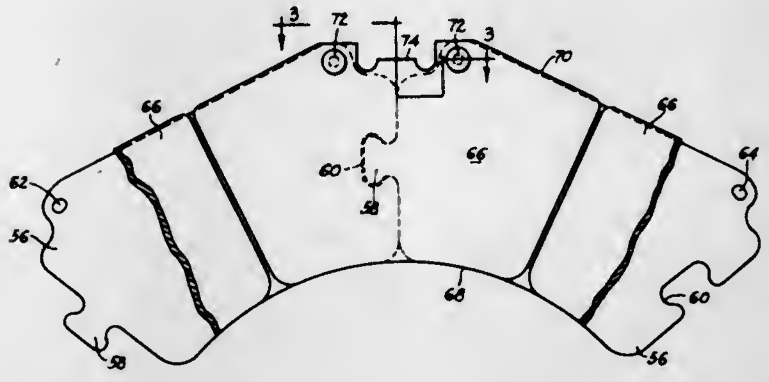
Gloyd R. Noland, 22850 Leonora Drive, Woodland Hills, Calif. 91364
Continuation of application Ser. No. 565,224, July 14, 1966. This application Feb. 26, 1968, Ser. No. 712,328
U.S. Cl. 188—29 **1 Claim**
Int. Cl. B60t *7/12;* **F16d** *65/24;* **B61h** *11/02*



The invention relates to an auxiliary brake system for vehicles such as trucks or busses which will be effective to aid the basic brake system, usually air, when it fails. This is accomplished by providing brake shoes adjacent the outer edge of the vehicle tires, pivoted on the vehicle frame to provide a mechanical advantage in braking pressure. The brakes are controlled by the vehicle air system as an auxiliary to the basic brake system and are provided with a safety spring action in case the air system fails.

3,426,871
LAMINATED SEGMENTED ROTOR

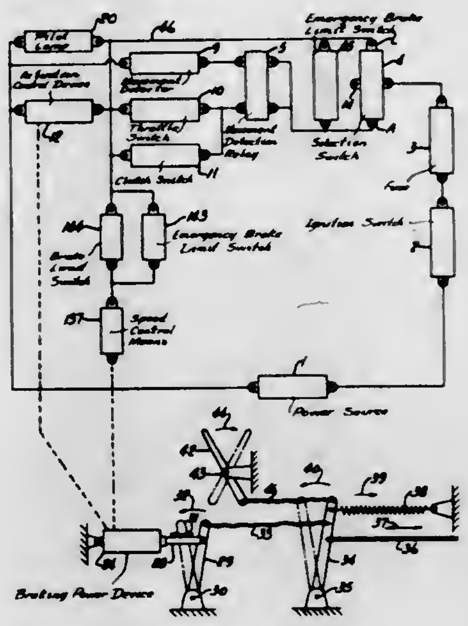
Eugene E. Harnish, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 8, 1967, Ser. No. 644,667
U.S. Cl. 188—218 **8 Claims**
Int. Cl. F16d *65/12, 13/60*



The following relates to a friction disc element construction for a disc brake which is formed of three segmented laminations. The center lamination is formed of a plurality of segments which are dovetailed to each other to provide an integral core. Each of the outer laminations is formed of a plurality of segments which are staggered with respect to the center segments so that each dovetailed end of the center segments is located between the ends of an outer segment.

3,426,872
AUTOMATIC BRAKE WITH SPEED AND THROTTLE CONTROLS

Tadasu Irie, Toyonaka, and Kaname Doi, Ibaragi, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan
Filed June 29, 1966, Ser. No. 565,037
Claims priority, application Japan, Oct. 18, 1965, 40/63,796; Dec. 25, 1965, 40/80,236; Mar. 15, 1966, 41/16,238
U.S. Cl. 192—.094 **14 Claims**
Int. Cl. F16d *67/04, 71/00;* **B60t** *11/10*

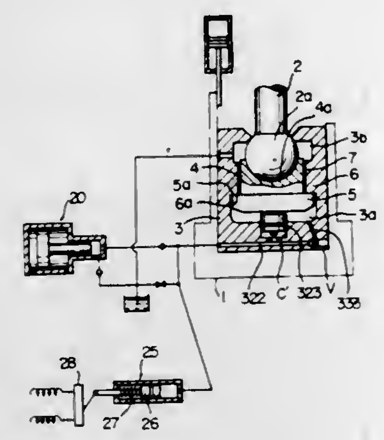


An automatic brake control for a motor vehicle wherein the parking brake is actuated by a fluid, electric or electromagnetic motor preferably driven from the vehicle engine or its associated parts and controlled by an electric circuit having a plurality of switches arranged and constructed to engage the parking brake upon the vehicle coming to a stop with the throttle control in engine idle position. A speed regulator is provided to selectively regulate the response time required for the motor to fully engage the parking brake with minimum time required upon the application of the vehicle foot brake to a predetermined limit. Upon the failure of the hydraulic or mechanical foot brake as determined by displacement thereof beyond predetermined limit, the parking brake is actuated in minimum time regardless of the state of motion of the vehicle.

3,426,873
HYDRAULIC OVERLOAD RELEASE AND CONTROL FOR A PRESS MACHINE

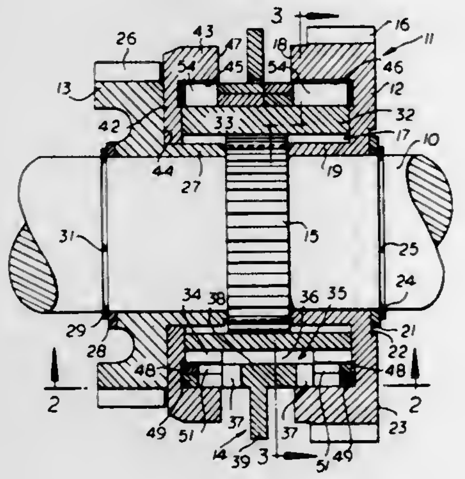
Yoshitomo Tezuka, Kanagawa-ken, Japan, assignor to Aida Iron Works & Co., Ltd., Kanagawa-ken, Japan
Continuation-in-part of application Ser. No. 567,141, July 22, 1966. This application Oct. 16, 1967, Ser. No. 675,501
Claims priority, application Japan, Aug. 26, 1965, 40/51,667
U.S. Cl. 192—150 **2 Claims**
Int. Cl. F16d *43/20, 71/00, 43/28*

A safety device for a press machine which has a slidable member adapted to be driven by a coupling rod to apply pressure to a workpiece. A movable pressure receiving member slidable within an oil chamber by the coupling rod divides the chamber into an upper oil chamber portion and a lower oil chamber portion. It has a sealing surface facing toward said upper oil chamber portion which cooperates with an annular seal member having a sealing surface facing toward said lower oil chamber portion to form a seal. Oil pressure sensing means is coupled to said lower oil chamber portion and is adapted to be coupled to the press machine drive means driving the coupling rod for stopping the driving of the coupling rod. A relief valve is provided in the oil supply line supplying oil under pressure to the lower chamber portion. A control device is provided in the bottom wall of said slidable member defining the bottom of said lower oil chamber for returning the safety device to an operative condition after the seal is broken.



3,426,874
SELF-ENERGIZING SYNCHRONIZING CLUTCH

Lawrence M. Johnston, Jr., Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 670,111
U.S. Cl. 192—38 **12 Claims**
Int. Cl. F16d *13/04, 15/00, 41/06*

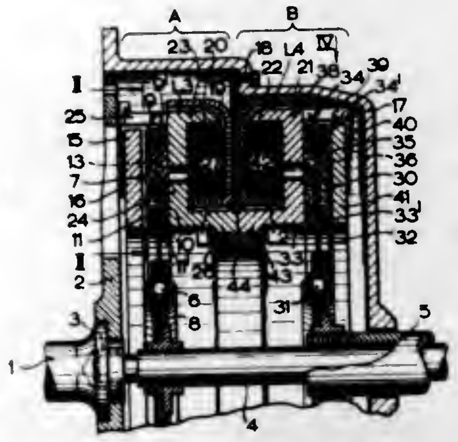


A self-energizing synchronizing clutch for synchromesh transmissions utilizing the main shaft inertia to synchronize a desired gear to proper speed. Synchronization is achieved by the use of rollers between an inner race splined to the main shaft and an outer race secured to the desired gear; the rollers being controlled by a shaft ring and shifting keys actuating an inner and an outer cage for the rollers. The inner race has cam surfaces thereon so that shifting of the inner and outer cages forces the rollers upon the cam surfaces of the inner race, and the rollers are wedged between the inner and outer races by the torque of the gear.

3,426,875
ELECTROMAGNETIC CLUTCH

Hans Stürmer, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed June 26, 1967, Ser. No. 648,726
Claims priority, application Germany, Aug. 19, 1966, B 88,536
U.S. Cl. 192—48.2 **11 Claims**
Int. Cl. F16d *27/08, 27/14, 13/60*

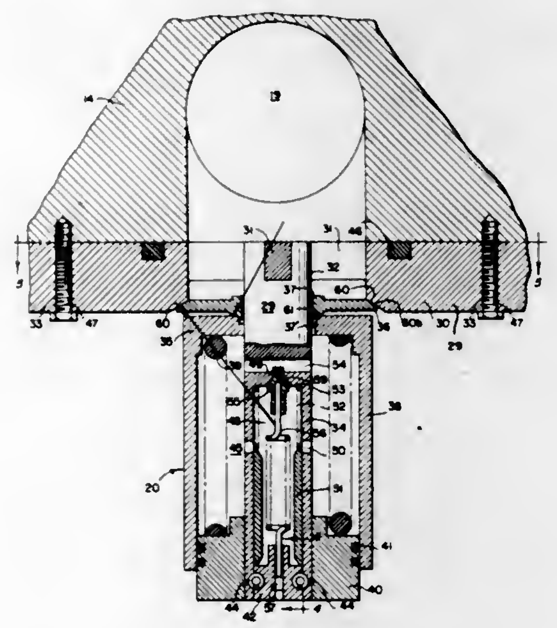
The clutch plate of a dry magnetic clutch is disposed between a rotary pressure plate and an axially movable rotary armature plate which latter can be attracted toward the pressure plate by an electromagnet to clamp the clutch plate between the rotary plates. The clutch plate comprises a flat or corrugated disk which consists of magnetically conductive material and carries pairs of concentric inner and outer pole rings, and friction facings interposed between the pole rings. The disk has an annulus of windows provided between the inner and outer pole rings.



Coupling pins limit axial movements of the armature plate away from the clutch plate and compensate for wear by changing their positions with reference to the pressure plate to the extent corresponding to wear on the clutch plate and/or the rotary plates.

3,426,876
MODULATING VALVE FOR HYDROSTATIC COUPLING

Karl G. Ahlén, Stockholm, Sweden, assignor to S.R.M. Hydromekanik AB, Stockholm, Sweden
Filed Nov. 17, 1966, Ser. No. 595,262
Claims priority, application Great Britain, June 24, 1966, 28,563/66
U.S. Cl. 192—61 **34 Claims**
Int. Cl. F16d *31/04;* **F16k** *25/00, 31/12*

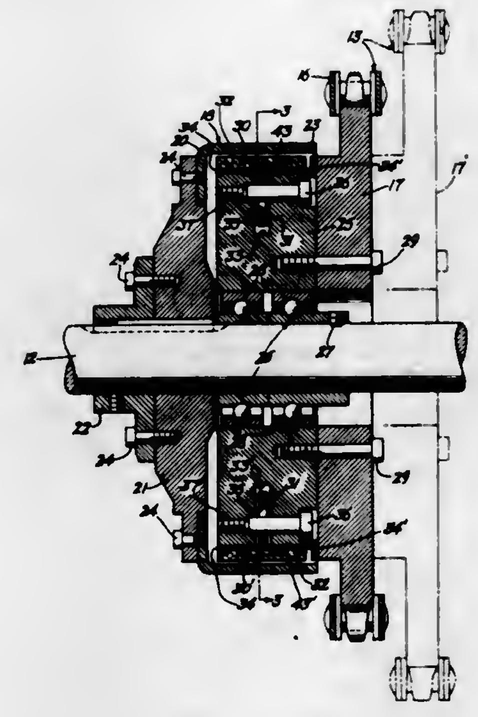


A modulating pressure valve for controlling the flow of pressurized fluid from the high pressure side to the low pressure side of a hydrostatic coupling. Fluid in the high pressure side tends to open the valve but this same fluid is directed through a restricted passage to a chamber where it urges a piston to close the valve. A spring assists the closing movement. Controllable openings from this chamber to the low pressure side determine the extent of the closing force applied by the pressure in the chamber.

An improved valve disc having opposing spherical surfaces cooperating with a seat and an actuating member, respectively.

3,426,877
CENTRIFUGAL AXLE CLUTCH

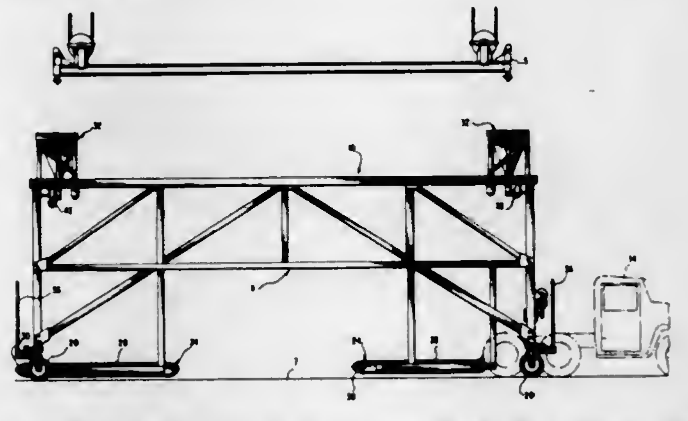
Frank F. Cancilla, Jr., 1449 Oakland Road, San Jose, Calif. 95112
Filed Feb. 13, 1967, Ser. No. 615,775
U.S. Cl. 192—105 **3 Claims**
Int. Cl. F16d *43/24, 11/06, 13/04*



A direct drive slip clutch having a drum secured to the drive axle of a racing vehicle and housing a power take-off free floating on the axle and driven from a source of power, the power take-off including a carrier for clutch shoes and a plurality of weights urged outwardly by centrifugal force into driving engagement with the drum for turning the latter.

3,426,878
CONTAINER SAFETY GUIDE FOR CONTAINER-SHIP LOADING AND UNLOADING

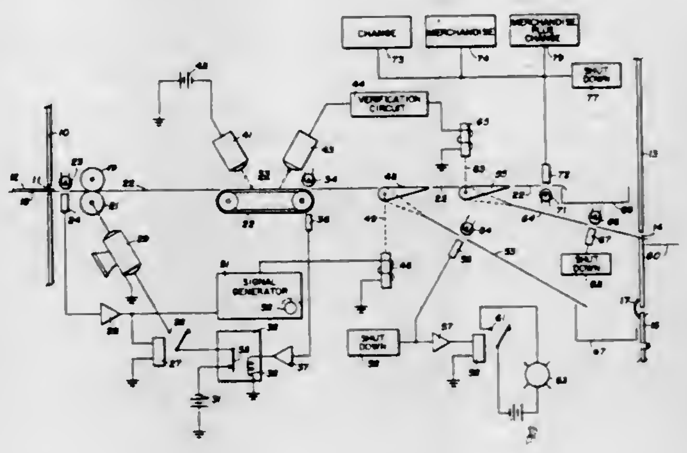
Robert N. Campbell, Jr., Mobile, Ala., and John H. Williams, Jacksonville, Fla., assignors to Sea-Land Service, Inc., Elizabeth, N.J., a corporation of Delaware
Filed Feb. 9, 1967, Ser. No. 614,940
U.S. Cl. 193—38 **3 Claims**
Int. Cl. B65g *11/00, 67/02*



A mobile framework is positionable on a wharf apron alongside a moored containership and is provided along its top edges with funneling guide elements for cooperating with a ship or shore mounted crane to direct a descending container onto a highway trailer chassis standing within the framework and alternatively for similarly directing a descending gappling spreader frame into coupling engagement with a chassis-supported container within the framework.

3,426,879
COUNTERFEIT DOCUMENT SECURITY SYSTEM

Gene Cowden Walker, Dallas, Tex., assignors, by mesne assignments, to Docutel, Inc., Dallas, Tex., a corporation of Delaware
Filed May 19, 1967, Ser. No. 639,717
U.S. Cl. 194—4 **15 Claims**
Int. Cl. G07f *3/00;* **B07c** *5/34*

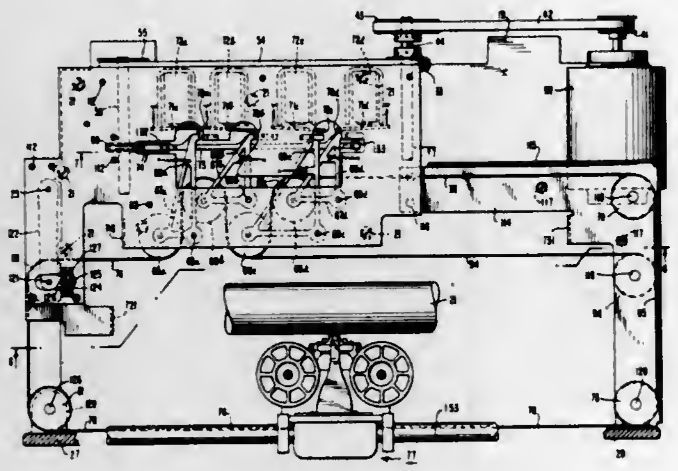


Apparatus for document verification including a testing area wherein the genuineness of a document is determined. After passing through the testing area a document is transported to a first receiver bin if found genuine and to a second receiver bin if counterfeit. A random sampling system selects a given number of documents from the total submitted to the system to be directed to the second receiver bin regardless of whether genuine or counterfeit. All documents directed into the second receiver bin actuate an alarm circuit to notify an operator.

3,426,880
SERIAL CHARACTER MATRIX PAGE PRINTER

Edwin O. Blodgett, Rochester, N.Y., assignor to Friden, Inc., a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 630,904
Int. Cl. B41j *5/38, 7/34*
U.S. Cl. 197—1 **35 Claims**

A serial character matrix page printer has a stationary platen and a wire-matrix print-head carrier supported and guided by a rail for movement longitudinally of the platen in printing a line of copy. The print head has a print-wire character-selection plate actuatable between wire-print and wire-selection positions by a pressure plate structure, and the carrier includes a first spring-biased member for actuating the pressure plate structure between print and non-print positions and additionally includes a pair of spring-biased actuating members for actuating the selection plate in individual ones of two perpendicular directions to print-wire character-selection positions thereof. Two idler pulley systems are each provided with a group of pulleys supported upon individual pivotal bell cranks each movable between latchable and unlatched positions for pivotal radial displacement of the pulleys of each group relative to the other pulleys thereof. A third idler pulley system includes a third pulley group having one pulley supported upon a pivotal bell crank movable between latchable and unlatched positions for pivotal radial displacement of the one pulley relative to the other pulleys of the group. A pair of elongated flexible bands extends over the pulleys of individual ones of the first and second pulley systems and have the ends of each secured between the carrier structure and an individual one of the selection-plate actuating members at points thereon spaced along a line substantially parallel to the rail. A third elongated flexible member extends over the pulleys of the third pulley system and has its ends secured between the carrier structure and the pressure-plate-structure actuating member at points thereon spaced along a line substantially parallel to the rail. Each of the flexible bands is tensioned by spring-bias force exerted thereon by the associated actuating member. A print cycle control cam initiates and terminates each character print cycle with all of the bell cranks concurrently positioned in their latchable positions. A latch-control electromagnet associated with the bell crank of the third pulley group permits or restricts displacement of the one pulley of this group effectively to expand and contract the third flexible member and effect a print operation by actuation of the pressure plate structure, and code energizable latch-control electromagnets associated with and individual to the bell cranks of the first and second pulley systems effect print character selection by selection plate positioning under control of effective incremental-step expansions and contractions of the pair of flexible members extending over the pulleys of the first and second pulley systems. Character spacing escapement of the carrier begins after the print wires have been moved a small distance from character impression position toward non-print position, thereby avoiding any blurring of the printed characters by carrier escapement motion.



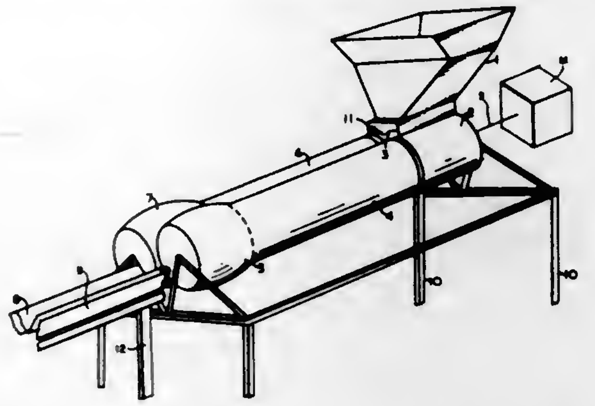
The printer includes a novel character selection plate and a novel method of utilizing it. The character selection plate is fabricated to effect printing of numerals, punctuation, and a full alphabet of both upper-case and lower-case characters accurately aligned upon a print line and in respect any depending portion of a lower-case character and of punctuation to effect printing of such portion in descending relation below the print line. This is accomplished simply by the selection plate and its character-selection positioning without the need for special shift control of the print head as between upper-case and lower-case selection of alphabetic characters, numerals, punctuation and symbols.

3,426,881

METHOD AND APPARATUS FOR ALIGNING BODIES

Francis B. Dwyer, Marrickville, New South Wales, Australia, assignor to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales
Filed Aug. 24, 1966, Ser. No. 574,708
Claims priority, application Australia, Sept. 2, 1965, 63,571/65; Dec. 9, 1965, 67,689/65; Feb. 4, 1966, 1,274/66
U.S. Cl. 198—30 **1 Claim**
Int. Cl. B65g *47/26*

Method and apparatus for obtaining a single row alignment of bodies by separating them longitudinally and simultaneously guiding them transversely into a single row, in which the bodies are caused to slide longitudinally down an inclined potential energy trough formed by one or more moving surfaces selected in such a way that the

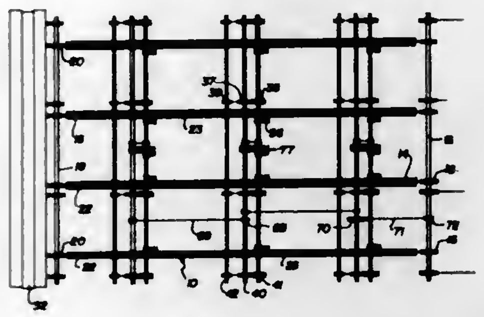


sliding bodies are submitted transversely to progressively varying degrees of longitudinal frictional retardation.

3,426,882

BOARD TURNING APPARATUS

William J. North, North Vancouver, British Columbia, Canada, assignor to Korth Machinery Limited, Vancouver, British Columbia, Canada
Filed Apr. 4, 1967, Ser. No. 628,364
U.S. Cl. 198—33 **18 Claims**
Int. Cl. B65g *47/24*

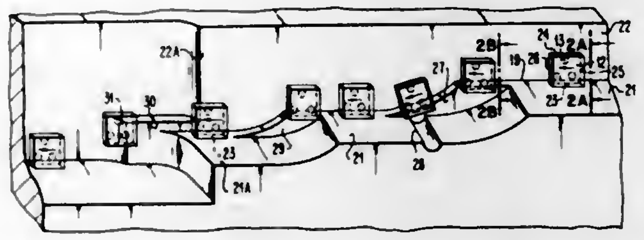


An apparatus for turning boards being moved edgewise at regularly spaced intervals by a fast-moving conveyor. The apparatus operates automatically to invert the boards while maintaining the forward speed and regular spacing of the boards on the conveyor.

3,426,883

VIBRATORY FEEDING AND ORIENTING APPARATUS

Jesse Aronstein, Latham, Donald T. Mozer, Chelsea, and Stanley J. Poloncic, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk N.Y., a corporation of New York
Filed July 28, 1967, Ser. No. 656,723
U.S. Cl. 198—33 **22 Claims**
Int. Cl. B65g *47/24*

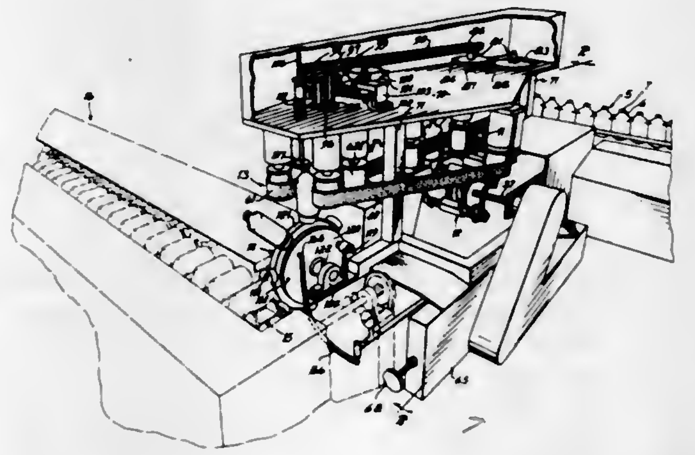


Vibratory article feeding apparatus for the rotational orientation of an article having a polygonal surface and a group of projections from said surface having a peripheral polygonal configuration which is asymmetrical with the surface configuration such as semiconductor chips with a rectangular surface configuration and a triangular configuration of contact projections. In a vibratory feeder bowl having a spiral track up which the articles are fed in an initial random rotational orientation in the surface plane, a series of projection-engaging guide means respectively rotate only articles having specific orientations to bring all of the articles into a preselected rotational orientation.

3,426,884

GLASS BOTTLE HANDLING APPARATUS

Edmund B. Donner, Washington, Pa., assignor to Solar Engineering & Equipment Co., Beaver, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1967, Ser. No. 660,760
U.S. Cl. 198—33 **15 Claims**
Int. Cl. B65g *47/24, 47/52*

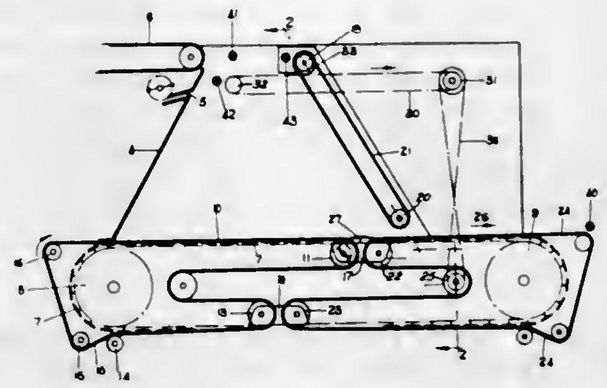


An input and output bottle handling mechanism for a glass decorating machine. The mechanism is operable to transfer bottles from one transport conveyor to another while rotating the bottles ninety degrees so as to change the orientation of the bottles from a vertically upstanding position to a horizontal position. The transfer occurs as a consequence of the bottles being moved off of a first conveyor onto suction cups of a continuously rotating transfer wheel which then transports the bottles through a ninety degree arc to a second conveyor.

3,426,885

STORAGE BINS

John P. Rupert, Stellenbosch, Cape Province, Republic of South Africa, assignor to Tobacco Research and Development Institute Limited, Zug, Switzerland
Filed Feb. 2, 1967, Ser. No. 613,503
Claims priority, application Republic of South Africa, Feb. 2, 1966, 66/615; Jan. 18, 1967, 67/311
U.S. Cl. 198—57 **8 Claims**
Int. Cl. B65g *47/19, 47/44*

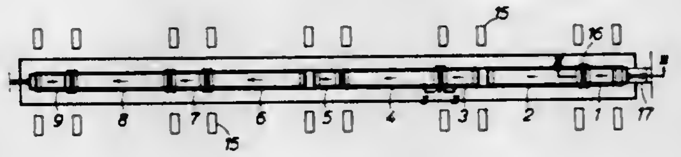


A storage bin consisting in an elongated trough closed at one end over which ore through which the bin is charged; an endless band constituting a false floor to the bin and lying on a floor movable in either direction, the band moving with the floor when the latter moves out of the trough under the closed end and slack in the band being taken up under the floor when the floor moves in the opposite direction; means such as a movable wall or a series of curtains for limiting movement of goods off the band; and means to cause the floor to move to expand and contract the length of band and hence the storage capacity of the bin in response to the amount of goods in the bin.

3,426,886

ARRANGEMENT FOR THE CONVEYANCE OF TIMBER TO SEVERAL SUCCESSIVE POINTS OF CONSUMPTION

Erkki Johannes Aro, Hyvinkaa, Finland
Filed Jan. 5, 1967, Ser. No. 607,570
U.S. Cl. 198—92 **9 Claims**
Int. Cl. B65g *37/00, 47/52*

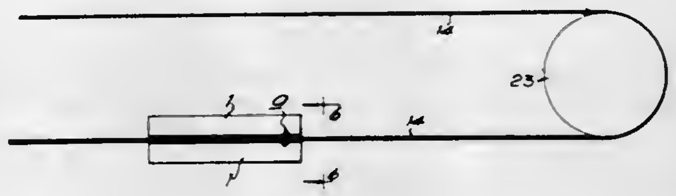


This invention relates to an arrangement for the conveyance of timber to several successive points of consumption, the arrangement comprising a conveyor way for timber composed of several successive, continuous belt, chain or cable conveyors on which the timber is transferred from one conveyor to the next, the gap between conveyors opening up to feed timber to the point of consumption. According to the invention the conveyors are movable along the axis of conveyor way, whereby one or more conveyors are coupled-up with a shifting device and the conveyor in question and those next to it can be connected-up and disconnected from each other so that the gap formed by disengaging the connection between any two conveyors can be closed again by means of the shifting device.

3,426,887

DRIVES FOR CONVEYORS

Frederick Gifford Ward, East Leake, and Anthony W. Davey, Long Whatton, England, assignors to Herbert Morris Limited, Loughborough, England, a company of Great Britain
Filed Feb. 27, 1967, Ser. No. 618,890
U.S. Cl. 198—177 **8 Claims**
Int. Cl. B65g *23/22, 17/20*



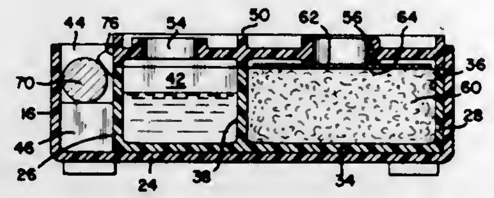
A drive for conveyors in which one member of a linear induction motor is mounted on the conveyor and the other member on a stationary track.

3,426,888

COLORING SET

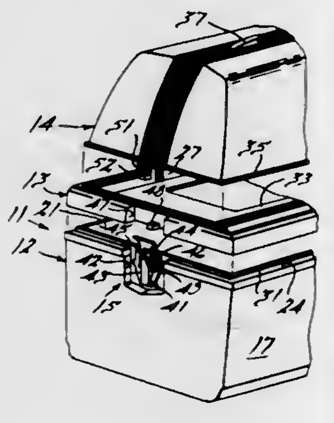
Harry Meth, Cincinnati, Ohio, assignor to Rainbow Crafts, Inc., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,016
U.S. Cl. 206—1.8 **9 Claims**
Int. Cl. B44d *3/00, 3/04;* **B05c** *11/00*

A coloring set which includes a spill-proof container for holding and storing a colored liquid such as paint, dye, or ink. The container contains a compressible and expandable sponge block for absorbing the liquid. A plate member is interposed between the block and an opening in the top of the container through which a brush can be inserted, and it effectively blocks the opening, thus preventing leakage and minimizing evaporation.



3,426,889
INSULATED LUNCH KIT

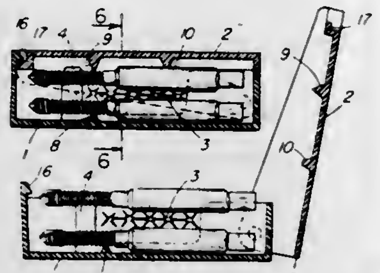
George W. Fuller, Hampton, Conn., assignor to King-Seeley Thermos Co., a corporation of Michigan
Filed Aug. 2, 1967, Ser. No. 657,960
U.S. Cl. 206—4 **8 Claims**
Int. Cl. A45c *11/00;* **B65d** *51/18*



An insulated lunch kit comprised of a body member that defines an open food receiving cavity, a cover member that is supported upon the body member and forms a closure for the food receiving cavity, a bottle cover that defines a cavity for receiving an insulated bottle and which is supported on and closed by the cover member and a latching assembly for holding the aforenoted parts together. The latching assembly consists of a latch member carried by the body member and which coacts with fixed latch members carried by the cover member and bottle cover.

3,426,890
TAP BOX

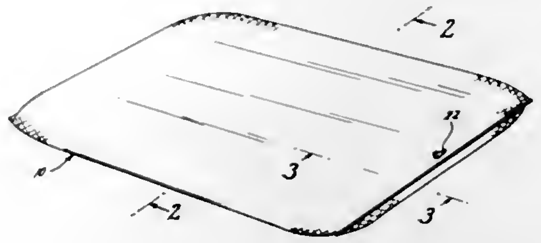
Christian Bayer, Armonk, N.Y., assignor to Tiros Plastics Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 20, 1967, Ser. No. 692,041
U.S. Cl. 206—17 **6 Claims**
Int. Cl. B65d *85/54;* **A45c** *11/26*



An injection molded plastic box having integral longitudinal dividers forms a package for taps. Angular ridges formed in the box prevent longitudinal motion of the taps. An inexpensive extruded resilient cushion member separates layers of taps and prevents damage and rattling.

3,426,891
CARGO CUSHION

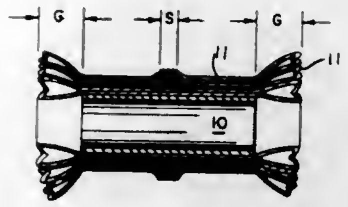
Ronald H. Marks, Dallas, Tex., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 544,926, Apr. 25, 1966, which is a continuation-in-part of application Ser. No. 404,823, Oct. 19, 1964. This application Sept. 25, 1967, Ser. No. 694,760
U.S. Cl. 206—46 **10 Claims**
Int. Cl. B65d *85/00, 57/00;* **B61d** *45/00*



An inflatable cargo cushion having an inner inflatable bladder and an outer close-knit fabric cover of paper or plastic in which the cover is tubular, has only transverse seams at the ends and is in firm engagement with the bladder when the latter is inflated, whereby an exterior impact applied to cushion is absorbed by both the deformation of the bladder and the deformation of the knitted fabric structure with the forces of said impact being distributed over a substantial area of said knitted fabric structure.

3,426,892
ROLL OF TUBING ON A CORE AND METHOD OF MAKING IT

George W. Poncy, 59 Dale Drive, Chatham, N.J. 07928
Filed Aug. 2, 1966, Ser. No. 569,712
U.S. Cl. 206—59 **20 Claims**
Int. Cl. B65h *55/00, 17/02;* **B31c**

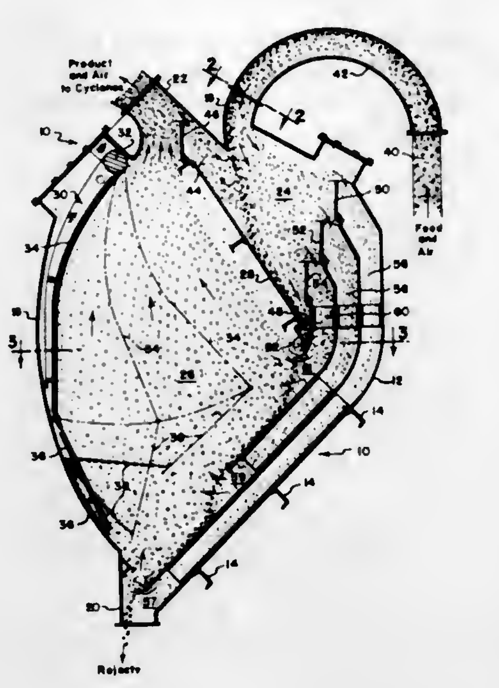


This invention relates to rolls of flexible tubing for bag making and similar and related purposes, and to the method of making same. The art of bag making is old and well known, and it is common practice today to make bags of uniform length and width expeditiously and economically from tubing by means of high speed machinery. Thus, it is common practice to form a sheet of bag material into a tube and to feed the tube directly into a bag making machine to make bags, without first winding same on a core.

3,426,893
METHOD AND APPARATUS FOR CLASSIFYING FINELY-DIVIDED SOLIDS CARRIED IN A GAS STREAM

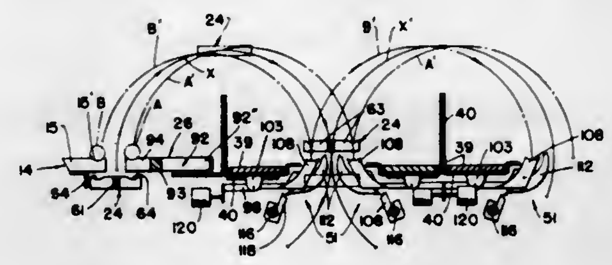
Roy H. Stark, Riverside, Pa., assignor to Kennedy Van Saun Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,833
U.S. Cl. 209—3 **13 Claims**
Int. Cl. B07b *4/04*

Vari-mesh classifier and method of classifying finely-divided solids carried in a main gas stream and caused to flow downwardly through a series of chambers in the classifier, the final chamber of which is a variable volume expansion chamber, and means for removing gas from the main stream at each of a series of points and for passing the removed gas through the main stream of solids at succeeding locations along the main stream in the expansion chamber.



3,426,894
EGG TRANSFER AND WEIGHING APPARATUS

Clarence Page, 23275 Outwood, Southfield, Mich. 48075
Filed May 29, 1967, Ser. No. 642,051
U.S. Cl. 209—121 **15 Claims**
Int. Cl. A01k *43/08;* **B07c** *5/16;* **B07b** *13/08*

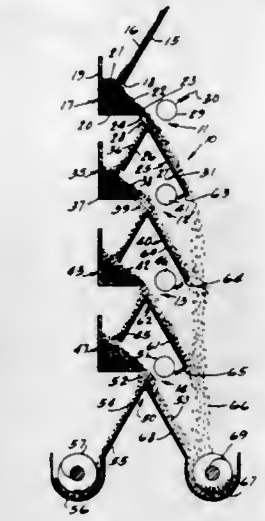


A machine is shown for grading eggs by weight which has a continuously traveling, spool-type egg supply conveyor delivering eggs to fixed egg-holding finger units spaced transversely of the direction of supply of eggs, the finger units corresponding in number with the egg-cradling lines of the conveyor. The eggs are transported through a succession of orbital transfer units and associated egg grading balance units. The transfer units each comprise an improved dual-type, circularly orbiting bar adapted to receive and transport double the number of eggs to the balance units.

3,426,895
METHOD AND APPARATUS FOR ELECTROSTATIC SEPARATION

Harry L. Bullock, Oak Park Village, Ill., assignor to National Engineering Company, Chicago, Ill.,
Filed Nov. 21, 1966, Ser. No. 595,755
U.S. Cl. 209—129 **9 Claims**
Int. Cl. B03c *7/10*

An electrostatic separator is provided with stationary feeder means defining surfaces for building up and maintaining a pile of feed particles having a face that slopes at substantially the angle of repose of said particles. A V-shaped divider and electrode are spaced from the bottom of said face. A chute delivers particles to said face and the particles flow, by gravity, to the divider and electrode.



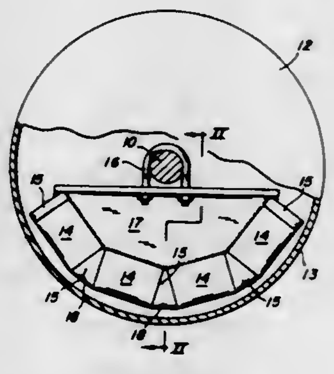
3,426,896
FLOTATION OF BULK CONCENTRATES OF MOLYBDENUM AND COPPER SULFIDE MINERALS AND SEPARATION THEREOF

Robert E. Baarson, La Grange, and Charles L. Ray, Wheaton, Ill., assignors to Armour Industrial Chemical Company, a corporation of Delaware
No Drawing. Filed Aug. 20, 1965, Ser. No. 481,420
U.S. Cl. 209—167 **14 Claims**
Int. Cl. B01d *43/00*

Molybdenum is recovered from a metallic sulfide ore containing molybdenum, copper and iron, along with siliceous gangue minerals by conditioning a water suspension of such ore with an S-substituted isothiouronium salt, introducing a frothing agent and air to float the molybdenum and copper together away from the iron and siliceous gangue minerals, and depressing the copper to separate the molybdenum as product.

3,426,897
MAGNETIC SEPARATOR

Robert W. Salmi, Mountain Iron, Minn., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,257
U.S. Cl. 209—223 **4 Claims**
Int. Cl. B03c *1/14*

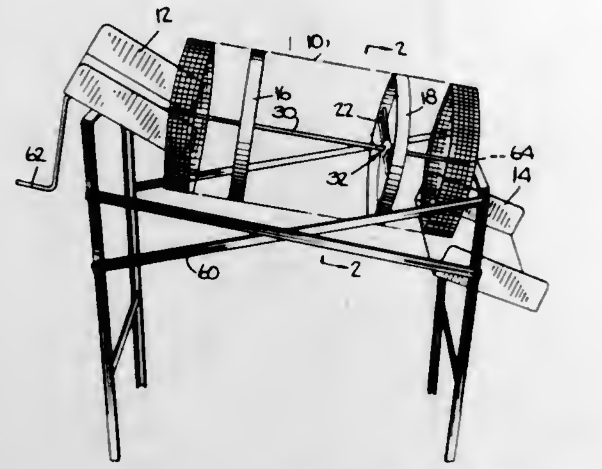


A magnetic separator which has stationary magnets and pole pieces housed within a rotating drum. The inventive feature is that the attractive force at each end of the drum is modified or weakened, as by rounding off the ends of the pole pieces. Thus the attractive force at the ends is approximately equal to the average along the drum length. This prevents too much magnetic material from accumulating near the ends of the drum and causing excessive wear.

3,426,898

SOIL SIFTER

Robert F. Cruickshank, Scarsdale, N.Y., assignor to Nip-Co Manufacturing, Inc., New Rochelle, N.Y., a corporation of New York
Filed Oct. 10, 1966, Ser. No. 585,434
U.S. Cl. 209—245 **23 Claims**
Int. Cl. B07b *1/24*

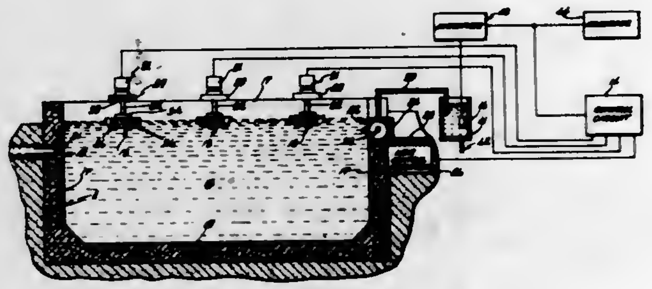


A sifter having a revolvable mesh cylinder with an inlet at one end and an outlet at the other. A pair of diametric supports mounted on the cylinder, and a rotatable rod adjustably mounted at a multiplicity of positions on said supports, the rod also being adjustable mounted on a cradle.

3,426,899

AERATION APPARATUS

Eugene J. Smith, Valley Cottage, N.Y., assignor to Yeomans Brothers Company, Melrose Park, Ill., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,831
U.S. Cl. 210—96 **6 Claims**
Int. Cl. B01d *15/00*



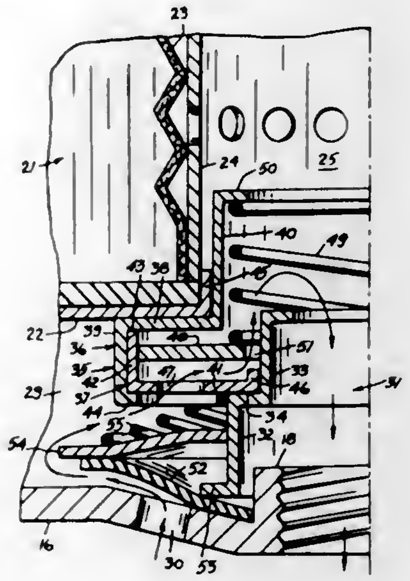
Apparatus for the aeration for liquid in a tank or the like which employs sensing means for determining the dissolved oxygen content of the liquid and an adjustable weir for controlling the level of liquid in the tank. Control means including a control circuit coupled to the weir is connected to the sensing means and is adapted to adjust the rate of introduction of oxygen in accordance with the sensed dissolved oxygen content. A plurality of rotary surface aerators may be employed and the control circuitry may be designed to change the speed of rotation and/or selectively turn aerators off and on.

3,426,900

DISPOSABLE TYPE FILTER

James W. Wilkinson and Robert J. Shaltis, Hastings, Mich., assignors to Hastings Manufacturing Company, Hastings, Mich., a corporation of Michigan
Filed Sept. 13, 1966, Ser. No. 579,145
U.S. Cl. 210—130 **14 Claims**
Int. Cl. B01d *27/10*

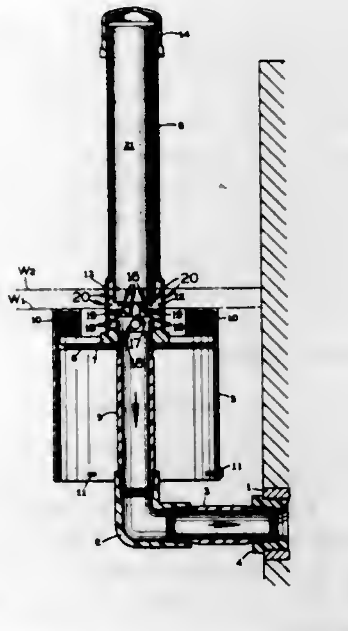
This application discloses a disposable type filter including a filter housing having a base provided with a central outlet neck and with inlet passages spaced radially from said neck, a filter cartridge provided in said housing in spaced relation from said base plate, said cartridge having a central outlet chamber and said housing defining an inlet chamber around the cartridge and between the cartridge and said base plate. In accordance with the invention a stepped adapter is provided having an enlarged base portion and a reduced upper portion with an intermediate upwardly facing shoulder portion on which is supported a relief valve casing. The upper portion of a flexible anti-drainback valve is adapted to be interposed between the foot or base of the adapter and the base plate while an annular sealing disc is mounted about the enlarged lower portion of the adapter and is spring biased against the outer portion of the anti-drain valve to normally hold the same in closed position. The adapter permits the use of a conventional housing and a conventional filter and provides a compact arrangement for the valve elements used in connection therewith.



3,426,901

CHEMICAL DISPERSION DEVICE FOR SWIMMING POOLS

David Sherper, 11103 SW. 79th Ave., Miami, Fla. 33156
Filed Jan. 15, 1968, Ser. No. 697,705
U.S. Cl. 210—169 **3 Claims**
Int. Cl. E04h *3/20*

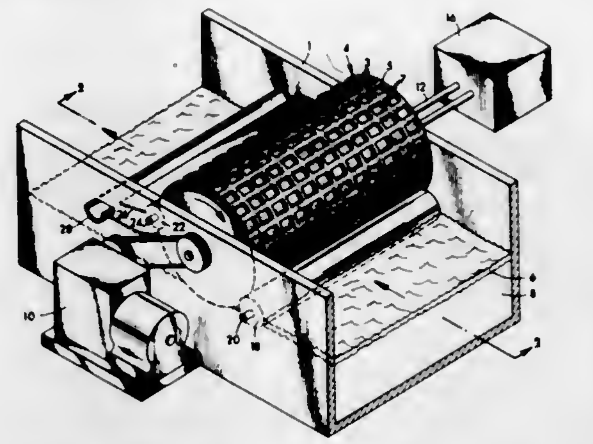


A device for chemically treating the water in a swimming pool by the metered erosion and dispersion of a solid state chemical.

3,426,902

LIQUID SKIMMING DEVICE

Richard Kilpert, Berkeley Heights, and Richard H. Bauer, West Caldwell, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 671,050
U.S. Cl. 210—179 **1 Claim**
Int. Cl. B01d *17/02*

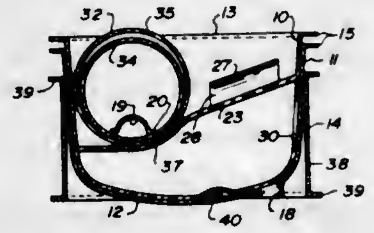


The present invention relates to an improved apparatus for skimming oil from a water stream therebelow. The device is characterized by a rotatable drum having an extended hydrophobic pickup surface which is of sponge-like material. Means are provided for heating the pickup surface and varying the speed of the rotation of the drum.

3,426,903

SEPTIC TANKS

Ray Olecko, Winnipeg, Manitoba, Canada, assignor to Structural Glass Limited, Winnipeg, Manitoba, Canada
Filed Sept. 12, 1966, Ser. No. 578,784
U.S. Cl. 210—232 **2 Claims**
Int. Cl. B01d *43/00*



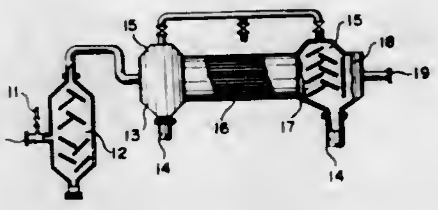
A knock-down septic tank structure, comprising frustoconical tank body sections which may be nested together for storage or shipment and which may be bolted together to form an assembled tank. One of the sections has an inlet with a removable baffle, and the other section is partitioned to provide a discharge compartment having a manhole equipped with a manhole sleeve. The sleeve is in a plurality of telescoped, separable members which, along with the inlet baffle, may be stored in the partitioned section in the knocked-down condition of the tank.

3,426,904

SEPARATING APPARATUS FOR DISPERSED MATTER

Kihei Katsuta, Yoshikatsu Shimasaki and Ikuo Miki, Nagasaki-shi, Akira Imamura, Tokyo, and Hiroshi Oota and Takeshi Matsubara, Kitakyushu-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, and Kabushiki Kaisha Imamura Seisakusho, Kitakyushi-shi, Japan
Filed Dec. 21, 1965, Ser. No. 515,361
Claims priority, application Japan, Dec. 23, 1964, 39/72,236; Nov. 8, 1965, 40/68,436
U.S. Cl. 210—259 **6 Claims**
Int. Cl. B01d *21/02*

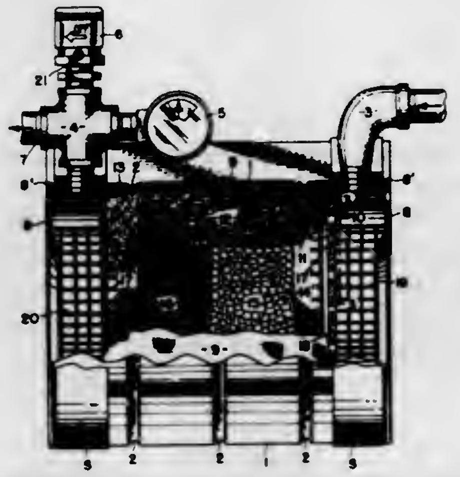
Separating apparatus for dispersed matter is disclosed as comprising a dispersed substance agglomerating chamber having a horizontal flow passage therethrough containing a packing of a plurality of relatively thin-wall tubes, each having a diameter not in excess of 10 mm., the packing substantially filling the transverse cross sectional area of the flow passage, with the tubes being in a laterally substantially contiguous relation and providing through flow passages therethrough and through the intertube spaces. The chamber has a dispersion inlet, a first outlet for a dispersion medium and a second outlet for dispersed substances separated and agglomerated during flow of the dispersion through and between the small diameter tubes. Further separating means communicate with the agglomerating chamber.



3,426,905

REPLACEABLE FILTER UNIT FOR COOLANT SYSTEMS OF INTERNAL COMBUSTION ENGINES

Raymond F. Kalfas, 2380 W. Pleasant Valley Road, Parma, Ohio 44134
Filed June 20, 1966, Ser. No. 558,729
U.S. Cl. 210—266 **3 Claims**
Int. Cl. B01d *27/02;* **C02c** *1/18*



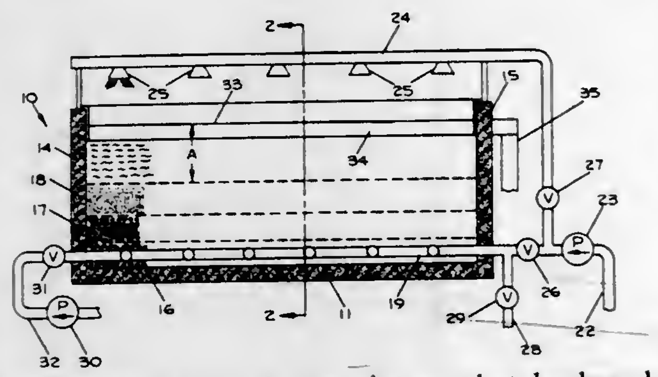
A disposable container for water cooled internal combustion engine cooling systems for effectively and efficiently removing contaminants such as sludge, foreign particles and byproducts of corrosion resulting from chemical or electrolytic reactions, etc. occurring in the service operation of water cooled transport engines, such removal being accomplished by absorption and/or entrapment of such contaminants in a sealed in horizontally disposed canister connected in the coolant system.

3,426,906

SAND FILTER

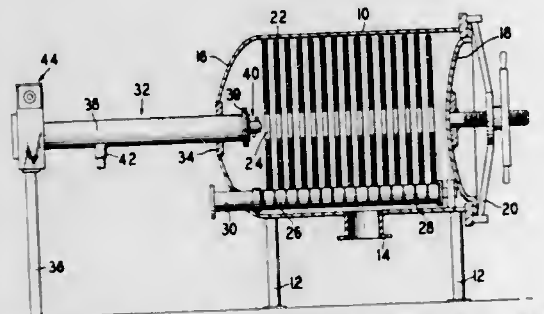
Martin H. Schroeder, 904 N. Lyndale, Faribault, Minn. 55021
Filed Dec. 3, 1965, Ser. No. 511,375
U.S. Cl. 210—279 **2 Claims**
Int. Cl. B01d *41/02*

A backwash arrangement for a filter bed comprising a feed pipe extending longitudinally at the bottom of the bed and perforated lateral extensions on said pipe. A pump



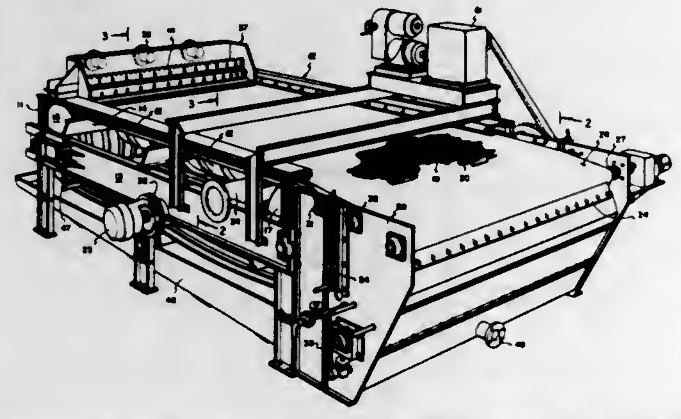
is connected to each end of the pipe so that backwash water is forced into both ends of the pipe.

3,426,907
WATER SPRAY CLEANING OF MULTIPLE, SPACED WALL FILTER ELEMENTS
Winthrop R. Stone, Winfield, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 13, 1967, Ser. No. 630,647
U.S. Cl. 210—332 **6 Claims**
Int. Cl. B01d *23/24*



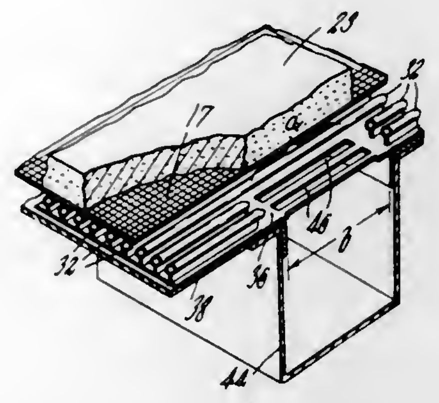
An apparatus for washing the leaves of a pressure-leaf filter of the type wherein a plurality of juxtaposed filter leaves are mounted in a casing and the filtrate is removed from the filter casing via filtrate collecting means connected to the periphery of the filter leaves. The washing apparatus comprises a nozzle, supplied with high pressure water or other washing fluid, which is simultaneously rotated about its axis and advanced longitudinally of the filter casing through a passageway formed by centrally disposed openings in the filter leave and directs high velocity streams of washing fluid against each of the filter leaves in succession.

3,426,908
HORIZONTAL VACUUM FILTER
Steven S. Davis, Bountiful, Utah, and George Slajchert, San Mateo, Calif., assignors to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Continuation of application Ser. No. 389,577, Aug. 14, 1964. This application Sept. 1, 1967, Ser. No. 665,182
U.S. Cl. 210—401 **1 Claim**
Int. Cl. B01d *33/04*



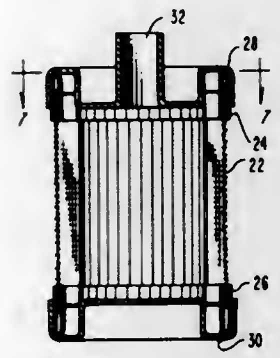
Vacuum filter with a single filter medium supported on and overlying a plurality of liquid impervious endless drainage belts arranged with their upper flights moving in a horizontal plane. Longitudinal ribs on the underside of the belt are guided in grooves in the top of a common vacuum pan to maintain a fixed space between adjacent belts and there are openings into the vacuum pan through the bottom of the groove for filtrate drainage. Seals operative between adjacent belts and the groove limit vacuum loss at the ends of the grooves. A cascading weir type feed system extends transversely of the filter.

3,426,909
FILTER MEDIUM SUPPORT GRID
Edward Vernon Garner, East Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Filed July 20, 1965, Ser. No. 473,415
U.S. Cl. 210—474 **7 Claims**
Int. Cl. B01d *35/00*



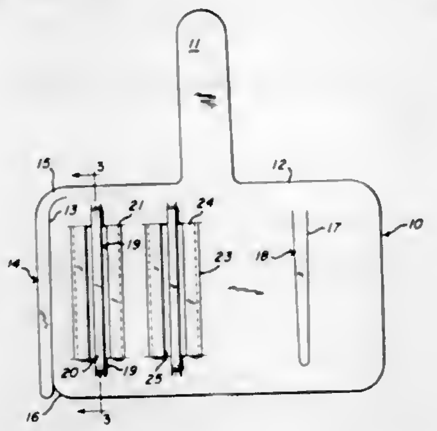
A filter medium support structure comprising a multiplicity of upstanding, elongated, closely spaced together elements, each element having a thin leg and an outwardly convex crest substantially wider than the leg and overhanging the space between legs of adjacent elements. Base sections connect adjacent elements, and the structure is formed of similar, integral sections interlocked together.

3,426,910
PLEATED METALLIC FILTER ELEMENT
John P. Winzen, 633 Ocean Ave., Santa Monica, Calif. 90402
Filed Jan. 4, 1965, Ser. No. 422,966
U.S. Cl. 210—493 **6 Claims**
Int. Cl. B01d *35/28, 35/00*



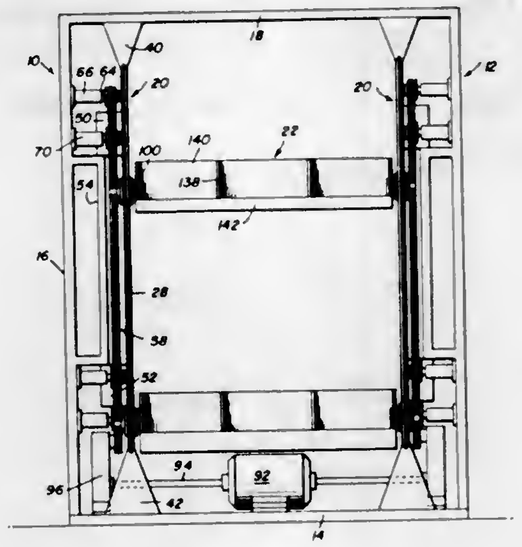
A filter element consisting of a metallic woven screen to the edges of which are attached metallic strips. This allows the screen to be fixed into a filter system, by attaching the strips to end caps, without danger of the screen being contaminated or damaged in the process of attachment to the end caps. Pleated filter elements may be made in this way, whereby the strips which overlap the edges of the metallic screen are crimped or welded to the screen and thereafter welded to the end cap. The screen will not be oxidized in the welding process and a completely leak-free filter is provided.

3,426,911
UTILITY HOLDING DEVICE
Don Seiling, 128 Grafton Ave., Dayton, Ohio 45406
Filed Apr. 1, 1966, Ser. No. 539,402
U.S. Cl. 211—13 **9 Claims**
Int. Cl. A47f *5/08, 7/00*



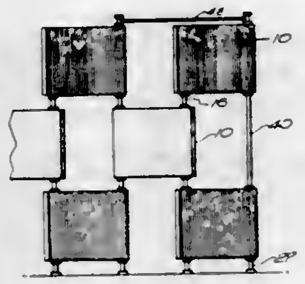
A utility holding device mounting to a sun visor of an automobile or other object of like configuration incorporating mounting and holding means, integral portions thereof being especially adapted to store articles of varying description and the device being so formed and positioned as to facilitate the storage and removal of such articles.

3,426,912
RACK CONVEYING SYSTEM
Anthony R. Perini, 6 Wall St., New Bedford, Mass. 02740
Filed Mar. 7, 1966, Ser. No. 532,312
U.S. Cl. 211—121 **21 Claims**
Int. Cl. A47f *5/03, 3/08*



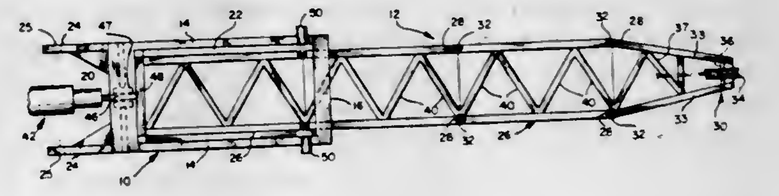
A carriage is conveyed by a flexible chain past a direction changing location of a track assembly such as a right angle corner. The track assembly guides the carriage along a path which deviates from the flexible chain supported by an idler wheel at said corner without changing the orientation of the carriage relative to the track assembly by continuous engagement of the track members at all times with yieldable guide wheels mounted by the carriage.

3,426,913
STRUCTURAL SYSTEM AND COMPONENTS
James S. Abatiell, Jr., 73 Phillips St., Rutland, Vt. 05701
Filed June 27, 1966, Ser. No. 560,704
U.S. Cl. 211—177 **8 Claims**
Int. Cl. A47f *5/10;* **G09f** *7/20*



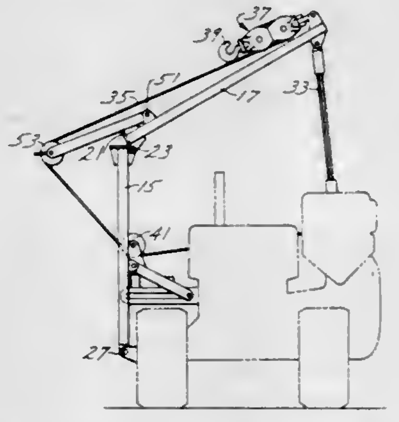
Modular components comprised of panels with blind sockets and interlocking spacing elements which connect with the sockets are provided to permit the assembly of free standing structures in a variety of arrangements particularly useful for display purposes.

3,426,914
EJECTOR TYPE BOOM
Frederik R. Waleson, 1945 NW. Lamont Ave., Roseburg, Oreg. 97470, and Roche J. Van De Hey, 801 E. 3rd Ave., Sutherlin, Oreg. 97479
Filed Mar. 13, 1967, Ser. No. 622,796
U.S. Cl. 212—1 **2 Claims**
Int. Cl. B66c *23/62*



An ejector type boom having a boom butt frame hingedly mounted in a crane for movement to a generally horizontal position for erection of a boom with an open side in the frame to receive boom sections and a longitudinally moveable plate within the frame to push the connected boom sections out of the frame, the terminal section of the boom having a rolling support to engage the underlying surface during erection of the boom.

3,426,915
COLLAPSIBLE WEIGHT HANDLING BOOM
Robert D. Tesch, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 28, 1967, Ser. No. 663,705
U.S. Cl. 212—8 **5 Claims**
Int. Cl. B66c *23/00, 23/62*



A collapsible weight handling boom having a hinge point at or near the center thereof and a cantilever frame mounted on the upper portion thereof. A force is exerted upon the cantilever frame by means of the load handling line whereby, when fastening means are removed, the upper portion of the load handling boom may be collapsed by pivoting about the hinge point at or near the center of the boom.

3,426,916

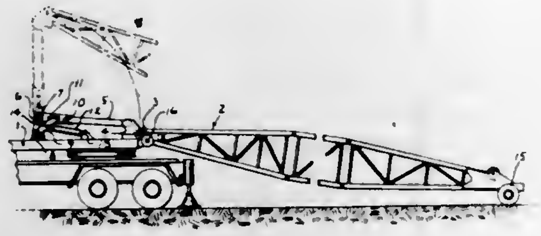
BOOM RETRACTING MACHINERY

Carl F. Novotny, Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware

Filed June 29, 1967, Ser. No. 650,032

U.S. Cl. 212—46 **6 Claims**

Int. Cl. B62c *23/62*



The bifurcated foot of the boom of a truck mounted crane is pivotally attached to respective outer ends of parallel retracting arms, the inner ends of which are fulcrumed on the revolving frame and connected by a torque shaft. The arms are pivotal through 180° to lift and move the boom foot between a retracted position to the rear of the frame and a forward working position. An actuating lever for the arms has an inner end fulcrumed on the frame below the fulcrum of the arms and an outer end which has a pin and slot connection with one arm. A hydraulic actuator cylinder is connected between the frame and a midpoint of the lever and is operable to reciprocally pivot the lever and, therefore, the arms.

3,426,917

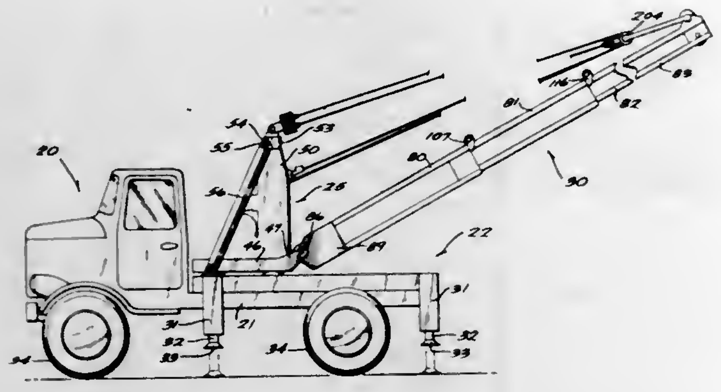
MOBILE CRANE AND TOW TRUCK

Charles R. Siegel, 3527 E. Squire Ave., Cudahy, Wis. 53110

Filed Dec. 2, 1966, Ser. No. 598,823

U.S. Cl. 212—55 **5 Claims**

Int. Cl. B66c *23/06, 23/62*



A crane mounted on a truck so that it can be employed to tow disabled vehicles as well as to lift them and other loads completely off the ground. The boom is formed of telescopic sections that are extended and retracted by a pulley and cable system. The boom sections ride on rollers relative to each other to facilitate their telescoping movement. The boom is supported for pivotal movement in a vertical plane by a rotatable column, which is rotated about its axis by a pair of piston and cylinder mechanisms through a chain drive for positioning the boom. Winches are provided to extend and retract the boom and pivot it in a vertical plane as well as to raise and lower the load. These winches are mounted to rotate with the column. The upstanding column is supported at its bottom and at its top for the sake of rigidity.

3,426,918

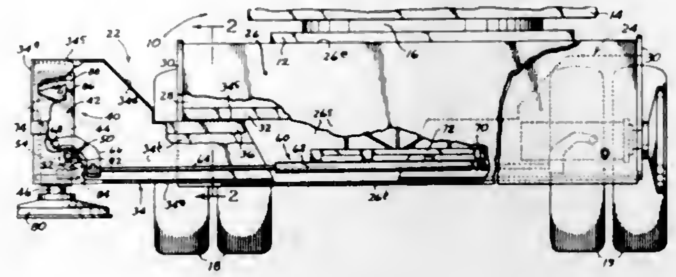
STABILIZING OUTRIGGER APPARATUS FOR MOBILE VEHICLE

Frank W. Keinonen, Hillsboro, Oreg., assignor to Pierce-Pacific Manufacturing, Inc., Portland, Oreg., a corporation of Oregon

Filed May 19, 1967, Ser. No. 639,681

U.S. Cl. 212—145 **6 Claims**

Int. Cl. B66c *23/80*



Stabilizing outrigger apparatus for a mobile vehicle, including an extensible section slidable outwardly on an encompassing guide section, where the extensible section has an hydraulically operated jack journaled on its outer end, and the jack, by reason of an offset connection with a ram producing extension of the extensible section, swings to an upright position on such extension, the mounting for the jack further accommodating limited upward shifting of the jack with subsequent fixing of the jack in an upright position occurring by reason of cooperating jaws coming into engagement.

3,426,919

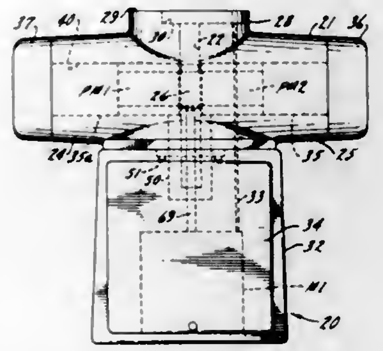
SAMPLE CENTERING DEVICE FOR RADIATION DETECTING AND MEASURING APPARATUS

Robert E. Olson, Glen Ellyn, Ill., assignor to Packard Instrument Company, Inc., Downers Grove, Ill., a corporation of Delaware

Filed Apr. 13, 1965, Ser. No. 447,831

U.S. Cl. 214—1 **6 Claims**

Int. Cl. B25j *3/00;* **G01n** *23/00*



In an apparatus for detecting and measuring radioactivity, and including a sample-transferring well, an elevator, and a radiation detection chamber, means are provided for centering a sample on the elevator, and therefore also with respect to the detection chamber. The sample centering means is a spring-like member having an inverted dished central portion and upstanding sample-gripping fingers; biasing the central portion urges the fingers inwardly so as to center the sample.

3,426,920

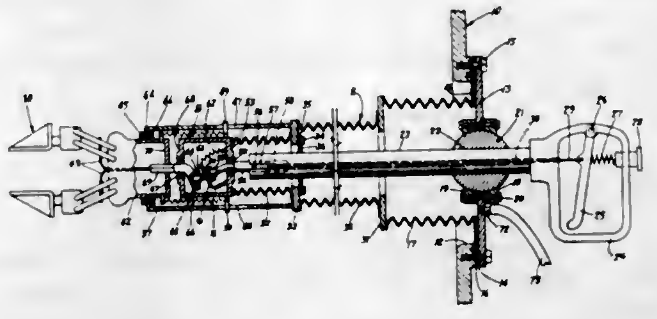
VACUUM MANIPULATOR

Frank G. Chesley, Red Wing, Minn., assignor to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota

Filed July 11, 1966, Ser. No. 564,349

U.S. Cl. 214—1 **7 Claims**

Int. Cl. B25j *3/00*



A sealed manipulator for performing work inside a vacuum chamber from the outside, without penetration of the vacuum-confining barrier by the motion transmission members. The manipulator has a wide degree of freedom of motion within the vacuum chamber through a universal joint providing for rotary and longitudinal movement. A series of vacuum-tight bellows surround the arm within the vacuum chamber to provide a vacuum-tight barrier permitting translation of the manipulator on its longitudinal axis and rotation and revolution of the tong means and opening and closing thereof without any penetration of the vacuum-tight barrier.

3,426,921

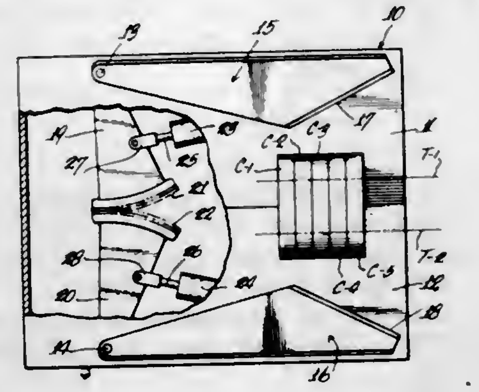
METHODS OF AND APPARATUS FOR SEPARATING COILS DISPOSED IN CLOSE FACE-TO-FACE RELATION

William V. Parshall, 3527 Atlantic St. NE., Warren, Ohio 44483

Filed May 1, 1967, Ser. No. 635,196

U.S. Cl. 214—1 **12 Claims**

Int. Cl. B25j *3/00;* **B23p** *19/04;* **B65g** *69/00*



This invention relates to the separation of a plurality of coils disposed in close, face-to-face relation when such coils are supported at outer peripheral portions by the progressive elevation of successive coils beginning with an end-most coil and the substantially simultaneous axial movement of successive coils in their order of elevation. In apparatus for practicing the invention, a pair of members are simultaneously moved in arcuate paths to successive engagement beneath the coils for elevating and axially moving the same.

3,426,922

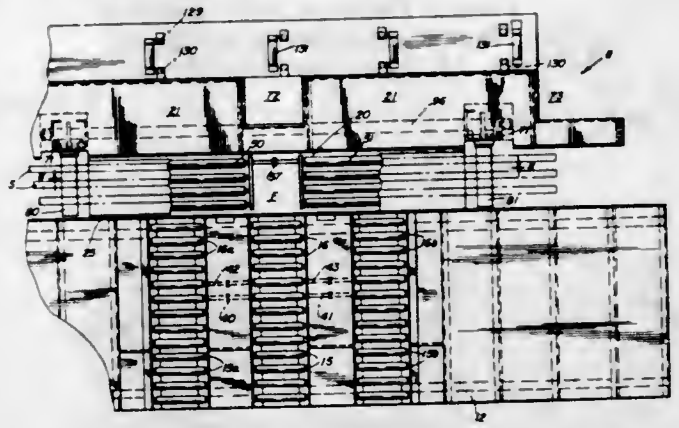
ORDER PICKING MECHANISM

John P. Massey, Clarendon Hills, Ill., assignor to Dormont Allen Company Inc., Cicero, Ill., a corporation of Illinois

Filed Apr. 7, 1967, Ser. No. 629,200

U.S. Cl. 214—2 **7 Claims**

Int. Cl. B65g *69/00, 65/04*



An order picking mechanism for selection of stock orders from different sizes of steel bars, tubes, or rods, or other large or heavy stock, stored in trays by size or other characteristics. The trays are successively advanced to a tray unloading station by a series of independent conveyor units, the last conveyor unit being mounted on an elevator at the unloading station. The stock in each tray is lifted above the edge of the tray while located in the unloading station, permitting the operator to unload any desired stock quantity onto an adjacent table; lifting is effected by a pair of stripper arms moving upwardly to engage the stock just beyond the ends of an open-end tray or moving through apertures near the ends in the bottom of a closed-end tray. After unloading, the stripper arms are retracted, the elevator is lowered, and the tray is deposited on a discharge conveyor that removes the tray. The elevator is then returned to its original level ready for the next tray. A weighing mechanism is located at the unloading station.

3,426,923

AUTOMATIC STACKER POCKET UNLOADING DEVICE

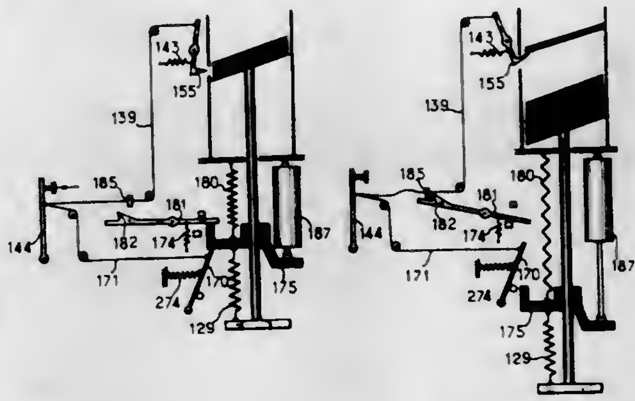
Bernardus Stegeman, Amsterdam, Netherlands, assignor to Bull General Electric (Nederland) N.V., Amsterdam, Netherlands

Filed Nov. 6, 1967, Ser. No. 680,931

Claims priority, application France, Nov. 18, 1966, 84,084

U.S. Cl. 214—6 **9 Claims**

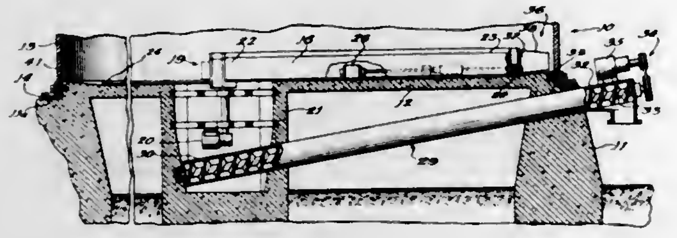
Int. Cl. B65g *57/00;* **B65h** *31/34*



The invention concerns a device which permits the unloading of a card reception compartment in a machine for dealing with record cards, without it being necessary to stop the machine. The device controls simultaneously the descent of the card-supporting tray and the bringing into action of a device for retaining cards which is arranged at the upper portion of the compartment so as to retain the cards which arrive in the compartment between the instant when the tray is lowered and the instant when the tray, discharged by the operator, has returned upwards to its highest position.

3,426,924
SILO AND UNLOADER

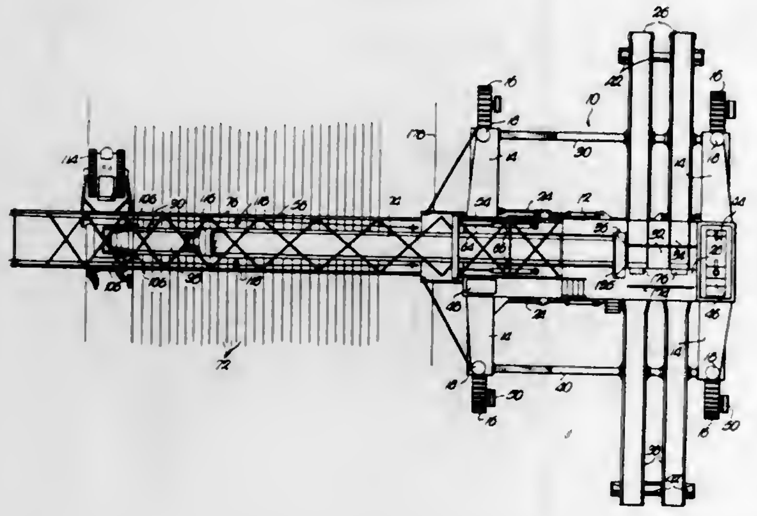
Robert G. Ferris, Harvard, Ill., assignor to Starline, Inc., a corporation of Illinois
Filed Nov. 17, 1966, Ser. No. 595,138
U.S. Cl. 214—17 **6 Claims**
Int. Cl. B65g *65/30*



A silo structure having a bottom silage unloading device therein, characterized by the fact that the silo has a horizontal floor and that, in order to reduce stresses imparted to the silo wall by stored material, the floor has a peripheral portion extending radially inwardly from the wall for a distance of about two feet which is inclined upwardly toward the wall at an angle of inclination in the range of about 10 degrees to 25 degrees. A bottom silo unloader is mounted immediately above the floor and generally parallel thereto, and includes a sweep arm and conveyor means which rotates about the vertical axis of the silo and has its outer end portion overlying the inclined peripheral floor portion.

3,426,925
APPARATUS FOR LAYING PROTECTIVE MATERIAL ON EMBANKMENTS

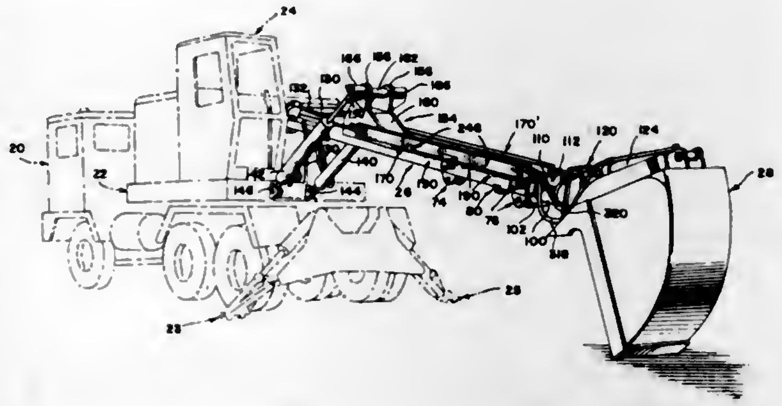
Joe M. Clark, Mission, and Donald P. Workman, Kansas City, Kans., assignors to List & Clark Construction Company, Overland Park, Kans., a corporation of Missouri
Filed Oct. 27, 1966, Ser. No. 590,031
U.S. Cl. 214—46 **6 Claims**
Int. Cl. B65g *67/24, 57/00, 37/00*



For the purpose of laying soil-cement on the surface of an earth embankment, a transport is provided which advances along the foot or crest of the embankment in forward and reverse directions. The transport has a hopper which is periodically resupplied with soil-cement by trucks that are driven onto the moving transport with the assistance of ramps carried thereby. A laterally extending boom is mounted on the transport and supports a primary conveyor which transfers the material from the hopper to a remote point on the boom at the end of the primary conveyor. A secondary, shuttle conveyor is suspended beneath the boom and receives the soil-cement as it is discharged from the outboard end of the primary conveyor. The shuttle conveyor is shiftable longitudinally of the boom, and the latter is swingable about a horizontal axis so that the ultimate discharge location of the soil-cement may be progressively shifted toward or away from the transport and elevated as required to discharge the soil-cement into a spreader which travels at the same speed as the transport and traverses the slope back and forth to lay the soil-cement thereon in overlapping, stair-stepped layers.

3,426,926
HYDRAULIC SYSTEM FOR USE WITH TELESCOPIC BOOM APPARATUS

Wallace J. Witwer, Waukesha, Wis., assignor to Hein-Werner Corporation, Waukesha, Wis., a corporation of Wisconsin
Filed Oct. 17, 1967, Ser. No. 675,821
U.S. Cl. 214—141 **10 Claims**
Int. Cl. E02f *3/00;* **B66c** *23/06*

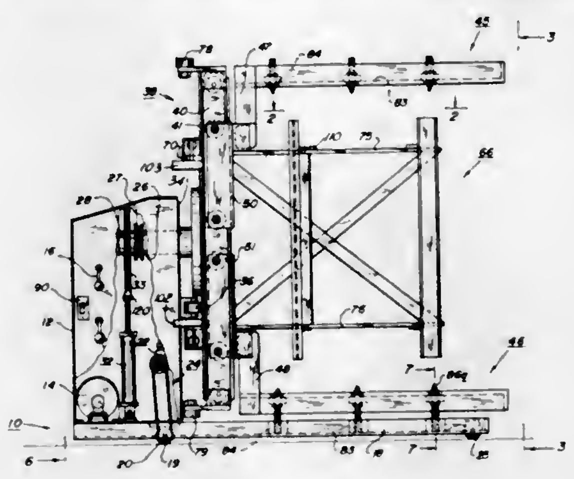


The inner portion of a telescopic boom is adapted to support a hydraulically operated attachment at the outer end thereof. A hydraulic system for supplying hydraulic fluid to the attachment is mounted within separate housing portions secured to the outer boom portion, and flexible conduit means is disposed within these housing portions. This flexible conduit means is doubled back within the housing portions so as to move into its operative positions with a rolling action.

3,426,927
MOVABLE PLATFORM WITH LIFT AND TURNOVER MECHANISM

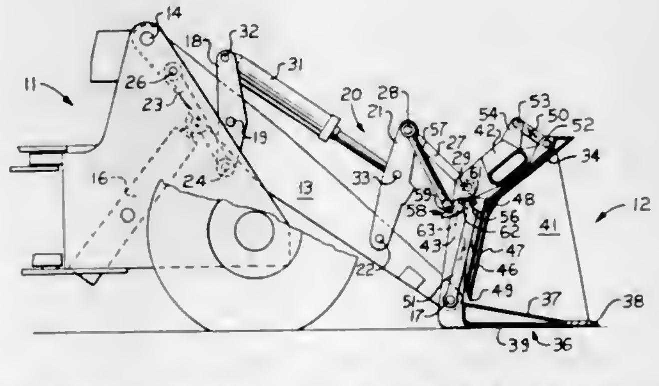
Cyril Horace Tracey Woodward, 160 Howard Ave., Rochelle Park, N.J. 07662
Continuation-in-part of application Ser. No. 551,096, May 18, 1966. This application Feb. 12, 1968, Ser. No. 709,526
U.S. Cl. 214—652 **12 Claims**
Int. Cl. B66f *9/18;* **B65g** *7/00*

A skid inverter for turning skids of paper and the like in which are provided selected limits of rotation of the turnover mechanism. The rotation is provided by a pair of hydraulic cylinders whose piston rod ends are connected by a roller chain. These connections are adjustable on the rods to compensate for stretch in the chain and to provide adjustment between the stroke of the cylinders and the driving sprocket. The inverter is further provided with cooperating means between the movable platforms and the support frame to provide an aligning means as the movable platforms are moved to an open position. With the aligning means in engagement the movable platform is retained in a precise position absent a turnover force. The skid inverter additionally has easily manipulated adjusting members readily movable to provide limits for both wide and narrow skid loads. The movable platforms are additionally provided with a plurality of auger screw type skid engaging means adapted to hold the skid to the top movable platform as it is moved to the open position.



3,426,928
EJECTOR MECHANISM FOR LOADER BUCKETS

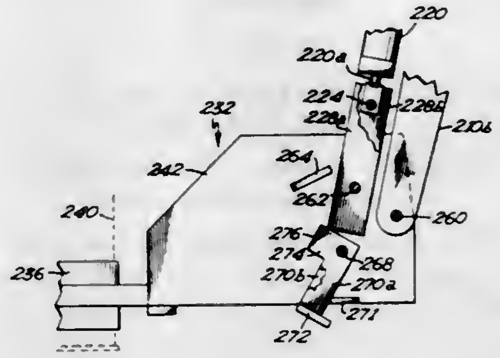
Trevor G. Campbell, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 3, 1966, Ser. No. 591,862
U.S. Cl. 214—767 **11 Claims**
Int. Cl. E02f *3/00*



1. Ejector mechanism for a loader bucket having a floor and a face with an opening for receiving and discharging a load comprising a movable ejector member disposed transversely in said bucket and having an edge adjacent said floor thereof, a lower link extending between said bucket and said ejector member, a first pivot connection coupling said lower link to said bucket, a second pivot connection coupling said lower link to said ejector at a point thereon spaced from said edge thereof, means for forcing said ejector member towards said face of said bucket by pivoting said ejector member and said lower link about said first pivot connection, an upper link extending between said bucket and said ejector member, a third pivot connection coupling said upper link to said bucket, and a fourth pivot connection coupling said upper link to said ejector member at a point thereon which is spaced from said edge a greater distance than the spacing of said second pivot connection therefrom whereby said ejector member is constrained to pivot relative to said lower link about said second pivot connection during said movement towards said face thereby causing said edge to move in a linear manner.

3,426,929
TILTING MECHANISM FOR A LIFTING IMPLEMENT

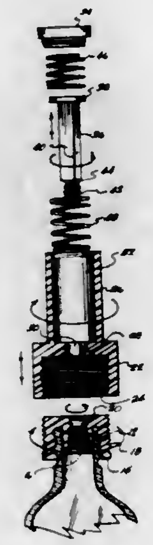
Albam M. Vik, New Brighton, Minn., assignor to Inventors Engineering Inc., Fridley, Minn., a corporation of Minnesota
Filed Dec. 8, 1966, Ser. No. 600,073
U.S. Cl. 214—778 **11 Claims**
Int. Cl. E02f *3/00;* **B66c** *3/00, 1/10*



A tilting mechanism for a lifting assembly such as a clamp mechanism or scoop for a front end loader that is mounted on the front or free end of the boom. A connecting link is pivoted to the lifting assembly. This link extends back from the pivot point toward the boom and is connected at its free end to a hydraulic actuator mounted upon the top of the boom. A fixed stop is welded to the lifting assembly for limiting the movement of the end of the connecting link about the pivot in one direction so that the lifting assembly will be supported from the link during the first extension of the hydraulic actuator and continued extension of the hydraulic actuator will cause the load to be shifted partially to the fixed stop. A gravitationally actuated movable stop swings into position against the opposite side of the link from the fixed stop when the lifting assembly is in its lowest position so that continued extension of the hydraulic actuator will continue to swing the lifting assembly beyond its lowest position and through a total arc of as much as 230° or more.

3,426,930
SAFETY BOTTLE CAP

Elvin F. Hirschler, 2792 Sierra Way, San Bernardino, Calif. 92405
Filed Apr. 26, 1967, Ser. No. 641,724
U.S. Cl. 215—9 **5 Claims**
Int. Cl. B65d *55/02*



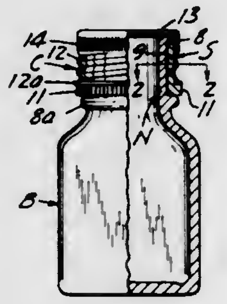
1. A safety capping device for bottles containing dangerous pills or liquids, comprising:

a threaded bottle neck having an interior threaded aperture;

a safety cap threaded to engage the threaded bottle neck;
a housing in said safety cap; and
a spring loaded sealing plug in said housing non engageable with the bottle neck when the safety cap is first engaged but when the safety cap is removed, the sealing plug engages the bottle neck until the cap is detached whereupon a reverse movment of the safety cap permits complete withdrawal of the sealing plug.

3,426,931
SAFETY CLOSURE FOR MEDICINE BOTTLE AND THE LIKE

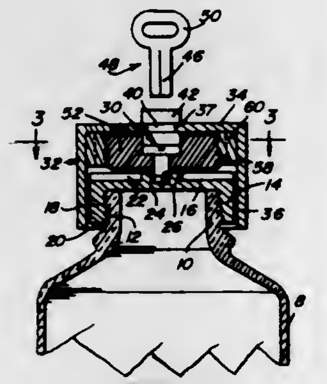
Robert P. Jensen, 918 Van Buren, Owatonna, Minn. 55060
Filed June 7, 1967, Ser. No. 644,167
U.S. Cl. 215—9 **4 Claims**
Int. Cl. B65j *55/02;* **A61j** *1/00*



A safety closure for medicine bottles and the like adapted to prevent access to the contents thereof without, on the part of the user, knowledge of an essential secret operation or function.

3,426,932
TAMPER-PROOF POISON BOTTLE CLOSURE

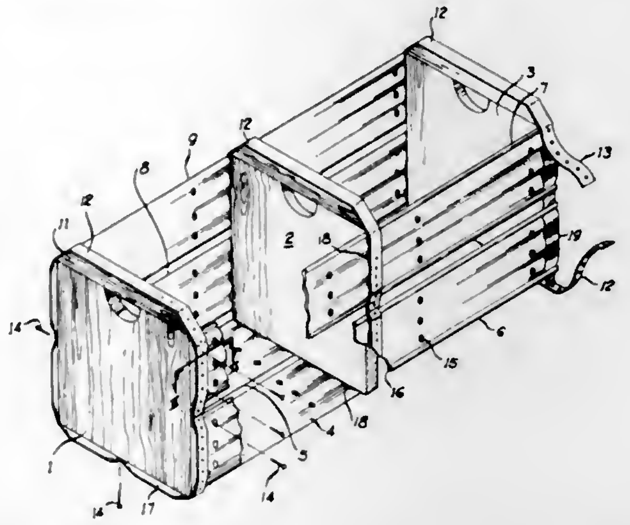
William R. Rouse, P.O. Box 41128, Sacramento, Calif. 95841
Filed July 17, 1967, Ser. No. 653,761
U.S. Cl. 215—9 **8 Claims**
Int. Cl. B65d *55/14;* **E05b** *65/52*



The safety closure shown is adapted for use on a bottle containing poisonous drugs. An inner screw cap is shielded within the confines of a larger outer protective cap and is swivelly mounted on a journal to guard against unauthorized use. This journal has a keyhole slot for a key in the hands of an authorized user. The journal not only couples the caps, it operates concealed means between the caps and converts rotary into reciprocatory motion imparted to an unscrewing rib atop the inner cap.

3,426,933
COMPOSITE SHIPPING BOXES

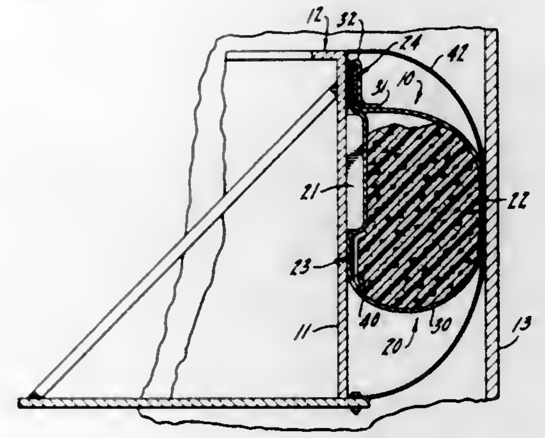
John W. Stecke, 1731 SW. 1st Terrace, Pompano Beach, Fla. 33060
Filed Aug. 15, 1966, Ser. No. 572,272
U.S. Cl. 217—40 **2 Claims**
Int. Cl. B65d *85/34*



This disclosure relates to field boxes or containers for shipping citrus fruits, and provides field boxes employing pre-molded plastic panels or side members of a design to render such boxes sturdy and to a great extent immune to moisture and rotting.

3,426,934
SEAL

Walter J. Marulic, Gary, Ind., assignor, by mesne assignments, to Union Tank Car Company, a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,218
U.S. Cl. 220—26 **4 Claims**
Int. Cl. B65d *87/20*

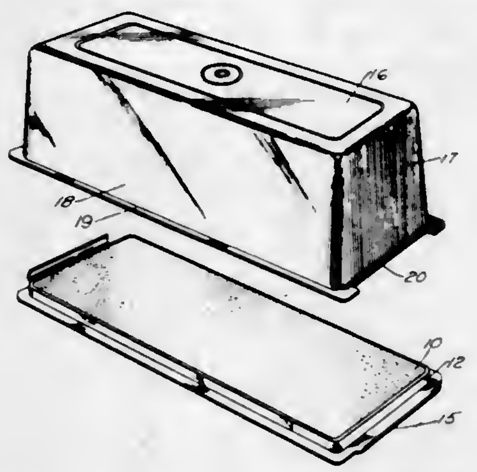


A seal arrangement for a floating roof storage tank wherein a horizontally elongated fabric casing is folded vertically upon itself in to enclose flexible, resilient foam plastic members. Vertically arranged upper and lower loops on the casing spaced horizontally around the casing receive clamping bands which hold the casing to the tank rim above and below the seal mounting and locating means.

3,426,935
CONTAINER

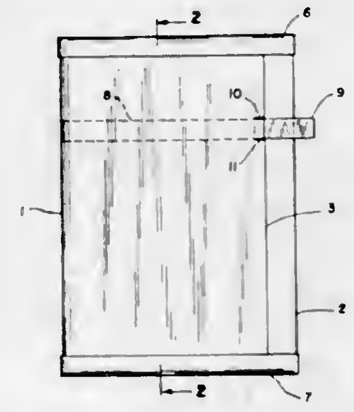
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 178,047, Mar. 7, 1962. This application Mar. 28, 1966, Ser. No. 544,645
U.S. Cl. 220—42 **9 Claims**
Int. Cl. B65d *11/10, 43/16, 51/04*

1. A storage container comprising a base having a top supporting surface, a continuous base flange surrounding said top surface and extending outwardly therefrom, a handle integral with said flange at either end of the base, a cover for enclosing the top surface of said base, said cover having downwardly directed side and end wall portions providing an open bottom, a flange integral with said side and end wall portions and extending generally normal thereto and outwardly therefrom at said open bottom, said cover flange at either cover end wall portion being provided with centrally disposed inset portions and flange extensions at either side thereof, said handles extending upwardly and outwardly from said base flange between said cover end wall portion flange extensions, said cover being adapted to pivotally rotate around said handles from a closed position with said cover engaged with said base to an open position wherein said extensions engage with the peripheral portions of said base ends and said cover rests on said handle so as to limit the extent to which the cover can be pivotally rotated.



3,426,936
TEAR STRIP OPENER FOR STEEL FOIL PACKAGES

Charles E. Palmer, Somers, Conn., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 29, 1966, Ser. No. 568,912
U.S. Cl. 220—53 **8 Claims**
Int. Cl. B65d *17/20, 33/30, 5/70*

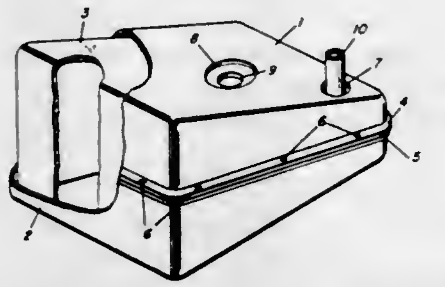


In combination with a steel foil package means in the form of a tear strip is provided for opening the package. The opening means has the characteristic of causing the edges which are formed on the package as it is opened to roll over.

3,426,937
IMPACT-RESISTING TANK

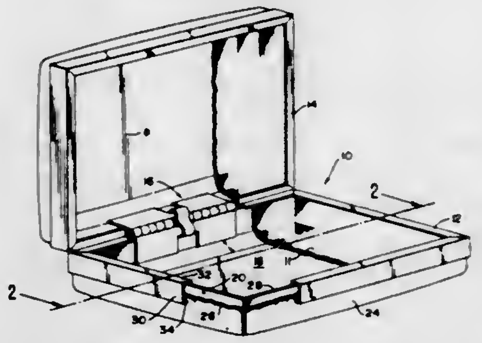
Antonio F. Boschi and Aldo Valentinotti, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy
Filed June 1, 1967, Ser. No. 642,868
U.S. Cl. 220—63 **7 Claims**
Int. Cl. B65d *25/18, 25/34, 25/42*

An impact-resisting tank, comprising a non-airtight rigid casing containing a flexible liner provided with openings for the admission and the discharge of the fuel through the casing. The liner has walls sufficiently thick so as to prevent its collapse when empty, and is made of rubber, or similar material adapted to stretch to a high degree without breaking.



3,426,938
COVERED BOX CONSTRUCTION

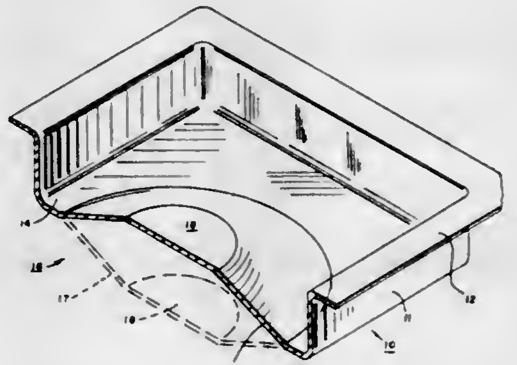
George G. Bergh, Plainville, and Robert G. Bergh, North Attleboro, Mass., assignors to Berch Bros. Co., Inc., Attleboro Falls, Mass., a corporation of Massachusetts
Filed Feb. 15, 1968, Ser. No. 705,836
U.S. Cl. 220—63 **9 Claims**
Int. Cl. B65d *25/36, 1/34, 15/22*



A decoratively covered box component of the type having a bottom member with a continuous wall member extending vertically from the peripheral edge thereof. The covering includes a blank of cloth, paper or similar flexible sheet material overlying the bottom member and at least a portion of the wall member. A rim cooperates with the wall member to hold the sheet material in place, the latter being in a taut condition with all of its exposed area movable relative to the surfaces over which it extends.

3,426,939
PREFERENTIALLY DEFORMABLE CONTAINERS

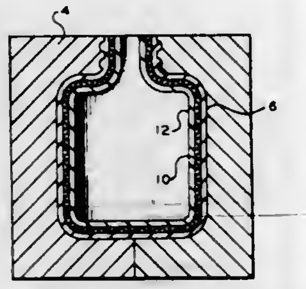
William E. Young, 52 Sea Beach Drive, Stamford, Conn. 06905
Filed Dec. 7, 1966, Ser. No. 599,839
U.S. Cl. 220—66 **6 Claims**
Int. Cl. B65d *11/20, 1/34, 25/00*



A tray or container of rigid though deformable material which may be plastic such as polyethylene, polypropylene, etc., is formed with at least one preferentially deformable portion similar to a blister. This deformable portion of the tray is in either the side or bottom or both. In the method of packaging a product the deformable portion is moved outwardly to provide a maximum volume for and during filling and is movable inwardly to provide a minimum volume for storage of the product. Inward movement provides a positive evacuation of a determined unfilled space in the tray after which a cover is customarily attached to the tray to retain the contents therein.

3,426,940
PRESSURE VESSELS

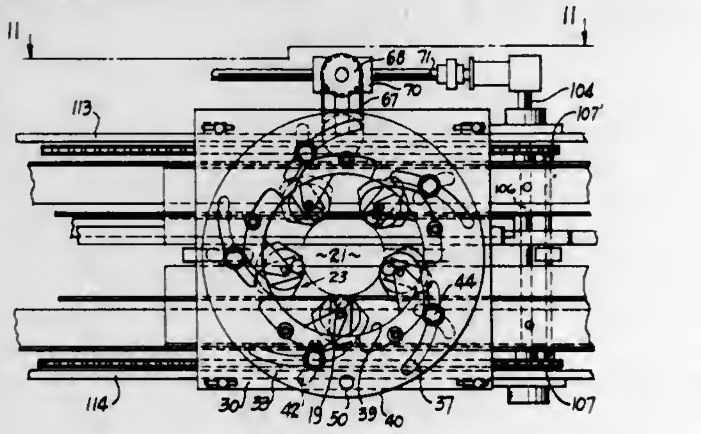
Arthur B. Broerman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,905
U.S. Cl. 220—83 **5 Claims**
Int. Cl. B65d *1/42, 11/22*



A pressure vessel is fabricated by embedding a filament sheet, made of polyimide fibers formed as a polycondensation reaction product of an aromatic tetrabasic acid and an aromatic diamine, into a thermoplastic material such as an olefin polymer. The filament sheet can be, for instance, a layer of knit fabric. The walls of this pressure vessel may be formed by disposing the filament layer between two sheets of heated thermoplastic material and applying pressure against the outer thermoplastic layers to force the thermoplastic material around the filaments. Alternatively, the filament layer can be disposed within a mold and the thermoplastic material introduced into the mold in the form of a parison which is subsequently blown out against the filament layer, thus forcing the thermoplastic material against the fibrous layer so that the fibers are embedded in the thermoplastic material.

3,426,941
ADJUSTABLE VERTICAL FEEDER MEANS FOR STACKED ARTICLES

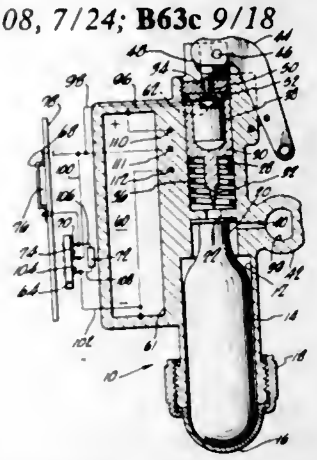
John C. Hovekamp, Elyria, Ohio, assignor, by mesne assignments, to R. Hoe & Co. Inc., New York, N.Y., a corporation of New York
Filed June 14, 1966, Ser. No. 557,423
U.S. Cl. 221—222 **25 Claims**
Int. Cl. B65h *3/28, 31/20, 5/18*



Adjustable, high speed vertical and horizontal feeders for printing presses and other purposes wherein the articles to be printed, or otherwise treated or acted upon, are delivered singly from a feed or supply stack to a pick-off point or station, and to method and means for causing a dwell in the movement of a single article on a continuously moving feeder, and/or of advancing or retracting adjacent individual articles on a continuously moving feeder, relative to each other, in the direction of their travel.

3,426,942
WATER-RESPONSIVE ENERGIZING APPARATUS

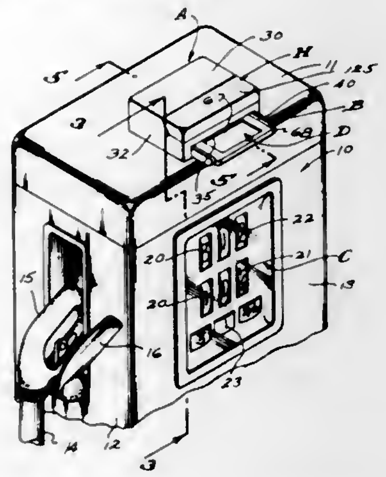
Billy D. McMains, Garden Grove, and Marvin L. Friedman, Beverly Hills, Calif., assignors to Jay-El Products, Inc., Gardena, Calif., a corporation of California
Filed July 31, 1967, Ser. No. 657,205
U.S. Cl. 222—5 **10 Claims**
Int. Cl. B67d *5/08, 7/24;* **B63c** *9/18*



Energizing apparatus having a source of electric power, and a pair of spaced-apart conductors that withdraw water droplets unintentionally accumulating in the space between them and which trigger a thyristor switch when they become immersed in water. The thyristor switch then closes an electric circuit whereby the energizing apparatus becomes activated. Terminals are provided to functionally test the components of the apparatus. Optionally, a time-delay circuit is included in the apparatus.

3,426,943
SALES RECORD PRINTER FOR GASOLINE PUMPS

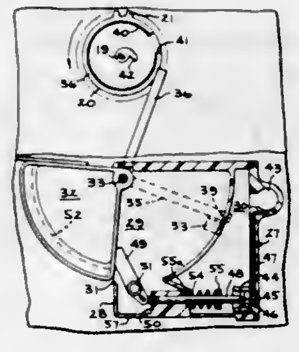
John J. Fitzgerald, 2120 Roselin Place, Los Angeles, Calif. 90039
Filed Sept. 12, 1967, Ser. No. 667,123
U.S. Cl. 222—30 **10 Claims**
Int. Cl. B67d *5/24, 5/38, 5/44*



In combination, a gasoline dispensing pump having a pump-driven computor with a plurality of rotary drums, each with a predetermined number of circumferentially spaced visually readable characters and adapted to indicate the volume and the cost of each sale of gasoline dispensed by the pump, and a printing mechanism attachment operatively related to the computor to print the volume and cost of each sale indicated by the drums on a sales slip form, said mechanism including a plurality of rotatable printing wheels, each related to one of the drums and having a number of circumferentially spaced character fonts equal to and in corresponding circumferential sequence with the characters on the drum, means between each related wheel and drum to set the wheel in a predetermined rotative position of the drum and including, setting means including a rotatable cam plate with circumferentially and radial spaced, radially outwardly disposed stop lands corresponding in number with the number of printing faces of the related drum and wheel, a pinion gear adjacent to and connected with the wheel, an elongate, axially shiftable rod with racks engaging the pinion gear and an end opposing and engageable with the lands, a driven gear adjacent and connected with the cam plate, a drive gear at and connected with the drum, a drive pinion engaging the drive gear and an elongate flexible drive cable fixed to and extending between the drive and driven pinions whereby the cam plate is rotated synchronously with the drum and a platen to engage and support the form and shiftable into and out of engagement with the wheels.

3,426,944
TREATING AGENT DISPENSER FOR AUTOMATIC WASHING MACHINE

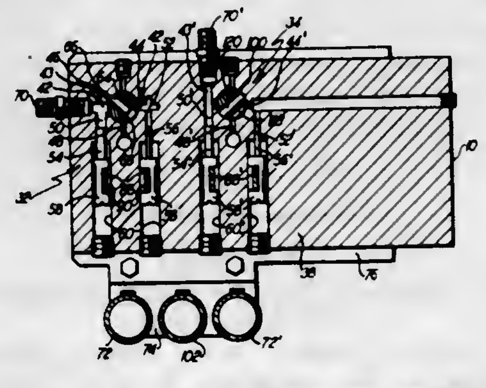
Raymond J. French, East Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 6, 1966, Ser. No. 599,443
U.S. Cl. 222—129 **6 Claims**
Int. Cl. B67d *5/56, 5/60;* **G01f** *11/42*



Dispensing means having a movable cup-like container to dispense granular treating agent and a piston-cylinder dispenser to dispense liquid treating agent. A crank interconnects the piston with the container whereby movement of the container from its dispensing position to a subsequent position trips the piston. Thus, sequential dispensing of granular and liquid treating agents is provided.

3,426,945
APPARATUS FOR DISPENSING ADHESIVE

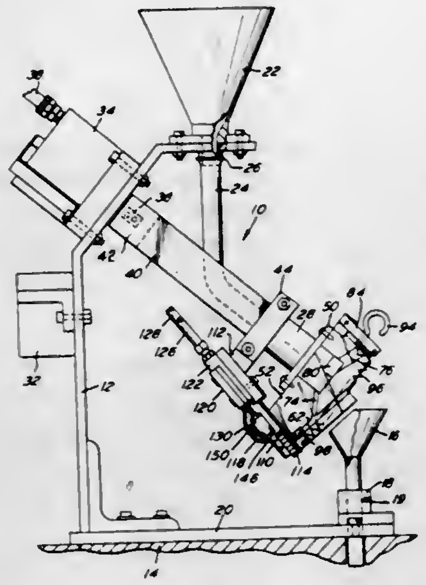
Allen C. Harriman, Brockton, Mass., assignor to Jacob S. Kamborian, West Newton, Mass.
Filed June 26, 1967, Ser. No. 648,720
U.S. Cl. 222—135 **5 Claims**
Int. Cl. B67d *5/52;* **B65d** *5/76, 25/42*



Disclosed herein is a fluid dispenser suitable for use with thermoplastic materials. The device includes a melting chamber in which fluid is stored. The chamber has a base in which a pumping unit is contained, the pumping unit being adapted to pump fluid from the chamber to and out of a discharge orifice. The construction of the pump unit is such that after it causes a predetermined volume of fluid to be dispensed from the discharge orifice some of the residual, undispensed fluid is withdrawn back towards the pump, away from the orifice, thus tending to minimize drip and leakage between dispensing cycles.

3,426,946
DISPENSING APPARATUS WITH INVERTIBLE FEED DUCT

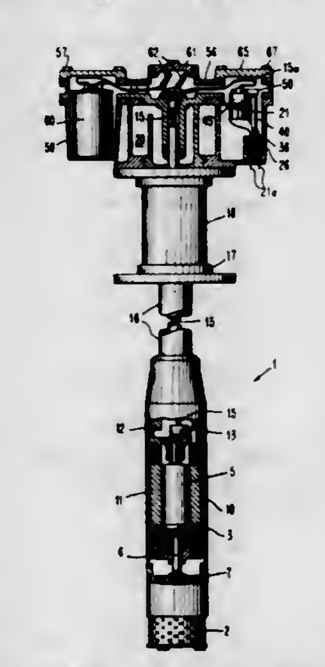
William D. Chamlee, Texarkana, Ark., assignor to Day & Zimmermann, Inc., Philadelphia, Pa., a corporation of Maryland
Filed July 13, 1966, Ser. No. 564,997
U.S. Cl. 222—306 **10 Claims**
Int. Cl. G01f *11/24, 15/00;* **F42b** *33/02*



A dispenser which utilizes a series of intersecting ducts including means for inverting at least one duct which has a predetermined amount of powder contained therein. By utilizing a series of intersecting ducts there is no sliding or rotating surface-to-surface contact at locations wherein initiating explosive would be present.

3,426,947
SEAL MEANS FOR ELECTRICAL CONDUIT

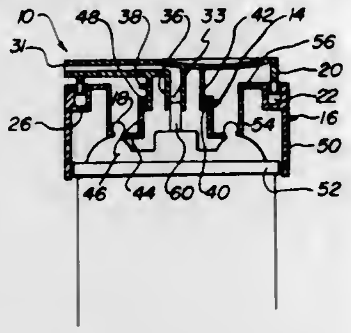
Paul A. Mankin, Muskegon, Mich., assignor to John Wood Company, East Orange, N.J., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,743
U.S. Cl. 222—385 **5 Claims**
Int. Cl. B67d *5/50;* **H02g** *3/00;* **F04d** *13/08*



Means to assure that a conduit which houses power inlet wiring to the motor of a submerged pumping means in an underground tank is sealed, to prevent moisture from entering the pump's chambers and cause failure, before an above ground electrical connection can be made to the motor.

3,426,948
FOAM ACTUATOR

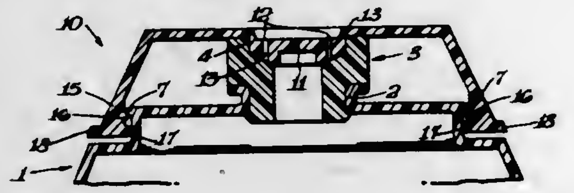
Loren D. Stirling, Newhall, Calif., assignor to Seaquist Valve Company, Division of Pittsburgh Railways Company, Cary, Ill., a corporation of Pennsylvania
Filed Mar. 1, 1967, Ser. No. 619,780
U.S. Cl. 222—402.11 **6 Claims**
Int. Cl. B67d *5/32;* **B65d** *83/00*



An actuator having a valve button, a valve button lock and a valve collar which are affixed together and to an aerosol can in a fashion such that the valve button cannot be accidentally or intentionally operated to dispense the product until the valve collar is rotated to place the actuator in an operative condition.

3,426,949
DISPENSER FOR POWDERS

Michael James, Welwyn Garden City, England, assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,437
U.S. Cl. 222—499 **10 Claims**
Int. Cl. B65d *83/06, 41/14;* **F16k** *25/00*



A nonpressurized powder dispenser having a cap with central boss fitted to and movable axially along the neck of the container between a closed position, in which the boss is seated against a shoulder in the neck, thereby sealing the lower extremities of dispensing apertures in the boss, and an open position. The cap has a resilient plastic depending apron which extends to the periphery of the container, and ridge means engageable in the two extreme positions with corresponding means on the container. The shoulder may be provided by an annular insert in the neck.

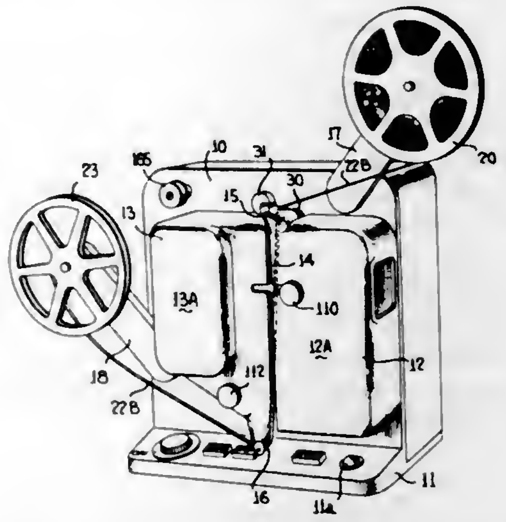
ERRATUM

For Class 225—3 see:
Patent No. 3,427,654

3,426,950
MOTION PICTURE PROJECTOR WITH AUTOMATIC FILM THREADING AND LOOP FORMING MECHANISM

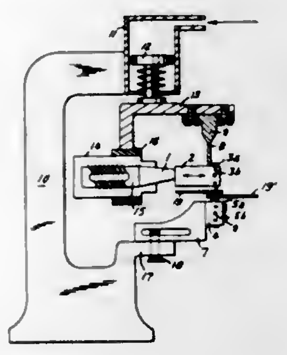
John A. Maurer, Jr., Somerset, N.J., assignor to J.M.D. Industries, Inc., New York, N.Y., a corporation of New York
Original application July 27, 1962, Ser. No. 212,858, now Patent No. 3,259,291, dated July 5, 1966. Divided and this application July 1, 1966, Ser. No. 562,323
U.S. Cl. 226—91 **21 Claims**
Int. Cl. B65h *17/42;* **G03b** *1/58*

1. A motion picture projector comprising first feed means for feeding film into projections means, second feed means for feeding film out of the projection means, means for initially actuating one of said feed means without actuating the other of said feed means whereby a portion of the film is disposed in the vicinity of the projection means, and means for actuating the other of said feed means after the film has been so disposed whereby the film is thereafter advanced through the projection means by both of said feed means.



3,426,951
ULTRASONIC WELDING APPARATUS

Reimar Pohlman, Darmstadt, and Roland Sievers, Heppenheim an der Bergstrasse, Germany, assignors to Dr. Lehfeldt & Co. G.m.b.H., Heppenheim an der Bergstrasse, Germany
Filed Oct. 31, 1962, Ser. No. 234,478
Claims priority, application Germany, Nov. 6, 1961, L 40,405; Jan. 25, 1962, L 41,049
U.S. Cl. 228—1 **18 Claims**
Int. Cl. B34k *1/06, 5/20*

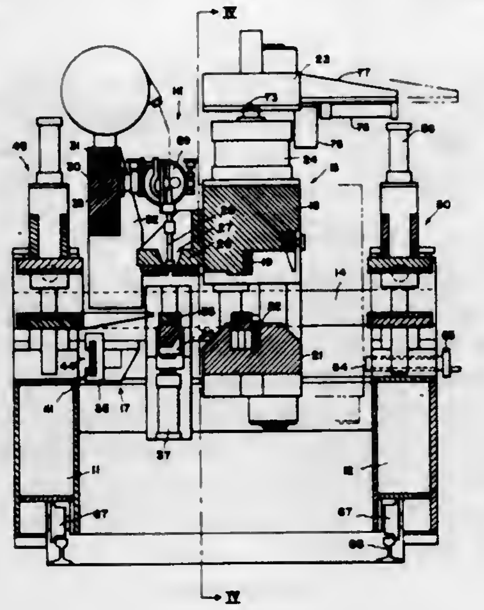


1. In an apparatus for welding ultrasonically, a sonotrode having a tip provided with striations forming a rough surface having projections spaced from each other at a distance of at least one-tenth of a millimeter and which engages the material which is to be welded and which when pressed against the material will, because of its rough surface, substantially eliminate any relative movement between the material which is to be welded and the tip of the sonotrode.

3,426,952
ARC WELDER HAVING BUILT-IN SHEAR FOR JOINING STRIP

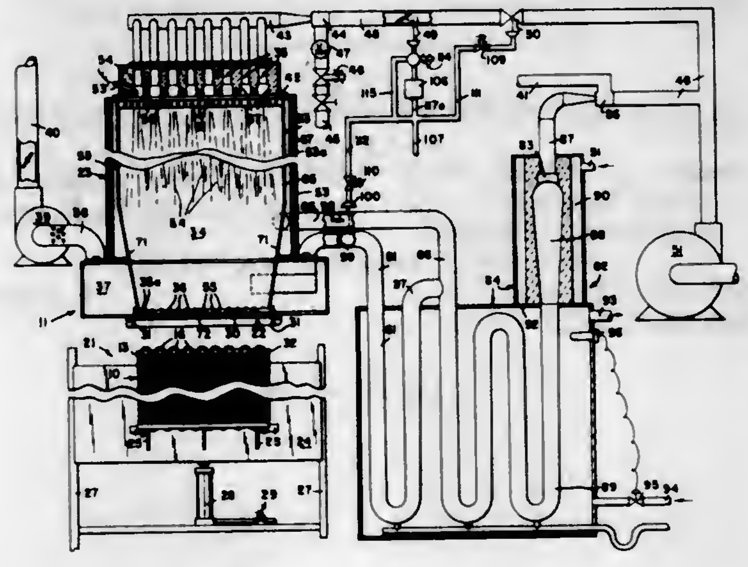
Charles R. Chew, Hunting Valley, Ohio, and Endre Leslie Toth, Sharon, Pa., assignors to The Taylor-Winfield Corporation, Warren, Ohio
Filed Nov. 25, 1966, Ser. No. 597,100
U.S. Cl. 228—5 **11 Claims**
Int. Cl. B23k *1/20, 9/12*

Apparatus for joining metal strip end to end, comprising a base mounting a pair of longitudinally spaced strip clamps through which strip flows when the clamps are open. A transverse shear and an adjacent transverse welder are longitudinally slidable, as an assembly, on the base between the strip clamps. The assembly is indexed by index means into an initial position between the clamps whereby the trailing end of one of the strip lengths, held in one clamp, is sheared. The assembly is indexed to a second position slightly spaced from the initial position so that the head end of the second strip length may be sheared. One of the clamps is along a line closely spaced from the first line of shear. The assembly is then indexed to a third position wherein the centerline of the welder is coincident with the center of the gap thus established between the strip length.



3,426,953
METHOD AND APPARATUS FOR BRAZING

Benjamin A. Metzger, Shaker Heights, Ohio, and Harry E. Miller, Westmoreland, Pa., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 19, 1966, Ser. No. 521,681
U.S. Cl. 228—46 **10 Claims**
Int. Cl. B23k *1/04, 31/06*

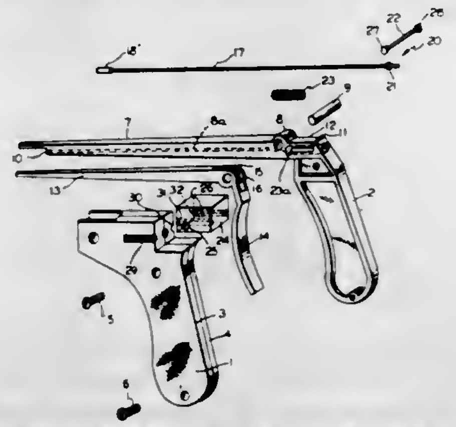


Apparatus for uniting parts by brazing or the like with control mechanism regulating the temperature of the brazing atmosphere through pre-heat, brazing and work-cooling cycles to assure an efficient bond between the materials involved.

3,426,954
HAND TOOL

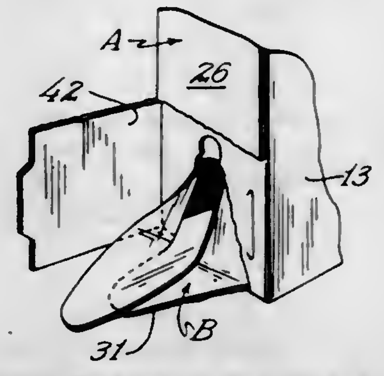
Frank A. Tureskis, 1236 N. Milton St., Lot 47, Springfield, Ill. 62702
Filed Aug. 3, 1966, Ser. No. 575,916
U.S. Cl. 228—51 **6 Claims**
Int. Cl. B23k *37/04;* **B23p** *19/04;* **B25b** *27/00*

This invention is a hand tool for gripping an object in a pair of jaws with one hand and with the same hand exerting a controlled force against the object away from the jaws independently of the force used to close the jaws on the object.



3,426,955
COMBINATION BAG AND BOX

Jerome F. Olson, South St. Paul, Minn., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 579,932
U.S. Cl. 229—17 **7 Claims**
Int. Cl. B65d *5/56, 17/24, 25/40*

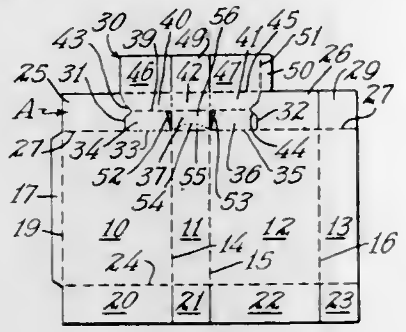


The invention discloses a bag in box combination in which a flat bag having one closed lower end is folded within a carton blank. The carton blank includes alternate side and end walls connected in tubular relation by an internal glue flap. Closure flaps are hinged to the upper and lower edges of the side and end walls to form carton closures. The bag is secured to the carton blank in such a manner as to open up when the carton is squared up. One end wall top closure flap includes a partially detachable area hinged to the upper edge of the end wall to which the closure flap is secured. The bag is secured to this area. This side wall closure flap overlying the end wall closure flaps is provided with a detachable area. The other or uppermost side wall closure flap is divided into two sections by a weakened line of separation extending from the end of this flap to the fold line connecting it to its side wall. One section overlying the detachable area may be hinged up to expose the detachable area.

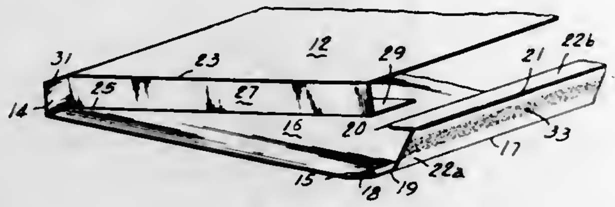
3,426,956
RECLOSABLE CARTONS

Stephen G. Frohlicher, Hudson, Wis., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 9, 1967, Ser. No. 659,359
U.S. Cl. 229—17 **8 Claims**
Int. Cl. B65d *17/24, 43/16*

The reclosable cartons of this invention include a flap structure in which a portion of the container top may hinge open and may reclose and lock. One end wall is provided with an end wall closure flap, and portions of the upper edges of the adjoining side walls are provided with partial closure flaps. A flap structure is hinged to the upper end of the other end wall and adjoining side wall portions. The flap structure includes first flanges folded outwardly of the walls to which they are hinged, second flanges contiguous with the first flanges and in face contact therewith, and closure flaps secured to the second flanges and foldable into superposed relation. A connecting flap secures one side wall closure flap to the adjacent side wall partial closure flap. The first flanges are detachably connected to the side walls to permit the closure structure to hinge open.



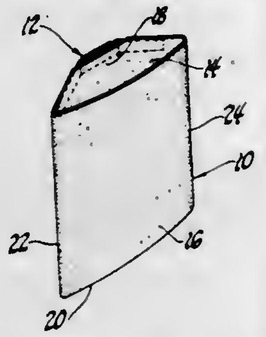
3,426,957
MAILING FOLDER
Richard J. McCall, 1500 S. Shore Drive,
Crystal Lake, Ill. 60014
Filed Dec. 16, 1966, Ser. No. 602,284
U.S. Cl. 229—40 **2 Claims**
Int. Cl. B65d *5/28, 27/28*



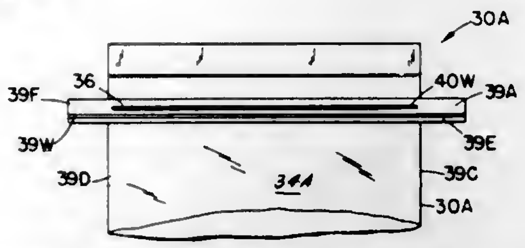
A one-piece foldable corrugated mailer box having a one-piece blank which upon assembly into the box defines three-sided air-cells on either side thereof protecting the side edges of the interior box chamber and having an indented folding flap member with rounded corners for ease in folding the same into the box.

3,426,958
LITTER BAG AND SUPPORT MEMBER
John J. Gore, 984 Heights Road,
Lake Orion, Mich. 48035
Filed Apr. 7, 1967, Ser. No. 635,288
U.S. Cl. 229—53 **4 Claims**
Int. Cl. B65d *33/14*

A receptacle for waste and other materials includes a sack having a folded edge at the open end for receiving a supporting member having divergent arms to help hold the sack open and which are laterally flexible to facilitate attachment to the sack or bag.

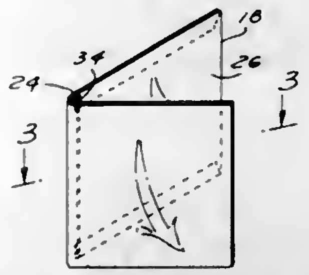


3,426,959
PACKAGING ASSEMBLY
Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 362,868, Apr. 27, 1964, which is a continuation-in-part of application Ser. No. 519,014, June 28, 1955. This application Jan. 16, 1967, Ser. No. 609,397
U.S. Cl. 229—65 **12 Claims**
Int. Cl. B65d *17/20*



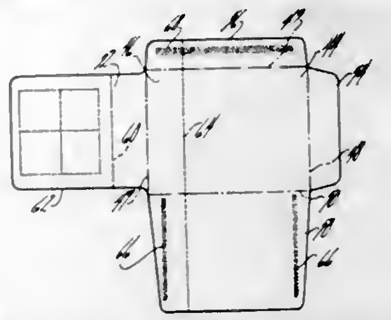
This invention relates to a package or container formed of thin sheet material, e.g. metal foil, plastic sheeting or film, from which the contents thereof can be readily dispensed through a tear opening formed in a wall portion. The tear opening is defined by forming a line portion of the wall of the container of reduced thickness with means disposed along such line portion for effecting a controlled separation of the adjacent wall portion of the container along such line portion.

3,426,960
PHONOGRAPH RECORD RECEIVING JACKET
Paul B. Shore, 17 Martin Court,
Kings Point, N.Y. 11024
Filed Sept. 28, 1967, Ser. No. 671,376
U.S. Cl. 229—68 **1 Claim**
Int. Cl. B65d *65/12, 85/30*



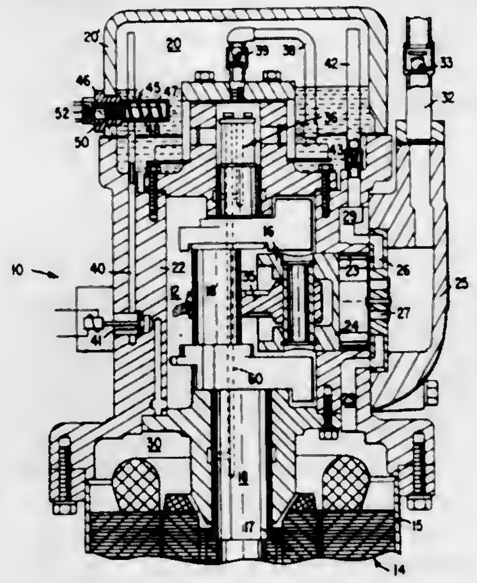
A phonograph record receiving jacket fabricated from a unitary blank of cardboard sheet material and formed to provide an internal record receiving pocket. The blank being elongated to provide three side by side panels, separated by score lines, that are bendable upon one another. Two of the panels are permanently joined to define the pocket with the other panel serving as a cover.

3,426,961
ONE-PIECE PERFORATED ENCLOSED COUPON ENVELOPE
Robert D. Allison, West Hartford, Conn., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine
Filed Feb. 2, 1968, Ser. No. 702,752
U.S. Cl. 229—70 **9 Claims**
Int. Cl. B65d *27/00*



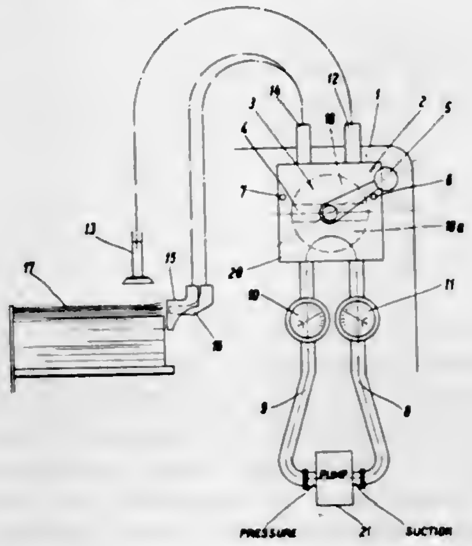
An envelope and a coupon or the like enclosed by the envelope are made from a single blank of paper or other similar sheet material. The envelope blank includes a main rectangular panel and four flaps, to one of which flaps the coupon is attached by a line of perforations. The flaps are folded relative to the main panel and sealed to form an envelope within which the coupon is contained and entirely concealed. The blank includes other perforations which register with the line of perforations attaching the coupon to the remainder of the blank, so that by tearing the sealed envelope along a single line of perforations the envelope is opened and the coupon simultaneously detached for ready removal by its user.

3,426,962
OVERTEMPERATURE AND LUBRICANT LOSS PROTECTOR FOR COMPRESSORS
David N. Shaw, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,824
U.S. Cl. 230—17 **3 Claims**
Int. Cl. F04b *49/02;* **F01m** *1/06;* **F16n** *29/04*



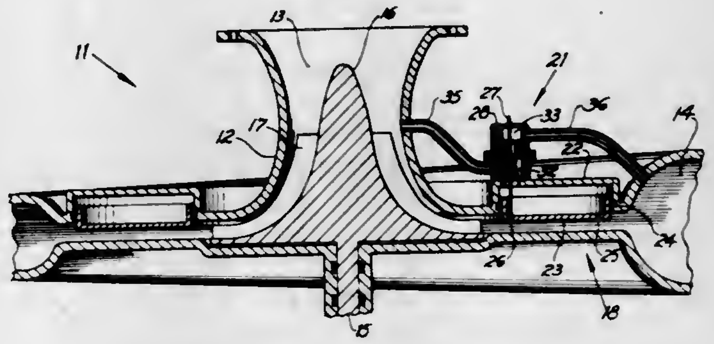
Lubricant heater and protector for compressor including a heater, a switch actuator heated by heater and a normally closed switch in compressor circuit. Upon predetermined increase in temperature indicating loss of lubricant, switch opens to prevent compressor operation.

3,426,963
DEVICE FOR CONTROLLING THE SUCTION AIR SUPPLY AND THE PRESSURE AIR SUPPLY FOR A SHEET PROCESSING MACHINE
Adolf Schwebel, Offenbach am Main, Germany, assignor to Mabeg Maschinenbau GmbH. Nachf. Hense & Pleines GmbH. & Co., Offenbach am Main, Germany, a German firm
Filed Feb. 2, 1967, Ser. No. 613,620
U.S. Cl. 230—22 **3 Claims**
Int. Cl. F04b *39/00, 49/00;* **F04d** *15/00*



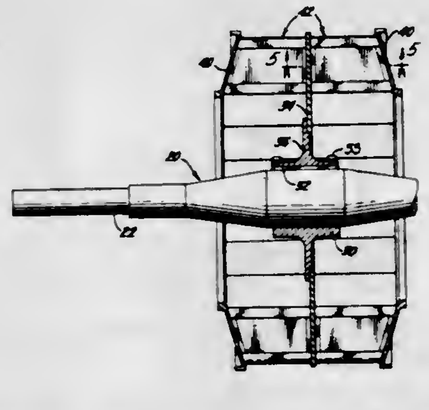
A device for supplying suction air consumers and pressure air consumers of a sheet processing machine with suction air and pressure air respectively, and for controlling the supply of suction air and pressure air.

3,426,964
COMPRESSOR APPARATUS
David H. Silvern, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 585,954
U.S. Cl. 230—114 **21 Claims**
Int. Cl. F04d *27/02*



A centrifugal compressor includes a vaneless diffuser having a movable wall defined by an annular piston in an annular cylinder chamber. The cylinder chamber communicates with regions of different pressure in the diffuser through two radially spaced apertures in the piston. Flow through one aperture is controlled by a needle valve which is secured to a diaphragm exposed to compressor inlet pressure on one side and compressor discharge pressure on the other side. The diaphragm is moved by changes in the relative differential pressures to control the flow through the one of the piston apertures and therefore control the pressure within the annular cylinder and the position of the movable wall. In an alternative arrangement, the pressures acting on the opposite sides of the diaphragm are the inlet static pressure and inlet dynamic pressure respectively.

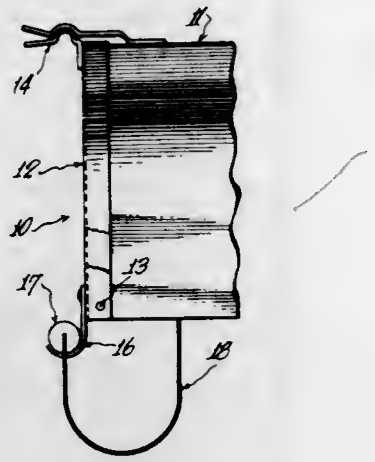
3,426,965
CENTRIFUGAL FAN HAVING REMOVABLE BLADE SECTION
Gerald J. Kulling, Detroit, Mich., assignor to American Standard Inc., a corporation of Delaware
Filed Jan. 10, 1967, Ser. No. 608,388
U.S. Cl. 230—134 **4 Claims**
Int. Cl. F04d *29/30, 17/16*



A blade assembly for centrifugal fans. The fan blade is constructed with a peripheral frame assembly including portions of the leading and trailing edges of the blade. The major portion of the fluid engaging surfaces of the blade is defined by a removable plate assembly detachably mounted in the frame so that the blade surfaces may be easily and quickly replaced in the event the surface deteriorates or becomes abraded.

3,426,966
RURAL MAILBOX SIGNALS

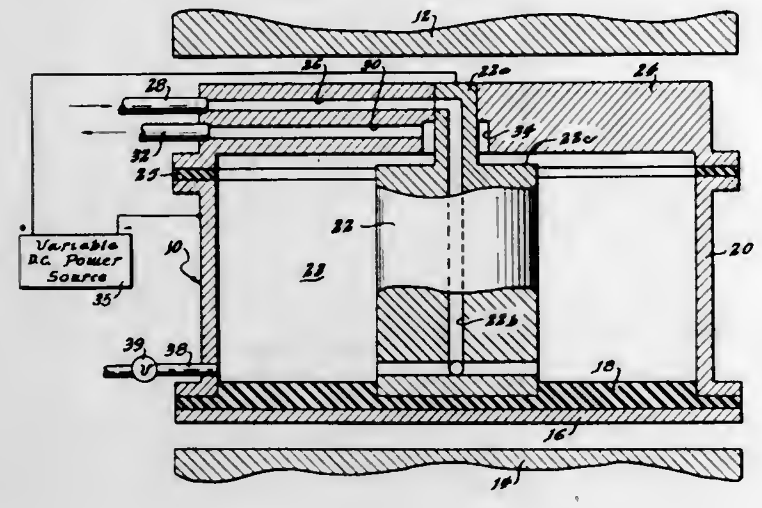
Norman W. Lay, Warren-Sharon Road, Box 576, Vienna, Ohio 44473
Filed May 26, 1967, Ser. No. 641,623
U.S. Cl. 232—35 **1 Claim**
Int. Cl. B65d *91/00*



A trough-like member, structurally integral with the door of a rural mailbox, has its mouth directed upwardly when the door is closed to normally retain therein an elongated, cylindrical body which is secured to the box by an elongated transversely flexible member. When the mailbox door is opened by the mail carrier, the support member mouth will be tilted downwardly to allow the body to gravitate from the support and to dangle from the tranversely flexible member to provide visual indication that the mailbox door has been opened.

3,426,967
APPARATUS FOR CENTRIFUGING ELECTRICALLY CONDUCTING LIQUIDS

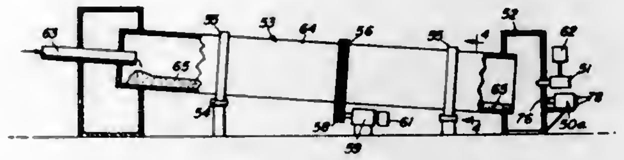
Morris W. Roberts, Chamblee, and Milton E. McLain, Jr., Smyrna, Ga., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 23, 1965, Ser. No. 516,156
U.S. Cl. 233—28 **2 Claims**
Int. Cl. B04b *9/00, 11/00*



An apparatus centrifuges an electrically conducting liquid confined in an annular cylindrical channel. A magnetic field is applied in the direction of the axis of the channel through the liquid. An electric current is forced to flow radially through the liquid in the channel perpendicular to the magnetic field to cause a rotational motion of the liquid in the channel.

3,426,968
PYROMETER AND CONTROL OF MANUFACTURING PROCESSES THEREWITH

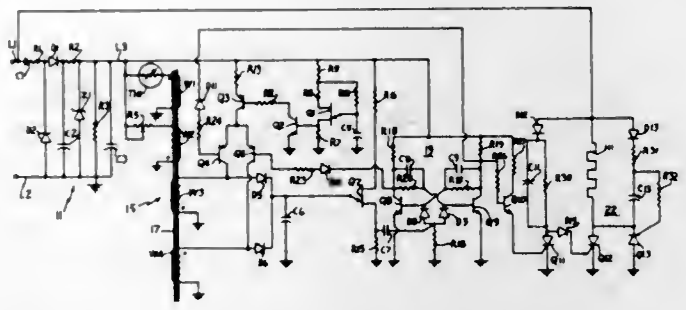
Louis Preisman, Wheeling, W. Va., assignor to PPG Industries, Inc., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,648
U.S. Cl. 236—15 **10 Claims**
Int. Cl. F23n *5/08;* **F27d** *19/00;* **G01j** *5/08*



This invention relates to a pyrometer, preferably an optical pyrometer, useful for simultaneously measuring different temperatures of a hot body at different locations on said body and at varying distances from the pyrometer. The pyrometer comprises means for focusing an image of said body upon an image-receiving area, and means in said area for simultaneously measuring the amount of light at a plurality of locations. The pyrometer is of particular utility in the control of manufacturing processes which require a hot body having controllable but differing temperatures in different parts thereof. Examples of such processes are glass manufacturing and the calcining, roasting or reduction of inorganic materials such as metalliferous ores, an example being production of black ash (BaS) from barite ($BaSO_4$).

3,426,969
CONDITION CONTROLLER WITH BISTABLE SWITCHING

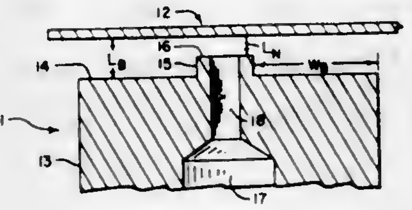
Walter M. Anderson, Jr., Reading, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 18, 1967, Ser. No. 639,382
U.S. Cl. 236—78 **20 Claims**
Int. Cl. H03k *17/00, 19/00;* **H03f** *9/00*



A temperature controller is disclosed which employs time division or pulse width modulation to variably energize a heater in response to variations in the resistance of a thermistor. The relative lengths of the on and off periods are determined by integrating, to a preselected level, respective signals which vary oppositely to each other in response to variations in the resistance of the sensing thermistor.

3,426,970
VIBRATION DAMPING NOZZLE AND FLAPPER

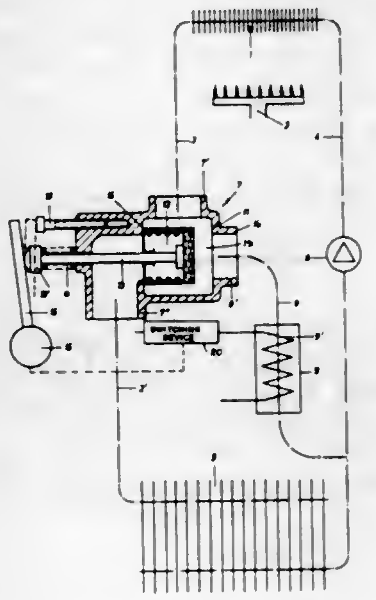
Richard K. Hedlund, Mount Prospect, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Continuation of application Ser. No. 564,767, July 13, 1966. This application Mar. 25, 1968, Ser. No. 715,942
U.S. Cl. 236—87 **10 Claims**
Int. Cl. G05d *16/02, 23/02*



A nozzle and flapper combination for use in pneumatic control devices, the nozzle having a unique structure that serves to dampen vibrations within the flapper.

3,426,971
ARRANGEMENT IN A HOT-WATER CIRCULATION HEATING WITH DOMESTIC WATER HEATER

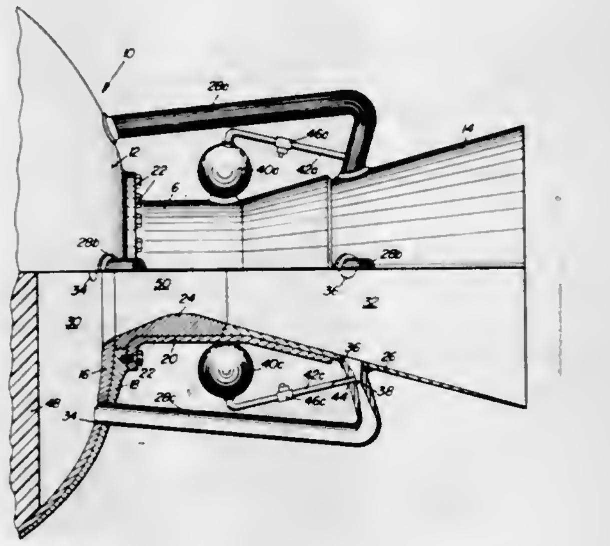
Hans Meier, Remscheid, Germany, assignor to Joh Vaillant KG, Remscheid, Germany
Filed Nov. 7, 1966, Ser. No. 592,380
Claims priority, application Germany, Nov. 22, 1965, V 29,774; May 14, 1966, V 31,062
U.S. Cl. 237—8 **6 Claims**
Int. Cl. F24d *3/08;* **F28f** *27/00*



A system for heating hot water radiators and a domestic hot water supply formed by a heat exchanger is provided with a thermostatically controlled valve to regulate the flow in the supply line leading from the water heater to the radiators and to the heat exchanger. This valve has two opposed valve seats, one about the line leading to the heat exchanger and the other the line leading to the radiator. A valve closure member is positioned between these seats to cooperate with one or the other of the seats in closing off the flow therethrough. In one embodiment the valve closure is motor actuated from a position closing off the line leading to the radiator to a position at which it is spaced from that valve seat. This motor is actuated to move the closure to the displaced position when the heating system is in operation and no domestic water is being drawn through the heat exchanger. This closure member is an expansible bellows and, when in the displaced position and the circulating water from the heater raises to a given temperature, the bellows expands so as to move the valve closure toward the seat about the line leading to the exchanger thereby to shut down the flow of water through the heat exchanger and to diminish the bypass effected thereby across the radiator. In a second embodiment the valve closure is moved between the valve seats by a heat sensor positioned to be actuated by the water coming to the valve from the heater. The cold water domestic supply for the exchanger runs through a loop about this heat sensor to more strongly affect the operation of the sensor by that cold water temperature than it is influenced by the temperature of the water from the heater. When domestic water is drawn, the cold water causes the closure to move toward the valve seat through which the water to the radiator passes so as to divert water from the heater through the heat exchanger. When cold water is not being drawn the hot water from the heater causes the sensor to move the closure member toward the valve seat controlling the flow through the heat exchanger.

3,426,972
ROCKET MOTOR THRUST VECTOR CONTROL APPARATUS

Albert R. Osburn, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 16, 1966, Ser. No. 572,756
U.S. Cl. 239—8 **6 Claims**
Int. Cl. B63h *25/46, 11/10;* **B64c** *15/04*

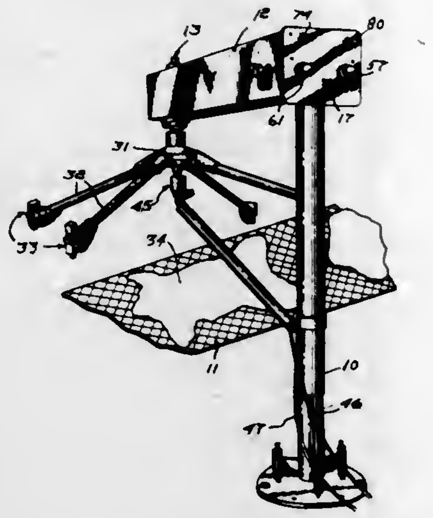


A secondary fluid injection system for thrust vector control of rocket motors and the like includes a plurality of conduits connecting the interior of the rocket motor combustion chamber to the nozzle interior downstream of the throat. Means are also provided for injecting fluid, preferably liquid, into the conduit just upstream of conduit entry into the nozzle.

3,426,973
APPARATUS FOR APPLYING A FLUENT TO AN OBJECT TRAVELLING ON A CONVEYOR

Richard S. Ordway, Haverhill, Mass., assignor to George O. Comeau, Haverhill, Mass.
Filed May 22, 1967, Ser. No. 640,196
U.S. Cl. 239—66 **9 Claims**
Int. Cl. B05b *3/02, 5/00, 9/00*

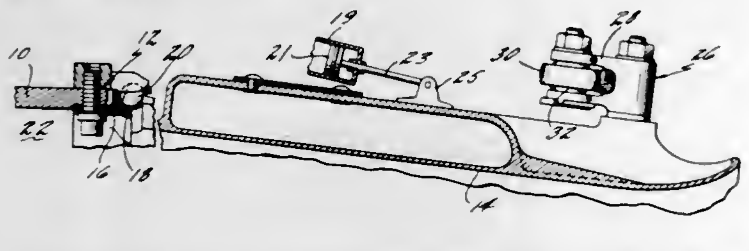
Apparatus having a shaft depending over a conveyor and provided with equally spaced arms, each with an air operated spray device, operating air being delivered successively to each device lengthwise of the shaft as the shaft turns to position it over the conveyor, and the apparatus having orifices that are adjustable to vary the



interval the air is so delivered thus to vary the sprayed area.

3,426,974
VARIABLE AREA NOZZLE SYNCHRONOUS HINGE

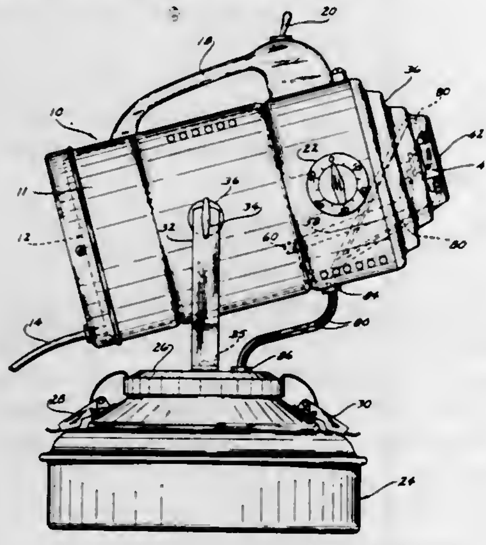
Frederick M. Pendoley, Jr., Collinsville, and Ransom S. Thompson, Middle Haddam, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 7, 1967, Ser. No. 629,126
U.S. Cl. 239—265.39 **6 Claims**
Int. Cl. B64c *15/06*



A variable area exhaust nozzle for a gas turbine engine wherein a plurality of link assemblies are mounted between the movable nozzle flaps to provide synchronous movement of said nozzle flaps.

3,426,975
PORTABLE FOG SPRAYER

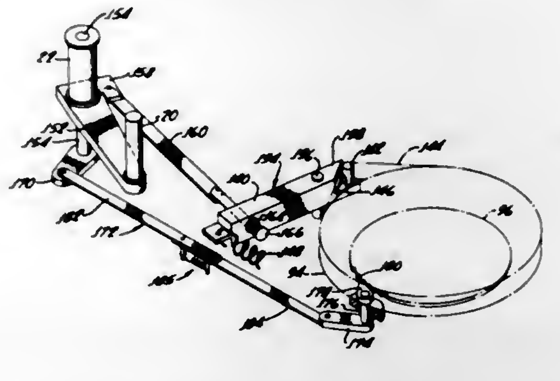
Michael S. Gallo, 1312 Forest St., Racine, Wis. 53404
Filed Mar. 15, 1967, Ser. No. 623,421
U.S. Cl. 239—341 **3 Claims**
Int. Cl. B05b *7/28, 7/00;* **A01n** *17/02*



A portable fog-sprayer for spraying insecticides, including a reservoir for the liquid insecticide, a compressor to provide air under pressure, and a nozzle having a plurality of atomizing orifices. The orifices are arranged in a pattern intended to assure a complete dispersion of the liquid particles so that the resulting vapor or mist remains in suspension, thereby increasing its effectiveness.

3,426,976
TAPE TRANSPORT APPARATUS WITH LOCKING MECHANISM

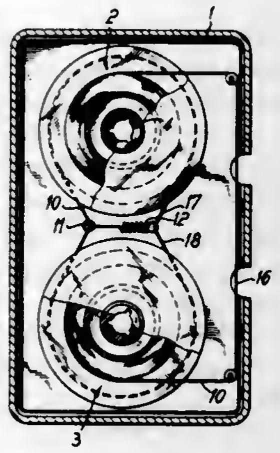
Alexander R. Maxey, Newark, Calif., assignor, by mesne assignments, to Alan R. Fowler, Orange, Calif., as trustee
Filed Mar. 24, 1967, Ser. No. 625,679
U.S. Cl. 242—55.12 **18 Claims**
Int. Cl. G11b *15/44;* **B65h** *25/22, 59/38*



A tape transport apparatus includes a selectively engageable locking mechanism operably connected to a tape compliance arm for locking the tape supply hub against rotation in the tape feeding direction when the transport apparatus is not in operation. The locking mechanism engages responsive to movement of the compliance arm a preselected distance in taking up slack in the tape coming off the supply reel and disengages responsive to movement of the compliance arm in the opposite direction as the tape tightens. The compliance arm is able to take up tape slack and relieve tape tension even with the locking mechanism engaged. The capstan and take-up reels are locked against reverse rotation by one-way clutches.

3,426,977
MAGNETIC TAPE MAGAZINE

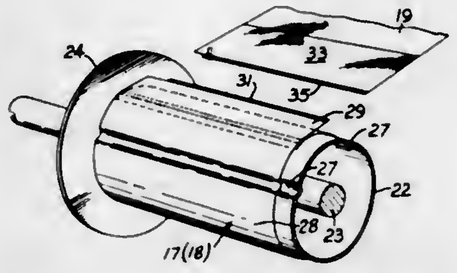
Richard Siegemund, St. Georgen, Germany, assignor to Dual Gebruder Steidinger, St. Georgen, Black Forest, Germany, a corporation of Germany
Filed Jan. 17, 1967, Ser. No. 609,835
Claims priority, application Germany, Jan. 26, 1966, St 24,902
U.S. Cl. 242—55.13 **8 Claims**
Int. Cl. G11b *15/43*



The present invention is concerned with a magnetic tape magazine which comprises a take-up and a feeding reel, which reels are disposed in a single plane. Each of the reels includes a reel body. A brake band surrounds each reel body and one end of the brake band is secured to the magazine and the other end of the brake band is connected with a spring with pretension of the latter. Finally, the sense of direction of the brake relative to the periphery of the reel is chosen such that the direction taken from the securing point to the spring engaging point of the brake band coincides with the direction of rotation of the reel body during unwinding of the magnetic tape disposed thereon.

3,426,978
REELS

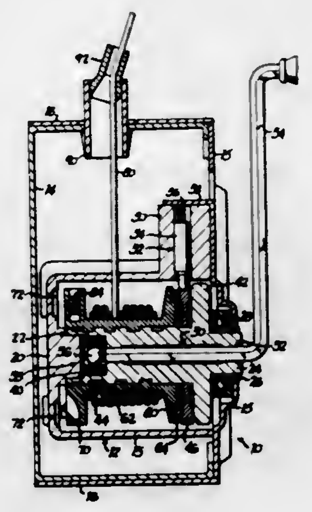
Ronald Jesse Barber, 62 Grange Road, Erdington, Birmingham 24, England
Filed Aug. 7, 1967, Ser. No. 658,912
Claims priority, application Great Britain, Aug. 12, 1966, 36,159/66
U.S. Cl. 242—74 **12 Claims**
Int. Cl. B65h *75/28*



A reel carrying one slide-operated fastener part to enable the reel to be releasably attached to a complementary slide-operated fastener part carried at at least one end of a liner. This positions the liner with respect to the reel to prevent telescoping of the liner when the latter is wound onto the reel, especially when carrying uncured rubber.

3,426,979
CONTROL MECHANISM

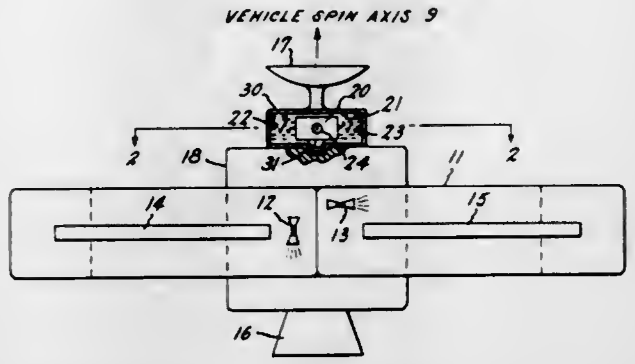
Claudio Gigante, Milan, Italy, assignor to Trans-Continental Engineering Corporation, Salt Lake City, Utah
Filed Feb. 8, 1967, Ser. No. 614,716
U.S. Cl. 242—99 **4 Claims**
Int. Cl. B65h *17/42;* **B66d** *1/50*



A control mechanism for winding and unwinding a normally tensioned flexible member. The mechanism incorporates a drum attached to a rotatable shaft with the drum being frictionally locked to a ratchet wheel while tension is applied to the flexible member with the drum being automatically locked to the housing of the mechanism when the tension on the flexible member is released. The present invention relates generally to devices for raising and lowering venetian blinds and the like and more particularly to an improved control mechanism for winding and unwinding a flexible member to raise and lower the venetian blinds or the like.

3,426,980
DOUBLE TUNED NUTATION DAMPER

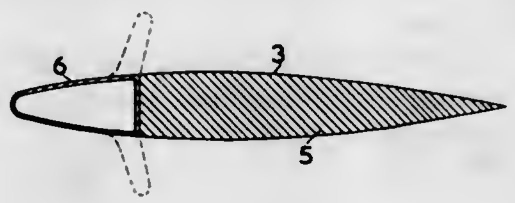
Gerard J. Caggiano, Endicott, and Robert C. Wells, Endwell, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 5, 1966, Ser. No. 518,852
U.S. Cl. 244—1 **4 Claims**
Int. Cl. B64c *17/02*



This invention relates to attitude controlling of spinning space vehicles, and more particularly, to a device for providing passive damping of spinning vehicle nutations. The damper consists of a mass placed in a damping fluid and attached to the vehicle through a spring suspension means. By locating the center of gravity of the mass along the spin axis of the vehicle but at a distance from the vehicle center of gravity, and providing a spring suspension, centrifugal forces on the mass add to the damping forces applied by the mass to the vehicle, thus providing faster nutation damping for a given size mass.

3,426,981
FOREIGN BODY GUARDS

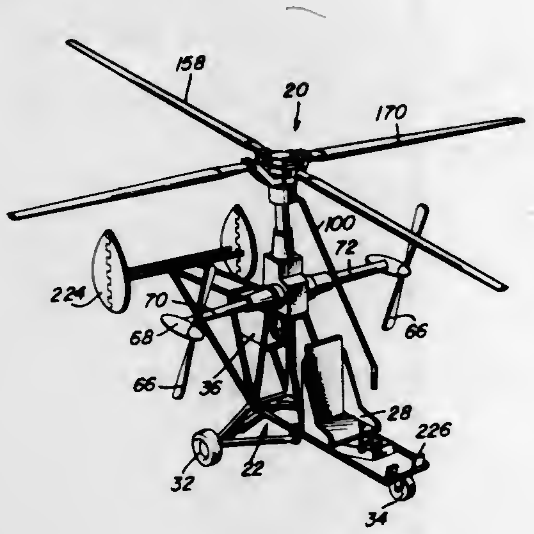
Alastair William Rodney Allcock, Northwood, England, assignor to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Feb. 20, 1967, Ser. No. 617,173
Claims priority, application Great Britain, Feb. 28, 1966, 8,650/66
U.S. Cl. 244—1 **8 Claims**
Int. Cl. B64d *33/00, 45/00*



An intake guard for a gas turbine engine has blades of streamline section arranged either radially or transversely. The main structure of each blade is rigidly constructed from steel or titanium and the nose is made of a deformable material so as to "mushroom" on being struck by a large foreign body such as a bird and thereby increase the shielding area. The protection of other parts of aircraft such as windscreens is envisaged as is also the utilising of hollow nose sections for hot air de-icing.

3,426,982
VERTIPLANE VTOL AIRCRAFT

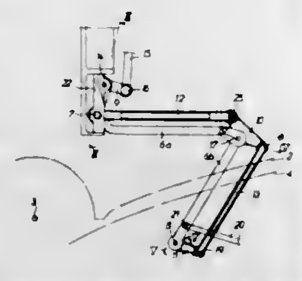
Ronald L. Markwood, 215 S. Juliana St.,
Bedford, Pa. 15522
Filed Feb. 3, 1967, Ser. No. 613,843
U.S. Cl. 244—7 **15 Claims**
Int. Cl. B64c *27/28, 27/82*



An aircraft of the type capable of vertical take-off and landing and horizontal flight incorporating a rotor having radial blades which aerodynamically operate as rotating wings and a pair of anti-torque propellers which are convertible from a position where the anti-torque propellers serve not only to counteract and neutralize the torque of the rotor but also to add lift to that of the rotor during take-off and landing and providing horizontal propulsion when the aircraft is in horizontal flight by altering the axes of rotation of the anti-torque propellers from a generally vertical orientation to a generally horizontal orientation. The rotor and hub therefore is extremely simple in construction in that the blades thereof are floating insofar as cyclic pitch control and other conventional controls normally provided on helicopters which introduces many advantages as to cost, weight, maintenance and the like. The anti-torque propellers provide supportive lift correct torque, provide rotational attitude control and form the prime means for forward propulsion during horizontal flight.

3,426,983
CONTROL TRANSMISSION DEVICE FOR VARIABLE-GEOMETRY AIRCRAFT

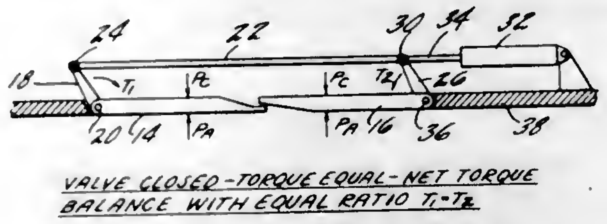
Henri Deplante, Paris, France, assignor to Avions Marcel Dassault, Saint-Cloud, Hauts-de-Seine, France, a company of France
Filed Nov. 1, 1967, Ser. No. 679,724
Claims priority, application France, Feb. 1, 1967, 93,370
U.S. Cl. 244—46 **7 Claims**
Int. Cl. B64c *3/40*



A mechanical transmission device in a variable-geometry aircraft, comprising an articulated support forming with the wing fulcrum a parallelogram linkage, three bellcranks mounted on the wing the fuselage and the supports, and coupling rods.

3,426,984
AIRCRAFT PRESSURIZATION OUTFLOW VALVE

Floyd R. Emmons, Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,093
U.S. Cl. 244—117 **6 Claims**
Int. Cl. B64d *13/02;* **B64c** *1/00*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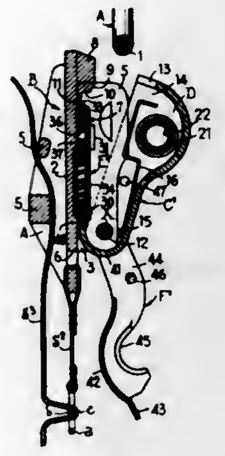
VALVE CLOSED-TORQUE EQUAL-NET TORQUE BALANCE WITH EQUAL RATIO T1=T2

A pair of cooperating flat plate-like valve elements are pivotally mounted at their respective ends and overlap each other at the outer periphery so as to be substantially flush with the skin of the aircraft whereby serving as a variable area throttling valve to maintain the pressure in the cabin of the aircraft at a predetermined value. The inner surfaces of the overlapping ends define a thrust nozzle when in a given position. One element projects into the airstream to define a ram air shield in another position.

3,426,985
DETACHABLE FIXING DEVICE FOR A PARACHUTE CANOPY PERMITTING THE PRACTICALLY IMMEDIATE RELEASE OF SAID CANOPY

Marcel H. Pravaz, Paris, France, assignor to Etudes et Fabrications Aeronautiques, Clichy, France
Filed Mar. 27, 1967, Ser. No. 626,068
Claims priority, application France, Apr. 5, 1966, 56,407
U.S. Cl. 244—151 **5 Claims**
Int. Cl. B64d *17/32*

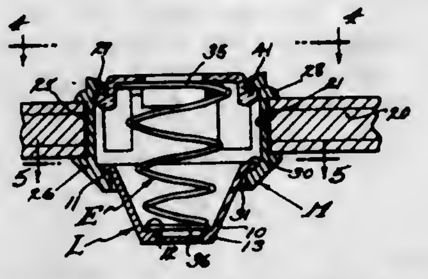


Detachable fixing device for releasing the canopy from the harness of a parachute, said device comprising two detachable complementary parts one of which comprises a ring and the other a base carrying an abutment having a support face for the ring, said support face being devoid of any projections liable to prevent the ready release of said ring and being exactly perpendicular to the face of said base adjacent said ring, releasable means being provided to maintain said ring against said support face.

3,426,986
SHOCK ISOLATING LEG ASSEMBLY

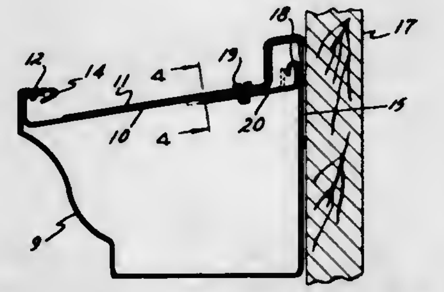
Clarence Pool, 8321 Passons Blvd.,
Pico Rivera, Calif. 90660
Filed Jan. 5, 1968, Ser. No. 696,059
U.S. Cl. 248—24 **8 Claims**
Int. Cl. F16f *15/04*

This invention relates to legs for the support of delicate devices which can be damaged by the transmission of shock therethrough, and provides a leg directly engageable upon a support, a mounting fixed to said device movably receiving the leg, means extensibly biasing the leg to project from the mounting and yieldingly supporting said device, and a retainer releasably secured to the mounting to retain the said means in operative relation to the leg and extending the same for support of said device. One or more such assemblies are installable directly into the frame of the supported device.



3,426,987
RAIN GUTTER SUSPENSION BRACKET

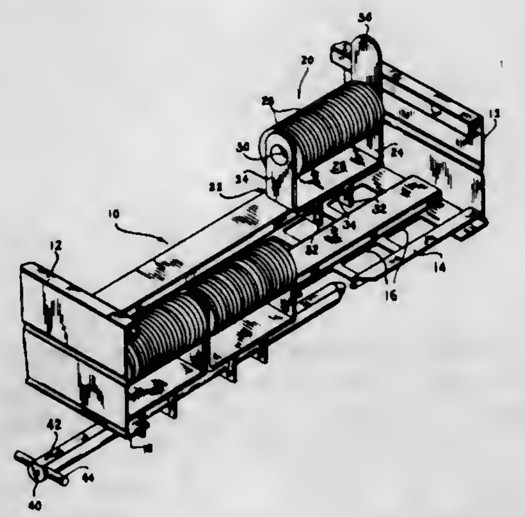
Frank R. Leslie, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 18, 1966, Ser. No. 595,502
U.S. Cl. 248—48.2 **6 Claims**
Int. Cl. E04d *13/06*



This application describes a rain gutter suspension bracket which comprises two members wherein one member is slidably associated with the other member and adjustable upon installation with a rain gutter to provide clamping and holding the gutter in position while permitting some degree of movement of the gutter. The bracket is useful with gutters made of materials which are characterized by a high degree of seasonal expansion and contraction.

3,426,988
CABLE INSTALLATION ROLLER

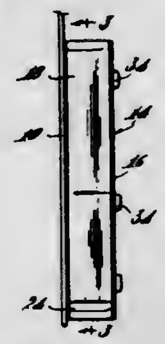
James Bradley, West Hill, Ontario, Edward F. Bradshaw, Agincourt, Ontario, and Jack A. Foster, Oshawa, Ontario, Canada, assignors to Burndy Corporation, a corporation of New York
Filed Oct. 6, 1966, Ser. No. 591,664
U.S. Cl. 248—55 **2 Claims**
Int. Cl. H02g *3/04;* **F16l** *3/00*



A roller bracket which can be locked in position or removed readily, to facilitate installation of long electrical conductors in supporting trays or troughs. The bracket is intended for use with trays or troughs having regularly perforated floors. It includes a locking leg which is inserted through a floor perforation, and a cylindrical rod with a partial flat face which is inserted through a bore in the locking leg and then rotated to achieve wedging relationship with the floor of the cable tray.

3,426,989
BRUSH HOLDER

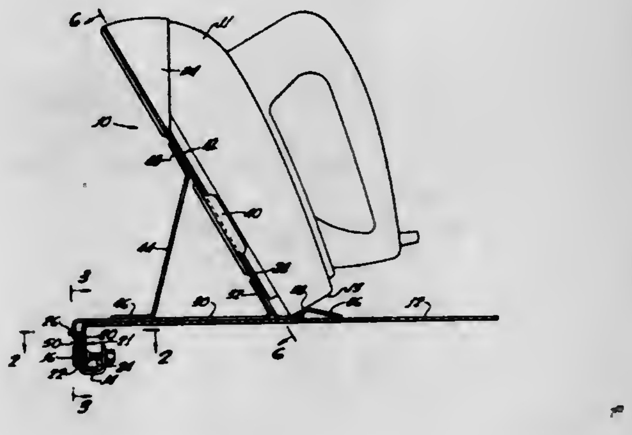
John Dgetluck, Chicopee Falls, Mass., assignor to Pioneer Packaging, Inc., Chicopee, Mass., a corporation of Massachusetts
Filed Feb. 13, 1967, Ser. No. 615,732
U.S. Cl. 248—110 **6 Claims**
Int. Cl. A46b *17/09*



A brush holder comprising a flat cardboard panel to which there is attached a transparent molded plastic shell open at each end and transversely shaped to receive and hold a paint brush with the bristles confined within the shell and the handle exposed for shipping and/or display purposes.

3,426,990
DETACHABLE IRON HOLDER FOR STEAM IRONS

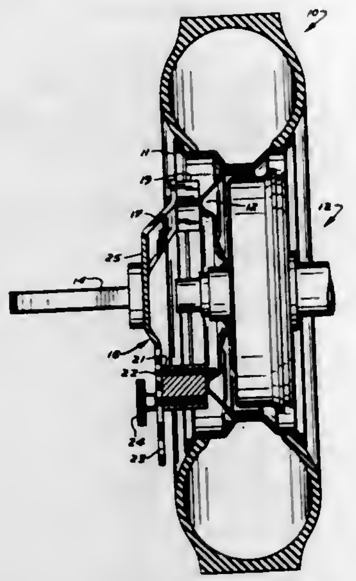
Roy T. Pady, 5130 Bushnell,
Riverside, Calif. 92505
Filed June 22, 1966, Ser. No. 559,584
U.S. Cl. 248—117.6 **3 Claims**
Int. Cl. D06f *79/00*



This invention relates to a device for holding a steam iron in an upright position and includes an inclined base having a nose retainer and a heel retainer for the steam iron, and supporting means for holding the base in an inclined position which has an insert mateable into a slot of a clamp bracket which is attachable to the ironing board. The supporting means and the base can be removed from the bracket which is attached to the ironing board, and stood up with the steam iron insertable in the base in an upright position.

3,426,991
WHEEL ALIGNMENT GAUGE ADAPTER

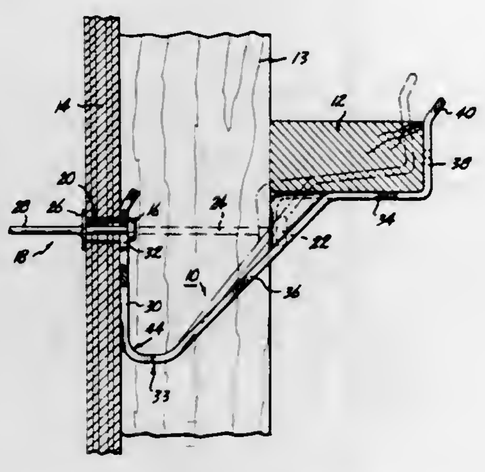
Sigurd A. Rishovd, Minneapolis, Minn., assignor to Bishman Manufacturing Company, Osseo, Minn., a corporation of Minnesota
Filed Dec. 5, 1966, Ser. No. 599,309
U.S. Cl. 248—205 **6 Claims**
Int. Cl. G01b *11/275*



A wheel alignment gauge adapter having a planar wheel gauge supporting surface and a three member attaching and supporting arrangement defining a plane parallel to the wheel gauge surface. The three member attaching apparatus includes at least one magnetic member and at least one radially adjustable mechanical support member arranged so that the top portion of the adapter is magnetically affixed to a planar portion of a wheel and the bottom portion is in planar and mechanical supporting engagement with the same portion of a wheel. The three member arrangement allows use of the "roll" of a wheel for accurate wheel alignment measurement.

3,426,992
WALER BRACKET

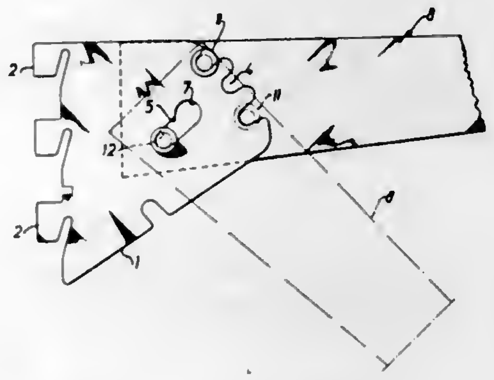
Frank E. Buyken, 1517 Rainier Ave. S., Seattle, Wash. 98144
Filed Oct. 11, 1967, Ser. No. 674,601
U.S. Cl. 248—205 **1 Claim**
Int. Cl. E04g *17/02*



A bracket supports and presses generally horizontally disposed waler against a series of laterally-spaced upright studs which, in turn, reinforce a concrete-form panel. The bracket engages and is supported by the head of a tie-rod which passes through the form panel. A ledge member on the bracket receives and supports the waler. An upright wall spaced from the ledge member rests against the form panel. An upwardly and outwardly extending connection arm has its lower end flexibly joined to the lower end of the upright wall and its upper end joined to the inner edge of the ledge member. An upstanding second wall at the outer edge of the ledge member bears against the outer face of a waler supported on the ledge member. Each of the upright wall and the upper portion of the connecting arm is provided with an inverted keyhole slot for engaging a tie-rod head, whereby the waler bracket may be supported on either a short or a long-type tie rod extending through the form panel.

3,426,993
SHELF BRACKETS

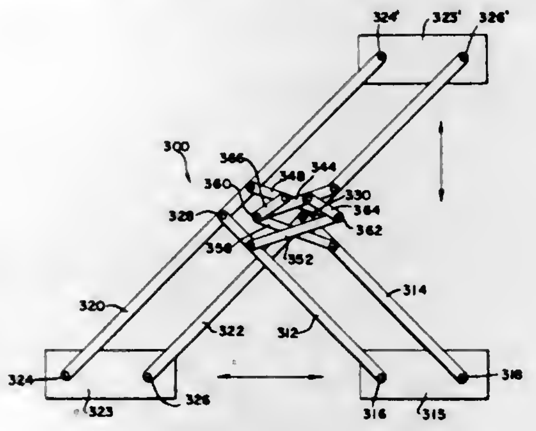
Rune Oskar Johansson, Kommendorsgatan 30, Goteborg, Sweden
Filed Mar. 23, 1967, Ser. No. 625,478
Claims priority, application Sweden, Mar. 28, 1966, 4,055/66
U.S. Cl. 248—242 **3 Claims**
Int. Cl. A47b *96/10*



The present shelf bracket is for attachment to vertical supporting rails and includes a coupling member detachably connectable to the vertical supporting rail and a bracket member detachably connectable to said coupling member in various positions of inclination of said bracket member.

3,426,994
STRAIGHT LINE CARRIER DEVICE

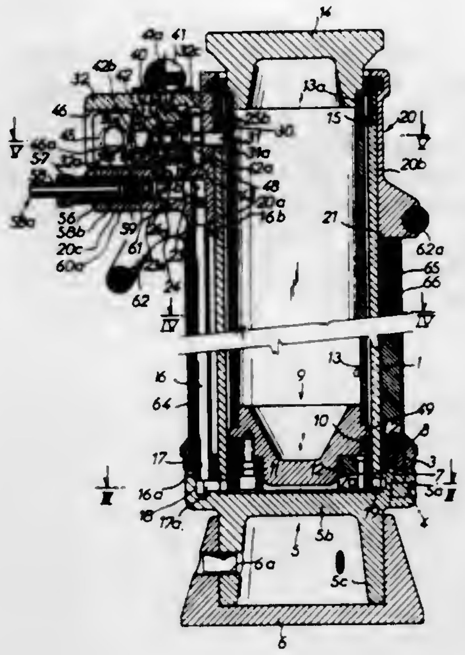
James A. Daniel, Jr., R.D. 2, Box 66, Newton, N.J. 07860
Continuation-in-part of application Ser. No. 469,175, July 2, 1965. This application Dec. 12, 1966, Ser. No. 601,096
U.S. Cl. 248—277 **9 Claims**
Int. Cl. A47f *5/12;* **F16h** *21/10*



The present disclosure relates to a straight line carrier device and may find a variety of uses such as a gauging instrument, scaffolding, doors, etc. The device utilizes a pair of joined parallelograms which move, relatively, in opposite directions changing their shape as they move. In order to maintain the movement of the two parallelograms in the proper relation to one another, a suitable means must be provided, such as suitable spacing rods and pivoted linkages, sliding pins, or gear wheels.

3,426,995
HYDRAULIC PIT PROP

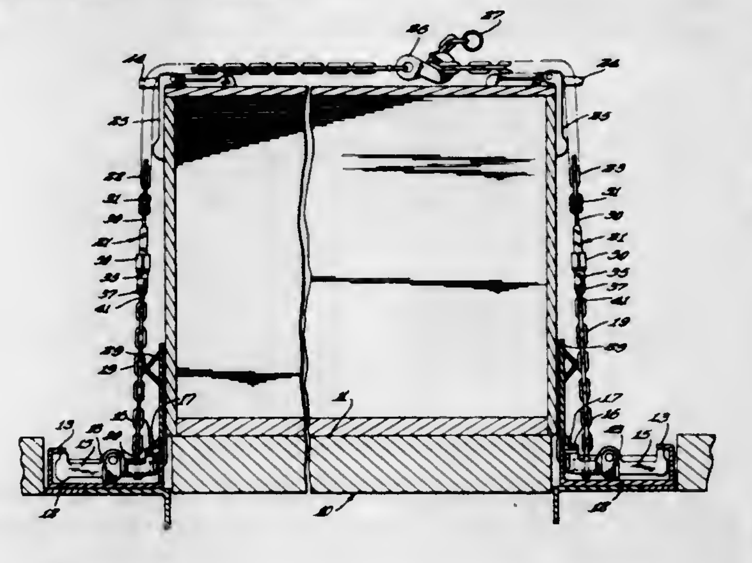
Fernand Stanislas Allinquant, 53 Ave. le Notre, Sceaux, France
Filed Dec. 19, 1966, Ser. No. 602,913
Claims priority, application France, Dec. 22, 1965, 43,419; Sept. 14, 1966, Ser. No. 76,395
U.S. Cl. 248—354 **9 Claims**
Int. Cl. E21d *15/44*



The invention mainly relates to a support of a hydraulic pit prop having the conventional filler, release, and slide valves wherein the support has a cylindrical recess which accommodates the release valve housing and two cylindrical bores which respectively accommodate the slide valve housing and the filler valve housing, and wherein said recesses are at right angles to the cylindrical recess, the release valve housing itself having two bores, the housings of the filler and of the slide valves running through the two bores of the support and each penetrating into respective ones of the two bores of the release valve housing, the whole assembly being made fast by a U-shaped clip.

3,426,996
FLEXIBLE TIE DOWN FOR FLAT LADING AND QUICK RELEASE THEREFOR

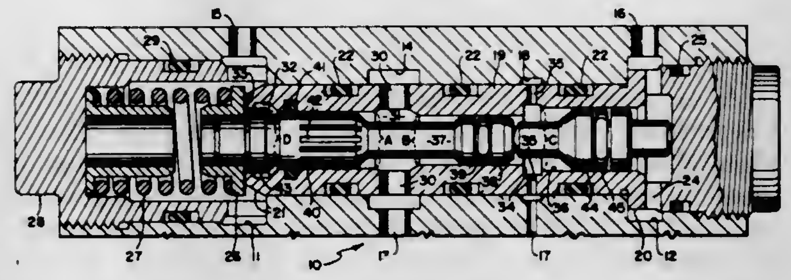
Keith W. Broling, Olympia Fields, Ill., assignor, by mesne assignments, to Portec, Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,374
U.S. Cl. 248—361 **7 Claims**
Int. Cl. B65j *1/22;* **B65d** *63/00*



Quick release for the tie down chains, tying lading to the flat deck of a vehicle. The quick release consists essentially in a releasable connecting link including an upper connector depending from the upper strand of a tie down chain on one side of the vehicle and extensible release links pivotally connected to the lower end of the upper connector, and foldable upwardly along and extensible from said upper connector. The links are held in their folded or retracted aligned position by a sleeve slidably movable along the upper connector and released by an upward blow on the sleeve. The pivot for the release links to the upper connector is eccentric of the longitudinal axis of the connector to effect the exertion of a sidewise force on the sleeve by the tension of the tie down chain, to prevent the sleeve from vibrating out of its locking position during travel of the vehicle.

3,426,997
RELIEF VALVE CONSTRUCTION

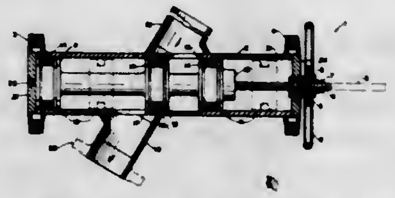
Robert Dale Vanderlaan, Kalamazoo, Mich., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,798
U.S. Cl. 251—120 **6 Claims**
Int. Cl. F16k *17/08, 17/168, 1/54*



1. Valve construction comprising sleeve means forming a through passage for pressure fluid flow, a valve plunger closely fitted in and being movable axially relative to the sleeve means, one of said sleeve means and plunger having an annular recess, a resilient seal ring in said recess, the other of said sleeve means and plunger having a body portion engaged by said ring in such relative movement for sealing the passage, said body portion being provided with a series of longitudinal grooves in circumferential spaced relation which in a closed condition of the valve construction are completely to one side of the ring and are relatively moved upon opening to bridge the ring, whereby fluid is permitted to flow through the grooves past the seal ring while the latter is supported by the body portions between the grooves, and flow-restricting means at a location spaced from the seal ring and having more restrictive effect than the body grooves, thereby to protect the ring against high flow erosive action.

3,426,998
PISTON VALVE WITH O-RING SEAL RETAINED BY SPLIT RING

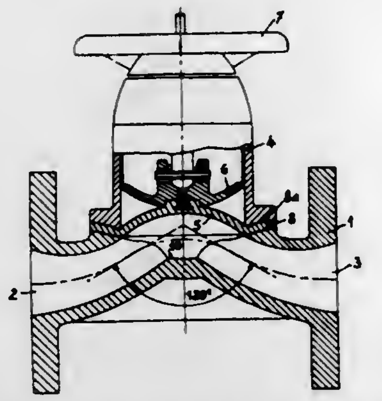
Edwin K. Kintner, Pittsburgh, Pa., assignor to Kinwell Development Company, Johnstown, Pa.
Filed May 25, 1967, Ser. No. 641,328
U.S. Cl. 251—324 **2 Claims**
Int. Cl. F16k *9/20, 5/02, 31/43*



The invention relates to a handwheel operated or automatically operated, high pressure, large flow valve having three pistons on its stem. The intermediate piston is movable across the inlet port against the incoming pressure and has an O ring of abnormal cross-section diameter of 1 inch or more and of high Durometer (about 90) and under tension. It is held in its seat by split piston rings and is partly encapsulated to resist its tendency to expand and wear through frictional contact with the inner walls of the valve body.

3,426,999
DIAPHRAGM VALVES

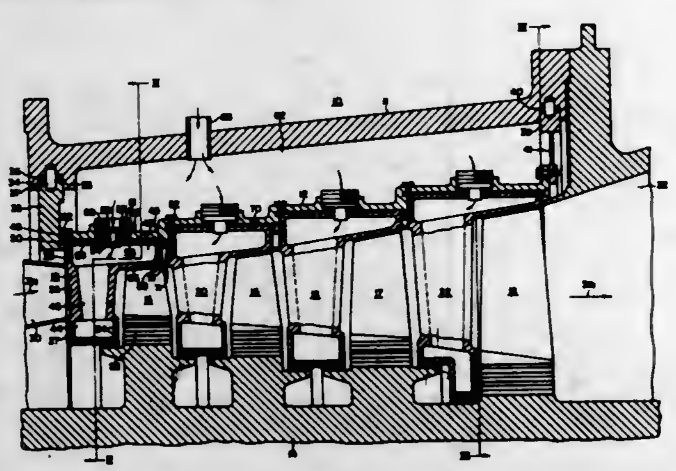
Georges Claude Tolnet, 64 Rue Louis, Lyons, France
Continuation of application Ser. No. 474,689, July 26, 1965. This application Oct. 5, 1967, Ser. No. 673,221
Claims priority, application France, July 29, 1964, 45,020
U.S. Cl. 251—331 1 Claim
Int. Cl. F16k *7/16, 15/14, 31/50*



A diaphragm valve has a body and a cap that define cooperating flanges for grasping a diaphragm between them that may be urged toward or away from a seat to close or open the valve, respectively. Those flanges have opposed parallel surfaces that are annular and coaxial and that are figures of revolution about their common axis and are inclined radially inwardly toward the valve seat. The flanges also have flat opposed surfaces disposed radially outwardly beyond the annular surfaces, so that the body and cap and diaphragm automatically correctly align with each other when the valve is assembled.

3,427,000
AXIAL FLOW TURBINE STRUCTURE

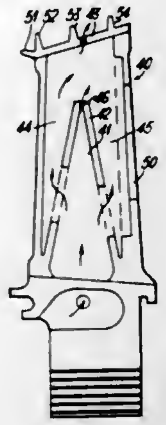
Augustine J. Scalzo, Philadelphia, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1966, Ser. No. 593,992
U.S. Cl. 253—39.1 10 Claims
Int. Cl. F01d *25/12, 9/06*



An axial flow gas turbine having inner and outer casings, the inner casing being joined to the outer casing by an annular flange structure at either end. One of the flanges is substantially flexible in axial direction to permit unrestrained thermal axial elongation, and both flanges are retained in radially slidable relation in the outer casing to permit unrestrained thermal radial growth of the inner casing. The stationary blades are formed in integral arcuate groups and are resiliently secured to the inner casing at a central point in their outer shroud segments to permit circumferential thermal elongation to occur without change in the blade gauging, and the outer shroud segments have integral portions encompassing the rotor blades to define the outer periphery of the motive fluid path past the rotor blades. The stationary blades are air cooled and are formed with inner and outer hollow shroud segments and hollow vane portions, and the cooling air is admitted to the outer shroud through a passage through the resilient securing means.

3,427,001
AEROFOIL SHAPED BLADE

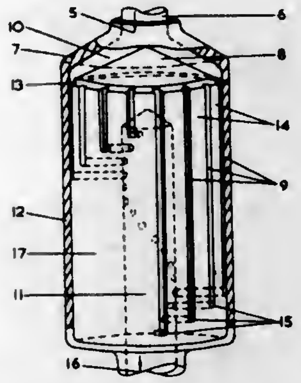
Harry Hartley Malley, Derby, and Gordon Allan Halls, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Jan. 6, 1967, Ser. No. 607,814
Claims priority, application Great Britain, Jan. 31, 1966, 4,268/66
U.S. Cl. 253—39.15 3 Claims
Int. Cl. F01d *5/08, 5/18*



An aerofoil-shaped blade which has an inlet passage which tapers towards the tip of the blade and two outlet passages, positioned adjacent to the edges of the blade, which taper towards the root of the blade. Cooling air is supplied to the inlet passage by way of the root and is directed into the outlet passages through holes in the internal walls, which define the passages. The cooling air is finally allowed to escape either through the tip or through the trailing edge of the blade.

3,427,002
PROCESS AND APPARATUS FOR MIXING VISCOUS LIQUIDS

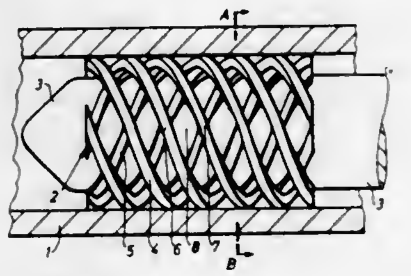
Frank Wilding, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Continuation-in-part of application Ser. No. 536,509, Feb. 18, 1966. This application July 11, 1967, Ser. No. 652,560
Claims priority, application Great Britain, Feb. 18, 1965, 7,079/65
U.S. Cl. 259—4 14 Claims
Int. Cl. B01f *15/02;* **F15d** *1/00*



A mixing apparatus for mixing a stream of viscous liquid or liquids which splits the total flow into a number of sub flows, each of which contains about the same amount of each of the parts to be mixed, and recombines them one at a time.

3,427,003
APPARATUS FOR MIXING AND HOMOGENIZING VISCOUS LIQUIDS

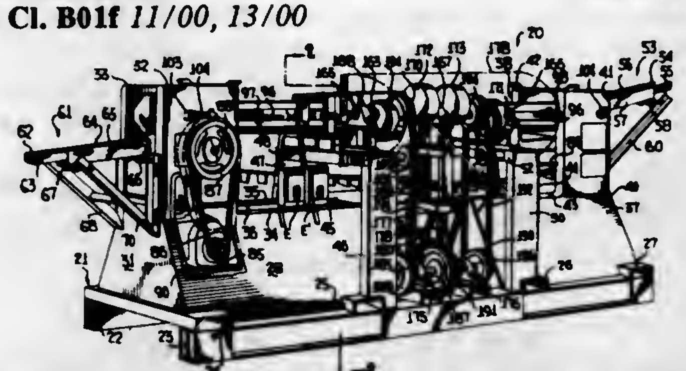
Rudolf Schneider and Ludwig Bottenbruch, Krefeld-Bockum, Otto Court, Neuss, Walter Damsky, Krefeld, Georg Spott, Krefeld-Urdingen, and Axel Lippert, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed June 21, 1967, Ser. No. 647,722
U.S. Cl. 259—9 10 Claims
Int. Cl. B01f *7/02;* **B29f** *3/02*



Mixing apparatus for the continuous mixing and homogenizing of flowable substances, e.g. viscous liquids and liquids containing pulverulent materials, including a tubular housing, a mandrel rotatably disposed therewithin, a first inner conveying thread extending in a first spiral direction and a second outer conveying thread extending in a second spiral direction counter to the first spiral direction, said threads defining correspondingly first and second spiral channels and said threads correspondingly contacting one another at points of intersection so as to form apertures therebetween which flow communicate the first and second channels, the threads being mounted on the mandrel for common rotation therewith, e.g. with the first inner thread disposed in abutting relation with the mandrel along their common extent and with the second outer thread disposed operatively in slidable abutting relation with the housing along their common extent, whereby upon rotation of the mandrel the flowable substance in the housing is divided into separate flows correspondingly conveyed along the channels at closely disposed spiral paths and in intermittent partial exchange flow contact at the apertures to achieve maximum intermixing between the layers in the channels and at the apertures during travel of the flowable substance along the course from the inlet portion to the outlet portion of the housing.

3,427,004
CAN SHAKING DEVICE

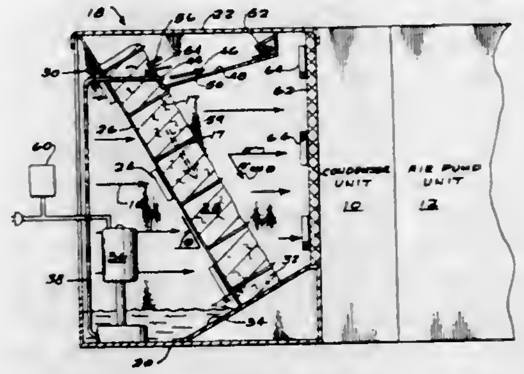
Ralph Cover and Clyde A. Kemper, Westminster, Md., assignors to The United Company, Westminster, Md., a corporation of Maryland
Filed July 24, 1967, Ser. No. 655,578
U.S. Cl. 259—59 20 Claims
Int. Cl. B01f *11/00, 13/00*



An apparatus is provided for conveying cans and like containers along a generally horizontal path and for shaking the containers in a back-and-forth motion, transverse to the direction of movement along the predetermined path, in order that a product fill in the containers may be evenly distributed throughout, or a gaseous substance raised to the desired pressure within the container. A particular desired motion is provided through a novel combination of machine elements which includes an eccentric for oscillating a frame, and guiding means for the oscillating frame.

3,427,005
PRECOOLER

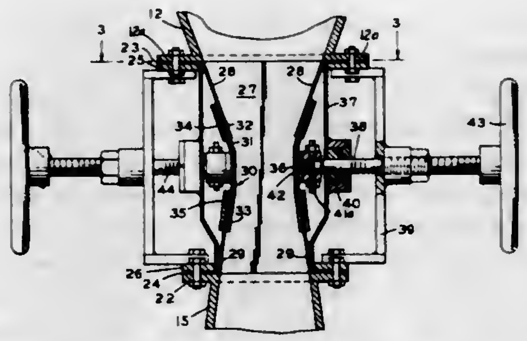
Edward A. Kuykendall, Julian, Calif.
(83-533 Highways 111 and 999, Indio, Calif. 92201)
Continuation-in-part of application Ser. No. 440,029, Mar. 15, 1965. This application Apr. 17, 1967, Ser. No. 631,507
U.S. Cl. 261—26 6 Claims
Int. Cl. B01d *47/02*



A system for precooling the air which is drawn over the condenser heat exchanger coils of refrigeration apparatus. An evaporator pad of aspen wood excelsior is disposed in front of the air intake port for the refrigeration system's condenser coil cooling heat exchanger system. The air flow is substantially horizontal and the pad is disposed across the flow at an angle of 50 to 70 degrees from the horizontal with the lower edge of the pad being downstream in the air flow with respect to the upper edge. Means for flooding the evaporator pad with a relatively very high magnitude of flow of cooling and washing water which flows downwardly across the width of the pad due to the combined forces of gravity and the strong draft of the cooling air the velocity of which has a component downwardly along the face of the sloped pad. The flooding water is recirculated from a receiving sump which is resupplied through conventional float valve means. A thermostatic control automatically stops the water flow when the ambient dry bulb temperature is relatively cool.

3,427,006
VARIABLE ORIFICE GAS SCRUBBER

Andrew Oiestad, Staten Island, N.Y., assignor to Automotive Rubber Company, Inc., Detroit, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 447,214
U.S. Cl. 261—112 3 Claims
Int. Cl. B01d *47/10*



A gas scrubber having a converging section, a throat section and a diverging section. Adjustment means are provided for moving the throat section so as to vary the size of the throat during operation of the gas scrubber.

3,427,007
BUBBLE CAP ASSEMBLIES FOR BUBBLE TOWERS

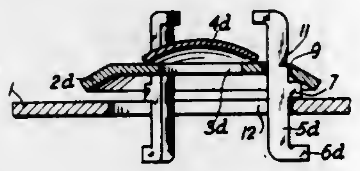
Vlastimil Braun, Brno, Czechoslovakia, assignor to Chepos, Zavody chemickeho a potravinarskeho strojirenstvi oborovy podnik, Brno, Czechoslovakia

Filed Feb. 20, 1967, Ser. No. 618,300

Claims priority, application Czechoslovakia, Feb. 21, 1966, 1,101/66; Apr. 25, 1966, 2,742/66

U.S. Cl. 261—114 **5 Claims**

Int. Cl. C02d *1/04*



A gas and liquid contact apparatus having a bubble tower plate adapted to carry a liquid and formed with an opening through which a gas or vapor is adapted to flow upwardly through the plate to contact the liquid. A bubble cap assembly is carried by the plate over the opening thereof and includes a lower cap situated over the plate opening and itself formed with an opening through which the gas or vapor is adapted to flow, the bubble cap assembly further including an upper cap situated over the opening of the lower cap to receive the gas or vapor which passes through both of the above openings. The upper cap is lighter than the lower cap so that the upper cap will be raised away from the lower cap before the lower cap is raised away from the plate.

3,427,008
INSTALLATION AND METHOD FOR THE TREATMENT AT HIGH TEMPERATURE AND COOLING OF GRANULAR OR DIVIDED SOLID PRODUCTS UTILIZING A FLUIDIZED LAYER

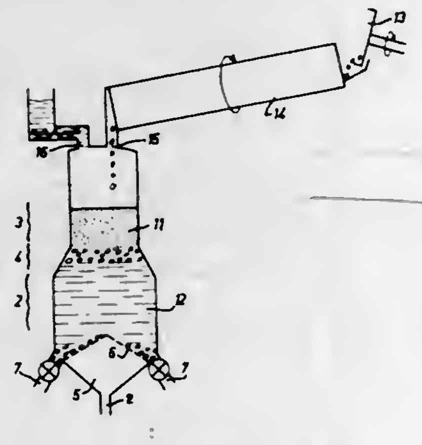
Jacques Geoffroy, Forbach, France, assignor to Charbonnages de France, Paris, France, a public institution of France

Filed July 27, 1967, Ser. No. 656,568

Claims priority, application France, July 29, 1966, 71,540

U.S. Cl. 263—21 **5 Claims**

Int. Cl. F27d *3/00;* **F26b** *3/14, 17/14*



The present invention relates to an apparatus for the heat treatment of granular or divided solids utilizing a fluidized layer, and to a corresponding method, especially for the sintering of small pellets or agglomerates of light ash. The invention also comprises an installation utilizing the above method. Two superposed zones of different sections and progressively coupled together are provided, namely: a lower zone, provided at its base with a grating traversed by cold air which is given a vertical rising movement, and having a section such that the products located therein are deposited in a fixed layer on the said grating; an upper zone of smaller section and such that the products present in this zone are maintained in the fluidized state by the combustion gases issuing from the lower zone.

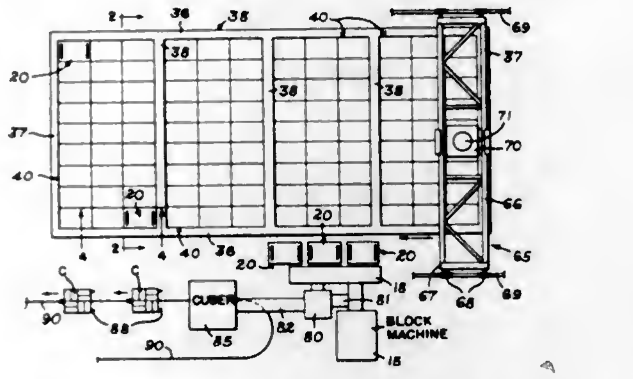
3,427,009
APPARATUS AND METHOD FOR HANDLING CONCRETE BLOCKS

Harry Norman Shute, ℅ Shute Concrete Products, Inc., 4810 Woodside Drive, Richmond, Ind. 47274

Filed Oct. 21, 1966, Ser. No. 588,559

U.S. Cl. 263—28 **20 Claims**

Int. Cl. F27b *3/12, 9/00;* **B28b** *15/00*



Racks of concrete blocks are delivered from a rack loading station to an open top steam curing kiln and are arranged in horizontally spaced relation with a cover for the kiln being formed by a plurality of substantially rigid panels arranged in a coplanar relation. After the blocks on each rack are cured, the rack is lifted from the kiln and delivered to a rack unloading station, after which the blocks are arranged in the form of cubes which are delivered to a storage rack and arranged in tiers on gravity feed roller conveyors.

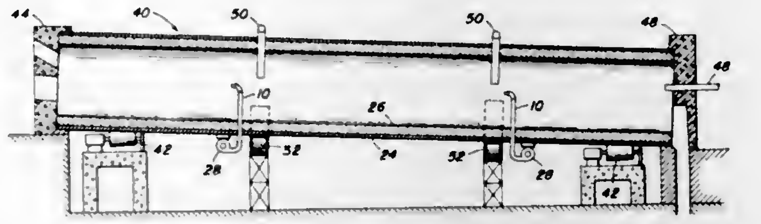
3,427,010
HEATING APPARATUS AND PROCESS

John R. Wesel, Lewiston, and Leonard E. Olds, Grand Island, N.Y., assignors to Strategic Materials Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Oct. 19, 1965, Ser. No. 497,686

U.S. Cl. 263—33 **6 Claims**

Int. Cl. F27b *7/36, 7/34*



In the use of rotary kilns for ore reduction, oxygen-bearing gases are often injected in conjunction with a source of fuel to heat the charge-bed to high temperatures. Impingement of the hot flames on the bed and kiln sidewalls is a continuing problem. In the present invention, specially designed flow-directing nozzles are located exactly on the central axis of the kiln, parallel with the kiln, and pointing toward the flue end of the kiln. These nozzles produce a long, even cone of flame which heats the charge uniformly without impingement. Of particular interest is the operation of the flow-directing nozzles in conjunction with the introduction of coal containing volatile matter through the side of the kiln, which coal is introduced onto the kiln bed separate from, but adjacent to the flow-directing nozzles.

3,427,011
HIGH PRESSURE FURNACE

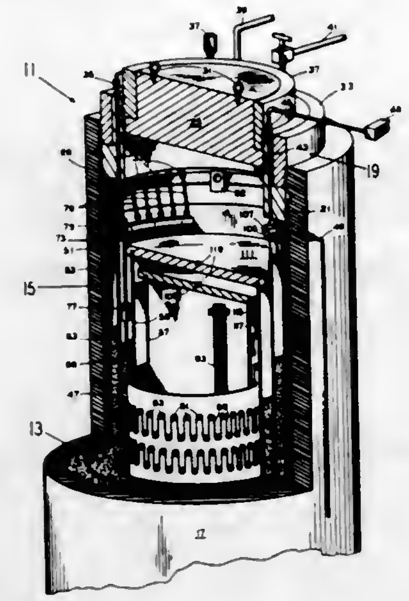
Charles B. Boyer and Franklin D. Orcutt, Columbus, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Nov. 9, 1967, Ser. No. 681,857

U.S. Cl. 263—40 **14 Claims**

Int. Cl. F27d *11/00;* **F27b** *1/22;* **H05b** *1/00*

A high-pressure furnace comprising a pressure vessel having at least two coaxial cylindrical shells positioned therein, the shells being combined with various sealing means to provide (1) a closed cylindrical inner work chamber surrounded by a closed annular chamber having a height substantially greater than its width and (2) a closed cylindrical insulating chamber having a diameter substantially greater than its height at one end of the inner chamber. Heating elements are arranged adjacent the innermost shell to provide at least two independent heating zones within the inner chamber and means are provided for restricting the flow of pressure medium between the various chambers while equalizing the pressure therein.



3,427,012
SCARFING APPARATUS FOR UPRIGHT INGOTS

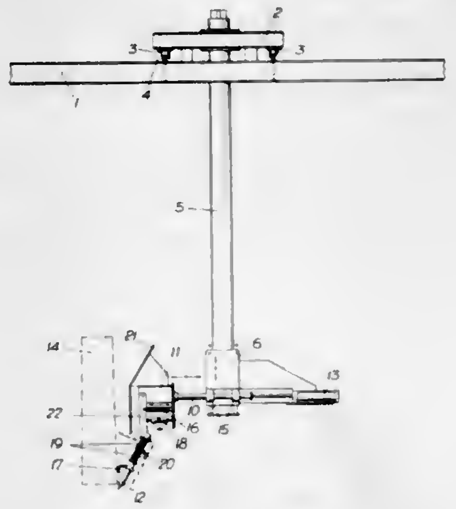
Josef Lambrecht, Ansfelden, Upper Austria, and Georg Stadlmann, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria

Filed May 17, 1966, Ser. No. 550,730

Claims priority, application Austria, June 9, 1965, A 5,192/65

U.S. Cl. 266—23 **6 Claims**

Int. Cl. B23k *7/06*



A scarfing apparatus for upright ingots is described comprising a plurality of individually movable and adjustable scarfing burners supported from a carriage. To perform the scarfing operation, the burners are individually adjusted to conform to the shape of the ingot and the carriage raised along a vertical guide column at the desired speed. Each burner is guided over the ingot surface by a liquid cooled feeler and is spring-urged to follow the surface. The vertical guide column is suspended from a frame movable in a direction parallel to the surface to be scarfed and the burner carriage is movable in a direction perpendicular to the surface, to allow universal positioning.

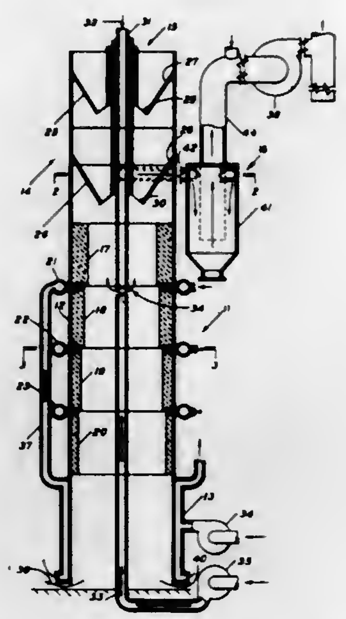
3,427,013
LOW TEMPERATURE BLAST FURNACE AND METHOD THEREFOR

Patrick Edgar Cavanagh, Montreal, Quebec, Canada, assignor, by mesne assignments, to Steep Rock Iron Mines Limited, Ontario, Canada

Filed Sept. 8, 1966, Ser. No. 578,067

U.S. Cl. 266—29 **8 Claims**

Int. Cl. F27d; C22b *9/14;* **F27b** *1/00*



A low temperature blast furnace with a shaft defined by a sheel has a plurality of concentric annular refractory linings which provide a plurality of zones each of reduced diameter relative to the previous zone and decreasing towards the top; means are provided to introduce combustion air at the steps formed by the refractories. An air-tube concentric with the furnace provides communication of gases into and between the zones and serves together with the lining to define a charge space. A charge of ore and reduction material, the latter being an excess of that required for complete reduction, are loaded into the top of the furnace. During combustion the charge and the reduction material are successively moved through controlled zones specifically through a preheat, a reduction and a cooling zone; a portion of the reducing gases being forced through the cooling zone to maintain a non-oxidizing atmosphere.

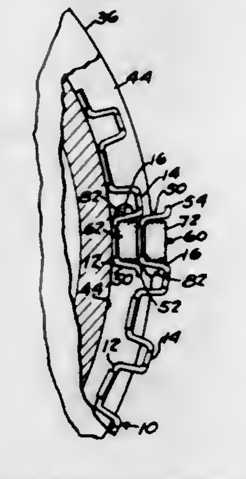
3,427,014
PISTON RING EXPANDER

Calvin N. De Bruin, Muskegon, Mich., assignor to Sealed Power Corporation, Muskegon, Mich., a corporation of Michigan

Filed Jan. 10, 1967, Ser. No. 608,337

U.S. Cl. 267—1.5 **8 Claims**

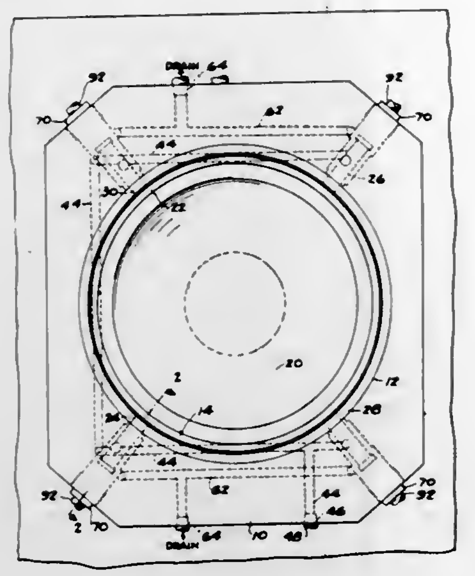
Int. Cl. F16f *1/34, 9/36;* **F16j** *15/00*



A radially corrugated split expander-spacer for a piston oil ring assembly having a pair of anti-nesting inserts mounted one in each of the end corrugations of the expander-spacer to prevent nesting of the end corrugations should the same become circumferentially overlapped.

3,427,015
HYDROSTATIC CENTERING DEVICE

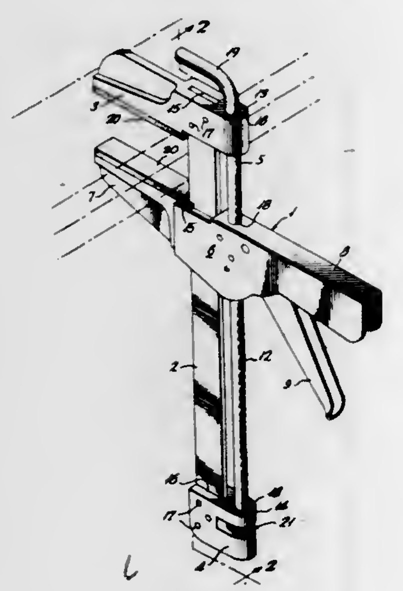
Peter H. Ohrnberger, Mount Clemens, Mich., assignor to F. Jos. Lamb Co., Inc., Detroit, Mich., a corporation of Michigan
Filed Jan. 26, 1967, Ser. No. 611,999
U.S. Cl. 269—25 **7 Claims**
Int. Cl. B23q *3/08;* **F02b** *73/00;* **F15b** *11/20*



A hydrostatically operated centering and clamping device comprising one or more pairs of opposed pistons arranged in cylinders each of which are provided at their inner ends with an oil recess and a sill and together with an end portion of a piston forms an exhaust passageway of variable cross-section from the recess to drain. When oil under pressure is admitted to the oil recesses, the opposed pair or pairs of pistons will project into engagement with and shift a workpiece until the opposed forces on the workpiece are equal. Thereafter the pistons are locked against axial movement to retain the workpiece in a centered position.

3,427,016
RATCHET CLAMP VERNIER

Harold D. Harris, 6310 N. 38th St., Omaha, Nebr. 68111
Filed Mar. 17, 1967, Ser. No. 623,926
U.S. Cl. 269—214 **5 Claims**
Int. Cl. B25b *5/06, 1/02, 1/06*



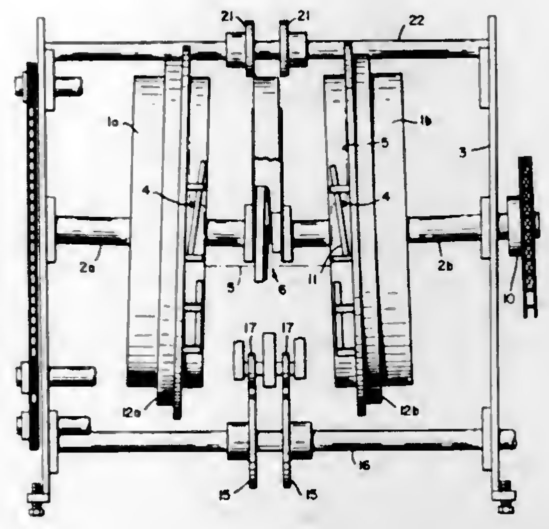
A device for adjusting the position of a movable jaw of a ratchet clamp relative to the fixed jaw thereof, wherein the ratch member is axially displaced, together with the movable jaw assembly, as a unit, while the jaw assembly is restrained against relative movement with respect to the ratch member.

ERRATUM

For Class 270—18 see:
Patent No. 3,427,655

3,427,017
SHEET ALIGNING MECHANISM

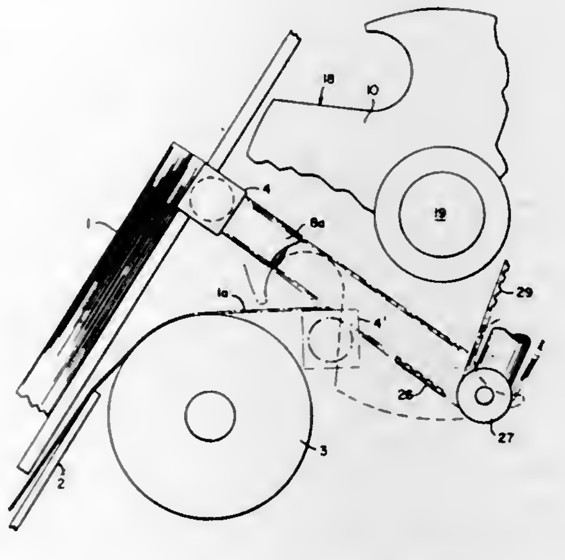
Robert Cohn, Millbrae, Calif., assignor to Nationwide Papers Incorporated, Knightsbridge, Ohio, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 609,176
U.S. Cl. 271—2 **5 Claims**
Int. Cl. B65h *5/16, 9/08*



This invention is an aligning mechanism which provides at least a pair of aligning pins that periodically converge upon a centering plane and align sheet material upon that plane.

3,427,018
FLEXIBLE SHEET FEEDING MECHANISM

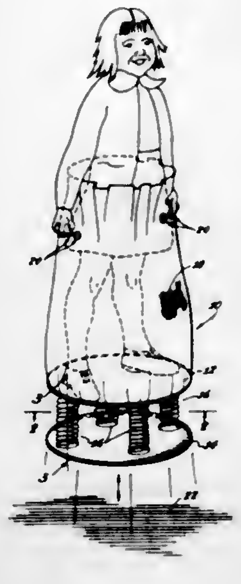
Robert Cohn, Millbrae, Calif., assignor to Nationwide Papers Incorporated, Knightsbridge, Ohio, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 609,202
U.S. Cl. 271—32 **7 Claims**
Int. Cl. B65h *3/56*



This invention is a continuous sheet feeding mechanism which employs a pivotable suction gripping head to separate successively the bottom-most sheet of a stack of sheets and to assist in feeding the separated sheet over a curved feeding surface.

3,427,019
SPRING-BIASED JUMPING DEVICE

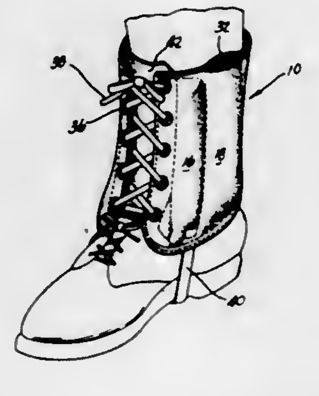
George J. Brown, 3317 W. 59th Place, Los Angeles, Calif. 90043
Filed Sept. 8, 1964, Ser. No. 394,696
U.S. Cl. 272—57 **4 Claims**
Int. Cl. A63b *71/00, 5/00*



1. An amusement device, comprising:
a substantially flat upper member of sheet material,
a lower member of approximately the same size and shape as said upper member,
spring means supporting said upper member on said lower member,
gripping means to be grasped by a child standing on said upper member, and means connecting said upper member to said gripping means and of a length such that the child can grasp the gripping means while in an upright standing position so that a child may balance herself while standing on said upper member and utilize the upper member and the gripping means to actuate the upper member as a springboard by jumping up and down so as to propel herself forward, backward and sideways, as desired, said connecting means being flexible and collapsible to permit the gripping means to drop when released by the child.

3,427,020
LEGGING HAVING REMOVABLE GRANULAR WEIGHT FILLED BAGS

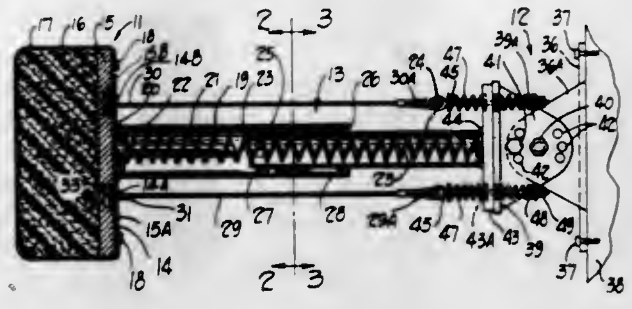
Wilfred N. Montour and Frederick Montour, both of 424 Benjamin, Ann Arbor, Mich. 48104
Filed Oct. 7, 1965, Ser. No. 493,811
U.S. Cl. 272—57 **6 Claims**
Int. Cl. A63b *23/04;* **A43b** *23/02*



1. A weighted flexible spat-shaped legging for physical training purposes comprising a flexible material sewed to provide on each side closed pockets vertically disposed in columnar arrangement over the instep and adjacent to the heel thereof, each of said closed pockets containing granular weights substantially filling such closed pockets, vertically disposed pockets open at the top on each side between the closed pockets, and a removable closed flexible bag of columnar shape fitted into and filling each of the open pockets, each such bag being filled with granular weights.

3,427,021
STRIKING DEVICE

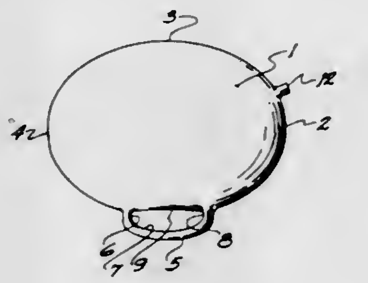
John A. Donato, 11039 Fitzwater Road, Brecksville, Ohio 44141
Filed Apr. 4, 1966, Ser. No. 539,864
U.S. Cl. 272—76 **2 Claims**
Int. Cl. A63b *69/00, 21/00*



A striking device having telescopic tubes, one carrying a striking pad at its free end and the other being mounted on a base attachable to a supporting surface, spaced ball bearing assemblies between the tubes at axially spaced locations to provide bearing support and guidance of one tube by the other, a spring disposed within the telescoped tubes to resiliently urge the striking pad away from the base, and cables interconnecting the striking pad and base to limit movement of the striking pad away from the base, the cables having a spring-connected anchor with the base to absorb shock upon rebound of the striking pad away from the base. The telescoping tubes are attached to the base by an angularly adjustable connector. The connector comprises two plates, one attached to the base and having a plurality of holes therein. Attached to the tubes is the second plate which is also pivotally attached to the first plate and has at least one hole therein. A removable pin extends through one of the holes in the first plate and the hole in the second plate to prevent relative angular movement therebetween.

3,427,022
AQUATIC EXERCISING AID DEVICE

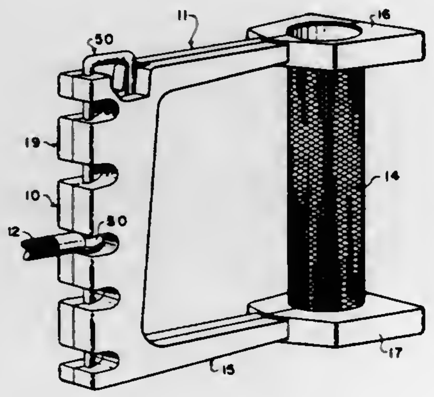
Raymond M. Ward, 1278 Karesh Ave., Pomona, Calif. 91767
Filed Sept. 8, 1966, Ser. No. 584,297
U.S. Cl. 272—80 **4 Claims**
Int. Cl. A63b *31/00, 41/00*



An aquatic exercising device including a pair of generally spherical hollow buoyant floats having valve means for introducing fluid thereinto and handle means depending therefrom for receiving portions of the body whereby the body portions are thereby buoyantly supported in water and exercising movements thereof are permitted while so floating.

3,427,023
HANDLE FOR STRETCHABLE EXERCISING DEVICE

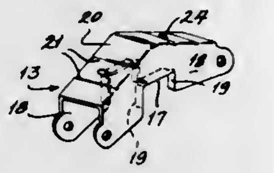
Ira J. Silberman, Opelika, Ala., assignor to Diversified Products Corporation, Opelika, Ala., a corporation of Alabama
Filed Apr. 19, 1966, Ser. No. 543,635
U.S. Cl. 272—82 **6 Claims**
Int. Cl. A63b *21/02, 23/00*



An exerciser for developing muscles in the torso comprising a pair of handles with an elastic resilient member extending between the handles. The handles are of a two-piece construction and include a series of projections and indentions wherein a plurality of axially aligned apertures are defined through the projections and a connecting pin is selectively insertable through the aligned apertures to connect the elastic member with the handles. The connecting pin is locked in position in the handles by a locking projection formed in the handle with a complementary locking projection formed on the connecting pin.

3,427,024
SWING SET CONSTRUCTION

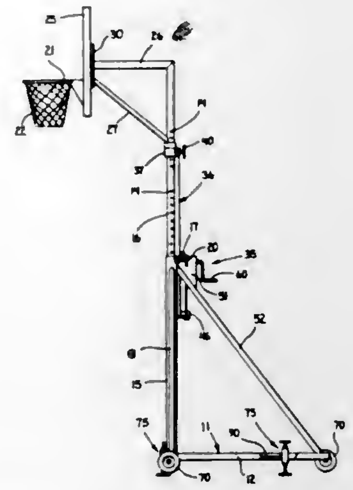
Earl G. Cross, Du Quoin, Ill., assignor to Turco Manufacturing Company, Du Quoin, Ill., a corporation of Missouri
Filed Mar. 24, 1966, Ser. No. 537,230
U.S. Cl. 272—87 **2 Claims**
Int. Cl. A63g *9/12*



A swing set in which the swings are suspended from a non rotatable bracket mounted on a bar of circular cross section. At the point of attachment of the bracket, the bar has flat upper and side faces. The bracket has side and top walls and the side walls have a cut out opening the same size and shape as the cross section of the bar at the point of attachment. The edges of the cut outs also have inwardly directed flanges to engage the surface of the bar and increase the bearing area. The bracket is held on the bar by a U-shaped bolt member having a flat central portion which engages the underside of the bar, and threaded end portions which pass through holes in the bracket top wall, on each side of the bar.

3,427,025
VERTICALLY ADJUSTABLE BASKETBALL GOAL

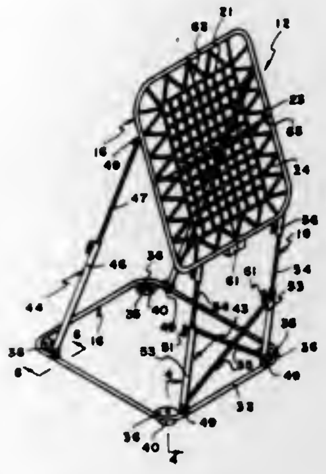
Elzie H. Procter, Rte. 3, Elwood, Ind. 46036
Filed Jan. 27, 1964, Ser. No. 340,414
U.S. Cl. 273—1.5 **3 Claims**
Int. Cl. A63b *63/04;* **F16m** *11/24*



1. A basketball goal comprising a framework including a triangular base and a first upright tubular member fixed to said triangular base midway of one of the three sides thereof, bracing fixed to said base and to said upright tubular member, a second tubular member telescoped within said first tubular member and having a plurality of holes spaced vertically along the second tubular member, a basketball hoop and backboard fixed to said second tubular member, a collar slideably received upon said second tubular member, a hand screw threaded through said collar and engaged within one of said plurality of holes, a vertical member fixed to said collar and extending downwardly alongside said first upright member to provide a stiff leg, a windlass fixed to said bracing adjacent the upper end of said first upright member and having the distal end of its line secured to the lower end of said stiff leg whereby reeling in of the line raises said stiff leg a hand screw threaded into the wall of said first upright member and engaged within one of said plurality of holes, three wheels rotatably mounted on said base for rotation about parallel axes with each of said wheels adjacent a respective one of the corners of said triangular base, and means adjacent each of said wheels for supporting each corner of said base at any of a plurality of vertically adjustable positions off of said wheels.

3,427,026
PROJECTILE RETURN APPARATUS

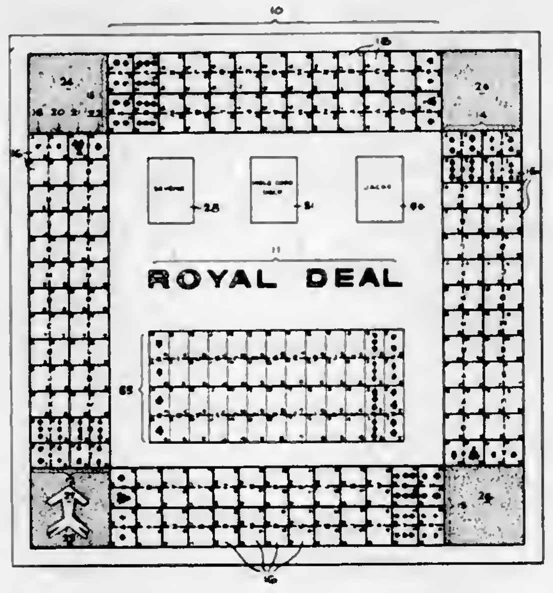
Kenneth J. Mahoney, Dorrance, Kans. 67634
Filed Oct. 10, 1966, Ser. No. 585,590
U.S. Cl. 273—1.5 **8 Claims**
Int. Cl. A63b *67/00, 63/04, 69/00*



1. A projectile return apparatus comprising:
(a) a backstop means having a return panel connected to a support frame, said support frame being of tubular construction and rectangular in shape, and said return panel having a central rebound netting secured to said support frame by a resilient strap member,
(b) a base frame assembly adapted to be releasably attached to a support surface and held aginst substantial lateral movement, and
(c) means adjustably connecting said backstop means to said frame assembly whereby said return panel may be adjusted horizontally and vertically to return a projectile thrown against said panel at a desired angle and direction.

3,427,027
BOARD GAME APPARATUS

Keith E. Kenyon, Los Angeles, Calif.
(12943 Dickens St., Studio City, Calif. 91604)
Filed May 12, 1965, Ser. No. 455,225
U.S. Cl. 273—34 **5 Claims**
Int. Cl. A63f *3/00, 1/04*

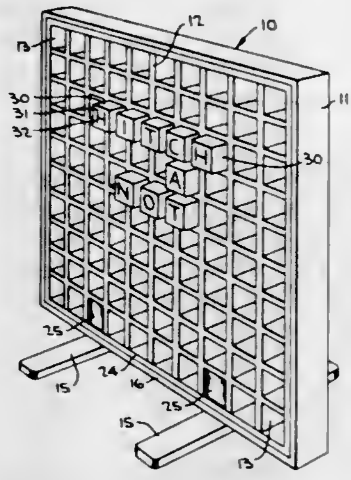


A game board apparatus including a board having marked playing spaces or areas constituting four tracks jointly circumscribing the board at its edge marginal regions and including dice for indicating the number of playing spaces to be played. The playing spaces of each track are arranged in columns and transverse rows wherein each playing space bears indicia corresponding to a card in a deck of ordinary playing cards, the spaces being arranged so that the columns represent card suits and the numbers of the cards are arranged consecutively in the rows. A record area is provided on the board having spaces arranged and marked the same as the spaces in the tracks, whereby marker means are positionable on the record area for indicating a player's best combination of values on the multiple columns.

3,427,028
WORD BUILDING GAME APPARATUS WITH TWO-SIDED PLAYING BOARD

Thomas C. Abrahamsen, 345 Farwood Road, Haddonfield, N.J. 08033
Filed Mar. 1, 1966, Ser. No. 540,436
U.S. Cl. 273—135 **11 Claims**
Int. Cl. A63f *3/00*

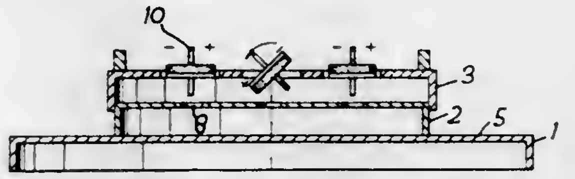
The game apparatus comprises a vertically disposed playing board consisting of a panel supported at one end by spaced bars normally disposed at right angles to the panel but rotatable into inoperative positions in the plane of the panel. In another form, a plurality of panels are supported by a base having a plurality of selectively usable slots receiving the panels in different angular relationships. The board has a multiplicity of openings of polygonal cross section extending all the way through it and arranged in rectilinear rows.



Playing pieces are employed comprising blocks of approximately the same cross-section as the openings (in order to prevent rotation) and each bearing inscribed letters upon opposite ends thereof, the letters of a given block being the same and positioned right-reading as viewed by the players from the respective opposite sides of the board.

3,427,029
BOARD GAME APPARATUS WITH MAGNETIC PLAYING PIECES POSITIONABLE BY CHANCE

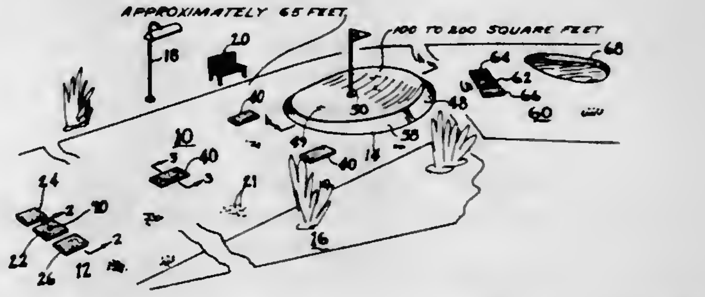
William Riva, 15 Viale Europa, Rome, Italy
Filed Apr. 29, 1966, Ser. No. 546,236
U.S. Cl. 273—135 **13 Claims**
Int. Cl. A63f *3/00;* **A63h** *33/26*



A magnetic game including a platform having openings in which a number of playing pieces, at least some of which are magnetic, may be movably disposed. The pieces are placed in a first position wherein they are restrained against movement. Upon release of the restraint, some of the pieces may change their position relative to others depending upon the polarity of the magnetic fields produced by the magnetic pieces. The pieces are identifiably marked so that a player may observe the position in which they are disposed on the platform.

3,427,030
MINIATURE GOLF COURSE

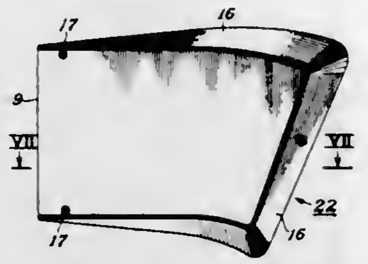
Lawrence C. Ward, 22534 Guadilamar Drive, Saugus, Calif. 91350
Filed Apr. 4, 1966, Ser. No. 540,043
U.S. Cl. 273—176 **2 Claims**
Int. Cl. A63b *67/02*



A miniature golf course incorporating two different types of balls, a solid plastic ball for putting and an open hollow ball for driving and chipping. The fairways are terminated by a tee and a green spaced apart by approximately 65 feet of gravel-covered expanse. Brush mats are affixed to the expanse for intermediate golf shots. The green is between 100 and 200 feet square and includes a hole defined in a continuous turf-like surface. "Rough" members defining triangular shapes are disclosed to define the fairway.

3,427,031
WEDGE-SHAPED GOLF SWING TRAINER

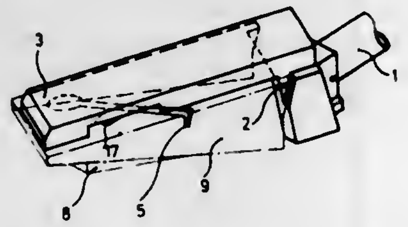
John M. Scott, 208 Virginia Place,
Fort Worth, Tex. 76107
Continuation-in-part of application Ser. No. 362,658, Apr. 27, 1964. This application May 4, 1967, Ser. No. 649,758
U.S. Cl. 273—186 **3 Claims**
Int. Cl. A63b *69/36*



A wedge-shaped slightly yieldable pad having a planar upper surface connecting its thin and thick ends. The planar surface is inclined both longitudinally and transversely to form the path along which an iron club head should move in starting a correct backswing in preparation for striking a golf ball positioned adjacent the thin edge of the pad. The respective sides of the upper surface are curved to different extents at the thick end of the pad to suggest different inside-out swing paths to accommodate long and short armed golfers.

3,427,032
HOLDING DEVICE FOR THE PICKUP IN A TONE ARM

Heinrich Zimmermann, St. Georgen, Black Forest, Germany, assignor to Dual Gebrueder Steidinger, St. Georgen, Black Forest, Germany
Filed Jan. 10, 1966, Ser. No. 519,631
Claims priority, application Germany, Jan. 9, 1965, St 23,187, Patent 1,231,450
U.S. Cl. 274—24 **5 Claims**
Int. Cl. G11b *3/02*

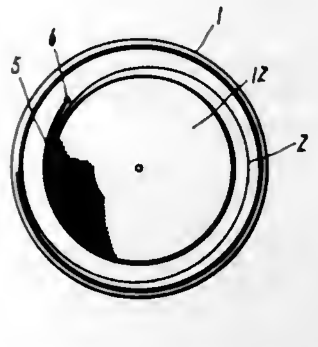


The pickup of a phonograph is attached permanently to a pickup carrier. The pickup carrier is engageable with a mating element in a pick-up arm. When in engagement, a handle on a plate of the pickup arm is pivoted until its cam moves into wedged engagement with an inclined plane on the pickup carrier, whence the pickup carrier becomes locked in fixed position relative to the pickup arm.

3,427,033
RECORD CHANGER ADAPTER

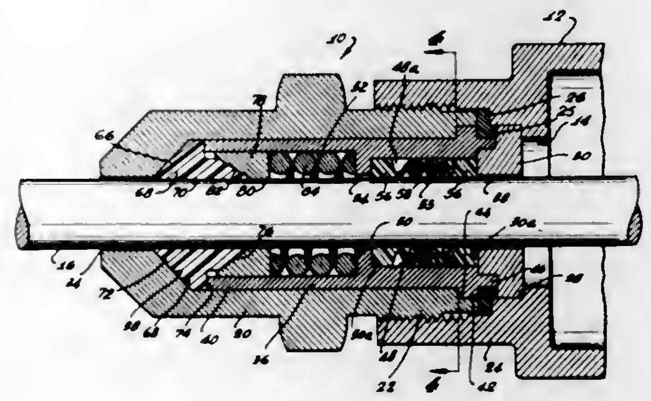
Kosuke Matsukata, 390 Tsurumi-cho, Tsurumi-ku, Yokohama, Japan
Filed Mar. 11, 1966, Ser. No. 533,581
U.S. Cl. 274—42 **6 Claims**
Int. Cl. G11b *3/80*

An adapter device for attachment to a film sheet gramophone record. The adapter has a ring with a spiral groove track on one face thereof to receive the needle of a tone arm, and a holder having a center hole positioned coaxially with the ring. A film sheet record is disposed between the adapter and the holder and is held in position by adhesive coated tape means on the opposed faces of the ring and the holder. The ring has a flexible tongue branching off the inner periphery thereof with the inner end of the spiral grooved track extending from said ring along said tongue. The tongue is adapted to be aligned with the sound track of the film sheet exposed through the center of the ring.



3,427,034
DYNAMIC SHAFT SEAL

Edwin C. Lowe, Van Nuys, Calif., assignor to Robbins Aviation, Inc., Vernon, Calif., a corporation of California
Filed Sept. 21, 1964, Ser. No. 397,837
U.S. Cl. 277—200 **6 Claims**
Int. Cl. F16j *15/00, 9/20;* **F16l** *19/00*

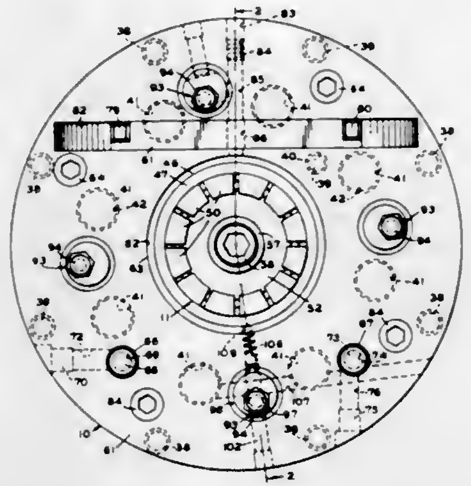


1. A pressure fluid sealing means for a shaft in a housing assembly, said assembly including means bored to form, concentrically and annularly spaced around said shaft, a cylindrical seal cavity with a cylindrical wall surface, and including also oppositely facing walls spaced axially of and surrounding said shaft to form end walls for said cylindrical seal cavity, said seal cavity being subject to fluid pressure at a pressurized end thereof, at a point adjacent said shaft, and a seal sleeve composed of an elastic plastics material, of low coefficient of friction, situated in said seal cavity around said shaft and comprising a substantially bellows-shaped corrugated, axially elastically compressible relatively thin central wall section, terminated at each of its two opposite axial ends by concentric cylindrical relatively thick end collars, said sleeve having a longitudinal cylindrical bore continuing through said end collars and said corrugated wall section, said end collars closely fitting said shaft and said corrugated wall section contacting said shaft and said wall surface of said seal cavity, and said seal sleeve being axially elastically compressed between said end walls of said cavity, the wall of said corrugated wall section being formed into alternately outwardly and inwardly directed loops which are inclined toward said pressurized end

of said seal cavity, and which bear successively on said cylindrical seal cavity wall surface and said shaft, respectively.

3,427,035
COLLET CHUCK FOR MACHINING THIN WORKPIECES

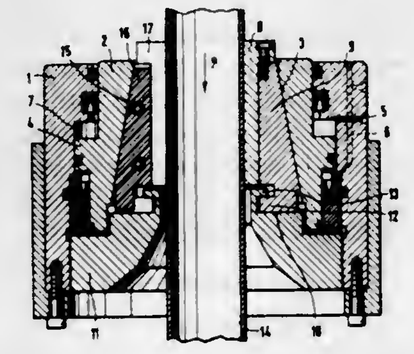
Norman A. Heldt, Allen Park, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed July 13, 1965, Ser. No. 471,617
U.S. Cl. 279—4 **4 Claims**
Int. Cl. B23b *31/30, 31/12*



A collet chunk means for supporting a workpiece having a relatively thin plate face in a manner to prevent deflection of the workpiece face while it is being machined. The collet chuck means includes a pair of locating pins and a pair of support pins pivotably mounted on a support arm and further includes a plurality of slidable support pins which are disposed radially in evenly spaced positions on the face of the collet chuck means.

3,427,036
HYDRAULIC CHUCK

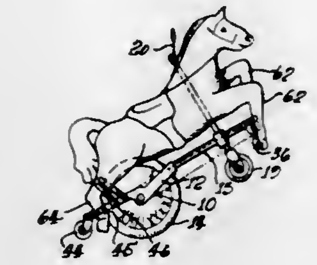
Bernd Siebelhoff, Solingen, Germany, assignor to Rheinmetall G.m.b.H., Dusseldorf, Germany, a company of Germany
Filed Oct. 23, 1965, Ser. No. 503,829
Claims priority, application Germany, Oct. 27, 1964, R 39,110
U.S. Cl. 279—4 **3 Claims**
Int. Cl. B23b *31/30*



A fluid operated chuck wherein a plurality of individual clamping members are supported within a longitudinally movable sleeve in such a manner as to be restrained to movement only radially of the sleeve in response to longitudinal movement of the sleeve within a housing means and for transmittal of forces applied longitudinally of a workpiece gripped by the clamping means to the housing through a planar support surface perpendicular to the axis of the housing with which the clamping means are in engagement.

3,427,037
VEHICULAR TOY CAPABLE OF SIMULATING A REARING HORSE

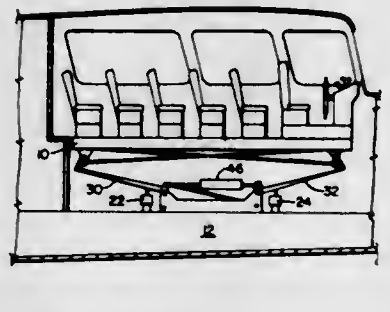
Vincent Marasco, 1364 North Western Ave., Los Angeles, Calif. 90027
Filed Nov. 2, 1966, Ser. No. 591,517
U.S. Cl. 280—1.189 **7 Claims**
Int. Cl. A63g *13/00, 19/00;* **B62h** *1/00*



A child's toy consists of a bicycle with the body of a horse, or other animal, and a pair of auxiliary wheels that can be raised and lowered and maintained in either position. When lowered, the auxiliary wheels provide added stability to the bicycle, similar to trainer wheels; when raised, they allow the toy to operate either on the two bicycle wheels or, by raising the front wheel off the ground, in the posture of a rearing horse.

3,427,038
SHOCK MITIGATION SYSTEM

Hugo E. Gauss, West Hartford, and Raymond V. Real, Glastonbury, Conn., and Vincent J. Rosa, Wellesley Hills, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,604
U.S. Cl. 280—6 **13 Claims**
Int. Cl. B62d *37/00, 47/00*

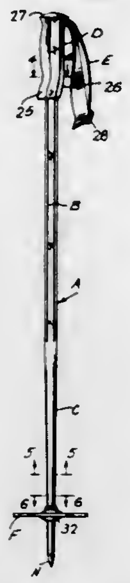


Apparatus for isolating the load supporting portion of a vehicle from the portions thereof which contact the medium over which the vehicle travels, the isolation system comprising first and second shock absorbing means. The second shock absorbing means is normally bypassed and is activated in response to the sensing of a vertical acceleration in excess of a predetermined level to thereby bypass the first and normally operative soft suspension means and to insert a stiff suspension means between the vehicle load supporting and medium contacting portions.

3,427,039
SKI POLE CONSTRUCTION

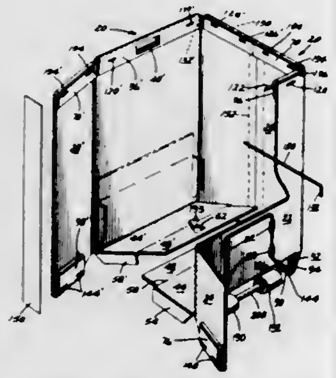
Douglas M. Collins, 736 Birch Ave., New Milford, N.J. 07646
Filed May 2, 1967, Ser. No. 635,558
U.S. Cl. 280—11.37 **6 Claims**
Int. Cl. A63c *11/00*

A ski pole in which the upper portion, including the plastic or rubber enclosure, is a hexagonal or polygonal cross section with the strap being mounted inside of a slot of the rubber enclosure and connected to the top of a pole. The lower end of the pole is tapered with increasing diameter downwardly and the basket is fitted thereon permanently by means of a friction fit and held in place by an elastic ring. The basket has a rubber or similar plastic structure which is permanently connected to an outer metal ring and an inside metal sleeve. The tip which is press fitted in position is hollow to lessen the weight.



3,427,040
CONTAINER INCLUDING ANTI-FRICTION SUPPORT MEANS

Owen E. Jenkins, 3318 River Forest Drive,
Fort Wayne, Ind. 46805
Filed May 16, 1966, Ser. No. 550,334
U.S. Cl. 280—36 **17 Claims**
Int. Cl. B62d *21/14;* **B62b** *1/00;* **B65d** *5/00*

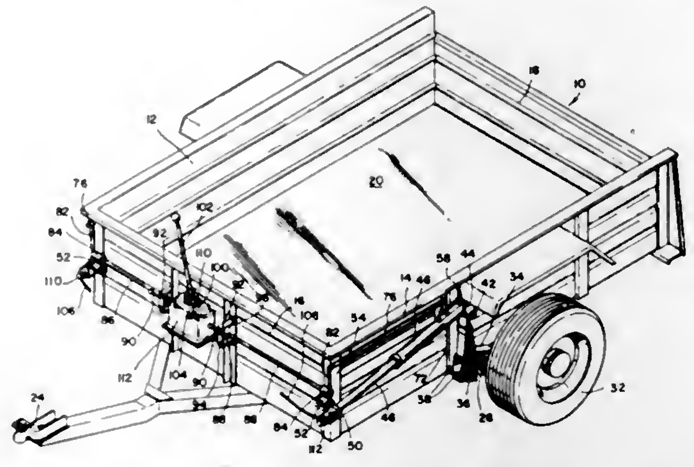


An apparatus comprising a collapsible container having a bottom and upstanding side walls. Rod receiving passageways are provided in each of the side walls which function toegther with two rods slidably positioned therein to lock the container either in a collapsed or an expanded position as desired. Two of the side walls have flange portions which depend downwardly beyond the bottom upon which the container may rest to elevate the bottom from a supporting surface. An anti-friction support means is secured to one of the side walls not having a depending flange by which the container may be tilted so as to be solely supported by the anti-friction means whereby the container may be easily slid over a supporting surface.

3,427,041
ELEVATABLE VEHICLE

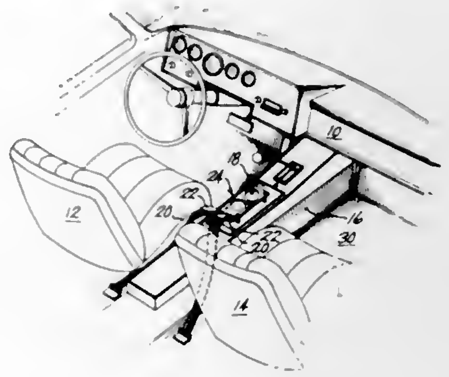
Hugh E. Nichols, Rte. 1, Box 16,
Higley, Ariz. 85236
Filed June 7, 1967, Ser. No. 644,385
U.S. Cl. 280—43.18 **8 Claims**
Int. Cl. B62d *21/14;* **B62b** *1/04*

An elevatable vehicle having hydraulic lift mechanism adapted to elevate a body of said trailer with respect to the wheels and wherein the hydraulic mechanism is connected to an upstanding spring at each opposite end of a pivoted bar to which the wheels are connected in a bell crank disposition, and wherein latch mechanism is adapted to hold the hydraulic mechanism in close proximity to the normally upper ends of said springs, whereby close coupling and latching of the suspension means of the trailer thereof to alleviate undue suspension deflection of the body of the vehicle or trailer when it is moved over uneven surfaces.



3,427,042
SEAT RETAINING AND POSITIONING MEANS FOR BUCKLE END PORTION OF A SEAT BELT

Howard L. Roper, 1111 S. Highland Ave.,
Tacoma, Wash. 98465
Filed Mar. 20, 1967, Ser. No. 624,456
U.S. Cl. 280—150 **1 Claim**
Int. Cl. B60r *21/10, 7/00*



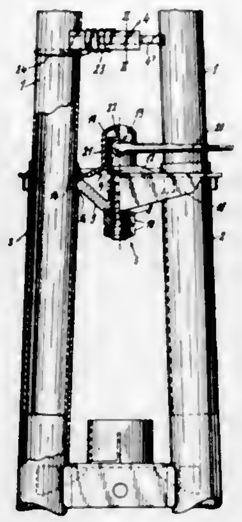
In general, this invention relates to a storage and positioning device for the buckle-end portions of automobile safety seat belt. More specifically, the invention finds its greatest advantages in connection with automobiles equipped with laterally spaced apart bucket seats, a separate safety seat belt for the occupant of each such seat, and where the seat belts terminate with adjacently disposed buckle-end portions. Also, the invention finds great utility in an automobile so equipped which has the additional features of a "drive shaft hump" and/or a console disposed laterally between such seats.

3,427,043
FOLDABLE OR KNOCKDOWN BICYCLE ARRANGEMENT

Willem Oskam, Weesp, and Jacobus Wilhelmus van Dijk, Bussum, Netherlands, assignors to Magneet Rijwielen-en Motorenfabriek N.V., Weesp, Netherlands, a Dutch company
Filed Feb. 1, 1967, Ser. No. 613,344
Claims priority, application Netherlands, Feb. 2, 1966, 6601305
U.S. Cl. 280—278 **14 Claims**
Int. Cl. B62k *17/00, 21/16*

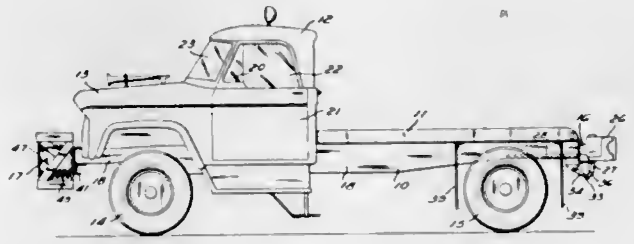
A bicycle, in particular a foldable and/or easily dismountable bicycle provided with disconnectable locking

means for simultaneously locking or releasing two separate handle bar portions with respect to their respective front fork tubes and/or with disconnectable locking means mounted on the upstanding frame tube which guides the saddle pin and engaging said saddle pin, said last-mentioned locking means not only preventing downward axial movement of the saddle pin with respect to the upstanding frame tube but allowing an upward axial movement of the saddle pin with respect to the upstanding frame tube.



3,427,044
SELF-PROPELLED ROAD VEHICLE FOR MOVING RAIL CARS

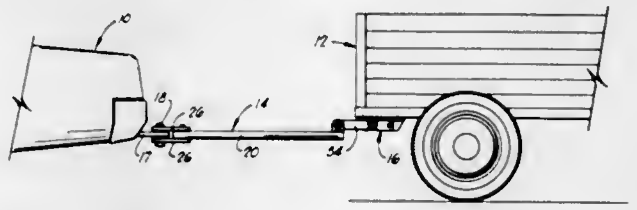
George J. Lynch, Bellevue, Ohio
(R.R. 2, Box 128, Clyde, Ohio 43410)
Filed Nov. 28, 1966, Ser. No. 597,264
U.S. Cl. 280—472 **5 Claims**
Int. Cl. B60d *1/16;* **B61c** *17/00;* **B61g** *3/00*



A self-propelled vehicle having a single set of wheels adapted for operation on a highway and for pushing and pulling railroad cars on and along a railroad track.

3,427,045
TOWING DEVICE

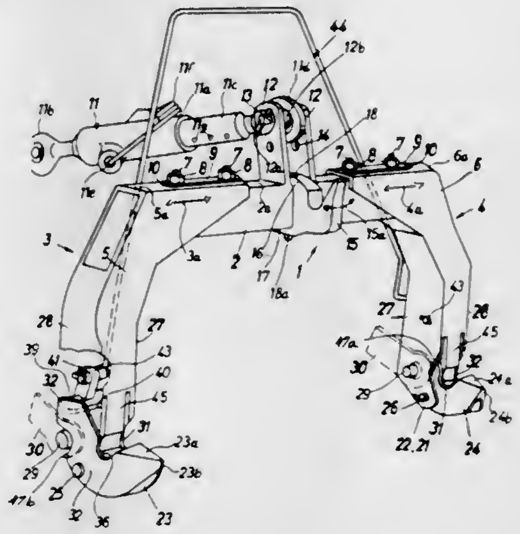
Herbert Hoock, Box 72, Corn, Okla. 73024
Filed June 16, 1967, Ser. No. 646,674
U.S. Cl. 280—478 **11 Claims**
Int. Cl. B60d *1/14, 1/00*



A device for interconnecting towed and towing vehicles including brackets adapted to be secured to opposite sides of the towed vehicle. The brackets include movable links adapted for detachable connection to legs of a generally V-shaped connecting frame which has a clevis secured to the convergent ends of the legs. One of the legs is pivotably secured to the clevis so that the legs can be brought into juxtaposition and substantial parallelism when the connecting frame is disconnected from the movable links of the brackets and is thus not in use. A latching device is provided on each of the brackets so that when a towing force is exerted thereon through the connecting frame, the movable links are securely latched in an extended towing position until manual release of the latching devices.

3,427,046
QUICK-RELEASE HITCH FOR IMPLEMENTS

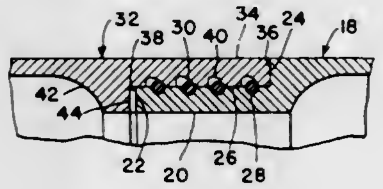
Anton Sommer, Dorndorf, and Ludwig Muncke, Morlenbach, Germany, assignors to Deere & Company, Moline, Ill.
Filed Nov. 30, 1966, Ser. No. 597,984
Claims priority, application Germany, Dec. 4, 1965, E 30,601
U.S. Cl. 280—479 **10 Claims**
Int. Cl. B60d *1/04, 1/16;* **A01b** *51/00*



A quick-release hitch for agricultural implements having a frame provided with upper and lower hooks for connection to the implement and mounted upon the three-point tractor linkage so as to be tiltable about a horizontal axis to shift the upper end of the frame toward the implement and cause the swingable upper hook to engage a pin on the implement. This hook is swingable about an upright axis while the lower hooks on the shanks of the frame are adapted to be locked against swinging movement to retain the implement but are releasable by the tractor operator upon movement of a lever disengaging a pawl from the lower hooks.

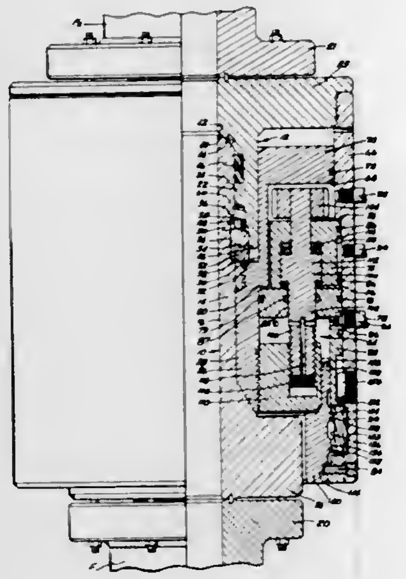
3,427,047
TUBULAR COUPLING HAVING FRANGIBLE CONNECTING MEANS

James W. Mayo, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 30, 1966, Ser. No. 598,118
U.S. Cl. 285—3 **4 Claims**
Int. Cl. F16l *15/00, 25/00*



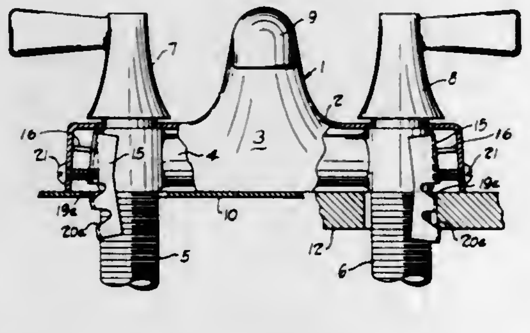
The invention contemplates the use of a metal sheathed explosive, such as a mild detonating fuse, wire of bimetallic compositions which exothermically deflagrate, or wire of a material having a selected melting point, which is used as a threaded insert or shear ring to provide a sound mechanical joint that will surrender its mechanical properties upon command or upon reaching a temperature in excess of those required for joint integrity.

3,427,048
POWERED COUPLING DEVICE
Cicero C. Brown, ℅ Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex. 77024
Filed Jan. 3, 1966, Ser. No. 518,261
U.S. Cl. 285—18 **10 Claims**
Int. Cl. F16e *35/00, 19/00*



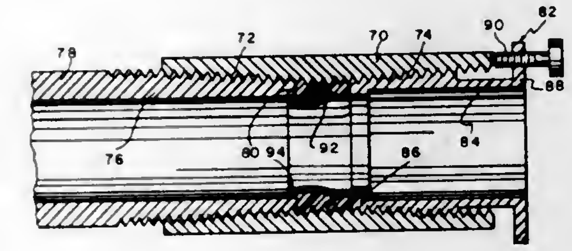
A power-operated coupling device for connecting massive tubular bodies, particularly at locations remote from the center of operations, as in connecting large diameter conductor pipe to a sub-sea wellhead. The coupling device includes a pin member sealingly received in a box member and retained therein by latch members which are operated by screw jack elements. Should the screw jack elements fail to release the latch members for uncoupling of the pin and box members an auxiliary release means is provided.

3,427,049
FITTING MOUNTING MEANS
William E. Politz, Delphi, Ind., assignor to Stephen A. Young, Monticello, Ind.
Filed Nov. 10, 1966, Ser. No. 593,465
U.S. Cl. 285—46 **7 Claims**
Int. Cl. F16l *5/00, 55/00;* **E03c** *1/048*



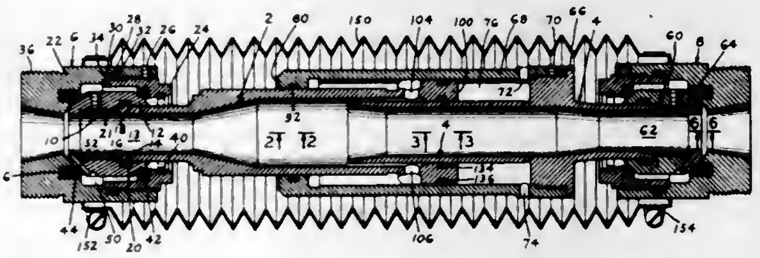
This invention discloses means for connecting a plumbing fitting to a fixture or the like without resort to the usual nuts threaded on shanks of such fittings which shanks fit through openings in the walls of the fittings. The primary purpose is to enable the installation of the fitting from the top or from a position above the fixture since in most cases fixtures have limited room for wrench manipulation therebeneath. The invention further contemplates the use of certain cam members of various forms to act as wedges between the shanks of plumbing fittings and openings through which such shanks fit to prevent the undesired misplacement of the fitting with respect to said fixtures. The cam members are adjustable so that the fitting may be secured in the walls of fixtures, which walls vary in thickness from very thin to rather thick, thus in effect a universal mounting arrangement is provided by the cam means disclosed.

3,427,050
COUPLING WITH BONDED LINER
Galen W. Krieg, 2631 Somerset Drive, Wichita, Kans. 67204
Original application July 25, 1960, Ser. No. 44,932, now Patent No. 3,172,934, dated Mar. 9, 1965. Divided and this application Dec. 7, 1964, Ser. No. 416,341
U.S. Cl. 285—55 **1 Claim**
Int. Cl. F16l *58/00, 21/04, 25/00*



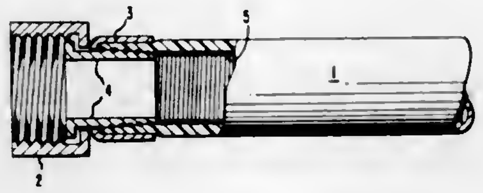
1. In a coupling construction structure comprising a tubular member having a tapered internally threaded portion, said tubular member having an internal shoulder facing said threaded portion and an end of the member, a resilient and impervious liner in said tubular member spaced from said end of the member and having an axial extent from the shoulder to include a part of the threaded portion of the tubular member, and said liner being securely bonded to the tubular member throughout its axial extent and also being bonded securely to the shoulder, wherein the internal surface of the liner is concaved with the concave curvature being greatest adjacent to the end of the liner remote from the shoulder.

3,427,051
FLUID PRESSURE COUPLING
Robert F. White, Westerly, R.I., and Roger M. Wright, Old Lyme, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,506
U.S. Cl. 285—165 **10 Claims**
Int. Cl. F16l *27/12*



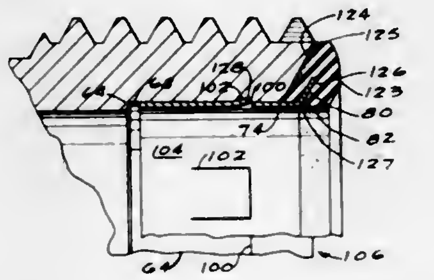
A fluid pressure coupling is provided with ball joints with a telescoping center section to make the pressure coupling flexible in three degrees of freedom. A seal is provided for the telescoping center sections having several radial grooves around the inner side of the seal and at least one axially extending groove interconnecting the grooves to pressure from the high pressure end, so that only one land of the seal is continuous around the circumference of the seal.

3,427,052
FLEXIBLE CONDUCTOR FOR PNEUMATICALLY PROPELLED YARN
William Arnold Gonser, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 12, 1966, Ser. No. 564,622
U.S. Cl. 285—256 **1 Claim**
Int. Cl. F16l *33/20, 11/12*



A flexible conductor for pneumatically propelled yarn consisting of a hose, a closely-spaced spiral formed of smooth-surfaced, stainless-steel wire of 0.031 to 0.045-inch diameter lining the inside of the hose, and a hose-end coupling on each end comprising a nipple extending into the hose inside of the spiral to cover the wire end, a ferrule crimped about the outside of the hose to hold the nipple in place and a coupling member rotatably secured to the outer end of the nipple.

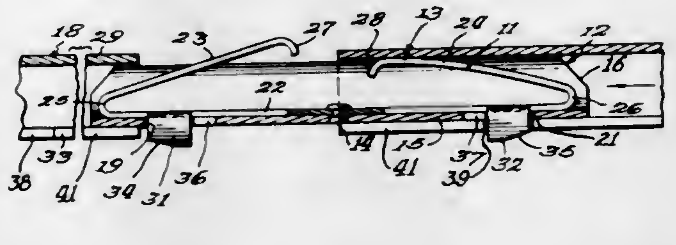
3,427,053
COUPLING AND SEAL APPARATUS FOR HOSES AND OTHER TUBULAR CONDUITS FOR FLUIDS
Jerald V. Dunlap, 2727 Washington Ave., Santa Monica, Calif. 90403, and James L. D. Morrison, 2045 Mandeville Canyon Road, Los Angeles, Calif. 90049
Filed Dec. 22, 1966, Ser. No. 603,862
U.S. Cl. 285—379 **1 Claim**
Int. Cl. F16l *21/04, 15/00;* **F16j** *15/32*



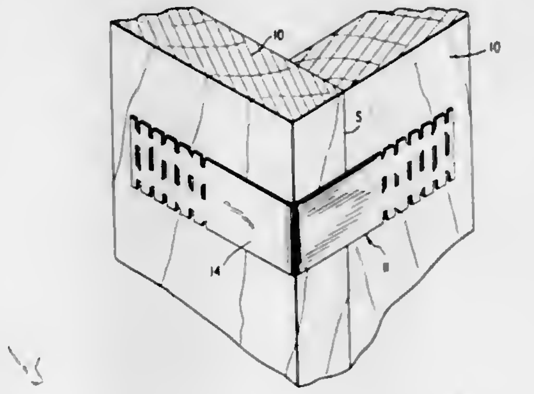
A coupling and sealing apparatus includes a cylindrically shaped body and a reinforced seal secured to its forward end for sealing engagement with a substantially identical coupling body having a corresponding forward end. The body has recessed portions on its inner cylindrical surface. The seal comprises a reinforcing means having external teth engaged within the recessed portions of the body and includes at its forward end a flared portion. An annular rubber-like seal completely surrounds the flared portion such that the flared portion is imbedded in and bonded to the annular seal in such a manner that the seal covers substantially completely the forward end of the body.

3,427,054
CONNECTOR FOR HOLDING ALIGNED MEMBERS AGAINST SEPARATION
Frank C. Bergman, Chicago, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed Apr. 5, 1967, Ser. No. 628,773
U.S. Cl. 287—2 **3 Claims**
Int. Cl. F16b *7/04, 2/00;* **F16l** *37/12*

A connector, comprising a spring mounted in a holder, has a pair of ears extending downwardly through openings in the bottom wall of the holder adjacent each end thereof and resilient fingers extending above the upper edges of the holder. The opposite end portions of the connector are adapted to fit within the adjacent open ends of two tubular members, and the resilient fingers force the ears downwardly into engagement with openings in the bottom walls of the tubular members. The interengagement of the ears of the connector with the openings in the bottom walls of the tubular members holds the tubular members against relative longitudinal movement.



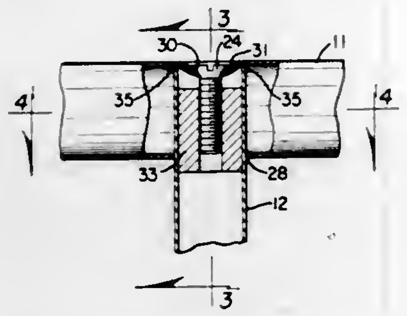
3,427,055
CORNER JOINT AND CONNECTOR PLATE THEREFOR
John Calvin Jureit, Coral Gables, and Gilbert T. Coovert, Hollywood, Fla., assignors to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed May 31, 1967, Ser. No. 642,479
U.S. Cl. 287—20.92 **10 Claims**
Int. Cl. E04c *3/00;* **F16b** *7/22, 15/06, 5/06*



The corner connector plate has a plurality of integrally projecting, nail-like teeth struck from its opposite ends in transverse rows leaving a planar intermediate portion having a length sufficient to span at least three times the thickness of the wood forming the corner joint. The teeth are struck from each end portion such that adjacent pairs of transverse rows thereof progressively decrease in length from the base of the plate from the outermost pair of rows to the innermost pair of rows, whereby planes lying on the tips of the innermost row of teeth of each pair of rows intersect adjacent the intermediate portion of the plate.

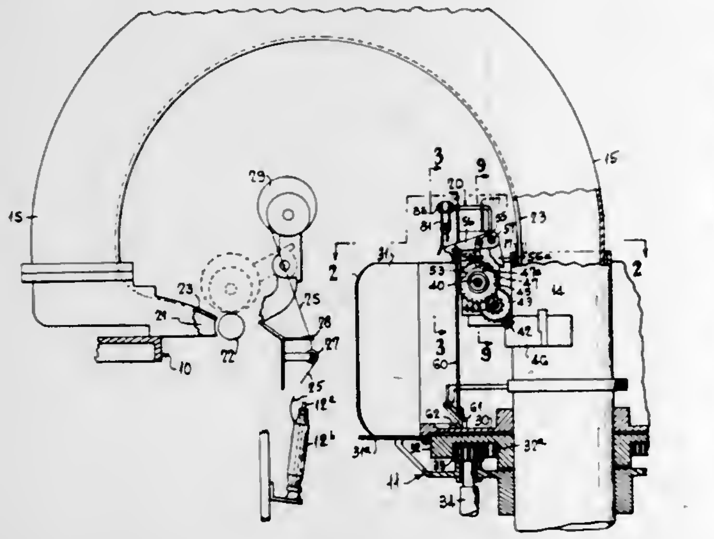
3,427,056
JOINT STRUCTURE FOR TUBULAR MEMBERS
Gerald A. Cunningham, 2465 20th St., Boulder, Colo. 80202
Filed Feb. 25, 1966, Ser. No. 530,053
U.S. Cl. 287—54 **3 Claims**
Int. Cl. F16b *7/18*

A detachable joint for tubular frame structures comprises two structural tubes one larger than the other and fitted into the other through a hole of the size and configuration of the smaller tube. A plug fits snugly within the end of the smaller tube which is deformed to conform to the inner wall of the larger tube. A screw is passed through a small hole in the larger member opposite the first hole and is tightened to draw the plug into clamping engagement with the deformed end of the smaller tube and to clamp the entire assembly securely together. The joint is particularly useful for joining thin walled tubes and provides effective reinforcement for such joints.



3,427,057
KNOT TYING MECHANISM

Buren L. Goins and Hazel W. Lewis, Gastonia, and Larry D. Dellinger, Mount Holly, N.C., assignors to A. B. Carter Incorporated, Gastonia, N.C., a corporation of North Carolina
Filed June 13, 1967, Ser. No. 645,783
U.S. Cl. 289—3 **10 Claims**
Int. Cl. D03j *1/16*

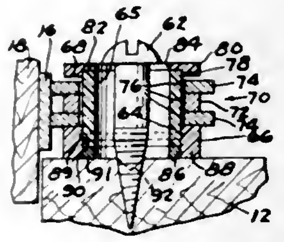


A mechanism employing a strand clamp, a tying bill, and strand crossing elements at each side of the bill, for uniting tensioned paired strands with modified weaver's knots, wherein the strands are braked at one side of the bill against lateral displacement before and during engagement by the associated crossing elements. The braking action is applied to laterally movable strand portions between the bill and clamp, the latter members being spaced to provide strand portions of sufficient length which can be crossed and tied without being subjected to excess stretching or tension.

3,427,058
MAGNETIC CATCH ASSEMBLY

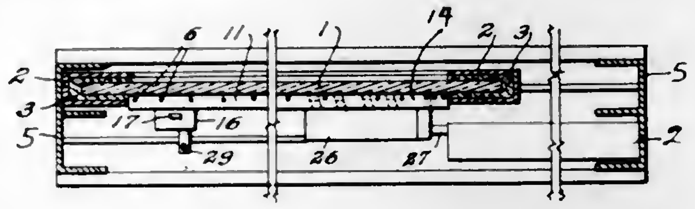
Raymond L. Pietsch, Flint, Mich., assignor to The Engineered Products Company, Flint, Mich., a corporation of Michigan
Original application Nov. 20, 1963, Ser. No. 325,014, now Patent No. 3,273,926, dated Sept. 20, 1966. Divided and this application July 22, 1966, Ser. No. 567,199
U.S. Cl. 292—251.5 **7 Claims**
Int. Cl. E05c *17/56*

A magnetic catch having a housing enclosing a magnet assembly consisting of a magnet sandwiched between two pole pieces with a hallow transversely elongated rivet or sleeve extending through the magnet assembly and interconnected with the housing so that a fastening screw can be driven through the elongated opening in the rivet to mount the catch on a support for adjustment lengthwise of the elongated opening in the rivet.



3,427,059
LOCKING MECHANISM FOR SLIDING DOORS

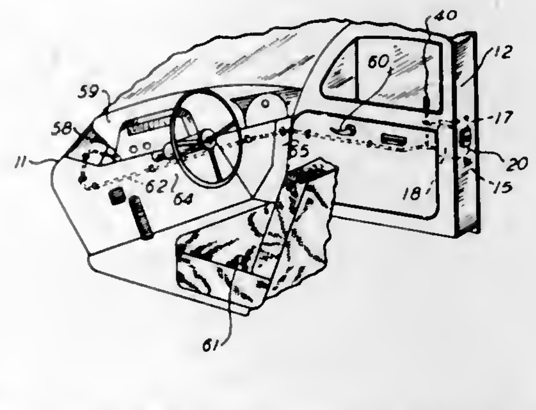
Edward J. Adickes, 1401 S. Magnolia, Indialantic, Fla. 32901
Filed Mar. 7, 1967, Ser. No. 621,315
U.S. Cl. 292—288 **6 Claims**
Int. Cl. E05c *19/18*



Overlapping sliding doors, particularly heavy glass doors, in a guideway or raceway have an elongated bar of component parts secured to one member or sliding door with a block mounted thereon and positioned above this door and intermediate the door frame and raceway. A removable spring loaded detent is secured to the elongated bar with the spring loaded detent offset therefrom to abut the face of the adjacent overlapping door and prevent longitudinal movement between the two doors. An adjustment is provided for the spring loaded detent to position it at different locations lengthwise of the elongated bar. Adjustments for the vertical displacement block intermediate the door frame and raceway is provided.

3,427,060
REMOTE CONTROL DEVICE FOR MOTOR VEHICLE DOOR LOCKS

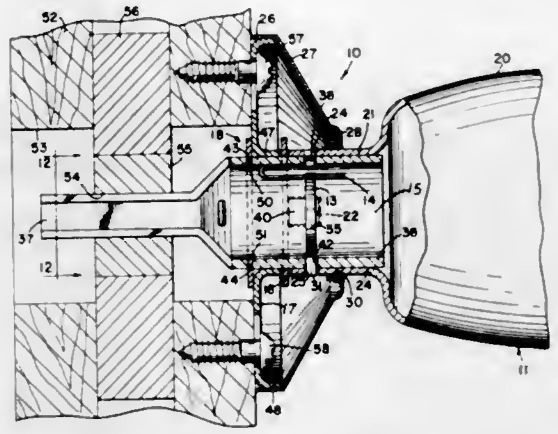
Emil Pennell, 241 N. 16th St., Bloomfield, N.J. 07003; Eileen Pennell, administratrix of said Emil Pennell, deceased
Filed May 27, 1966, Ser. No. 553,439
U.S. Cl. 292—336.3 **7 Claims**
Int. Cl. E05c *3/06;* **E05b** *65/12*



A motor vehicle provided with an opening on the side remote from the driver, a door hinged to said side to close or afford access to said opening, said door having latch means to hold it locked, internal means for rendering said latch means selectively operable or inoperable, local control means connected to said internal means and disposed on the inner side of said door, and a push-pull cable traversing the distance from a knob on one end to said latch means while passing under the dashboard, through the upper door hinge and through said door, for effecting a similar control of said latch means from the driver's side of said vehicle.

3,427,061
DOORKNOB ADAPTER ASSEMBLY

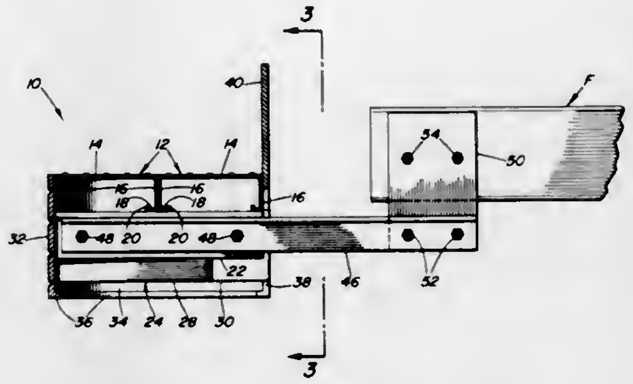
Forrest H. McMeen, 232 Hillgreen Place, Arcadia, Calif. 91006, William F. Gresham, 104 Alameda Lane, San Clemente, Calif. 92672, and George R. Stucka, 1125 S. 5th Ave., Arcadia, Calif. 91006
Filed Nov. 26, 1965, Ser. No. 509,709
U.S. Cl. 292—353 **16 Claims**
Int. Cl. E05b *1/06, 3/00, 15/02*



A doorknob adapter assembly has a spindle which includes a barrel and a shank portion. The shank extends axially of the barrel contiguous to and on one side of a plane containing the longitudinal center line of the barrel. The shank's configuration and geometric orientation are such as to adapt it for cooperation with a similar shank on the other side of the plane in the operation of square-type latches and locksets. A mounting plate is also provided to attach the assembly to a door and hold the barrel portion. The mounting plate and spindle are fixed in axial relation but the spindle is capable of rotating with respect to the plate. A doorknob is fixed to the barrel.

3,427,062
ALUMINUM BUMPER WITH HORIZONTAL STEP PORTION

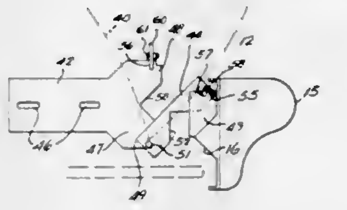
Francis L. Struben, Baltimore, Md., assignor to The Silver Top Manufacturing Company, Inc., White Marsh, Md., a corporation of Maryland
Filed Nov. 17, 1967, Ser. No. 683,932
U.S. Cl. 293—69 **4 Claims**
Int. Cl. B60r *19/04, 21/14, 3/00*



A light metal bumper type accessory of aluminum for road vehicles is disclosed. Use is made of extruded forms utilizing the flanges thereof to gain added strength. This together with a one-piece diagonal brace structure forms an extended step as well as an adequate bumper.

3,427,063
BUMPER BRACKET MOUNTING ASSEMBLY

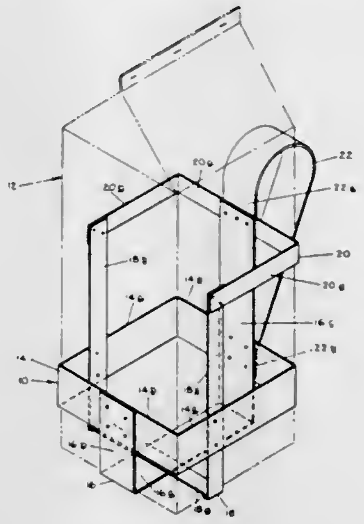
Lawrence D. Taylor, Carmichael, Calif. (1610 Kathleen Ave., Sacramento, Calif. 95815)
Filed July 14, 1967, Ser. No. 653,407
U.S. Cl. 293—73 **7 Claims**
Int. Cl. B60r *19/02*



An attachment bracket assembly for securing a bumper to an automobile frame. The assembly consists of an elongated channel bar adapted to be bolted longitudinally inside the bumper. An angle bar is welded longitudinally to the web of the channel bar with its corner projecting outwardly. The web has longitudinal bolting slots. Frame brackets are employed consisting of plates with slotted lugs adapted to be bolted to the sides of the vehicle frame. Each plate has a flange formed with a V-shaped channel engageable over and fitting the angle bar. The flanges have vertical slots transversely-registrable with the first-named lonigtudinal slots for receiving fastening bolts to secure the flanges to the web of the channel bar. In modified versions of the assembly, the brackets may be linked or hinged to the channel bar with the brackets and connecting links notched to receive the angle bar. In these modifications, the brackets are releasably-held adjacent to the channel bar by latches, which, when released, allow the bumper to swing away from its normal position.

3,427,064
CONTAINER HOLDER

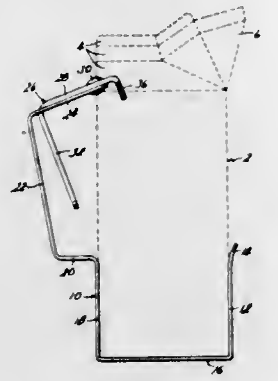
Harry H. Hanschar, 4514 SW. Cullen Blvd., Portland, Oreg. 97221
Filed July 10, 1967, Ser. No. 652,296
U.S. Cl. 294—32 **4 Claims**
Int. Cl. A47j *45/00;* **B65d** *61/00;* **B66c** *1/62*



A holder for removably receiving and holding a carton-type container of rectangular cross section. In operative position the holder includes a rectangular girth member encompassing the container adjacent its base, a strap secured to the girth member extending under and supporting the container's base, a yoke above the girth member with a back and opposed legs straddling the container, a handle joined to the yoke and girth member, and flat lateral support elements extending along opposite sides of the container secured to the yoke and girth member occupying planes substantially paralleling planes of opposed sides in the container.

3,427,065
POURING HANDLE FOR MILK CARTONS

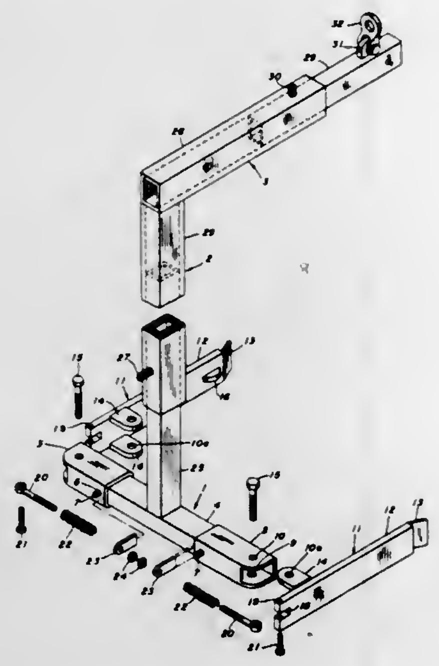
Herman Epstein, 1210 E. 9th St., Kansas City, Mo. 64106
Filed Aug. 8, 1967, Ser. No. 659,151
U.S. Cl. 294—33 **5 Claims**
Int. Cl. B65d *25/28;* **A47j** *45/00*



This application discloses a pouring handle for cardboard or plastic milk cartons, said handle comprising a length of resilient strap metal having one end portion thereof bent to form a cradle adapted to engage beneath and support the lower portion of the carton, the other end portion of said strap extending upwardly along the side of the carton and having a portion thereof offset outwardly to form a hand grip, a barb being carried at the upper end of said strap and adapted to pierce a top wall of said carton, said barb being controlled by an auxiliary handle or lever adjacent said hand grip to prevent withdrawal of said barb from said carton by the weight of the carton, despite the flexibility of said strap.

3,427,066
LADING, CLAMPING AND TRANSPORTING DEVICE

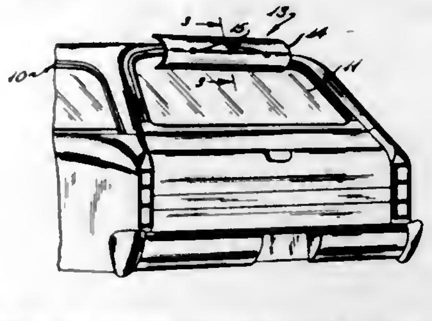
Uwe H. Kugler, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed June 6, 1967, Ser. No. 643,968
U.S. Cl. 294—67 **7 Claims**
Int. Cl. B66c *1/28, 1/62*



An adjustable clamping device for balancing and lifting varying sizes of stacks of crates loaded with fruit or other types of lading.

3,427,067
AUTOMOBILE REAR WINDOW DEFLECTOR

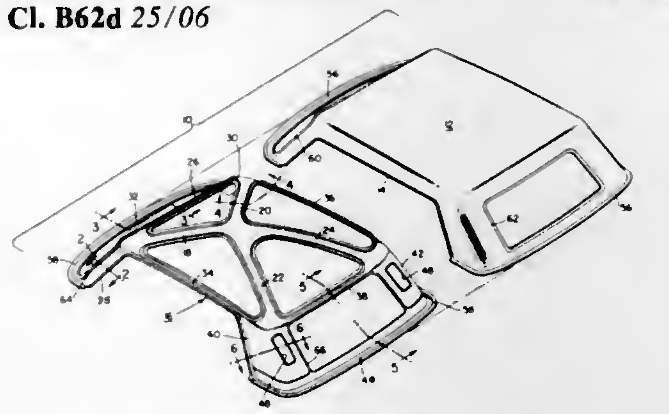
Robert W. Kish, 403 N. Abbe Road, Elyria, Ohio 44035
Filed Dec. 23, 1966, Ser. No. 604,298
U.S. Cl. 296—1 **3 Claims**
Int. Cl. B60j *1/20*



A wind deflector apparatus mounted on an automobile by friction alone and having an adjustable wind scoop mounted on an adjustable bracket.

3,427,068
VEHICLE ROOF STRUCTURE

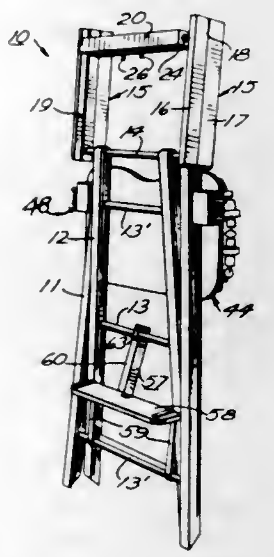
Albert G. Keahn and Robert Koltvedt, Detroit, Mich., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 25, 1967, Ser. No. 677,909
U.S. Cl. 296—137 **10 Claims**
Int. Cl. B62d *25/06*



A reinforced roof structure for use on "hardtop" model vehicles in which the front door lock pillars do not extend above the belt line of the vehicle. The reinforcement structure consists of a single stamping with sections blanked out to reduce weight and having formed sections therein for added strength.

3,427,069
PORTABLE BABY CHAIR

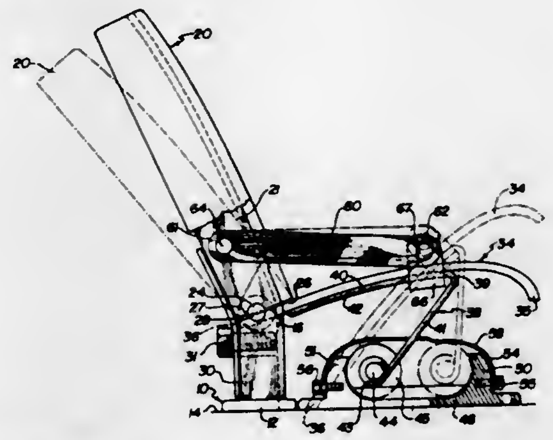
Quentin H. McDonald, 95 Morris Lane, Scarsdale, N.Y. 10583
Filed Mar. 10, 1967, Ser. No. 622,194
U.S. Cl. 297—153 **21 Claims**
Int. Cl. A47d *1/02;* **A47e** *4/02*



A portable baby chair having a collapsible support frame. The seat having a pivotal seating assembly is connected to the support frame when it is extended and detached when the frame is to be collapsed. The tray and foot rest are also detachable so as to be mounted in primary positions when in use and secondary positions on the support frame when not in use. The tray and foot rest permit collapsing of the support frame and conform with the flattened configuration of a collapsed support frame.

3,427,070
SAFETY SEAT FOR VEHICLES

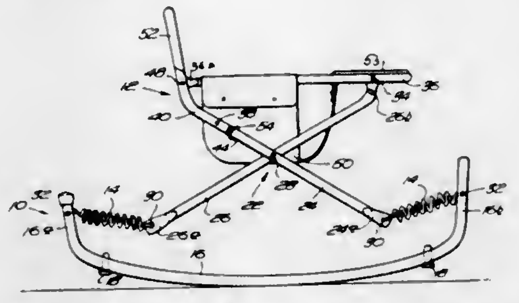
George Wallach, 12565 24th Ave., White Rock, British Columbia, Canada
Filed Oct. 3, 1966, Ser. No. 584,012
U.S. Cl. 297—216 **12 Claims**
Int. Cl. B60r *21/10*



A vehicle seat having a portion which will be collapsed rearwardly by the weight of an occupant should the vehicle be involved in a front end collision.

3,427,071
CHILDREN'S PLAY SEAT

Raymond G. Pierson, Jr., Bedford, Pa., assignor to Hedstrom Union Company, Fitchburg, Mass.
Original application Apr. 15, 1966, Ser. No. 549,108, now Patent No. 3,331,631, dated July 18, 1967. Divided and this application June 5, 1967, Ser. No. 643,723
U.S. Cl. 297—258 **2 Claims**
Int. Cl. A47d *13/04, 13/10*

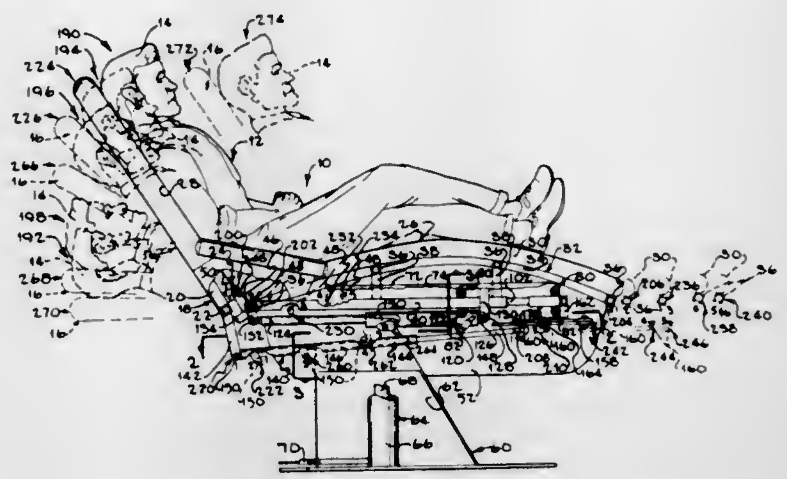


A children's foldable play seat comprises a pair of parallel, spaced-apart rockers. A flexible, bag-like seat having leg openings at the bottom of and near the front of the seat is resiliently suspended from said rockers. The leg openings are arranged to allow a child sitting in the seat to extend his legs down under the seat to engage the ground so he can propel the seat with his feet. Tubular members for mounting casters are affixed to the rockers and oriented at angles relative to the axes of the rockers so that the members are generally vertical when the lowermost portions of the rockers engage the ground.

3,427,072
RECLINING DENTAL CHAIR

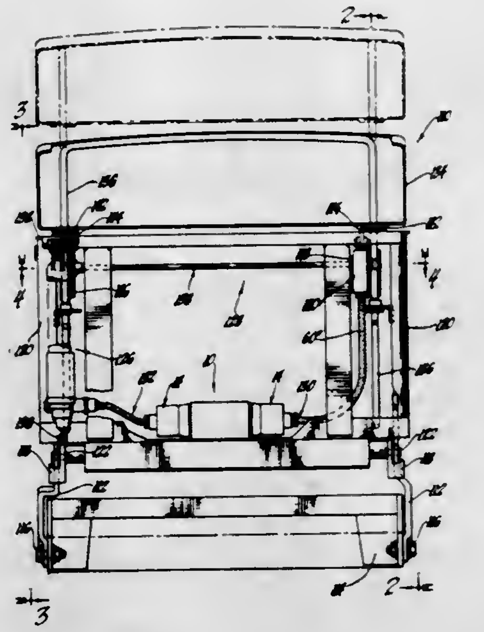
Dean Howard Hale, 2500 N. Main, Logan, Utah 84321
Filed Aug. 15, 1966, Ser. No. 572,281
U.S. Cl. 297—342 **4 Claims**
Int. Cl. A47c *1/032;* **A61g** *15/00*

A reclining dental chair apparatus and method, the apparatus featuring a chair seat and back pivotally joined together and supported by a base, (a) the seat being power-driven to move rectilinearly to the base and simultaneously pivot the back relative to the seat by force provided by the same power source, or (b) the back being power-driven to pivot relative to the seat and simultaneously shift the seat oppositely and rectilinearly relative to the base by force delivered from the same power source. The disclosed methods comprise positioning a reclining dental chair so that the disposition of the patient's head remains within essentially one predetermined and relatively narrow vertical corridor though occupying any one of a plurality of relatively erect or reclined positions by displacing the seat relative to the base and simultaneously oppositely pivoting the back relative to the seat or vice versa.



3,427,073
SEAT ASSEMBLY

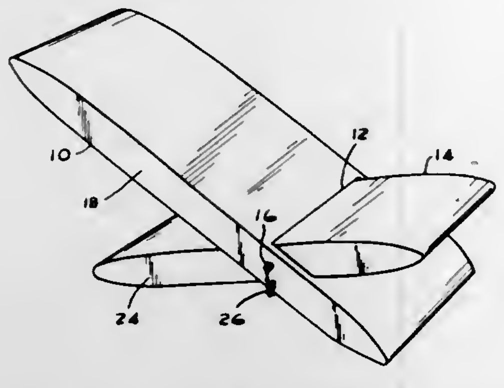
William T. Downs, Detroit, and Robert I. Homier, Farmington, Mich., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,510
U.S. Cl. 297—361 **19 Claims**
Int. Cl. A47c *1/024, 1/036*



A seat assembly comprising, a seat frame, a back frame connected to the seat frame for pivotal movement relative thereto; an adjustable head-rest assembly attached to said back frame for moving relative to said back frame, and motor means for actuating the selectively and independent movements of the back frame and the head rest.

3,427,074
CHAIR CAPABLE OF RAPID ERECTION AND DISMANTLING

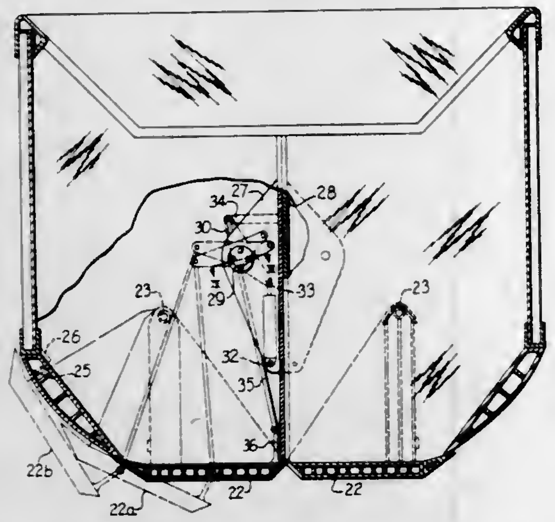
Kenneth Ronald Atholl Whyte, 257 Nicolson Road, Durban, Natal, Republic of South Africa
Filed Mar. 23, 1967, Ser. No. 625,381
Claims priority, application Republic of South Africa, Apr. 29, 1966, 66/2,495
U.S. Cl. 297—443 **6 Claims**
Int. Cl. A47c *7/16;* **A63c** *15/02*



The underlying idea of the invention is to provide a collapsible chair, more particularly for outdoor use such as on beaches, the two parts of which are each made so as to be floatable so that when separated such parts can be used for surfing and other aquatic amusements.

3,427,075
BOTTOM DUMP DOOR MECHANISM AND TWO-STATION CONTROL

Ralph H. Kress, Peoria, Jackson C. Medley, East Peoria, and Donald E. Merritt, Peoria Heights, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 24, 1967, Ser. No. 641,029
U.S. Cl. 298—35 **5 Claims**
Int. Cl. B60p *1/56;* **B61d** *7/02, 7/28*

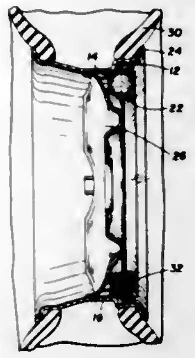


Pivoted bottom dump vehicle doors having a before-center linkage means and hydraulic control means operable from either of two stations to effect opening and closing of the doors and whereby a portion of the force required to maintain the doors in a closed position is provided by a hydraulic motor.

3,427,076
WHEEL BALANCER WITH INTEGRAL ATTACHING TABS

Donald W. Cole, Fort Worth, Tex., and Arlan E. Mitchell and Beauford I. Whitlock, Stafford, Kans., assignors to AWB Manufacturing Co., Inc., Stafford, Kans., a corporation of Kansas
Filed June 28, 1967, Ser. No. 649,508
U.S. Cl. 301—5 **4 Claims**
Int. Cl. B60b *13/00;* **B60r** *19/00*

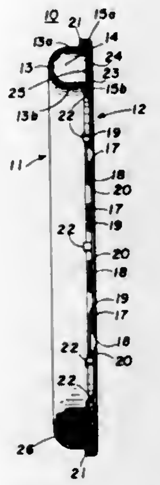
A plastic annular casing containing plural weight means and a damping fluid has a plurality of tabs extending therefrom parallel to the longitudinal axis of the casing. The tabs are circumferentially spaced on the casing so that they may be inserted into narrow ports spaced circumferentially about the face of an automobile wheel. The tabs are arcuate in cross section and the radial thickness of the tabs is greater than the radial width of the ports. Insertion of the tabs into wheel ports causes deformation of the tabs creating forces at the points of contact of the tabs and the wheel face which serve to maintain the casing attached to the wheel.



The casing may have a circular cross section or, if it is desired to reduce the axial dimension of the balancer to provide space for a wheel cover or the like, it may have a semicircular cross section. The casing is provided with an outlet and a threaded plug for the outlet to facilitate addition or removal of weight means or fluid.

3,427,077
DYNAMIC WHEEL BALANCER

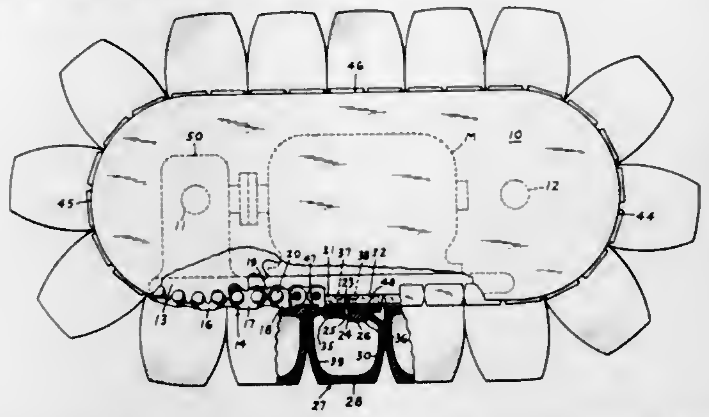
Donald W. Cole, Fort Worth, Tex., and Arlan E. Mitchell and Beauford I. Whitlock, Stafford, Kans., assignors to AWB Manufacturing Co., Inc., Stafford, Kans., a corporation of Kansas
Filed June 28, 1967, Ser. No. 649,625
U.S. Cl. 301—5 **4 Claims**
Int. Cl. B60b *13/00;* **G01m** *1/32*



A dynamic wheel balancer which includes a balancer ring having a relatively flat side portion which is provided with a lip that defines the outer diameter of the ring. The ring is fixedly accommodated within an annular plate having an upstanding rim at its outer periphery which is clamped over the balancer ring lip for concentrically mounting the balancer ring to the plate. The plate proximate its inner diameter is provided with a plurality of apertures through which lug bolts may be passed for fixing the wheel balancer to a motor vehicle wheel between the brake drum and the disk of the wheel.

3,427,078
ENDLESS TRACK WITH HOLLOW INFLATABLE TREADS

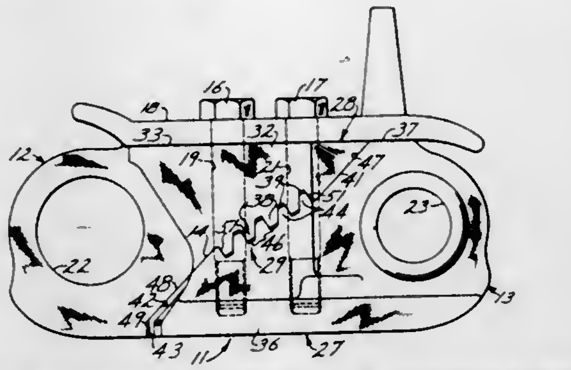
Frederick L. Parsons, 759 Morningside Road, Ridgewood, N.J. 07450
Filed Oct. 20, 1966, Ser. No. 588,040
U.S. Cl. 305—14 **8 Claims**
Int. Cl. B62d *55/20;* **B63h** *1/34;* **B60c** *5/06*



A vehicle track wheel made up of a plurality of elongated, hollow treads made of resilient material and carried in a closed path and including a pair of flexible tread carriers driven in a closed path, a pressure chamber above the treads in contact with the ground, a pair of stationary end seals extending in fore and aft directions above cooperating sealing surfaces carried by the flexible carriers, the leakage from the chamber decreasing the friction between the stationary and moving sealing surfaces, and a plurality of rigid, transverse connections extending between and carried by the flexible carriers to which portions of the tread are mounted.

3,427,079
TWO-PIECE MASTER TRACK LINK

Austin G. Skromme, Peoria, Ill., and James N. Maytum, Brookings, S. Dak., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 9, 1967, Ser. No. 645,055
U.S. Cl. 305—58 **4 Claims**
Int. Cl. B62d *55/20;* **F16g** *13/06*

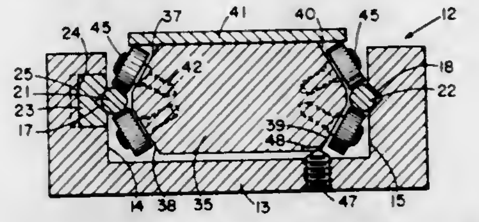


A two-piece master track link. A central portion of the juncture between the parts is disposed on a diagonal plane of the link with multiple interlocking serrations being defined on the mating surfaces of the parts along the diagonally disposed juncture. The ends of the juncture line vary out of the diagonal plane to provide increased link part masses between pin connections of the parts and the juncture of the parts.

3,427,080
RECIPROCATING BEARING ASSEMBLY HAVING ROLLER-BEARING WHEELS ON A BEARING ROD

Lee E. Folk, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 17, 1966, Ser. No. 587,319
U.S. Cl. 308—6 **5 Claims**
Int. Cl. F16c *17/00, 21/00, 19/00*

A first member having opposed V grooves respectively receiving elongated bearing rods. A second member having pairs of angled roller-bearing wheels in rolling engagement with the bearing rods supported on the first member. The engagement between the roller-bearing wheels and the rods in the V groove support the rods in the V grooves. An adjustable gib is provided for adjusting the bearing. The bearing is particularly suitable for microminiature movements.

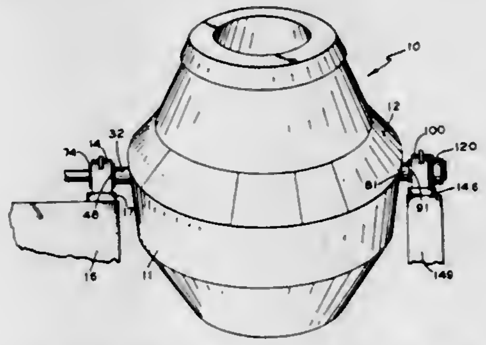


ERRATUM

For Class 308—6 see:
Patent No. 3,427,656

3,427,081
BEARING ASSEMBLY

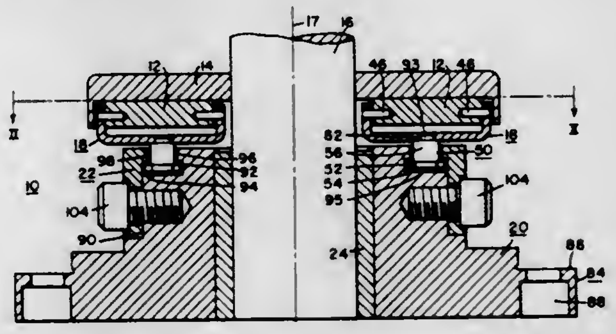
Carl L. Dellinger, Norwalk, Conn., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,065
U.S. Cl. 308—15 **16 Claims**
Int. Cl. F16c *13/00, 35/00, 39/00*



A bearing assembly for a steel making vessel supported in a trunnion ring with aligned main shafts extending from opposite sides of the ring, a main bearing in which the shaft is journalled at both a fixed end and at an expansion end of the assembly, housing enclosing each main bearing, a pedestal with a base receptacle having a recess extending downwardly from its top, supporting each housing, a base section with matching inclined walls, to cause said housing, when raised from and later returned to the base receptacle, to be returned in its initial position.

3,427,082
BEARINGS

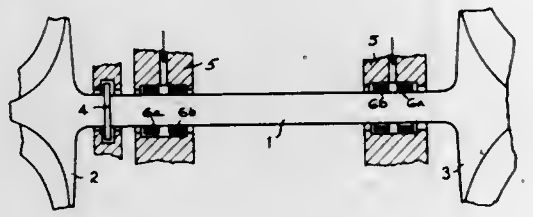
Oskar Hagen, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1967, Ser. No. 615,822
U.S. Cl. 308—26 **4 Claims**
Int. Cl. F16c *27/02, 35/02, 17/10*



A thrust bearing of the Kingsbury type, having a plurality of circumferentially spaced bearing shoes, each pivotally supported between two points on a spring-like mounting member. The mounting members allow circumferential and radial tilting of the bearing shoes, when they are mounted in a co-operating base ring assembly, and they have a substantially diamond-like or lozenge configuration which provides a constant blending resistance, to equalize the thrust among the plurality of shoes.

3,427,083
RADIAL PLAIN BEARING FOR HIGH-SPEED TURBO-MACHINES

Ulrich Linsi, Zurich, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed June 9, 1966, Ser. No. 556,441
Claims priority, application Switzerland, June 29, 1965, 9,058/65
U.S. Cl. 308—122 **4 Claims**
Int. Cl. F16c *1/24, 33/66, 13/02*



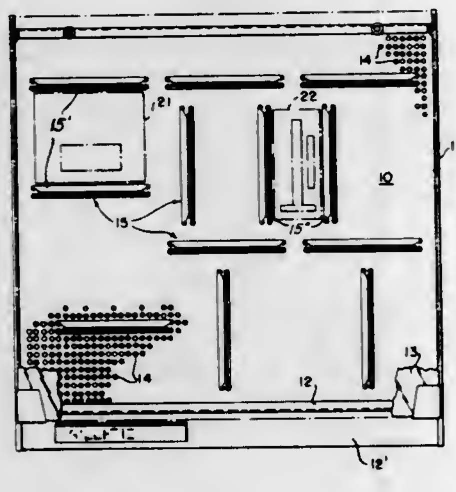
A radial plain bearing structure for supporting the rotor shaft of a high-speed turbo-machine comprises a bearing housing surrounding a part of the rotor shaft and a freely rotatable runner bush structure which surrounds the shaft and floats in the annular space between the shaft and bearing housing. The runner bush structure is comprised of two or more undivided bush rings between which lubricating oil is forced and the bush rings are free to rotate independently of each other.

ERRATUM

For Class 308—136 see:
Patent No. 3,427,657

3,427,084
DISPLAY CASE

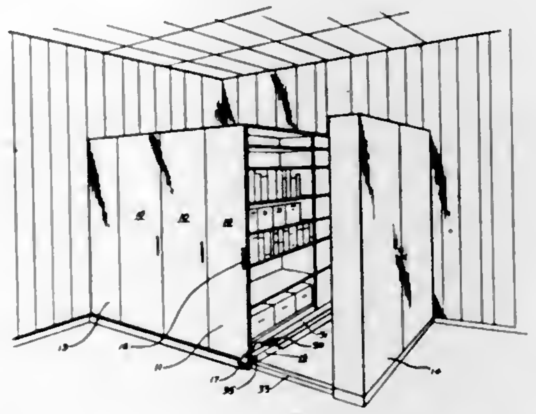
Robert L. Sinclair, Dedham, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,566
U.S. Cl. 312—117 **5 Claims**
Int. Cl. A47f *7/00, 5/00;* **A47b** *57/28*



The present invention is concerned with merchandise display cases which can be divided into compartments of various sizes through the use of a plurality of removable partitions. The partitions are formed from a single sheet of resilient material by deforming it to form two diverging side walls. The side walls are resiliently movable toward one another and on their lower edges they each merge into a pair of downwardly extending spaced legs. Through the resilient movement of the side walls the legs are readily inserted and detached from perforations provided in the base of the case.

3,427,085
MOBILE SHELVING CARRIAGE

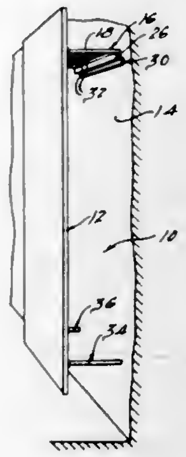
Maurice F. Staller, Fort Atkinson, Wis., assignor to Staller Cabinets, Inc., Fort Atkinson, Wis., a corporation of Wisconsin
Filed Apr. 26, 1967, Ser. No. 633,773
U.S. Cl. 312—200 **8 Claims**
Int. Cl. A47b *53/02;* **B61b** *13/00*



A carriage to provide rolling support for shelving or cabinet units of movable-stack type. The carriage is a rectangular angle-iron frame whose cross-members carry load and guide wheels arranged to run along the rectangular rails. The cabinet or shelving rests on top of the carriage and has a handle on one end panel for manually rolling the cabinet or shelving unit along the rails.

3,427,086
WALL WARDROBE

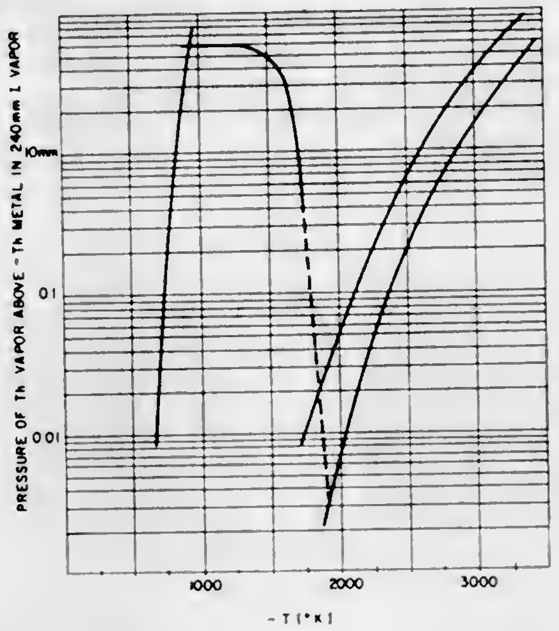
Hugh C. Acton, Birmingham, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Original application Oct. 6, 1964, Ser. No. 401,952, now Patent No. 3,346,314, dated Oct. 10, 1967. Divided and this application Aug. 15, 1967, Ser. No. 660,626
U.S. Cl. 312—245 **10 Claims**
Int. Cl. A47b *61/00;* **A47f** *7/19*



An article of furniture which includes a vertically extending cover panel adapted to be mounted on a wall or similar structure. Means are provided for supporting the panel in a position spaced from and substantially parallel to the wall. In the preferred embodiment of the invention the means includes a channel defining member secured to the wall and a plurality of spaced apart support arms secured to the panel and engageable with the channel defining member for supporting the panel in its vertical position.

3,427,087
ARC TUBES AND PROCESS FOR THEIR FABRICATION

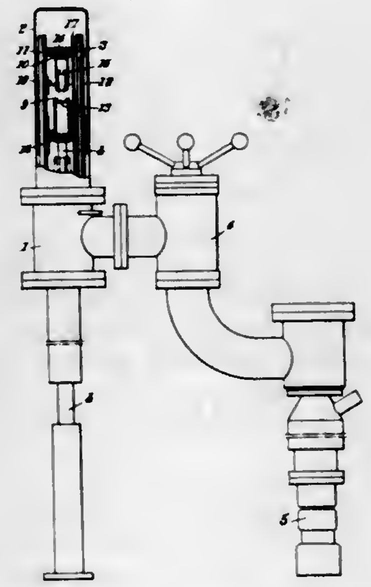
John F. Waymouth, Marblehead, and Frederic Koury, Lexington, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application May 2, 1963, Ser. No. 277,634, now Patent No. 3,313,974, dated Apr. 11, 1967. Divided and this application Oct. 24, 1966, Ser. No. 588,851
U.S. Cl. 316—13 **6 Claims**
Int. Cl. H01j *9/02, 9/38*



The manufacture of a lamp including the steps of forming an arc tube with electrodes at each end and an exhaust tube in the middle. The resulting envelope is evacuated through the exhaust tube and atoms of mercury and light emitting metals (as the metal, the corresponding halide or both) are added. An arc is formed and the light emitting metal is deposited upon the exterior surfaces of the electrodes.

3,427,088
DEVICE FOR MANUFACTURING ELECTRON TUBES

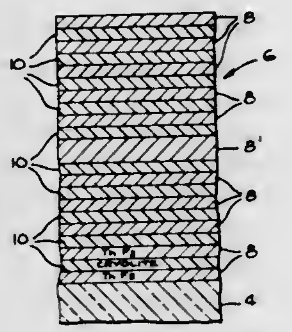
René Legoux, Sceaux, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Original application Feb. 14, 1966, Ser. No. 527,293, now Patent No. 3,353,889, dated Nov. 21, 1967. Divided and this application June 2, 1967, Ser. No. 659,249
Claims priority, application France, Feb. 23, 1965, 6,689
U.S. Cl. 316—31 **1 Claim**
Int. Cl. H01j *9/46, 9/26, 9/38*



A device is disclosed for sealing two parts of an evacuated envelope housing a photosensitive layer. One part is provided with a continuous upstanding rim having a groove therein for receiving a corresponding rim portion of the other part. The parts are placed in a vacuum bell which can be exhausted and the parts are held a given distance from each other while a photosensitive layer is applied in vacuo to a supporting body forming part of one of the envelope portions from a vapor deposition furnace.

3,427,089
ULTRAVIOLET FILTER

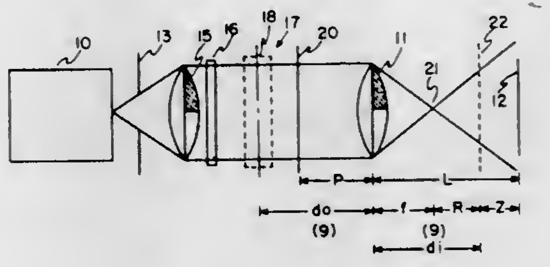
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Samuel J. Holmes, North Hollywood, Calif.
Filed Mar. 12, 1965, Ser. No. 439,490
U.S. Cl. 350—1 **6 Claims**
Int. Cl. G02b *5/20, 5/28, 13/14*



A filter of the Fabry-Perot interference type. It will pass a band of ultraviolet radiation in the region of 2,150 angstroms. It has approximately an 80% transmission efficiency, while rejecting sideband radiation of longer and shorter wavelengths. The filter has a base of ultraviolet transparent material, and a filter coating deposited on the base of alternate thin film layers of thorium fluoride and cryolite. The thorium fluoride is used as the high index of refraction material, and the cryolite is used as the low index of refraction material.

3,427,090
HOLOGRAM MAGNIFICATION

Bruce Justh, Dayton, Ohio, and William R. Zinky, Bedford, Mass., assignors to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,135
U.S. Cl. 350—3.5 **5 Claims**
Int. Cl. G02b *27/22*



A hologram recording system in which a lens is used to relay to a recording plane a magnified image of a plane in which a Fraunhofer hologram of the object might have been formed. A magnified hologram of the object is recorded at the actual recording plane with a magnification

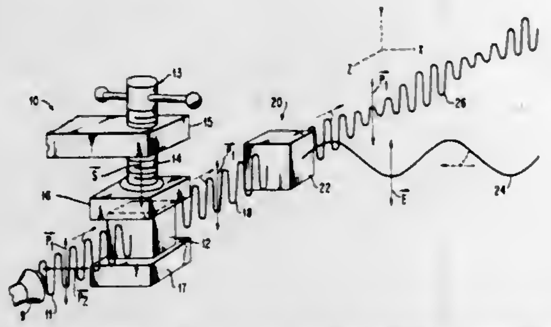
$$L\frac{-f}{f}$$

where L is the distance between the lens and the recording plane and *f* is the focal length of the lens.

3,427,091

ALTERATION OF TRANSMITTANCE IN SOLIDS

Erich Erlbach, New York, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 14, 1964, Ser. No. 389,589
U.S. Cl. 350—149 **11 Claims**
Int. Cl. G02f *1/24*

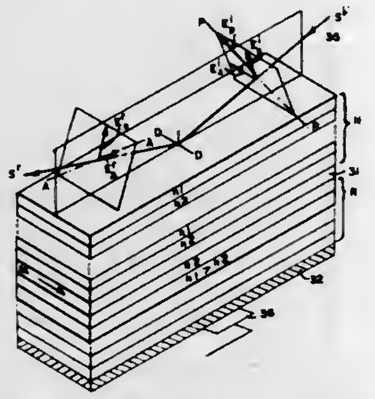


Alteration of the transmittance of electormagnetic radiation propagating in a solid, the radiation having wavelength longer than an energy gap in the solid, is obtained by changing the energy distribution of free charge carriers therein in selected ones of several energy valleys in the solid. The change may be obtained by application of either stress or electric field to the solid. Stress is applied to a monocrystalline semiconductor solid in a preferred crystal direction to populate preferentially selected ones of energy valleys therein with free charge carriers. Electromagnetic radiation propagating in the solid, the radiation having wavelength longer than an energy gap in the solid, is linearly polarized by selective absorption of all but one direction of the polarization components. A time varying electric field is applied to a monocrystalline semiconductor solid to heat preferentially free charge carriers therein in selected ones of several energy valleys. Linearly polarized electromagnetic radiation propagating in the solid, the radiation having wavelength longer than an energy gap in the solid, is amplitude modulated by absorption thereof in accordance with the amplitude of the electric field. In particular, the time varying electric field is linearly polarized microwave radiation.

3,427,092

THIN FILM HIGH FREQUENCY LIGHT MODULATOR USING TRANSVERSE MAGNETO-OPTICAL EFFECT

Donald O. Smith, Lexington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed June 22, 1964, Ser. No. 376,986
U.S. Cl. 350—151 **5 Claims**
Int. Cl. G02f *1/22, 1/28, 1/26*

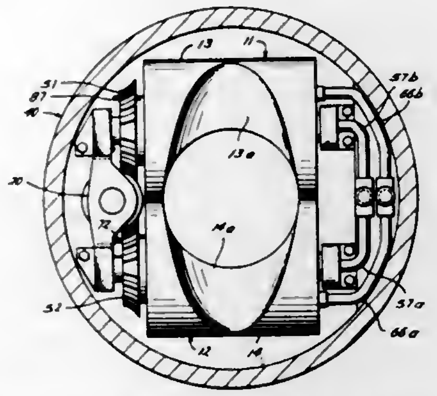


A magneto-optical light modulator used the dichroic absorption property of a thin magnetic film having a direction of magnetization transverse to the direction of propagation of a beam of polarized light, an arrangement in which the absorption of light by the magnetic film depends on the direction of polarization of the light beam. The absorption effect is enhanced by positioning the magnetic film in a composite multilayer quarter-wave dielectric film optical network supported on a mirror substrate at an electric node of the optical standing wave and where the multilayer structure affords an efficient coupling of the thin magnetic film to free space. Crossed polarizer and analyzer elements are oriented in the path of the light beam to provide increased signal to noise ratio.

3,427,093

LIGHT INTENSITY MODULATOR CONTROLLER

Herbert K. Strass, Seabrook, and Hoyt E. Maples, Pasadena, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 23, 1965, Ser. No. 516,158
U.S. Cl. 350—275 **9 Claims**
Int. Cl. G02f *1/30*



5. An apparatus for controlling the intensity of a light beam produced by a light source associated with high heating rates, said apparatus comprising:

a plurality of elongate hollow members each defining a closed chamber with an external surface of revolution and journalled for rotation about its longitudinal axis, said hollow members being arranged with their axes of rotation coplanar, each said external surface being provided with a groove of varying depth of predetermined cross section extending in a circumferential direction at least part way around the hollow member, said grooves being identical in configuration and disposed by the arrangement of said hollow members in conjugate relationship, whereby an aperture of predetermined shape is defined by the grooves in the plane which includes their axes of rotation;

drive means for simultaneously rotating said hollow members at equal rates, said drive means being reversible and adapted to reverse the rotation of the hollow members; and

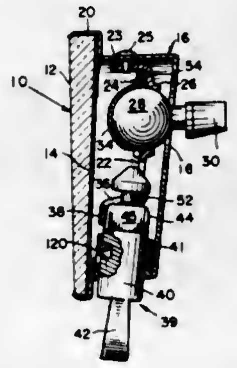
means for controlling said drive means to selectively adjust the rotary positions of said hollow members, whereby the intensity of a light beam may be modulated by varying the size of the aperture defined by said grooves when the hollow members are interposed in a light beam with said aperture adjacent the focal point of the light beam.

3,427,094

REARVIEW MIRROR AND ADJUSTING MECHANISM THEREFOR

George E. Scheitlin and John C. Brighton, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 17, 1966, Ser. No. 587,164
U.S. Cl. 350—281 **14 Claims**
Int. Cl. G02b *17/00*

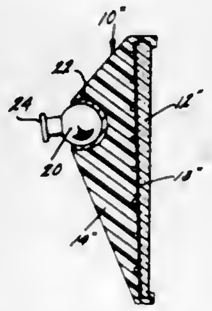
1. In a rearview mirror, a housing having its front side open, a mirror fixedly secured in said housing and having a low and a high efficiency reflector angularly disposed in front to back relationship, a tilt plate, means pivotally interconnecting said tilt plate to said housing at one end thereof, spring means contacting said tilt plate closely adjacent the tilt plate and housing interconnecting means and acting in tension between said tilt plate and housing, bracket means in said housing remote from said tilt plate and housing connecting means, an actuator rotatably carried in said bracket means and projecting out of said housing, said actuator having a circumferentially spaced cam face and cam flat in alignment with each other and engageable with said tilt plate and said spring means remote from said tilt plate and housing interconnecting means whereby said actuator is rotatable to move said tension of said spring means to dispose one of said reflectors in position to reflect an image back to an observer and to move said cam face into engagement with said tilt plate to permit said spring means to move said housing with respect to said tilt plate to dispose the other of said reflectors in position to reflect an image back to an observer, and means on said tilt plate for swivelly mounting it on a mounting member.



3,427,095

SAFETY REARVIEW MIRROR WITH FLEXIBLE GLASS ADHERED TO A FLEXIBLE BACKING SUPPORT

James A. Dykema and Roger D. Johnson, Holland, Mich., assignors to Donnelly Mirrors, Inc., Holland, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 252,751, Jan. 21, 1963. This application Mar. 11, 1965, Ser. No. 439,024
U.S. Cl. 350—288 **3 Claims**
Int. Cl. G02b *7/18*



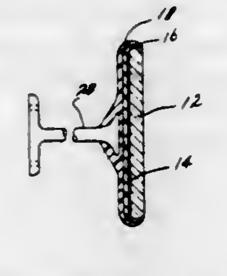
A safety rearview mirror for vehicles constructed of a thin, flexible and bendable glass reflector adhesively secured over its entire back surface to a resilient, nonmetallic support body, which is the sole support for the glass reflector. The support body is flexible and bendable and has sufficient retention capacity for the glass reflector to retain the fragments in the event the glass is broken.

3,427,096

SHATTER RESISTANT REARVIEW MIRROR

James A. Dykema and Roger D. Johnson, Holland, Mich., assignors to Donnelly Mirrors, Inc., Holland, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 252,751, Jan. 21, 1963. This application June 1, 1967, Ser. No. 642,955
U.S. Cl. 350—288 **3 Claims**
Int. Cl. G02b *7/18*

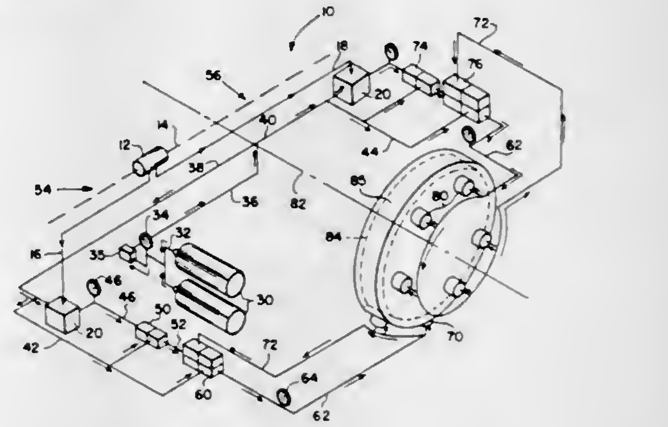
This disclosure relates to a caseless rearview mirror assembly for automobiles, for example. The mirror assembly comprises a glass base with a metallic reflective film thereon, a solid body forming an integral self-supporting shatter-preventing backing support of a thickness sufficient to provide the sole support for the mirror and being adhesively secured to substantially all portions of the back of the mirror with sufficient tenacity to tightly retain all fragments of glass on the support in the event of breakage of the mirror under impact. The backing support is made from a resinous material having flexibility, integral strength, and toughness sufficient to allow displacement of portions of the glass when broken under impact without breakage or tearing of the resin backing.



3,427,097

PNEUMATIC MIRROR SUPPORT SYSTEM

Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Kenneth L. Kemp, Glenshaw, Pa., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 24, 1965, Ser. No. 482,313
U.S. Cl. 350—310 **4 Claims**
Int. Cl. G02f *7/00*

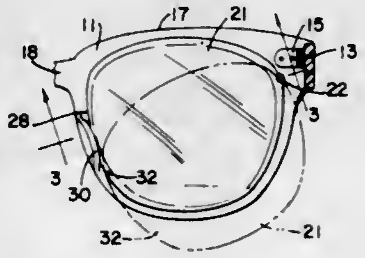


A mounting arrangement for a telescope mirror featuring pneumatic supports distributed about the rear and the circumference of the mirror together with a control system which varies the pressure in both sets of supports as a function of the elevation angle of the telescope.

3,427,098

SUNSHADE ATTACHMENT FOR EYEGLASSES

Donald L. Johnston, Hammond, Ind., assignor of one-half to Leland Strouse, Flossmoor, Ill.
Filed June 13, 1966, Ser. No. 557,266
U.S. Cl. 351—47 **4 Claims**
Int. Cl. G02c *9/00, 7/08, 1/00*

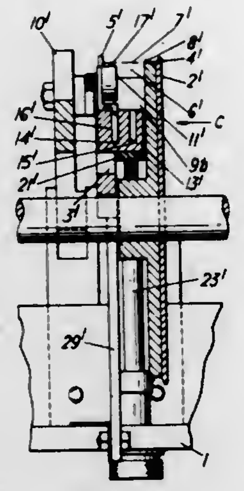


1. A sunshade lens attachment for eyeglasses, said eyeglasses including a frame having a pair of lens-receiv-

ing rims, each of said rims having temple attachment means located at an outer margin thereof, a lens mounted in each of said rims, a bridge portion joining said rims together to maintain said lenses in spaced relation, post means disposed on each of said rims adjacent each of said temple attachment means, each of said post means projecting outwardly from a rearwardly facing portion of said frame, a pair of flexible sunshade lenses adapted for disposition over each of said lens-receiving rims, each of said sunshade lenses having notch means formed along an outer peripheral portion thereof and engaged with said post means, abutment means on each of said rims adjacent said bridge portion, each of said abutment means comprising a nose piece formed integral with said frame and engaging an inner peripheral margin of each of said sunshade lenses, the dimension of each of said sunshade lenses when taken in a straight line from said notch means to the inner peripheral margin of said sunshade lens engaging said abutment means being slightly greater than the dimension between said post means and said abutment means on the associated rim whereby each of said sunshade lenses is resiliently wedged on said frame in overlying relation to the associated lens.

3,427,099
FILM SYNCHRONIZER

Harry Marsden, Dartford, Kent, England, assignor to Robert Rigby Limited, London, England
Filed Dec. 6, 1965, Ser. No. 511,767
Claims priority, application Great Britain, Dec. 4, 1964, 49,563/64
U.S. Cl. 352—12 **8 claims**
Int. Cl. G03b *31/02*

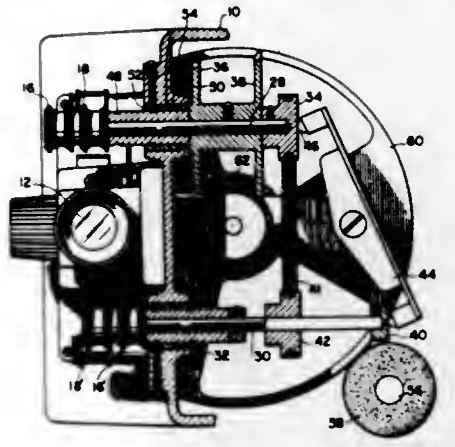


A film synchronizer having a number of ganged sprockets for feeding a number of films and a pickoff head for each sprocket which is to feed a film bearing a sound head mounting means for the pickoff head enabling the latter to be located on the film synchronizer, on the sprocket side of the film, in alternative positions according as the sound track is transversely disposed on the film.

3,427,100
SMALL-SIZED MOTION-PICTURE PROJECTOR

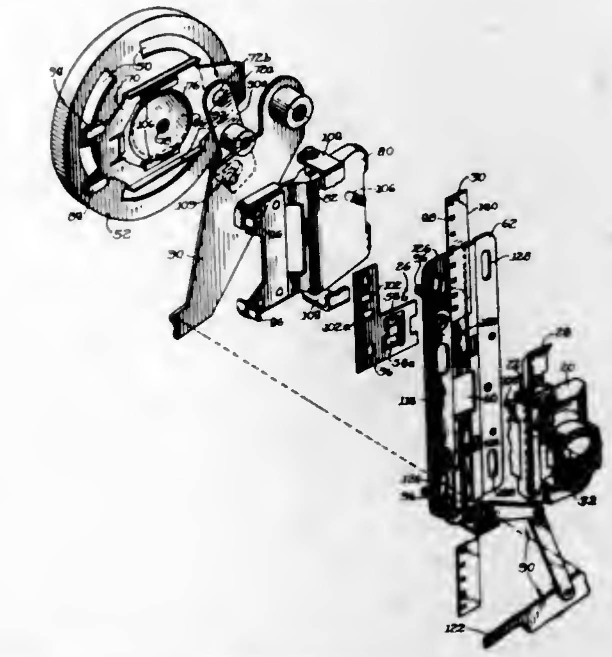
Fumio Sakai, Nagoya, and Chihiro Aoki, Aichi-gun, Japan, assignors to Elmo Company Limited, Mizuho-ku, Nagoya, Japan
Filed Mar. 10, 1966, Ser. No. 533,203
Claims priority, application Japan, Mar. 31, 1965, 40/18,331
U.S. Cl. 352—79 **3 Claims**
Int. Cl. G03b *41/00, 21/48*

A film feed mechanism for selectively projecting two types of 8 mm. wide motion-picture film respectively having slightly different perforation pitch. The device comprises a pair of parallel rotary shafts wherein there are provided on one end portion two pairs of sprocket wheels of substantially equal diameter having different gear teeth ratios corresponding to the respective film perforation pitches. The sprocket wheels are disposed in juxtaposed relationship and in the opposite orders. Upon changing the type of film, the shafts can be manually displaced in axial, opposite directions to put each sprocket wheel on each shaft into corresponding operatively aligned positions while at the same time both shafts are set to be rotated at a common speed suitable for projecting the film involved.



3,427,101
COMPATIBLE MOTION PICTURE PROJECTOR

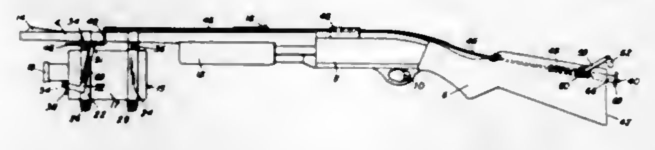
Lester V. Jorgensen, Skokie, and Melvin T. Kerstein, Chicago, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1965, Ser. No. 498,040
U.S. Cl. 352—79 **14 Claims**
Int. Cl. G03b *41/00*



1. In a motion picture projector apparatus of the type in which a plurality of film types, each having different perforation pitches, may be moved from a film supply station through a film gate, the apparatus comprising:
a shuttle mechanism located at said film gate;
first and second teeth on said shuttle mechanism, said first and second teeth being spaced apart by a distance equal to the spacing between a pair of nonadjacent perforations on said film, said distance being equal to the space between:
- a whole number of perforations on a first one of said film types; and
- a different whole number of perforations on a second one of said film types, and wherein the whole number of perforations on said first film type is not a multiple of the whole number of perforations on said second film type.

3,427,102
COMBINED FIREARM AND MOTION PICTURE CAMERA

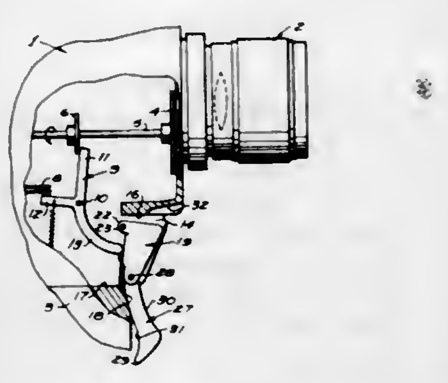
Lloyd H. Wade, R.D. 1, Linglestown, Pa. 17112
Filed July 29, 1966, Ser. No. 568,859
U.S. Cl. 352—95 **9 Claims**
Int. Cl. G03b *29/00, 1/00*



A rifle carries a movie camera with its focal axis parallel to the barrel. A camera actuating member is located at the rearward end of the rifle stock, permitting a hunter to actuate the camera by forcibly urging the rifle stock against his shoulder.

3,427,103
SHUTTER RELEASE DEVICE FOR MOVING PICTURE CAMERAS

Lawrence G. McCain, Beverly Hills, Calif., assignor to Ponder & Best, Los Angeles, Calif., a partnership
Filed Sept. 14, 1966, Ser. No. 579,316
U.S. Cl. 352—178 **4 Claims**
Int. Cl. G03b *1/00, 19/18*

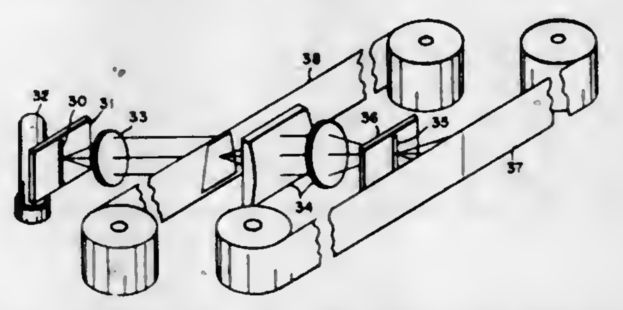


1. The combination with a moving picture camera having walls defining an access recess and a lever movable to control the camera shutter and to close a switch, the operating end of said lever being positioned in registry with said access recess, of means for operating said lever, comprising:
- (a) an inner trigger pivotally mounted between said walls within said recess for engagement with said lever;
- (b) an outer trigger pivotally connected to said inner trigger and movable between a guard position between said walls within said recess and overlying said inner trigger and an extended operating position in essentially radial relation with the pivotal axis of said inner trigger and projecting laterally from said recess.

3,427,104
OPTICAL PLURAL CHANNEL SIGNAL DATA PROCESSOR

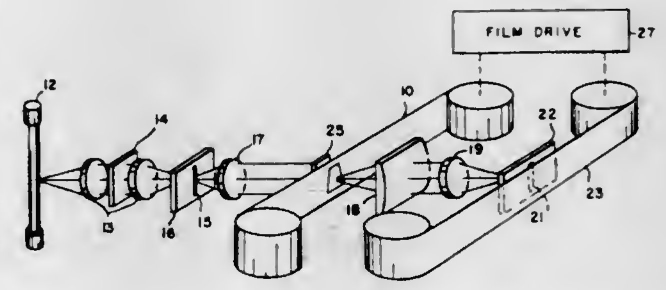
Wendell A. Blikken, Ypsilanti, Louis J. Cutrona and Arthur L. Ingalls, Ann Arbor, Emmett N. Leith, Plymouth, and Leonard J. Porcello, Ann Arbor, Mich., assignors to the United States of America as represented by the Secretary of the Air Force
Filed May 4, 1960, Ser. No. 26,916
U.S. Cl. 355—2 **10 Claims**
Int. Cl. G03b *27/00, 27/32, 27/68*

1. A device for obtaining the integrated product of two functions in a plurality of channels simultaneously, comprising: a first transparency having thereon a plurality of spatial frequency functions with the functions extending in a first direction and the separate channels extending in a second direction perpendicular to said first direction, means for illuminating said first transparency with monochromatic coherent light which is collimated in said first direction, a second transparency having a plurality of functions extending in said first direction with the separate channels extending in said second direction, a pair of lenses for imaging said first transparency upon said second transparency, a first mask in the focal plane of the first lens of said pair of lenses, said mask having a slit in the position of at least one of the first diffracted order images of said first transparency, a second mask, output means adjacent said mask, means for integrating the output of said second transparency in said first direction and for focusing said output on said mask, said mask having an output slit therein in the position of one of the first diffracted order images of said second transparency and means including said last named means for imaging the information in the separate channels in said second direction on said slit.



3,427,105
PLURAL CHANNEL OPTICAL DATA PROCESSOR

Arthur L. Ingalls, Ann Arbor, Mich., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 13, 1961, Ser. No. 116,895
U.S. Cl. 355—2 **5 Claims**
Int. Cl. G03b *27/00, 27/32, 27/68*



1. An apparatus for processing a signal film, from an air-borne coherent side-looking radar, having thereon Doppler frequency azimuth target information in a direction along the length of the film and range information across the film, comprising: said signal film means for producing a beam of polychromatic light, means for moving said film through said light in the azimuth direction, a first mask having a slit therein located between said beam producing means and said film, said slit being narrow in the azimuth direction and elongated in the range direction, means located between said mask and said film for collimating the light in the azimuth direction, means including said light producing means for illuminating said film with light of a wavelength proportional to range, a second mask having an output slit therein, output means adjacent said output slit, a first lens for integrating the light information from said signal film in the azimuth direction and for focusing it on said output slit, a second lens which together with said first lens images the range information from said signal film on said output slit.

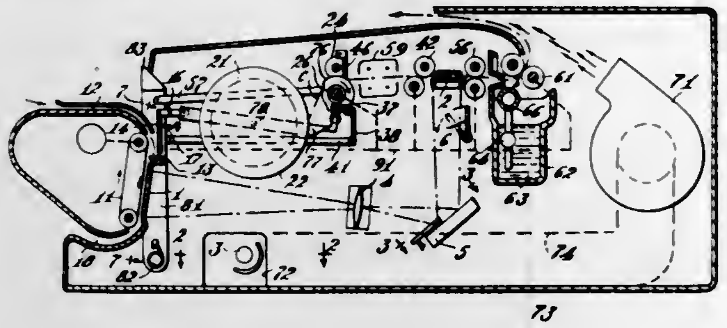
3,427,106
RECORD COPIER

Donald D. Sloan, Weston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed Oct. 12, 1966, Ser. No. 586,144

U.S. Cl. 355—3 **2 Claims**

Int. Cl. G03b *27/32*



A machine for copying records on paper by projecting an image from a record gate to a copy window. When the forward edge of the record is slipped into the receiving slot it abuts a shelf after which it is pushed off the shelf and passed through the record gate by an endless belt. The copy material is exposed while it and the record are traveling continuously in synchronism.

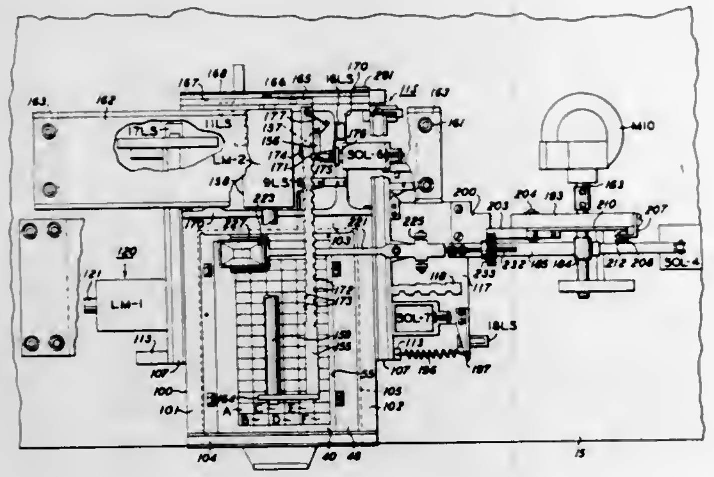
3,427,107
INDEXING CONTROL SYSTEM

Richard C. Rauscher, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed June 30, 1965, Ser. No. 468,337

U.S. Cl. 355—42 **3 Claims**

Int. Cl. G03b *27/52, 19/02*



A control arrangement for controlling longitudinal and transverse step-by-step movement of a microfiche card relative to a fixed point. Control device is utilized to effect automatic restart of the step-by-step movement from an initial start position when a predetermined microimage has been reached and another control device is adapted to return the microfiche to the initial position before the last microimage is reached.

3,427,108
ELECTRO-OPTICAL APPARATUS FOR MONITORING ROTATIONAL MOVEMENT OF A BODY

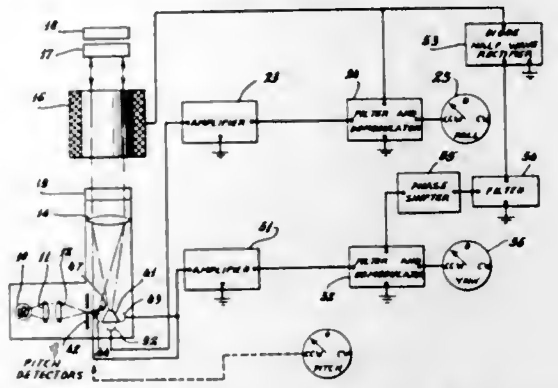
Joseph Richard Vyce, Ridgefield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Apr. 24, 1964, Ser. No. 362,435

U.S. Cl. 356—117 **14 Claims**

Int. Cl. G01n *21/44*

An apparatus for monitoring the rotational movement of a remote object. In two versions, rotation about the roll axis is monitored. In a third version, rotations about the roll, pitch and yaw axes are monitored. A polarizer is positioned in front of and connected to a reflector which is mounted on the object being monitored. A Faraday modulated beam of polarized light, produced by directing light from a lamp through a condensing lens, a collimating lens, a polarizing beamsplitter and a Faraday cell in that order, is transmitted through the polarizer and strikes the reflector. The reflected beam passes through the polarizer, Faraday cell, polarizing beamsplitter and collimating lens and is fed into an electro-optical light detection system. In the two versions for measuring roll the electro-optical light detection system includes one phototube. Rotation of the polarizer relative to the polarizing beamsplitter produces a change in the light signal impinging on the phototube. In the version for measuring roll, pitch and yaw the electro-optical light detection system further includes a four sided sensing prism and associated phototubes with these latter items being used to measure pitch and yaw.



3,427,109
REFLECTION TESTING APPARATUS WHICH DETECTS PITS IN SHEET MATERIAL

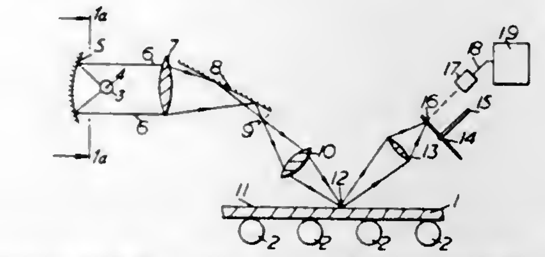
John Reginald Beattie, Maghull, near Liverpool, and Alan Graham Ogilvie, Norton, near Daventry, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed May 18, 1964, Ser. No. 368,252

Claims priority, application Great Britain, May 26, 1963, 20,273/63

U.S. Cl. 356—237 **4 Claims**

Int. Cl. G02b *1/00;* **G01n** *21/16, 21/32*



Indications of the presence and character of pits in the surface finish of flat glass or the like is obtained by processes and apparatus of and for illuminating strip-shaped zones on the surface, detecting from reflected light the presence and character of any pits on the surface by producing electrical signals, and analyzing, the signals, as for use in grinding apparatus for removing pits from the surface.

3,427,110
METHOD FOR INSPECTING OBJECTS HAVING PARALLEL FACES

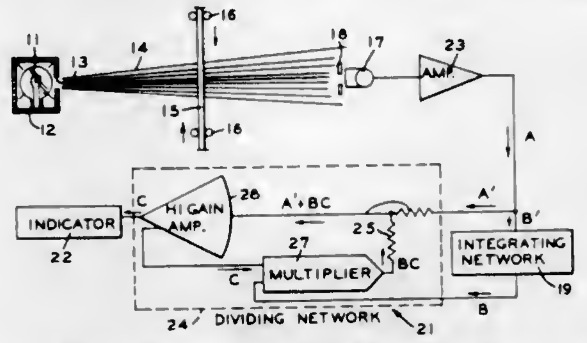
Tahir M. Mansour, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 1, 1964, Ser. No. 393,661

U.S. Cl. 356—239 **3 Claims**

Int. Cl. G01n *21/16, 21/30, 21/32*

A method of rejecting a radiation transparent object when a defect in the object causes refraction of the radiation passing therethrough more than a predetermined amount has the following steps. A beam of radiation is projected through the object and a portion of the beam is collected after its passage through the object. A first radiation intensity value signal is produced from the collected beam which is an integral value representative of the average radiation passing through the object. A second radiation intensity value signal is produced from the collected beam which is a differential value representative of the radiation passing through the object at a particular time. The object is rejected as having a defect therein if the differential radiation intensity value is substantially different from the integral radiation intensity value.



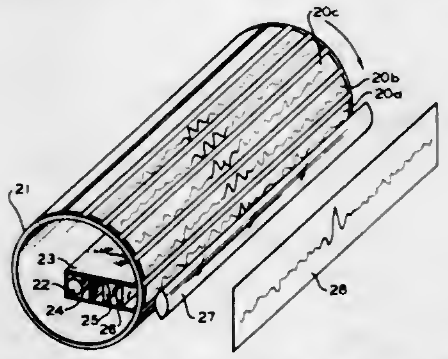
3,427,111
SIGNAL CORRELATION

Dan G. Sterry and Joe P. Lindsey, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 21, 1964, Ser. No. 405,501

U.S. Cl. 356—256 **2 Claims**

Int. Cl. G02b *27/32;* **G01r** *23/16;* **G01v** *1/00*



Signals to be compared, such as seismic signals, are represented by films, the light transmission properties of which vary as functions of the signals. A plurality of these films are moved sequentially into a beam of light at a speed greater than the retention time of the human eye. The resulting transmitted light beam thus provides a visual indication of the correlation between the signals. In one embodiment, the films are mounted on a rotatable drum which has a light source at the center.

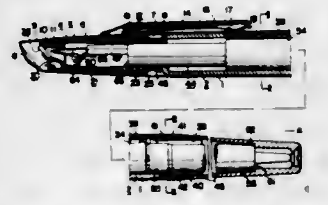
3,427,112
CAPLESS FOUNTAIN PEN

Akimasa Yanagisawa, Naka-gun, Kanagawa-ken, Kenichi Kanbe, Koza-gun, Kanagawa-ken, Tsunenori Sano, Hiratsuka-shi, and Tadashi Ishii, Ashigarakami-gun, Kanagawa-ken, Japan, assignors to Pilot Man-Nen-Hitsu Kabushiki Kaisha, Kyobashi, Tokyo-to, Japan

Filed Dec. 26, 1967, Ser. No. 693,439

U.S. Cl. 401—107 **5 Claims**

Int. Cl. B43k *24/02, 3/04*



Sliding projection and retraction movements within a fountain pen barrel of a writing unit consisting of the integral combination of a writing member including a pen nib, an ink reservoir, and an interconnecting ink feed structure are attained by gravity, and a front opening at the writing end of the barrel is opened and closed by a closing mechanism operated by manipulation of the barrel clip, the closing mechanism opening the front opening to permit the writing member and nib to project outward to the writing position and locking the writing member in this writing position.

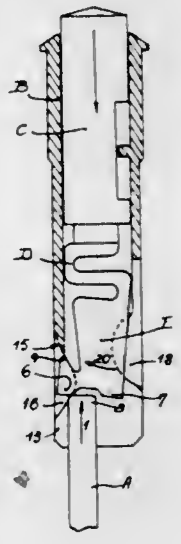
3,427,113
OPERATING DEVICE FOR WRITING APPLIANCES WITH RETRACTABLE WRITING ELEMENTS

Jean Bourbon, St. Lupicin, France, assignor to Etablissements A. Bourbon & Fils, Saint-Lupicin, Jura, France, a joint-stock company of France

Filed Mar. 15, 1966, Ser. No. 534,302

U.S. Cl. 401—112 **3 Claims**

Int. Cl. B43k *7/12, 24/08, 3/04*



An operating device for writing appliances with retractable writing elements is provided with a push button which is integrally connected to a flat push rod having a casing engaging hook thereon by means of a flexible connection. A pair of lugs are formed on the end of the push rod for alternately engaging the end of the retractable writing element. Fixed bosses are provided in the casing for camming the end of the writing element from engagement with one lug to the other lug during retracting movement of the writing element.

3,427,114
FINE-LINE WRITING MARKER

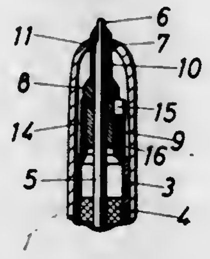
Peter Dziuk, Nuremberg, Germany, assignor to J. S. Staedtler, Nuremberg, Germany, a company of Germany

Filed Dec. 1, 1965, Ser. No. 510,928

Claims priority, application Germany, July 17, 1965, St 18,910

U.S. Cl. 401—199 **5 Claims**

Int. Cl. B43k *5/00, 1/12*



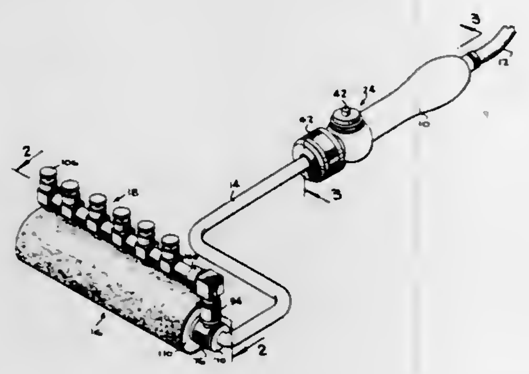
An ink marker for marking fine lines in which an ink channel assures a continuous flow of ink to the writing nib the diameter of which is such that it will draw fine lines.

ERRATUM

For Class 401—201 see:
Patent No. 3,426,464

3,427,115
ROLLER FLUID APPLICATOR

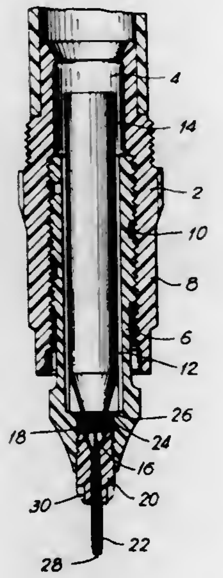
James Duncan Jolly, McQuady, Ky. 40153
Filed Mar. 7, 1967, Ser. No. 621,177
U.S. Cl. 401—219 **9 Claims**
Int. Cl. B44d *3/28*



A viscous liquid applying roller having a liquid supply manifold with orifices spaced along the length of the roller spaced from the roller through which liquid is discharged onto the roller surface all supported by a handle and including various adjustable connections with a support handle for providing versatility in the use of the device and also including means for adjusting the radial distance of the orifices from the roller to accommodate different sizes of rollers.

3,427,116
PEN HAVING A WEAR-COMPENSATING CONSTRUCTION

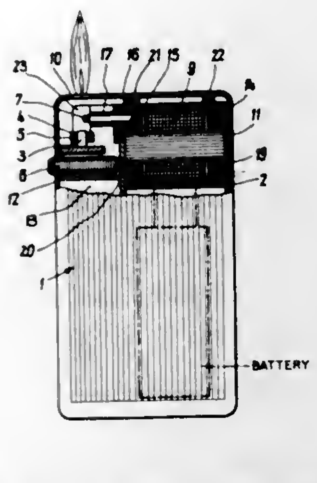
Helmuth Riepe, Hamburg, Germany, assignor to Rapidograph, Inc., Bloomsbury, N.J., a corporation of New Jersey
Filed May 27, 1966, Ser. No. 554,538
U.S. Cl. 401—259 **1 Claim**
Int. Cl. B43k *1/10, 1/06*



This invention is concerned essentially with a pen having a writing tip comprising a tubular fitting and a capillary wire wherein screw means are provided for adjusting the relative position of said tubular fitting and capillary wire thereby to compensate for wear of said writing tip.

3,427,117
IGNITION SYSTEM FOR GAS LIGHTERS OR THE LIKE

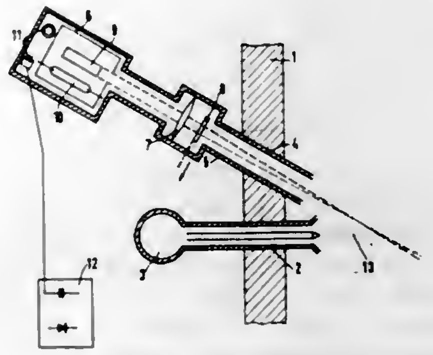
Horst Dieterle, Frankfurt am Main, Germany, assignor to Heinrich Maltner, G.m.b.H., Offenbach am Main, Germany
Filed Oct. 17, 1966, Ser. No. 587,121
Claims priority, application Germany, Oct. 15, 1965, M 66,947
U.S. Cl. 431—255 **16 Claims**
Int. Cl. F23q *3/01*



An electrical ignition system for using gas lighters includes a burner which is arranged to discharge combustible gas. A source of electrical energy is provided and transformer means is conductively connected therewith and has a high-voltage circuit. A pair of electrodes are electrically connected in the circuit and define a sparking gap positioned to ignite gas discharged by the burner. Insulator holder means is provided for the electrodes, one of the aforementioned means is supportingly connected to the other.

3,427,118
IGNITION DEVICE FOR OIL-FIRED BOILERS

Bernhard Andress and Ludwig Kuchelbacher, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany
Filed July 1, 1966, Ser. No. 562,233
Claims priority, application Germany, July 2, 1965, S 97,949
U.S. Cl. 431—258 **3 Claims**
Int. Cl. F23q *7/06;* **F02c** *7/26*



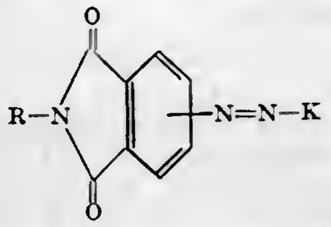
Ignition device combined with a boiler fired by crude oil includes a laser radiation source, excitation means for controlling it to issue pulses of optical radiation, and optical means for concentrating a beam of the pulses onto an oil-air mixture in the firing chamber of the boiler for producing an energy density large enough to attain the ignition temperature of the oil in a volume of the oil-air mixture sufficiently large so that, after decay of the radiation pulses, generation of heat within the volume is greater than heat loss therefrom whereby combustion of the oil-air mixture is maintained.

CHEMICAL

3,427,119
SYNTHETIC LINEAR POLYAMIDES WHICH HAVE BEEN COLORED WITH MONOAZO INDOLE PHTHALIMIDE DYES

Johannes Dehnert and Walter Grosch, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 7, 1965, Ser. No. 470,244
U.S. Cl. 8—41 **6 Claims**
Int. Cl. D06p *1/02, 3/24*

1. Textile materials of linear synthetic polyamides colored by compounds of the formula



wherein R represents a hydrogen atom, an aliphatic or cycloaliphatic radical and K represents the radical of an indole which is free from sulfonic acid groups and which is capable of coupling where azo is attached to 3-carbon of indole ring and 2-carbon of the indole ring has alkyl or aryl substituents.

3,427,120
PRODUCING METHOD OF CARBON OR CARBONACEOUS MATERIAL

Akio Shindo, Oyodo-ku, Osaka, Rokuro Fujii, Toyonaka-shi, and Isao Souma, Ibaraki-shi, Osaka-fu, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 17, 1963, Ser. No. 331,095
Claims priority, application Japan, Dec. 21, 1962, 37/56,270
U.S. Cl. 8—115.5 **2 Claims**
Int. Cl. C01b *31/07;* **C23c** *9/08*

1. A method of producing carbonaceous or carbon products that substantially retain their original shapes comprising treating polyvinyl alcohol materials in the form of fibers, fabrics, films, fine spherical particles or filaments by oxidizing said polyvinyl alcohol materials in air at a temperature between about 180° C. to about 200° C. producing a blackish-brownish product,

said heating step is performed in a nitrogen atmosphere at an increasing temperature at a rate of about 10° C. per hour from a temperature of above 250° C. to about 700° C. and further heating in a nitrogen atmosphere at an increasing temperature of about 50° C. per hour from a temperature of about 700° C. to about 1000° C. to produce carbon.

2. The method as set forth in claim 1 further comprising the subsequent step of heating in a nitrogen atmosphere from about 1000° C. to about 2500° C. to produce graphite.

3,427,121
WRINKLE-RESISTANT COTTON FABRICS WITH IMPROVED MOISTURE ABSORPTION

John G. Frick, Jr., and Andrew G. Pierce, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed June 24, 1963, Ser. No. 290,264
U.S. Cl. 8—115.6 **1 Claim**
Int. Cl. D06c *29/00;* **D06m** *1/00*

1. In a process for treating cotton fabrics with nitrogen-containing resins, the improvement which consists of incorporating into the resin-treating formulation a quantity of from about 5.0% to about 7.5% of tetraethylene glycol dimethyl ether.

3,427,122
SIZING COMPOSITIONS CONTAINING ACRYLAMIDE AND DIMETHYLOLATED ACETYLENE MONO-UREINE

Pierre Talet, Alfortville, France, assignor to Nobel-Bozel, Paris, France, a joint-stock company of France

No Drawing. Continuation-in-part of application Ser. No. 290,556, June 25, 1963. This application Oct. 19, 1965, Ser. No. 498,081

Claims priority, application France, Apr. 30, 1965, 15,467

U.S. Cl. 8—116.3 **9 Claims**
Int. Cl. D06m *13/34*

A cellulose textile dressing composition is provided comprising a condensate of one mole of dimethylolated acetylene-mono-ureine and 0.01 to 0.10 mole acrylamide, and a catalyst of glyoxylic acid.

3,427,123
PROCESS FOR THE MANUFACTURE OF PALLADIUM (II) HALIDES FROM METALLIC PALLADIUM

Hans Fernholz, Fischbach, Taunus, and Hans-Joachim Schmidt, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 24, 1967, Ser. No. 618,315
Claims priority, application Germany, Mar. 11, 1966, F 48,639

U.S. Cl. 23—87 **5 Claims**
Int. Cl. C01g *55/00, 1/06*

Halides of the bivalent palladium produced by treating metallic palladium having a large surface area with oxygen in the presence of carboxylic acids and in the presence of metal halides or ammonium halide.

3,427,124
METHOD OF PRODUCING DICALCIUM PHOSPHATE

David R. Boylan, Ames, Iowa, and Kuo Kang Feng, Arvida, Quebec, Canada, assignors to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa

Continuation-in-part of application Ser. No. 55,022, Sept. 9, 1960. This application June 18, 1965, Ser. No. 478,000

U.S. Cl. 23—109 **1 Claim**
Int. Cl. C01b *25/32, 25/30*

A method for the production of dicalcium phosphate by direct acidulation of phosphate rock utilizing a mixture of sulfuric and phosphoric acids wherein the formulation is determined by reference to a diagram of the quaternary system $CaSO_4—H_2SO_4—H_3PO_4—Ca_3(PO_4)_2$, the method employing steps which can be represented as a closed cycle on the diagram whereby once the method is operational, continuation is achieved through sequential additions of sulfuric acid and phosphate rock.

3,427,125

PROCESS FOR PREPARING HIGHLY PURE CALCIUM HYDROGEN PHOSPHATE DIHYDRATE

Masashi Hayakawa, Tokyo, and Makoto Kadotani and Kunio Ishikawa, Kanagawa-ken, Japan, assignors to Central Glass Co., Ltd., Yamaguchi-ken, Japan, a corporation of Japan

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,138

Claims priority, application Japan, Apr. 6, 1966, 41/21,651

U.S. Cl. 23—109 **7 Claims**
Int. Cl. C01b *25/32*

A process for preparing highly pure calcium hydrogen phosphate dihydrate suitable for use as a dentifrice polishing agent, by adding ammonia and a basic sodium salt to impure wet process phosphoric acid to precipitate and separate crystals of sodium ammonium hydrogen phosphate ($NaNH_4HPO_4 \cdot 4H_2O$) or so-called microcosmic salt, and by mixing a calcium salt such as calcium chloride to a solution of said microcosmic salt to precipitate calcium hydrogen phosphate dihydrate ($CaHPO_4 \cdot 2H_2O$) while maintaining the pH of said mixed liquid at 3.5 to 5.0, the temperature thereof at 45° C. or lower and the calcium to phosphorus mol ratio (Ca/P) thereof at 1.0 to 1.3.

3,427,126

PREPARATION OF WATER-INSOLUBLE SULPHIDES

Livio Cambi, Largo Rio de Janeiro 5, Milan, Italy

No Drawing. Filed June 26, 1964, Ser. No. 378,444

Claims priority, application Italy, July 1, 1963, 13,691/63

U.S. Cl. 23—138 **1 Claim**
Int. Cl. C01g *9/08*

This invention relates to the preparation of water-insoluble sulphides by the reaction of the corresponding oxides or oxygen-containing salts with sulphur in liquid water at temperatures of about 180–370° C., and pressures of about 10–250 atmospheres.

3,427,127

PROCESS FOR RECOVERING ALUMINUM VALUES FROM HEAT EXPANDABLE MATERIALS

Louis Stanton McCollum, 104 Roxbury St., Santa Clara, Calif. 95050

Continuation of application Ser. No. 124,099, July 14, 1961. This application May 9, 1966, Ser. No. 548,792

U.S. Cl. 23—143 **3 Claims**
Int. Cl. C01f *7/02;* **C22b** *3/00*

In a process for the treatment of heat-expandable volcanic glasses of silicous-aluminous nature, the steps comprising admixing particles thereof with an inorganic chloride in sufficient proportion to combine with at least a portion of the aluminum in said particles, the amount of said chloride being above about 25%, based on the weight of said particles, drying said admixture at a temperature up to about 850° F., heating said admixture at a temperature in the range between about 1200 and 2000° F. for a time sufficient to expand the particles and to react said chloride salt with the particle consituents, cooling the expanded product, digesting said particles in water and separating the expanded particles and soluble materials, admixing the separated expanded particles with hydrochloric acid and digesting said admixture, separating the digested solubles from the solids, and recovering the aluminum values from said solubles.

3,427,128

PROCESS OF PRODUCING RAMSDELLIT, A TYPE OF MANGANESE DIOXIDE

Alfred Schmier, Frankfurt am Main, Germany, assignor to Varta Petrix-Union Gesellschaft mit beschrankter Haftung, Ellwangen, Jagst, Germany, a German company
Filed Oct. 23, 1963, Ser. No. 318,238
Claims priority, application Germany, Oct. 27, 1962, P 30,460

U.S. Cl. 23—145 **4 Claims**
Int. Cl. C01g *45/02, 45/00*

A process for producing ramsdellit, a type of manganese dioxide, which comprises oxidizing manganese oxide hydrate with a particular aqueous inorganic oxidizing agent. Also a process which relates to producing ramsdellit from gamma-manganese dioxide with a certain aqueous oxidizing acid at elevated temperature. Ramsdellit is a type of manganese dioxide also referred to in the literature as ramsdellite.

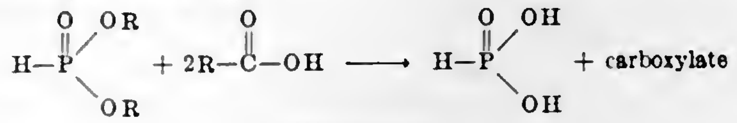
3,427,129

PROCESS FOR PREPARING ORTHO-PHOSPHOROUS ACID

Riyad R. Irani and Robert S. Mitchell, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 12, 1966, Ser. No. 578,464

U.S. Cl. 23—165 **9 Claims**
Int. Cl. C01b *25/16*

Phosphorous acid is produced by the following reaction at from 70°–200° C.



$$\mathrm{H{-}P({=}O)(OR)_2} + 2\,\mathrm{R{-}C({=}O){-}OH} \longrightarrow \mathrm{H{-}P({=}O)(OH)_2} + \text{carboxylate}$$

3,427,130

PROCESS FOR TREATING SILICIC ACIDS AND SILICATES

Ludwig Hüter, Weisskirchen, Taunus, and Christa Losenske and Dieter Schirmer, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 9, 1965, Ser. No. 512,696
Claims priority, application Germany, Dec. 16, 1964, D 46,070

U.S. Cl. 23—182 **16 Claims**
Int. Cl. C01b *33/18;* **B01d** *11/00*

A siliceous precipitate is filtered under pressure with carbon dioxide-containing water to effect the removal of cations contained in the precipitate. The filtration is desirably conducted at temperatures above 50° F. to the ambient boiling point of the carbon dioxide-containing water and at pressures between about 1 and about 40 atmospheres gauge. After the cations have been removed from the siliceous precipitate, the precipitate may be reloaded with a desired quantity of cations by contacting the precipitate with an aqueous solution containing the cations. For example, an aqueous solution containing dissolved sodium bicarbonate may be employed as a wash to reload the precipitate with a desired level of sodium.

3,427,131

METHOD OF PREPARING TETRABORON-SILICIDE (B_4Si)

Vlado I. Matkovich, Youngstown, N.Y., and Ervin Colton, Wauwatosa, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Continuation-in-part of application Ser. No. 50,912, Aug. 22, 1960, which is a division of application Ser. No. 820,886, June 17, 1959. This application Apr. 13, 1964, Ser. No. 360,477

U.S. Cl. 23—204 **4 Claims**
Int. Cl. C01b *35/00, 33/00*

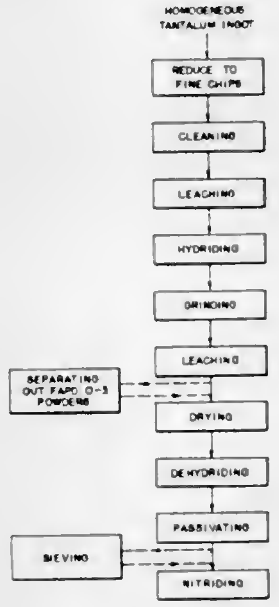
A method of making tetraboronsilicide, B_4Si, wherein the elemental constituents, in a finely divided state, are mixed together in a ratio of at least one part silicon for four parts boron. The mixture has a brownish color. The mixture is then heated to a temperature of at least 2000° F., but below 2550° F. for a period of from 2 to 8 hours. When the brownish color disappears, the mixture has formed into tetraboronsilicide.

3,427,132

TANTALUM NITRIDE POWDER AND METHOD FOR ITS PREPARATION

Edward J. Goon, Needham, Mass., assignor to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts
Filed Apr. 12, 1967, Ser. No. 630,366

U.S. Cl. 23—204 **5 Claims**
Int. Cl. C01b *21/06;* **C22c** *29/00*



Tantalum nitride powders, of homogeneous epsilon-phase composition made by hydriding tantalum, milling to fine powder, dehydriding and nitriding the powder.

3,427,133

PROCESS FOR PRODUCING TRANS-DIFLUORODIAZINE

Gerald L. Hurst, West Covina, Calif., and Saadideen I. Khayat, Cleveland, Ohio, assignors to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware
No Drawing. Filed Mar. 29, 1966, Ser. No. 538,236

U.S. Cl. 23—205 **6 Claims**
Int. Cl. C01b *21/52*

This invention comprises a process for the preparation of a trans-difluorodiazine (trans-N_2F_2) wherein tetrafluorohydrazine (N_2F_4) is reacted under carefully controlled conditions, including temperature, pressure and reaction time, with anhydrous $AlCl_3$, $FeCl_3$, $FeSO_4$, $MnCl_2$, and $NiCl_2$. The reaction is preferably conducted at a temperature of −112° C. to 30° C., a pressure of 10 mm. Hg to atmospheric, and a reaction period of not more than one minute.

3,427,134

FERROMAGNETIC COMPOUNDS AND METHOD OF PREPARATION

Frederic Holtzberg, Pound Ridge, and Siegfried J. Methfessel, Montrose, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,180

U.S. Cl. 23—204 **12 Claims**
Int. Cl. C01f *17/00*

1. A rare earth compound having a formula A_4M_3 wherein A is a rare earth selected from the group consisting of Gd, Tb, and Dy and M is a metalloid selected from the group consisting of Sb and Bi.

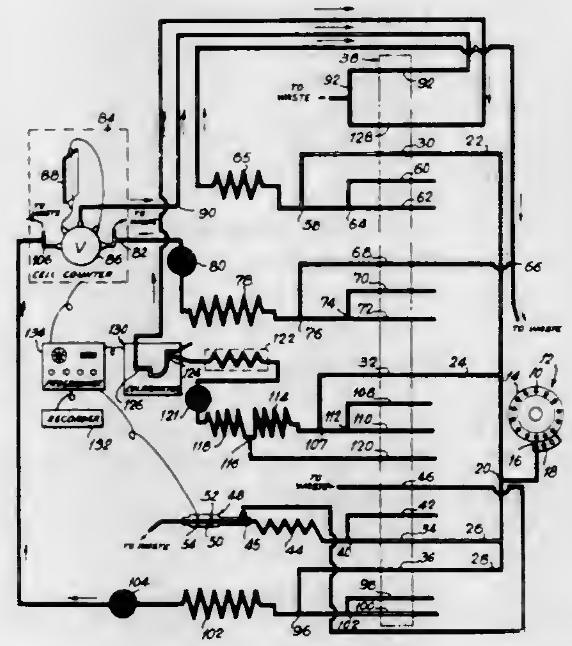
10. A rare earth solid solution system having a formula $(A_yA'_{1-y})_4(Sb_xBi_{1-x})_3$ wherein A and A′ are rare earths selected from the group consisting of Gd, Tb, and Dy and each is different; $1>y>0$ and $1>x>0$.

3,427,135

HEMATOLOGY APPARATUS

Milton H. Pelavin, White Plains, William A. Weschler, Sparkill, and Kent M. Negersmith, Mahopac, N.Y., assignors to Technicon Instruments Corporation, Ardsley, N.Y., a corporation of New York
Filed July 11, 1966, Ser. No. 564,291

U.S. Cl. 23—253 **8 Claims**
Int. Cl. G01n *33/16, 31/00*



1. Apparatus for the analysis of a plurality of blood samples with respect to a given number of characteristics of blood, said apparatus comprising: supply means for providing the blood samples sequentially to form an initial stream of sequential samples wherein each sample is in sequence with the preceding and succeeding samples; dividing means coupled to said supply means for receiving the initial stream of sequential samples and for dividing such initial stream into a plurality, equal to the given number of characteristics, of quotient streams, each sequential increment in each of such quotient streams being a fractional portion of a respective sequential sample in the initial stream; means coupled to said dividing means, for receiving and for treating one of the quotient streams for red blood cell counting; means coupled to said red blood cell counting treating means, for receiving and examining the treated quotient stream to determine the red blood cell count of each sequential increment thereof and for providing a signal responsive to such determination; means, coupled to said dividing means, for receiving and for treating one of the quotient streams for hematocrit analysis; means, coupled to said hematocrit treating means, for receiving and examining the treated quotient stream to determine the hematocrit of each sequential increment thereof and for providing a signal responsive to such determination; and recording means coupled to said red blood cell count determining means and to said hematocrit determining means for receiving the respective signals therefrom and for recording the signals with respect to the increments from a common sample of the initial stream in correlation.

3,427,136
DIAZONIUM COMPOUNDS OF THE DECABORATE CAGE RADICAL

Walter H. Knoth, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 186,270, Apr. 9, 1962. This application Nov. 19, 1963, Ser. No. 324,885

U.S. Cl. 23—356 **18 Claims**

Int. Cl. C01c *3/16;* **C01b** *21/54, 21/52, 21/00*

Inner diazonium compounds of decaborate cage compounds can be prepared by reacting a salt of a decahydrodecaborate anion or a sulfide substituted derivative thereof with nitrous acid followed by reduction, or by diazotization of amino substituted decaborate anions (which can also be otherwise substituted). Additional substituents can be introduced by reacting the diazonium compound with electrophilic reagents.

3,427,137
PHOSPHONITRILE POLYMER

Charles D. Schmulbach, Murphysboro, Ill., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,245

U.S. Cl. 23—357 **3 Claims**

Int. Cl. C01b *25/00*

Chlorinated phosphonitrile polymers having the empirical formula $Cl_5P_3N_3$ are prepared by reacting hydrogen azide with phosphorus trichloride at temperatures below about −50° C. in the presence of ultraviolet light to form an intermediate composition having the empirical formula $Cl_9P_5N_8$ and then heating the intermediate composition above 140° C. The resultant polymers are stable to heat and hydrolysis and are useful in fire proofing fabrics or as protective coatings.

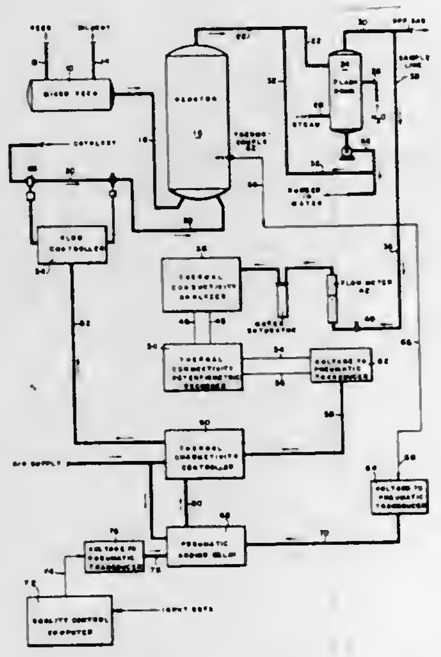
3,427,138
PROCESS CONTROL SYSTEM FOR MAKING BUTYL RUBBER

John F. Donnelly, Michael J. Larsen, and William O. Webber, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,219

U.S. Cl. 23—260 **1 Claim**

Int. Cl. B01j *1/00;* **C08f** *1/72*



In a system for making butyl rubber, the rate of flow of catalyst to the reactor in which the butyl rubber is produced is adjusted by a variable pneumatic control signal which is variably responsive to variations in output signals from the hydrocarbon off gases and the temperature in the reactor; a preselected viscosity of the butyl rubber may also be used for producing a pneumatic output signal which is added to the signals employed in controlling catalyst flow rate.

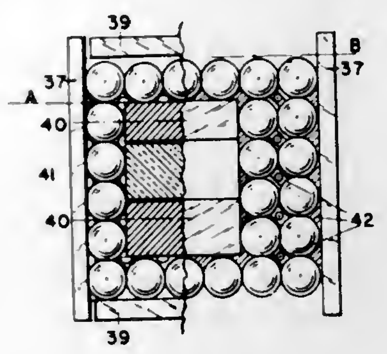
3,427,139
RIGID STRUCTURE COMPRISED OF HOLLOW, SEALED SPHERES BONDED TOGETHER

William C. Gregory, 520 N. Burris Ave., Compton, Calif. 90221

Continuation-in-part of application Ser. No. 474,118, July 22, 1965. This application June 7, 1967, Ser. No. 657,443

U.S. Cl. 29—183 **3 Claims**

Int. Cl. E04b *1/74*



A rigid structure comprised of abutting, hollow, sealed spheres bonded together into a predetermined shape. The interiors of each of the spheres are maintained at a pressure substantially different from atmospheric pressure at ground level. The structure is rigidified by a plurality of sealed tubes disposed in spaces between the spheres and abut the surrounding spheres to reinforce the structure.

3,427,140
TIP OF RUTHENIUM METAL FOR SOLDERING IRON

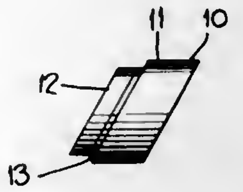
David Wade Rhys, Gerrards Cross, and Roy David Berry, High Wycombe, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 3, 1966, Ser. No. 569,853

Claims priority, application Great Britain, Aug. 16, 1965, 35,014/65; Jan. 11, 1966, 1,296/66

U.S. Cl. 29—199 **9 Claims**

Int. Cl. B23k *3/02*



Tip for soldering iron has a ruthenium metal body that is coated with palladium, platinum and/or copper.

3,427,141
NITROGEN- AND PHOSPHORUS-CONTAINING GASOLINE COMPOSITIONS

Clark O. Miller, Willoughby Hills, and Casper J. Dorer, Jr., Lyndhurst, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 314,639, Oct. 8, 1963. This application Feb. 9, 1967, Ser. No. 614,825

U.S. Cl. 44—63 **8 Claims**

Int. Cl. C10l *1/26, 1/24, 1/14*

Compositions prepared by reacting at a temperature below 100° C., a phosphoric acid mono- or diester with a di- or trialkylamine and a partially acylated and oxyalkylated polyalkylene polyamine are useful as gasoline additives to decrease carburetor icing and provide detergency to decrease deposits in the carburetor throttle area.

3,427,142
MANUFACTURE OF FLAT GLASS ON A MOLTEN METAL BATH

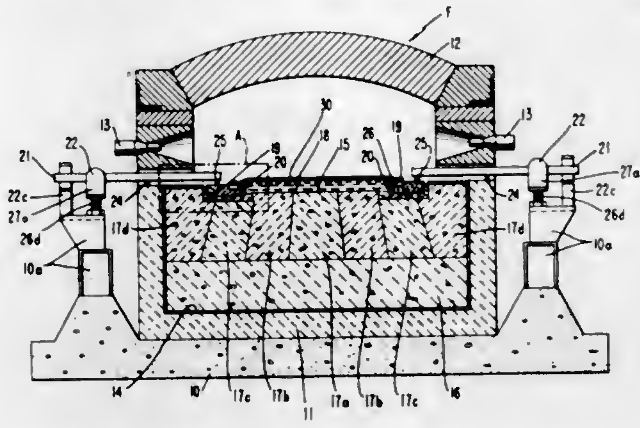
Stephane Dufaure de Lajarte, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Haute-de-Seine, France

Filed June 28, 1965, Ser. No. 467,357

Claims priority, application France, July 1, 1964, 980,303/64; Apr. 30, 1965, 15,315/65

U.S. Cl. 65—65 **10 Claims**

Int. Cl. C03b *18/02*



Flat glass sheet is continuously made by the flotation process, the edges of the sheet resting on a series of individually adjustable, individually temperature-controllable supports which make it possible to locally vary the position of the boundaries of the flotation bath to perfect the handling of the sheet.

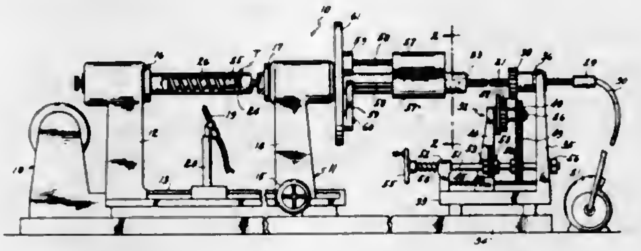
3,427,143
APPARATUS FOR FORMING A HELICALLY SHAPED GLASS TUBE

Edward D. Deery, Edward J. Deery, and Arthur R. Deery, Yonkers, N.Y., assignors to Heights Laboratory Glass Inc., Yonkers, N.Y., a corporation of New York

Filed June 8, 1965, Ser. No. 462,342

U.S. Cl. 65—279 **5 Claims**

Int. Cl. C03b *23/04*



Apparatus for imparting a helical configuration to thin-walled glass tubing induced by a pressure actuated collapse of heated tubing around a forming mandrel and wherein said tube is rotatably supported at a plurality of spaced locations so as to prevent undesired deformation thereof during a progressive forming operation wherein the internally disposed mandrel is rotated both conjointly with said tube and independently with respect thereto.

3,427,144
FERTILIZER COMPRISING UREA AND NITRILOTRIACETONITRILE

Charles Kapar, Brooklyn, N.Y., assignor, by mesne assignments, to W. R. Grace & Company, New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 7, 1965, Ser. No. 493,894

U.S. Cl. 71—28 **2 Claims**

Int. Cl. C05c *9/00, 13/00*

A fertilizer composition comprising a mixture of urea and nitrilotriacetonitrile which is characterized by slow-release properties.

3,427,145
METHOD OF AGGLOMERATING POTASSIUM CHLORIDE USING HYDROFLUORIC ACID OR METALLIC FLUORIDE

James R. West, 432 Stratford Road, South Hempstead, N.Y. 11550

No Drawing. Continuation-in-part of application Ser. No. 368,700, May 18, 1964. This application Sept. 22, 1967, Ser. No. 669,727

U.S. Cl. 71—61 **3 Claims**

Int. Cl. B01j *2/28;* **C05d** *1/02;* **C01d** *3/22*

A method for agglomerating finely divided fertilizer grade potash material consisting essentially of potassium chloride involving the steps of mixing the fines with a solution containing about 10% by weight of hydrofluoric acid or metallic fluorides in a proportion by weight relative to said potash material of about 2/100, then forming the wetted particles into aggregates by conventional apparatus such as a pelletizing drum, disc or the like and then drying said aggregates at a temperature of about 200–650° C.

3,427,146
PHENOXYPYRIDAZINES AS HERBICIDES

Saburo Tamura, Tokyo, Tetsuo Takematsu, Utsunomiya, and Kozo Oyamada and Teruomi Jojima, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

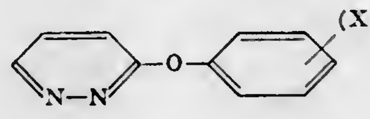
No Drawing. Filed Mar. 23, 1966, Ser. No. 536,613

Claims priority, application Japan, May 26, 1965, 40/31,001; Sept. 6, 1965, 40/54,520; Oct. 16, 1965, 40/63,445; Mar. 19, 1966, 41/17,042, 41/17,043

U.S. Cl. 71—76 **14 Claims**

Int. Cl. A01m *9/22;* **C07d** *51/04*

Compounds for the control of undesired plants and for retarding plant growth, which have the formula



wherein X is methyl or chlorine and *n* is an integer of 1 to 5 inclusive; provided that when *n* is an integer of 1 to 3 inclusive, X may be the same or different and, when *n* is an integer of 4 or 5, each X represents chlorine.

The invention relates also to some of the inorganic and trichloroacetic acid addition salts of the compounds and includes further a method for the control of undesired plants and for retarding plant growth by means of said compounds.

3,427,147
IMINODIOXOLANES AS HERBICIDES

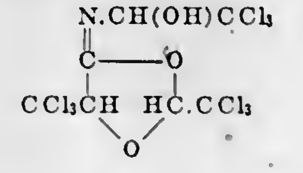
Heinz J. Dietrich, Bethany, George G. King, New Haven, and Joseph V. Karabinos, Orange, Conn., assignors to Olin Mathieson Chemical Corporation

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,210

U.S. Cl. 71—88 **4 Claims**

Int. Cl. A01m *9/28;* **C07d** *13/04*

Wallach's compound having the formula



is applied as a herbicide for controlling the growth of grasses.

This invention relates to herbicidal compositions and methods in which 2,5-bis(trichloromethyl)-N-(1-hydroxy-2,2,2-trichloroethyl)-4-iminodioxolane is the essential herbicidal ingredient.

3,427,148

PROCESS OF PRODUCING IRON-COKE BODIES

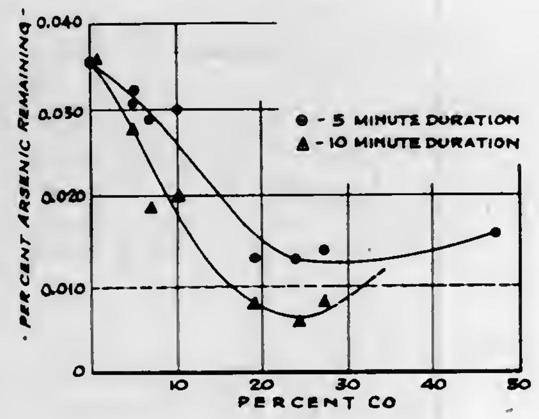
Werner Peters, Wattenscheid, Heinrich Echterhoff, and Heribert Bertling, Essen, Germany, assignors to Bergwerksverbond G.m.b.H., Essen, Germany
No Drawing. Filed Oct. 10, 1966, Ser. No. 585,233
U.S. Cl. 75—4 **9 Claims**
Int. Cl. C22b *1/14*

Production of ore-coke bodies characterized by high strength characteristics and high contents of reduced material by mixing finely divided ore and coking coal, adding water to the resultant mixture and forming pellets therefrom, coking the pellets by contacting the same with an inert solid carrier heated to the coking temperature and cooling the coked pellets.

3,427,149

PROCESS FOR REMOVING ARSENIC FROM IRON ORE

Arthur M. Schwarz, Munster, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 527,366
U.S. Cl. 75—6 **20 Claims**
Int. Cl. C21b *1/04;* **C22b** *1/02*

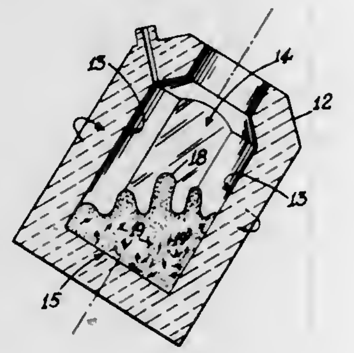


Treating a fluxed or unfluxed iron ore containing arsenic as an impurity to provide a heat treated iron ore product having an arsenic content below 0.015 percent by weight and suitable for use in a blast furnace by contacting the iron ore at a temperature between about 1600° F. and 2000° F. with a controlled reducing atmosphere.

3,427,150

PROCESS FOR MANUFACTURING IRON OR STEEL WITH LOW SULPHUR CONTENT

Conrad F. Niehaus, Johannesburg, Transvaal, Republic of South Africa, assignor to Niehaus Engineering S.A., Fribourg, Switzerland
Filed Aug. 9, 1966, Ser. No. 571,287
Claims priority, application Switzerland, Aug. 19, 1965, 11,685/65
U.S. Cl. 75—55 **1 Claim**
Int. Cl. C21c *7/02*

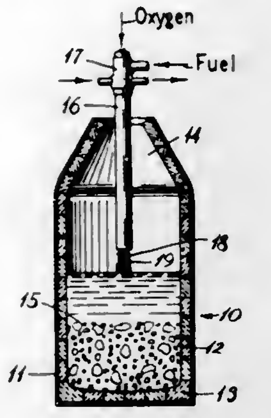


A method of de-sulphurizing ferrous material whereby a slag forming de-sulphurizing agent is added to the molten material contained in a vessel, the vessel is then rotated such that opposed wave trains are generated on the surface of the molten material. These wave trains then merge to define a central disturbance acting to project the agent deep into the metal in a path that has currents which move in a form resembling a figure **8**.

3,427,151

PROCESS AND APPARATUS FOR INTRODUCING A GASEOUS TREATING STREAM INTO A MOLTEN METAL BATH

Robert E. Koudelka, Long Branch, Cornelius S. Arnold, Cranford, and Dewitt T. Kelley, Nixon, N.J., assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 340,844, Jan. 6, 1964. This application June 19, 1967, Ser. No. 649,073
U.S. Cl. 75—59 **11 Claims**
Int. Cl. C21c *5/32, 5/46*

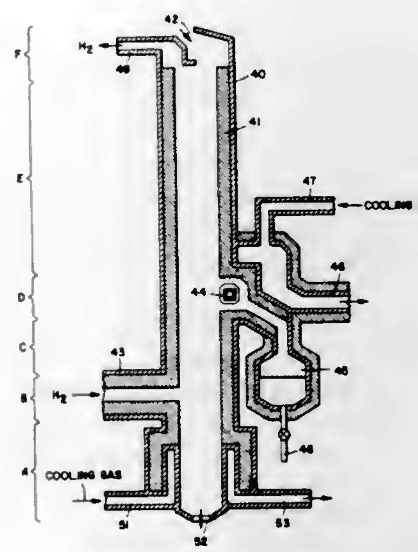


Process consists of providing a stream of hot combustion gases to surround a high velocity treating stream, such as oxygen, being discharged from a roof jet into a molten metal bath. The burning gases form a continuous shroud which acts to confine the treating stream and prevent such stream from naturally diverging after it is discharged from a metallurgical lance nozzle. This permits penetration of the treating stream through a slag layer without appreciable splashing, and allows the lance to be operated from heights substantially above the molten metal bath surface.

3,427,152

PRODUCTION OF MAGNESIUM BY THERMAL TREATMENT OF MAGNESIUM OXIDE UTILIZING COUNTERCURRENTLY FLOWING HOT INERT GAS

Benjamin Eisenberg, Parsippany, and Ellington M. Magee, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 9, 1965, Ser. No. 512,686
U.S. Cl. 75—67 **8 Claims**
Int. Cl. C22b *5/04, 45/00*



Magnesium is produced by the thermal treatment of a mixture of magnesium oxide and a reducing agent wherein the necessary heat is imparted by a preheated inert gas which is countercurrently flowed with respect to the magnesium oxide. A preferred inert gas comprises hydrogen utilized in a shaft kiln wherein the magnesium is withdrawn from an intermediate point and condensed.

3,427,153

METHOD OF PREPARING ALLOY BLACKS

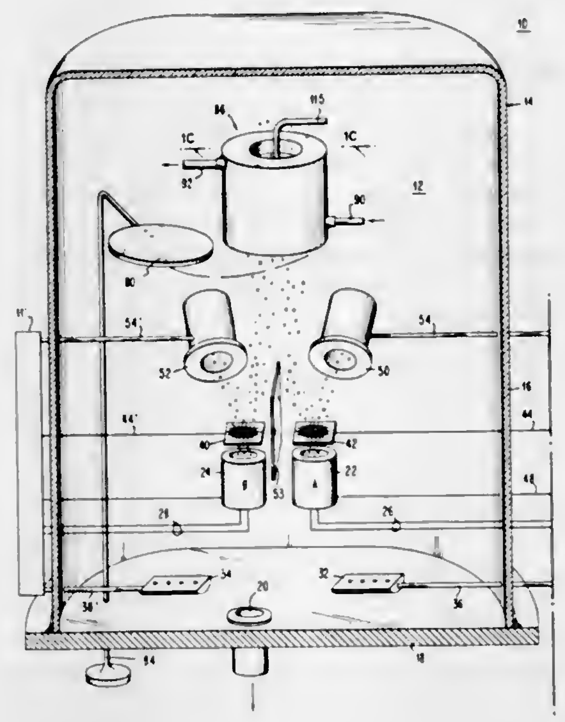
Peruvemba Swaminatha Venkatesan, Bronx, and Melvin Yarish, Brooklyn, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
No Drawing. Filed June 11, 1964, Ser. No. 374,274
U.S. Cl. 75—108 **2 Claims**
Int. Cl. C22c *1/06, 5/00*

An improved method of preparing alloy blacks is described. The method comprises admixing salts of the desired metals of the alloy in the proper ratios, forming a co-precipitate of the metals by addition of ammonium hydroxide to the salt solutions, and reducing the co-precipitated hydroxide.

3,427,154

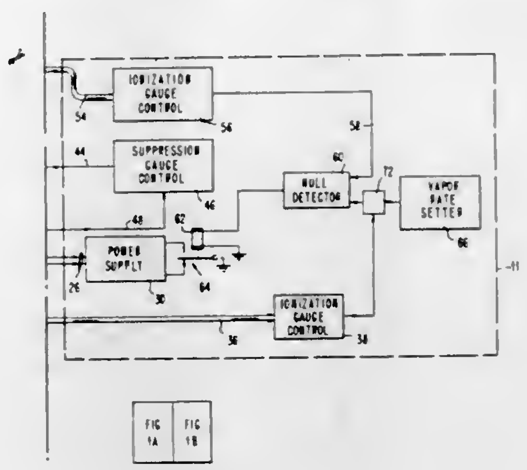
AMORPHOUS ALLOYS AND PROCESS THEREFOR

Siegfried R. Mader, Putnam Valley, and Arthur S. Nowick, Scarsdale, N.Y., and Hans Widmer, Maichingen, Germany, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 11, 1964, Ser. No. 395,718
U.S. Cl. 75—134 **27 Claims**
Int. Cl. C22c *1/00, 5/00;* **H01v** *11/12*



An alloy material which has an amorphous structure that is metastable to a relatively high temperature, e.g., room temperature of 20° centigrade. Vapors of the components of a multicomponent alloy system, e.g., binary system or ternary system, with particular compositions are quenched on a relatively cold substrate to form the amorphous structure. The multi-component alloy system has particular size factors of the components, insolubility range, and average melting temperature.

Since the alloy material is non-equilibrium, it transforms into an equilibrium or near equilibrium structure when sufficient thermal energy is imparted through heating. Because the material has a significant degree of metastability, the transformation requires a relatively large amount of thermal activation. Illustratively, the following alloys have been prepared with amorphous structure where percentages are atomic percent: Cu+Ag in the range of compositions from Cu+35% Ag to Cu+65% Ag; Cu+Mg in the range of compositions from Cu+20% Mg to Cu+90% Mg; Au+Mg as Au+75% Mg; and Co+Ag as Co+17% Ag and Co+50% Ag.



3,427,155

BRAZING ALLOY

Charles W. Fox, Kokomo, Ind., and Gerald M. Slaughter, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed May 3, 1967, Ser. No. 637,043
U.S. Cl. 75—170 **4 Claims**
Int. Cl. C22c *39/44, 39/20*

An alloy consisting of nickel, germanium, iron, and either or both chromium and silicon useful in brazing stainless steels and high nickel alloys.

3,427,156

SINTERING METHOD AND ARTICLE MANUFACTURED THEREBY

Rudolf Reinstadler, Burghaun, Kreis Hunfeld, Germany, assignor to Sintermetallwerk Krebsoge G.m.b.H., Krebsoge, Rhineland, Germany, a corporation of Germany
Filed Dec. 14, 1965, Ser. No. 513,744
Claims priority, application Germany, Dec. 22, 1964, S 94,768
U.S. Cl. 75—214 **5 Claims**
Int. Cl. B22f *3/12*

Sintering method for manufacturing a body of relatively low electrical conductivity and high saturation induction includes the step of sintering at a temperature of between about 700° C. and 1150° C. a sinter blank consisting essentially of an iron powder having a particle size of from about 0.06 to about 0.4 mm.

3,427,157

XEROGRAPHIC PROCESS UTILIZING A PHOTOCONDUCTIVE ALLOY OF THALLIUM IN SELENIUM

Peter J. Cerlon, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,626
U.S. Cl. 96—1.4 **7 Claims**
Int. Cl. G03g *13/22, 7/00*

A photoconductive alloy comprising an amorphous film of from about 0.0001 percent by weight to about 5 percent by weight of thallium in selenium.

3,427,158

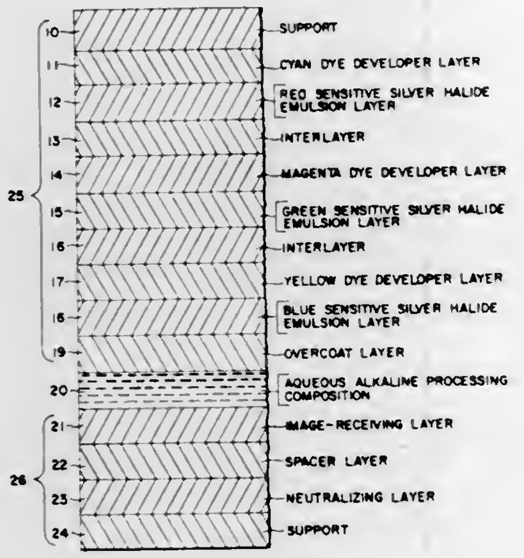
NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES

David P. Carlson, Westboro, and Jerome L. Reid, Watertown, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed June 2, 1966, Ser. No. 554,743

U.S. Cl. 96—3 **17 Claims**

Int. Cl. G03c *7/00*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SUPPORT
CYAN DYE DEVELOPER LAYER
RED SENSITIVE SILVER HALIDE EMULSION LAYER
INTERLAYER
MAGENTA DYE DEVELOPER LAYER
GREEN SENSITIVE SILVER HALIDE EMULSION LAYER
INTERLAYER
YELLOW DYE DEVELOPER LAYER
BLUE SENSITIVE SILVER HALIDE EMULSION LAYER
OVERCOAT LAYER
AQUEOUS ALKALINE PROCESSING COMPOSITION
IMAGE-RECEIVING LAYER
SPACER LAYER
NEUTRALIZING LAYER
SUPPORT

1. A a product, a photosensitive element which comprises, in combination, a support layer, at least two selectively sensitized gelatino silver halide emulsion layers each having a dye, which dye is a silver halide developing agent, of predetermined color associated therewith and a layer, intermediate said emulsion layers, comprising a processing composition permeable polymer containing a diffusible gelatin hardening agent substantially inert with respect to said polymer.

3,427,159

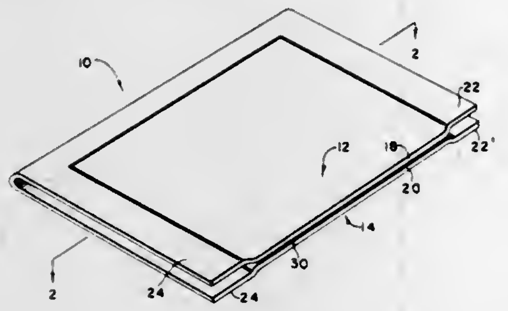
DIFFUSION TRANSFER PROCESS UTILIZING HEAT TRANSFER

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 25, 1963, Ser. No. 297,559

U.S. Cl. 96—29 **6 Claims**

Int. Cl. G03c *5/54;* **G03d** *9/00*



Processing of a diffusion transfer film unit is initiated outside of the camera at relatively low tempeartures, e.g., below about 60° F., with the film unit being placed within a heat conductive film holder promptly after removal from the camera. The heat conductive film holder may be constructed of thin aluminum sheets and preferably is prewarmed prior to insertion therein of the film unit.

3,427,160

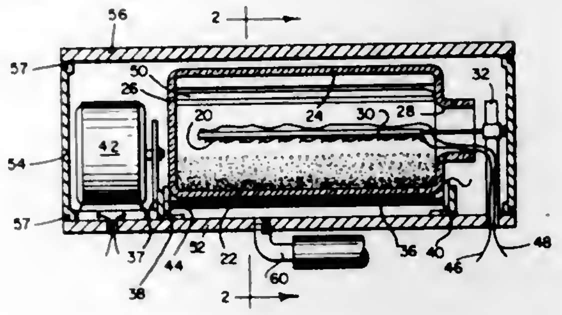
CAPSULAR PRODUCTS

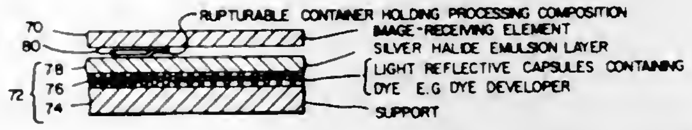
William J. McCune, Jr., South Lincoln, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 108,774, May 9, 1961. This application Apr. 26, 1966, Ser. No. 545,509

U.S. Cl. 96—29 **11 Claims**

Int. Cl. G03c *7/30*

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RUPTURABLE CONTAINER HOLDING PROCESSING COMPOSITION
IMAGE-RECEIVING ELEMENT
SILVER HALIDE EMULSION LAYER
LIGHT REFLECTIVE CAPSULES CONTAINING DYE E.G DYE DEVELOPER
SUPPORT

This invention relates to capsules adapted to retain solid and fluid materials and to the use of such capsules in photographic color processes for forming monochromatic and multichromatic images and to photographic products for carrying out said processes, wherein the capsules include a substantially continuous film-forming polymeric layer surrounding a nucleus comprising color-providing material, for example, dye developer, having a substantially continuous metallic layer thereover, for example, a substantially continuous layer comprising an elemental metal.

3,427,161

PHOTOCHEMICAL INSOLUBILISATION OF POLYMERS

Urbain Leopold Laridon and Gerard Albert Delzenne, Wilrijk-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Feb. 25, 1966, Ser. No. 529,943

Claims priority, application Great Britain, Feb. 26, 1965, 8,480/65

U.S. Cl. 96—35.1 **17 Claims**

Int. Cl. G03c *1/68*

13. Light sensitive polymeric materials comprising the homogeneous mixture of (A) a soluble, light sensitive polymeric material taken from the group consisting of (i) polymers carrying side substituents possessing carbon-to-carbon unsaturation of the acryl or lower alkylacryl type, and (ii) polycondensation products of aliphatic or aromatic diols with aliphatic dicarboxylic acids possessing side-chain unsaturation, and (B) a synergistic activating mixture consisting of two activating agents of which one is benzophenone, p,p'-dialkylamino benzophenone or fluorenone, and the other is a different activating agent taken from the group consisting of benzoin, benzoin methyl ether, anthraquinone, 2-methyl anthraquinone, benzophenone, benzil, xanthone, 1,3,5-triacetylbenzene, fluorenone, fluorene, diacetyl, propiophenone and benzaldehyde.

16. Process for producing a photographic resist image by the photochemical insolubilisation of a light-sensitive polymeric material according to claim 13, wherein a photographic element is exposed to actinic light through a process transparency, said photographic element comprising a support having thereon a layer of said light-sensitive polymeric material, whereby in the exposed areas said light-sensitive polymeric material is cross-linked to the insoluble state and the soluble polymeric material in the unexposed areas is removed, thereby forming a photographic resist image.

3,427,162

DIAZOTYPE MATERIALS AND METHODS FOR PRODUCING DIAZOTYPE IMAGES

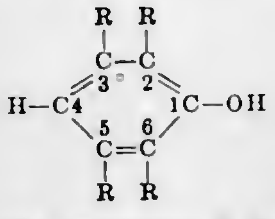
Bernard I. Halperin, Glen Aubrey, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,083

U.S. Cl. 96—49 **7 Claims**

Int. Cl. G03c *1/58, 5/34*

A method for producing high opacity diazotype images whereby a material containing a light-sensitive diazonium compound is selectively exposed to light so as to decompose said compound in the portion of said material where the light impinges, and whereby substantially anhydrous ammonia is applied at a pressure of about 35 p.s.i.g. to 985 p.s.i.g. so as to couple said undecomposed diazonium compound with a coupler compound having the formula



wherein, in a specific compound, R is other than hydrogen at a 2,3,5-, 2,3,6- or 2,3,5,6-position and R is a radical selected from the group consisting of hydrogen, aryl, alkyl, alkene and aralkyl radicals and said radical is unsubstituted or substituted by radicals selected from the group consisting of carboxy, hydroxy, carbonyl and amino, thereby producing a high opacity image.

3,427,163

DIAZOTYPE MATERIALS AND METHODS FOR PRODUCING DIAZOTYPE IMAGES

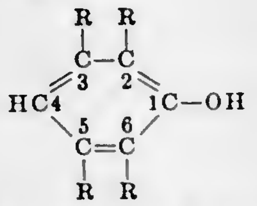
Bernard I. Halperin, Glen Aubrey, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,101

U.S. Cl. 96—49 **7 Claims**

Int. Cl. G03c *1/58, 5/34*

A method for producing high opacity diazotype images whereby a material containing a light-sensitive diazonium compound is selectively exposed to light so as to decompose said compound in the portion of said material where the light impinges, and whereby substantially anhydrous ammonia is applied at a pressure of about 35 p.s.i.g. to 985 p.s.i.g. so as to cause coupling with said undecomposed diazonium compound with a coupler having the general formula



wherein, in a specific compound, R is other than hydrogen only at the 2,3-, 2,5- or 2,6-positions and R is a radical selected from the group consisting of hydrogen, halogen, aryl, alkyl, alkene and aralkyl radicals, thereby producing a high opacity image.

3,427,164

DIAZOTYPE MATERIALS AND METHODS FOR PRODUCING DIAZOTYPE IMAGES

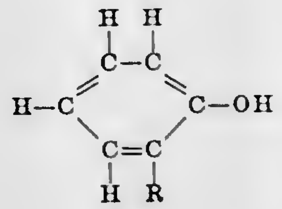
Bernard I. Halperin, Glen Aubrey, N.Y., and James O. Thompson, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,140

U.S. Cl. 96—49 **7 Claims**

Int. Cl. G03c *1/58, 5/34*

A method for producing high opacity diazotype images whereby a material containing a light-sensitive diazonium compound is exposed to light so as to decompose said compound in the portion of said material where the light impinges, and whereby substantially anhydrous ammonia is applied at a pressure of about 35 p.s.i.g. to 985 p.s.i.g. so as to cause coupling with said undecomposed diazonium compound and a coupler compound having the formula



where R is a radical selected from the group consisting of aryl, alkyl, alkene and aralkyl radicals, and said radical is unsubstituted or substituted by a radical selected from the group consisting of carboxy, hydroxy, carbonyl, alkoxy, and amino, thereby producing a high opacity image.

3,427,165

DIAZOTYPE MATERIALS AND METHODS FOR PRODUCING DIAZOTYPE IMAGES

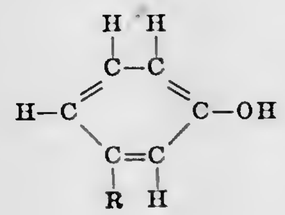
Robert B. Champ, Slingerlands, and Bernard I. Halperin, Glen Aubrey, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,897

U.S. Cl. 96—49 **7 Claims**

Int. Cl. G03c *1/58, 5/34*

A method for producing high opacity diazotype images whereby a material containing a light-sensitive diazonium compound is selectively exposed to light so as to decompose said compound in the portion of said material where the light impinges and whereby substantially anhydrous ammonia is applied at a pressure of about 35 p.s.i.g. to 985 p.s.i.g. so as to couple said undecomposed diazonium compound with a coupler having the formula



wherein, in a specific compound, R is other than hydrogen only at the 2,3-, 2,5- or 2,6-positions and R is a radical selected from the group consisting of hydrogen, aryl, alkyl, alkene and aralkyl radicals, and said radicals unsubstituted or substituted by a radical selected from the group consisting of carboxy, hydroxy, carbonyl and amino, thereby producing a high opacity image.

3,427,166

STABILIZATION OF ANIMAL AND POULTRY FEEDS CONTAINING A TETRACYCLINE ANTIBIOTIC

Anthony Abbey, Jamesburg, Robert Berendt Fortenbaugh, Gladstone, and Irving Klothen, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 21, 1964, Ser. No. 339,088

U.S. Cl. 99—2 **11 Claims**

Int. Cl. A23k *1/175*

Stabilizing animal and poultry feeds containing an edible animal feedstuff and dried fermentation harvest mash solids containing a tetracycline antibiotic against losses in potency for extended periods of time by adding said fermentation mash and prior to harvest thereof, an effective amount of aluminum ion.

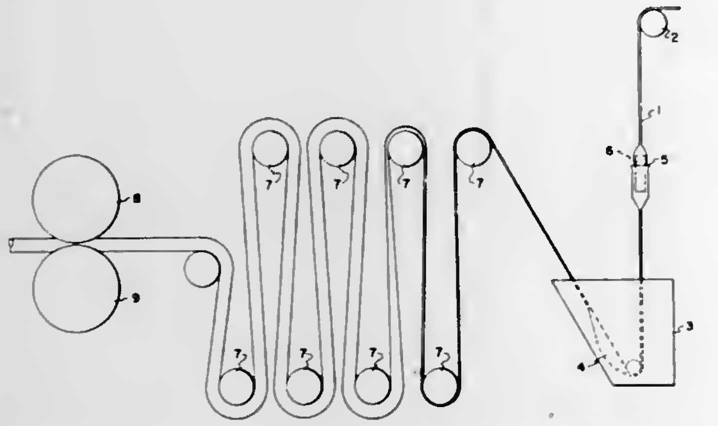
3,427,167
PRODUCT AND PROCESS FOR ENHANCING THE GRAPE-LIKE FLAVOR OF FOOD PRODUCTS
James L. Michael, Arlington Heights, and Harold W. Jackson, Libertyville, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 30, 1965, Ser. No. 483,789
U.S. Cl. 99—140 **6 Claims**
Int. Cl. A23l *1/26*

Enhancing the grape-like flavor of food products by adding thereto an effective amount of methyl - beta-hydroxybutyrate, ethyl-beta-hydroxybutyrate or mixtures thereof.

3,427,168
METHOD OF PRODUCING TUBULAR SAUSAGE CASINGS
Albin F. Turbak and Henry J. Rose, Danville, Ill., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,455
U.S. Cl. 99—176 **2 Claims**
Int. Cl. A22c *13/00*

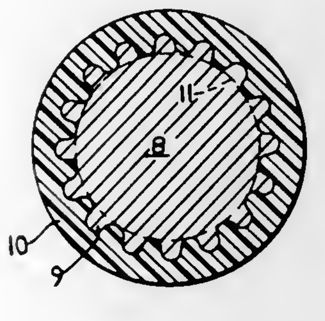
A cellulosic sausage casing having a color approximating that of natural gut and adherent toward dry sausage compositions during the processing of dry sausages therein is prepared by incorporating soluble protein, such as gelatin, and whole blood or blood fractions, containing a small amount of hydrogen peroxide, in the viscose from which the casing was prepared. Separate solutions are prepared of soluble protein in water and of whole blood in water containing about 0.1–0.5% hydrogen peroxide. These solutions are mixed and added to viscose immediately prior to extrusion thereof in an amount sufficient to produce a concentration of 0.5–5% protein and 0.1–10% blood or blood fractions in the extruded casing to color the casing and provide properties of adhesion toward dry sausage meat when processed therein.

3,427,169
CASING FOR DRY SAUSAGES
Henry J. Rose and Albin F. Turbak, Danville, Ill., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 394,817, Sept. 8, 1964. This application Dec. 23, 1965, Ser. No. 515,952
The portion of the term of the patent subsequent to Dec. 26, 1984, has been disclaimed
U.S. Cl. 99—176 **3 Claims**
Int. Cl. A22c *13/00*



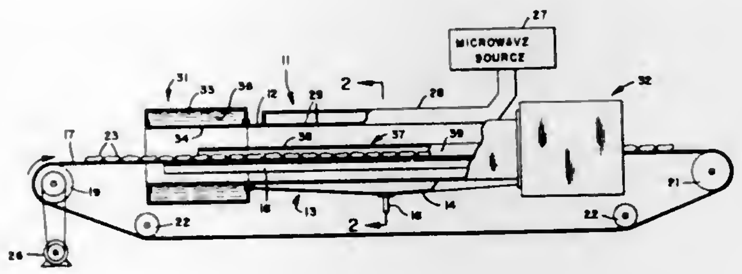
A casing for the preparation of dry sausages, which is resistant to mold or fungus growth, is prepared by coating the inner surface of a synthetic tubular casing with a soluble protein which is insolubilized by liquid smoke and which contains 0.1–5.0% sorbic acid or potassium sorbate or sodium sorbate. The protein used in the coating composition has a molecular weight above about 10,000 and is added in a solution in a concentration of 0.1–5.0% and containing 0.05–5.0% liquid smoke, based on the weight of the casing being treated, to substantially insolubilize the protein coating after drying. The treatment is preferably given to regenerated cellulose casings and especially to fiber-reinforced regenerated cellulose casings. The treated casing with the insolubilized proteinaceous coating adheres to the surface and shrinks with the dry sausages which are processed therein. The sorbic acid or potassium sorbate or sodium sorbate in the composition prevents mold or fungus growth on the surface of the casing during the processing of dry sausages.

3,427,170
SEALING OF SAUSAGE CASINGS
Paul G. K. Schroeder, 28 Island Trail, Lake Mohawk, Sparta, N.J. 07871
Filed Mar. 8, 1966, Ser. No. 532,689
U.S. Cl. 99—176 **6 Claims**
Int. Cl. A22c *13/00*



1. A flexible casing having a flexible end sealed by a flattened winding of stiff wire having at least three longitudinal convolutions per quadrant and having a convoluted circumferential length of about 135% to about 170%, as compared to its inner circumferential length, said wire having a plastic coating over its entire convoluted periphery.

3,427,171
METHOD AND APPARATUS FOR REDUCING DESICCATION EFFECTS IN THE MICROWAVE PROCESSING OF UNSEALED FOOD PRODUCTS
Morris R. Jeppson, Alamo, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California
Filed Mar. 12, 1965, Ser. No. 439,216
U.S. Cl. 99—221 **7 Claims**
Int. Cl. A23l *3/32, 3/26;* **H05b** *9/06*



Heating unwrapped food by passing it through a conductor walled tunnel into which microwave energy is injected. The food is enclosed by a dielectric covering which reduces evaporation from the food.

3,427,172
METHOD FOR PROTECTING AUTOMOBILE UNDERSIDES WITH ASPHALT EMULSION
Joseph C. Roediger, Westfield, N.J., Eugene E. Tompkins, Winchester, Mass., and George H. Schoenbaum, West Islip, N.Y., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation of application Ser. No. 245,655, Dec. 19, 1962. This application Mar. 30, 1966, Ser. No. 540,147
U.S. Cl. 106—14 **1 Claim**
Int. Cl. C09d *5/08;* **C08h** *13/00*

A method of protecting the metal undersides of an automobile which comprises spray coating said metal undersides with an asphalt-in-water emulsion containing 0.2 to 20 wt. percent of the sodium salt of n-coco-amino butyric acid.

3,427,173
CERAMIC DIELECTRICS
Shinobu Fujiwara, Minami-Akita-gun, Akita-ken, and Takao Shiraiwa, Akita-shi, Japan, assignors to TDK Electronics Co., Ltd., Tokyo, Japan
Filed June 8, 1964, Ser. No. 373,313
U.S. Cl. 106—39 **4 Claims**
Int. Cl. C04b *35/46*

The present invention provides novel ceramic dielectric compositions consisting essentially of a sintered mixture of 45 to 95 molar percent barium titanate, 1 to 20 molar percent lanthanum titanium oxide $La_2O_3.2TiO_2$ and 1 to 54 molar percent of calcium titanate. The ceramic dielectric compositions are produced by combining barium carbonate, calcium carbonate, lanthanum oxide and titanium oxide to form a homogeneous mixture. Such mixture is calcined in an oxidizing atmosphere at a temperature in the range of 1,100° C. to 1,300° C. for about two hours. The resultant mixture is pulverized into a fine powder followed by the addition of a binder which is admixed with the powder. The mixture is formed into the desired shape and size and the resultant shape is sintered in an oxidizing atmosphere at a temperature in the range of 1,100° to 1,400° C. for about three hours.

3,427,174
HEAT-INITIATED PHOSPHATE-BONDED COMPOSITIONS
Robert E. Miller, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 318,160, Oct. 23, 1963. This application Feb. 14, 1967, Ser. No. 615,885
U.S. Cl. 106—58 **15 Claims**
Int. Cl. C04b *35/00*

Heat-initiated phosphate-bonded compositions containing from 25 to 65% by weight of a filler and from 75 to 35% by weight of a metal phosphate containing a mixture of magnesium or aluminum phosphate with barium phosphate in weight ratios of from about 9:6 up to about 9:1 are disclosed. Also disclosed is a process for preparing hydrolytically stable compositions comprising mixing specific proportions of filler, phosphorus pentoxide and metal oxide, compressing the mixture so formed into a molded shape, and applying a heat source to initiate an autocatalytic reaction. Further disclosed is the reactant mixture formed during the process described above.

3,427,175
ACCELERATOR FOR PORTLAND CEMENT
Richard L. Angstadt, Silver Spring, and Forrest R. Hurley, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed June 14, 1965, Ser. No. 463,888
U.S. Cl. 106—89 **1 Claim**
Int. Cl. C04b *7/00, 7/56*

A method of accelerating the hardening rate of Portland cement by adding 0.1 to 10% calcium nitrite based on the dry weight of the cement. This accelerator is advantageous in that it also inhibits corrosion of the metals placed in the cement as reinforcing bars, etc.

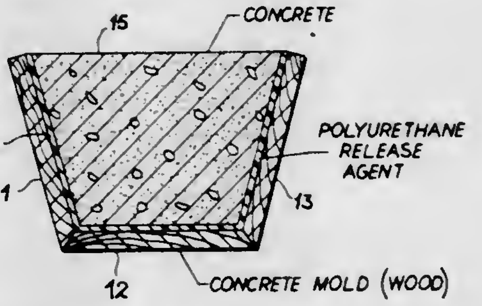
3,427,176
THREE-DIMENSIONAL COLORING COMPOSITION
Shozaburo Moriya, Marugame-shi, Japan, assignor to Shikoku Kasei Kogyo Company Ltd., Marugame-shi, Japan
Filed Nov. 15, 1963, Ser. No. 324,103
Claims priority, application Japan, Nov. 28, 1962, 37/52,170
U.S. Cl. 106—157 **4 Claims**
Int. Cl. B29j *5/02;* **B44f** *7/00;* **B44c** *3/00*

A three-dimensional coloring material consisting essentially of a plastic hydrous paste which is adapted for being stored and squeezed from a tube. The paste comprises a carrier of crushed pulp, wood flour or ground fibrous material of less than 300 microns in size, a coloring agent operatively combined with the carrier to impart color thereto and constituted either as a pigment or dyestuff, a powdery water-soluble adhesive of less than about 500 microns size mixed with the carrier, and a fluid embodying the carrier and adhesive.

3,427,177
SECONDARY PLASTICIZER FOR THERMOPLASTIC NON-RUBBERY POLYMERS
Maurice K. Rausch, South Holland, and Henry V. Isaacson, Oak Forest, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,348
U.S. Cl. 106—191 **15 Claims**
Int. Cl. C08f *45/52;* **C08b** *27/60*

A secondary plasticizing agent for use with thermoplastic, non-rubbery polymers, preferably in combination with a primary plasticizer, which is the product produced by the process comprising hydrogenating a petroleum naphthenic lubricating oil fraction by contact with molecular hydrogen and a sulfur-resistant hydrogenation catalyst at a temperature of about 400 to 800° F. and a pressure of about 300 to 5,000 p.s.i.g. to provide a hydrogenated oil and hydrogenating said hydrogenated oil by contact with molecular hydrogen in the presence of a platinum group metal hydrogenation catalyst at a temperature of about 400 to 800° F. and a pressure of about 300 to 5,000 p.s.i.g., to provide a product having an aromatic content of less than about 3%.

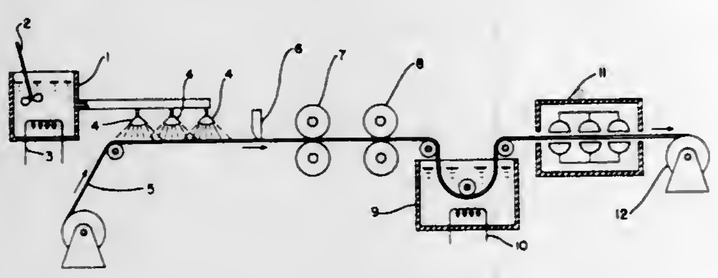
3,427,178
METHOD FOR COATING A MOLD WITH A POLYURETHANE RELEASE AGENT
Gerald Zakim, Clifton, and Musa M. Shihadeh, Paterson, N.J., assignors to Latex and Polymer Research Corporation, Paterson, N.J., a corporation of New York
Filed July 15, 1964, Ser. No. 382,972
U.S. Cl. 117—5.1 **1 Claim**
Int. Cl. B44d *1/20, 1/48*



A method of preparing a mold for concrete, synthetic resin and the like, wherein the mold is coated with a polyurethane in a partially cured state which is thereafter subjected to final curing in situ on the mold in the presence of ambient moisture.

3,427,179
METHOD OF MAKING A POROUS POLYAMIDE FABRIC

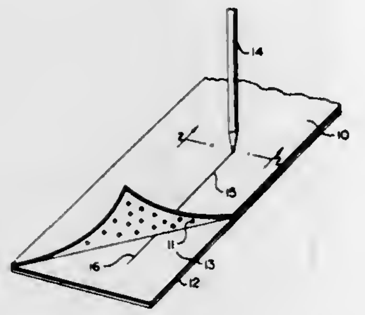
William J. Davis, Wyomissing, Pa., assignor to The Polymer Corporation, Reading, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 356,723, Apr. 2, 1964. This application Oct. 23, 1965, Ser. No. 503,730
U.S. Cl. 117—11 **16 Claims**
Int. Cl. B44f *9/12;* **B44d** *1/44*



Micro-porous polyamide product, e.g., leather or like fabric substitute, and method of manufacture of same. Product is formed by dissolving polyamide in liquid which is non-solvent at room temperature and solvent at elevated temperatures, applying the solution to a base, cooling the solution of polyamide and liquid solvent to a temperature below which the liquid is a solvent for the polyamide thereby forming a stable gel and liquid extraction at a temperature at which the liquid is a non-solvent.

3,427,180
PRESSURE-SENSITIVE RECORD SYSTEM AND COMPOSITIONS

Paul S. Phillips, Jr., Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 31, 1965, Ser. No. 444,274
U.S. Cl. 117—36.2 **27 Claims**
Int. Cl. B41m *5/16, 5/22*



This invention relates to pressure-sensitive record systems in which a mark is produced according to the pattern of pressure by the chemical reaction of mark-forming components and in particular wherein the mark-forming components comprise a primary chromogenic component, a polymeric material reacting with said chromogenic component, a liquid solvent medium in which the primary chromogenic component and the material are soluble, a pressure-rupturable material which isolates the liquid solvent medium from at least either the chromogenic or the polymeric material and a secondary chromogenic component, which does not react with the primary chromogenic material, polymeric material, or the liquid solvent. More particularly, the secondary chromogenic component is a member of the group consisting of 10-pivalyl-3,7-bis (dimethylamino) phenothiazine (N-pivalyl leuco methylene blue), 10-(α,α-dimethylbutyryl)-3,7-bis (dimethylamino) phenothiazine (2,2 dimethylbutyryl leuco methylene blue), and 10-(p-anisoyl)-3,7-bis(dimethylamino) phenothiazine (p-anisoyl leuco methylene blue).

3,427,181
DEPOSITION OF GOLD ON A TIN NICKEL SURFACE

Christopher Haydn Lowery and Geoffrey Charles Wilson, Bracknell, England, assignors to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,331
Claims priority, application Great Britain, Oct. 1, 1964, 40,030/64
U.S. Cl. 117—50 **6 Claims**
Int. Cl. C23g *1/02*

Before the electroless deposition of gold conductors onto a tin nickel underlayer in the manufacture of a miniature printed circuit board, the surface of the tin nickel underlayer is activated by immersion in a mixture consisting essentially of 30% to 60% by weight of orthophosphoric acid and at least one α-hydroxy polycarboxylic acid in aqueous solution, such as citric acid or tartaric acid.

3,427,182
PIGMENT SEALING COATS

Joel Ronald Zingerman, Monroe, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 12, 1965, Ser. No. 455,326
U.S. Cl. 117—72 **5 Claims**
Int. Cl. B44d *1/16*

Pharmaceutical tablets are first coated with a sealing coat, which may be in a number of layers, which coat is either opaque or colored and is not transparent. This coat is formed of a water insoluble resin, such as shellac, dissolved in a suitable solvent, such as a lower alcohol. The sealing coat may either be colored or opaque and the tablet is then covered with film coats of water soluble or dispersible film forming substances, usually with certified dyes or pigments.

3,427,183
METHOD FOR BONDING NATURAL OR SYNTHETIC TEXTILE FIBERS TO OLEFIN COPOLYMERS

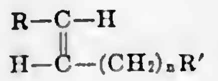
Augusto Portolani, Enzo Di Giulio, and Mario Milano, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed Apr. 13, 1965, Ser. No. 447,891
Claims priority, application Italy, Apr. 14, 1964, 8,132/64
U.S. Cl. 117—76 **16 Claims**
Int. Cl. D06m *15/28, 15/46*

Improved process for bonding fibers to saturated elastomeric ethylene/higher alhpa-olefin copolymer comprising coating fiber with a single aqueous dispersion of phenol/formaldehyde resin and latex of modified ethylene/higher alpha-olefin copolymer having from about 1 to 10% maleic acid grafted thereon, latex further containing mixture of a nonionic surfactant and an anionic surfactant, the aqueous dispersion having been allowed to mature for from about 40 to 120 hours after preparation; after coating fiber with aqueous dispersion, coated fiber is dried and elastomeric ethylene/higher alpha-olefin copolymer composition containing vulcanizing agents is contacted with coated fiber and vulcanized by heating.

3,427,184
METHOD FOR COATING POLYOLEFIN FILMS AND COATED ARTICLES

Jean B. Mauro, New Haven, and Lamont Hagan, Guilford, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 28, 1965, Ser. No. 467,715
U.S. Cl. 117—76 **6 Claims**
Int. Cl. B44d *1/22, 1/092*

A method for coating a polyolefin film with a vapor-impermeable vinylidene chloride interpolymer which comprises applying an aqueous, alkaline coating composition comprising a co-polymer of a vinyl ester of an aliphatic saturated monocarboxylic acid having from one to four carbon atoms and an unsaturated monocarboxylic acid component having the formula:

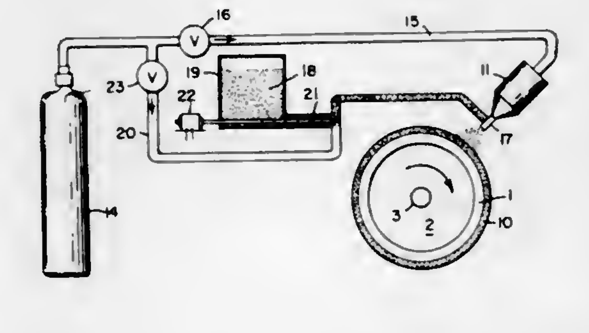


$$\begin{matrix} R-C-H \\ \| \\ H-C-(CH_2)_nR' \end{matrix}$$

to form a primer coat on the polyolefin film, drying the primer coating composition at a temperature above 90° F., applying an aqueous emulsion containing an interpolymer of vinylidene chloride on the primer coat and drying the vinylidene chloride polymer-containing coating at a temperature greater than that utilized to dry the primer coat. The primer coat thus consists essentially of the described co-polymer in amounts from 0.1 to 10 grams per 1000 square inches of the coated film surface area. The final drying step coalesces the emulsion and forms a continuous film of the vinylidene chloride interpolymer. R, *n*, R' and R'' are defined in the specification. A coated polyethylene film having a vapor-impermeable vinylidene chloride interpolymer-containing coating adhered thereto by means of the above-described primer coat is also disclosed. The primer coat is formed of the materials described above.

3,427,185
COMPOSITE STRUCTURAL MATERIAL INCORPORATING METALLIC FILAMENTS IN A MATRIX, AND METHOD OF MANUFACTURE

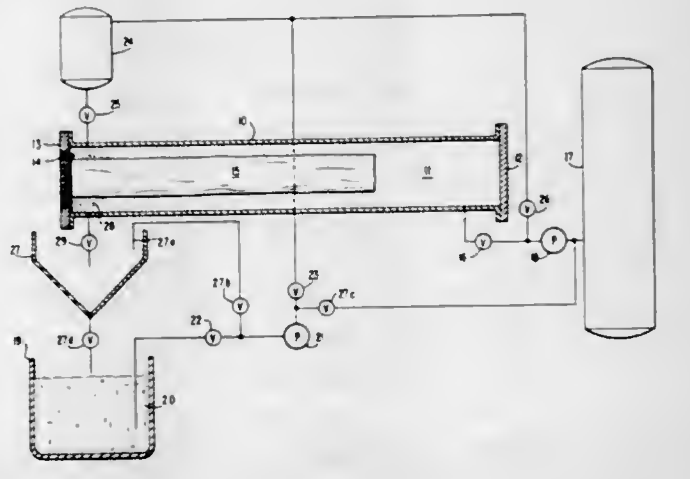
Robert G. Cheatham, Cohasset, and Joseph F. Cheatham, Sudbury, Mass., assignors, by mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 93,941, Mar. 7, 1961. This application Feb. 19, 1964, Ser. No. 346,388
U.S. Cl. 117—93.1 **10 Claims**
Int. Cl. C23c *7/00*



A high strength composite structural material resistant to high temperature atmospheres consisting of high tensile strength metallic filaments within a high temperature resistant matrix. The matrix material has a melting point higher than the recrystallization temperature of the filamentary material and is deposited onto a mat of filamentary material by plasma arc spraying in an inert atmosphere. In order to maintain the high tensile strength of the filamentary material, the rate of deposition of the matrix is controlled so that the filamentary material is maintained below its recrystallization temperature.

3,427,186
PROCESS AND APPARATUS FOR TREATING WOOD

Monie S. Hudson, P.O. Box 2451, Spartanburg, S.C. 29302
Continuation-in-part of application Ser. No. 411,905, Nov. 17, 1964. This application Oct. 4, 1966, Ser. No. 584,236
U.S. Cl. 117—116 **27 Claims**
Int. Cl. B27k *3/00;* **B44d** *1/26;* **B05c** *3/00*



Disclosed is a process for the impregnation of a length of wood with a fluid treating medium in which a seal is formed about one end of the length of wood using a slurry containing solid granules less than about 105 microns in diameter. After the seal is formed, liquid treating medium is passed into the reaction zone and a difference in pressure on opposite sides of the sealed area forces the treating medium through the length of wood. Also disclosed is an apparatus for pressure impregnation of a length of wood which includes a pressure vessel having a perforated member disposed cross-sectionally thereof, a porous member adjacent the perforated member, means for introducing a slurry containing solid granules of a size larger than the pores of the porous member into the pressure vessel and means for introducing fluid treating medium into the vessel under pressure.

3,427,187
SILICIC-HYDROCARBON COMPOSITES

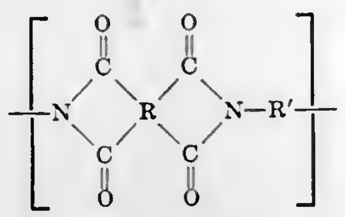
John Bentley Wiggill, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 363,973, Apr. 30, 1964. This application June 22, 1964, Ser. No. 377,064
U.S. Cl. 117—118 **2 Claims**
Int. Cl. C03c *17/30;* **C08g** *31/18*

Copolymers containing pendant silane groups prepared by the reaction of an acyl halide containing copolymer and an amino silane or an alcohol silane, bonded to a silicic substrate.

3,427,188
ZINC-COATED POLYIMIDE PRODUCTS

John Willard Jones, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 16, 1964, Ser. No. 397,011
U.S. Cl. 117—122 **5 Claims**
Int. Cl. B32b *15/08;* **C23c**

A polyimide shaped article having on at least one surface a coating of zinc, said polyimide being characterized by a recurring unit having the following structural formula:



$$\left[-N\begin{matrix}\overset{O}{\overset{\|}{C}} & & \overset{O}{\overset{\|}{C}}\\ & R & \\ \underset{O}{\underset{\|}{C}} & & \underset{O}{\underset{\|}{C}}\end{matrix}N-R'-\right]$$

3,427,189

RADIATION RESISTANT INSULATION

Habib Brechna, Palo Alto, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,798

U.S. Cl. 117—126 **3 Claims**

Int. Cl. C03c *25/00;* **C09d** *3/48;* **H01b** *13/26*

A high voltage insulation that is resistant to deterioration when subjected simultaneously to high levels of nuclear radiation, high temperatures and large mechanical stresses and which is comprised of fiber glass cloth uniformly impregnated with a thermosetting organic resin impregnant, such as an epoxy, polyester, or silicone resin, in which a large proportion of inorganic filler material, such as aluminum oxide, ground glass or mica, is suspended prior to impregnation of the cloth.

3,427,190

PROCESS FOR FORMING A CORROSION RESISTANT EPOXY RESIN COATING ON A METAL SURFACE

Robert E. Murdock, Scotch Plains, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,914

U.S. Cl. 117—132 **2 Claims**

Int. Cl. B44d *1/09;* **C23f** *15/00*

1. A process for forming a corrosion resistant coating on a metal surface while the surface is immersed in fresh water ·vhich comprises applying to the surface a putty-like mixture of (1) a liquid polyepoxide containing only carbon hydrogen and oxygen and having more than one vicepoxy group, (2) from 5% to 50% stoichiometric excess of a polyamide of a polycarboxylic acid containing at least 7 carbon atoms and an aliphatic polymine which polymide contains free amino groups, and (3) from 0.5% to 5% by weight of a water soluble salt of an alkali metal and an inorganic polybasic acid, and then allowing the mixture to harden while in contact with the water.

2. A process for forming a corrosion resistant coating on a metal surface while the surface is immersed in fresh water which comprises applying to the surface a putty-like mixture of (1) a liquid polyepoxide containing only carbon hydrogen and oxygen and having more than one vic-epoxy group, (2) from 5% to 50% stoichiometric excess of a polyamide of a polycarboxylic acid containing at least 7 carbon atoms and an aliphatic polyamine which polyamide contains free amino groups, and (3) from .05% to 5% by weight of sodium citrate, and then allowing the mixture to harden while in contact with the water.

3,427,191

MAGNETIC RECORDING TAPE

Samuel G. Howell and Dale M. Akers, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,924

U.S. Cl. 117—138.8 **4 Claims**

Int. Cl. G11b *5/70*

A magnetic recording tape comprising a biaxially oriented polypropylene base film having a surface coated with an adherent coating formed from a composition comprising finely divided magnetic material, a film forming binder, a solvent for the film forming binder and finely divided polyethylene having an average particle size of less than about 20 microns.

3,427,192

TEXTILE SIZING COMPOSITION

Edgar Dare Bolinger, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Filed May 20, 1964, Ser. No. 368,993

U.S. Cl. 117—139.5 **17 Claims**

Int. Cl. D06m *13/00, 15/00*

An aqueous textile sizing composition consisting essentially of a yarn lubricant, a styrene-maleic acid copolymer and a water soluble polyurethane which is the reaction product of a diisocyanate and a polyalkylene glycol. The ratio of the copolymer to the polyurethane is from about 9:1 to 1:9 by weight. The process includes sizing polyester warp yarns by either a one dip or two-dip coating procedure.

3,427,193

SHRINK RESISTANT IMPREGNATED WOOL

Walter R. Wszolek, Sykesville, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 450,499, Apr. 23, 1965. This application July 26, 1967, Ser. No. 656,066

U.S. Cl. 117—141 **5 Claims**

Int. Cl. D06c *29/00*

A shrink resistant textile composition of substantially unimpaired hand consisting essentially of wool impregnated with 1 to 25 percent by weight based on the total weight of the impregnated wool of an aqueous emulsion of a member selected from the group consisting of ethylene homopolymer and ethylene copolymers containing at least 50 mole percent ethylene, said group members having a reduced specific viscosity of at least 0.5 deciliter/g. and containing 0.1 to 3.0 milliequivalents carboxyl per gram.

3,427,194

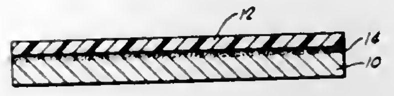
COATED MULCH SHEET

Richard F. Lippoldt and Warren W. Woods, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,106

U.S. Cl. 117—155 **4 Claims**

Int. Cl. A01c *1/04*



Mulch sheet comprising a fibrous biodegradable porous cellulosic sheet such as paper, coated on one surface with a composition comprising asphalt and a copolymer of ethylene-vinyl acetate or ethylene-ethyl acrylate.

3,427,195

ELECTRODE FOR ELECTROLYTIC CONDENSER AND PROCESS FOR PRODUCING THE SAME

Bernard F. G. Chesnot, Paris, France, assignor to Société anonyme: Les Condensateurs Sic-Safco, Colombes, Hauts-de-Seine, France, a French society

No Drawing. Filed Apr. 12, 1965, Ser. No. 447,538

Claims priority, application France, Apr. 20, 1964, 971,485

U.S. Cl. 117—200 **14 Claims**

Int. Cl. H01l *7/62;* **C23f** *7/22*

A process for the treatment of a metal foil to be used as an electrode in an electrolytic condenser whereby the entire surface thereof is covered with a thin adherent separator coating which permits the foil to be wound in direct contact with a second foil serving as the other electrode in a condenser and which comprises (1) coating the metal foil with a liquid film comprising a solution of water-soluble nitrate or oxalate salt of a metal, such nitrate or oxalate salt being decomposable by heat into an electrically insulating refractory oxide, which solution contains finely suspended particles of a water-insoluble electrically insulating refractory compound having a maximum particle size of 1 micron, (2) drying the film coating to remove the solvent therefrom, and (3) heating the dried coating to the pyrolysis temperature of the nitrate or oxalate salt to decompose it into an electrically insulating refractory oxide which together with the refractory compound form the separator coating on the electrode foil.

3,427,196

PRODUCING ELECTRICAL CAPACITORS

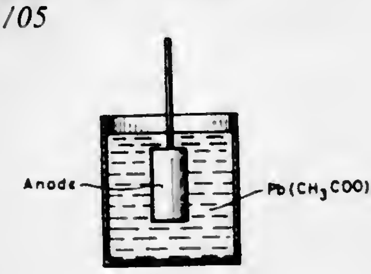
Günter Behrend, Heidenheim, Germany, assignor to Siemens Aktiengesellschaft, a German corporation

Filed Sept. 3, 1963, Ser. No. 306,383

Claims priority, application Germany, Sept. 6, 1962, S 81,324

U.S. Cl. 117—200 **12 Claims**

Int. Cl. H01g *9/05*



1. A method of producing an electrical capacitor, comprising soaking with a lead (IV)-acetate solution a metallic capacitor electrode of valve metal which is provided with an oxide layer serving as a dielectric, to precipitate lead salt thereon, and thereupon subjecting the soaked electrode to the action of a flowing vapor of a hydroxyl-containing substance to convert the precipitated lead salt to a semiconducting oxide.

3,427,197

METHOD FOR PLATING THIN TITANIUM FILMS

William M. Lilker, Palo Alto, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,554

U.S. Cl. 117—213 **7 Claims**

Int. Cl. C23c *3/02*

The invention is directed to a method of plating nickel over thin films of titanium and related metals of several microns thick which are utilized in micro-miniature electrical circuitry. The thin metallic film circuitry which may be deposited on a substrate such as ceramic is prepared for electroless plating by cleaning in an electrocleaner solution, treating in a deoxidizing solution and immersing in an activator solution. The resulting nickel-plating provides solderable or weldable surfaces on the substrate.

3,427,198

METHOD AND APPARATUS FOR AUTOMATIC CONTROL OF PICKLING SYSTEM

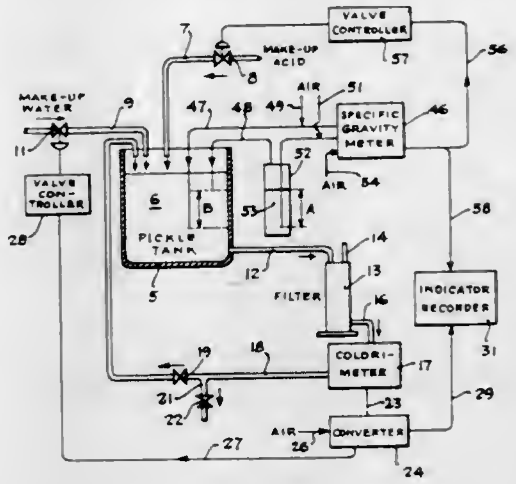
Uno T. Hill, Gary, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 218,786, Aug. 22, 1962. This application Oct. 22, 1965, Ser. No. 502,105

U.S. Cl. 134—10 **12 Claims**

Int. Cl. C23g *1/08, 3/00;* **G01n** *21/02*

1. In a process of treating a metal by contact with an aqueous mineral acid bath wherein acid is consumed by conversion to an ionized metal salt and wherein water and concentrated makeup acid are added to said bath, the improved method of control which comprises; withdrawing from said bath a sample stream, exposing said stream to light in a colorimeter and obtaining a first signal which is a measure of the concentration of ions of said metal in said bath, regulating the addition of water to said bath in response to said first signal to maintain the concentration of said ions in said bath substantially constant, measuring the specific gravity of said stream and obtaining a second signal which is a direct measure of the acid concentration of said bath, and regulating the addition of concentrated makeup acid to said bath in response to said second signal to maintain said acid concentration of said bath within predetermined limits.



3,427,199

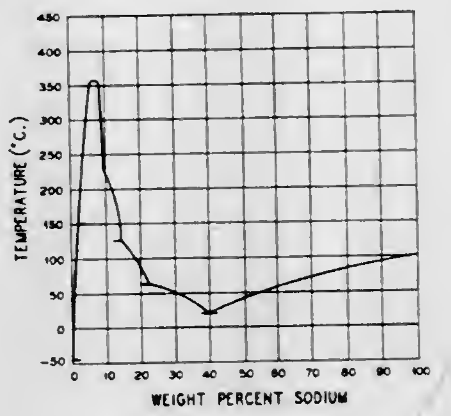
METHOD FOR STARTING OPERATION OF A SODIUM AMALGAM-OXIDANT FUEL CELL

Erwin A. Schumacher, Cleveland, and Milton B. Clark, North Royalton, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,701

U.S. Cl. 136—86 **3 Claims**

Int. Cl. H01m *27/30*



1. In a process of generating electrical energy, in a fuel cell including an anode, a cathode and aqueous electrolyte, comprising feeding an oxidant and a second liquid sodium amalgam in an amount sufficient to react with said oxidant to produce electrical energy, the improvement in combination therewith comprising starting up said fuel cell when at about room temperature, prior to introducing said second sodium amalgam, by supplying to said anode, a first liquid amalgam containing between about 35 and 45 percent by weight sodium and an oxidant to said cathode thereby generating electrical and heat energy, discontinuing said supply of said first sodium amalgam before introducing said second sodium amalgam, the energy generated during the start up period constitut-

ing the only source of power from said fuel cell during said start up period.

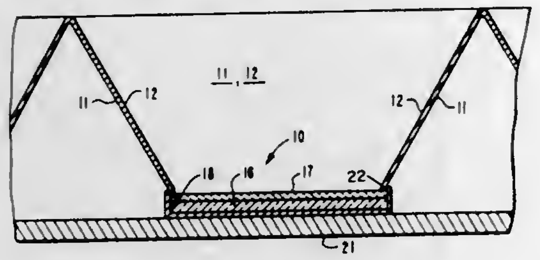
3,427,200
LIGHT CONCENTRATOR TYPE PHOTOVOLTAIC PANEL HAVING CLAMPING MEANS FOR RETAINING PHOTOVOLTAIC CELL

Ellis E. Lapin, Santa Monica, and Alan W. Ernest, and Philip A. Sollow, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Sept. 24, 1964, Ser. No. 398,947

U.S. Cl. 136—89 **1 Claim**

Int. Cl. H01m *29/00;* **H01g** *9/20*



This disclosure concerns a photovoltaic device which comprises a plurality of photovoltaic modules, each including a solar cell having its own individual reflecting surfaces. The cell of each module is disposed in a pocket formed by the lower ends of the walls providing the reflecting surfaces therefor. The walls include an inwardly crimped portion at the lower ends thereof which overlaps the upper edge of the cell so as to clamp and retain the cell in proper position in the pocket without requiring an adhesive cement.

3,427,201
DEFERRED ACTION BATTERY

Leonard Joseph Burant, 3714 N. Maryland Ave., Milwaukee, Wis. 53211, and Ronald Maynard Fiandt, Menomonee Falls, Wis. (900 E. Keefe Ave., Milwaukee, Wis. 53201)

Filed Mar. 14, 1966, Ser. No. 535,653

U.S. Cl. 136—100 **14 Claims**

Int. Cl. H01m *21/12*

1. A battery comprising at least two cells, each cell including a pair of adjacent electrodes defining a reaction space therebetween, a first set of chambers, each chamber of said first set associated with the top of one of said cells, a second set of chambers, each chamber of said second set associated with the bottom of one of said cells, each of said chambers extending generally coextensively with at least a peripheral portion of the associated cell providing electrolyte communication with the respective reaction space, at least a first manifold at one end of said battery for distributing electrolyte to said first set of chambers from a common source, and a casing surrounding said cells and said manifold including openings for providing electrolyte communication between said source and said manifold and the perimeter of one of said electrodes of each cell being larger than the perimeter of the other electrode and the outer margins of the larger electrode extending outwardly of said other electrode and sealingly engaging the manifold.

3,427,202
MAGNESIUM BATTERIES WITH IMPROVED CELL SEALS AND INTERCELL CONNECTIONS AND METHOD OF MAKING THE SAME

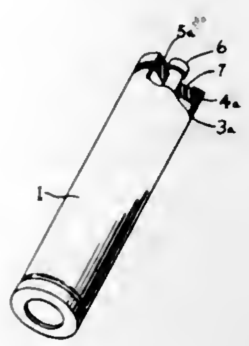
Milton E. Wilke, Freeport, Ill., assignor to Clevite Corporation, a corporation of Ohio

Filed July 11, 1966, Ser. No. 564,206

U.S. Cl. 136—100 **11 Claims**

Int. Cl. H01m *1/02, 13/10*

An end of a dry cell having a negative electrode made from a magnesium cylinder is sealed by a combination consisting essentially of: a stiff resilient disk-shaped cover within the end of the cylinder, said cover being radially stressed in compression whereby to exert continuous pressure against the inside surface of the magnesium cylinder; and a ring of steel tightly encircling the end portion of the cylinder containing the compressed cover.



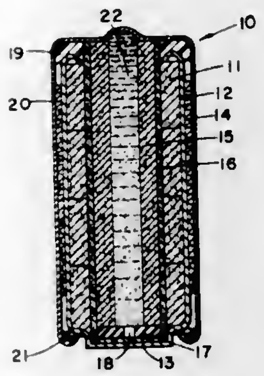
3,427,203
LARGE SURFACE AREA ELECTRODES AND A METHOD FOR PREPARING THEM

Robert W. Fletcher, Madison, Wis., assignor to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,620

U.S. Cl. 136—120 **14 Claims**

Int. Cl. H01m *13/06*



A large surface area electrode having amalgamated metal particles bonded together by an inorganic metal oxide or silicate bonding agent. The amalgamated metal particles and the inorganic bonding agent are formed into an intimate mixture which is contacted with an acid or alkaline bonding solution, and while in contact with both the inorganic bonding agent and the bonding solution, the amalgamated metal particles are heated to effect the bond whereby a structurized, high surface area electrode is formed. The inorganic bonding agent is selected from zinc oxide, calcium oxide, barium oxide, magnesium oxide, aluminum oxide, iron oxide, sodium silicate, potassium silicate or calcium silicate.

3,427,204
LEACHED AMALGAMATED ZINC ANODE

Richard R. Clune, Ardsley, and Harold Field, Peekskill, N.Y., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 594,174

U.S. Cl. 136—126 **4 Claims**

Int. Cl. H01m *13/06*

A porous amalgamated zinc anode and a method for making the amalgamated zinc anode suitable for use in a current producing cell by reactively cementing an admixture mass of an aliphatic solvent and powders of ammonium chloride, magnesium sulfate, mercurous chloride and zinc to form the amalgamated zinc anode suitable for use in the current producing cell.

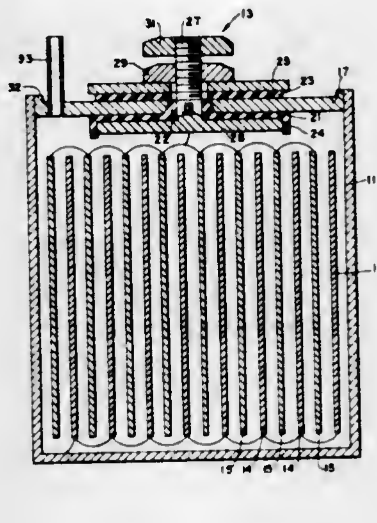
3,427,205
SPACECRAFT BATTERY SEALS

Karl F. Plitt, Kensington, and Carroll H. Clatterbuck, Silver Spring, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Sept. 1, 1966, Ser. No. 577,114

U.S. Cl. 136—133 **8 Claims**

Int. Cl. H01m *1/02*



A battery seal is used to insulate a terminal of an inverted T-shape. The terminal extends through a flat cover plate of the battery and is insulated from the plate by the seal having a rubberized characteristic. The insulation comprises two parallel washers above and below the plate joined by a hollow conical section that protrudes through the plate. The terminal leg fits inside this section with insulation extending around the periphery of the cross member by the bottom washer, and means are provided to create a pressure seal between the insulation and the plate. The terminal is thereby insulated from the casing and internally forming dendrites.

3,427,206
SEPARATOR FOR ALKALINE CELLS

Paul Scardaville, East Northport, Thomas Wetherell, New York, and Lawrence Sears, Woodside, N.Y., assignors to RAI Research Corporation, Long Island City, N.Y., a corporation of New York

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,690

U.S. Cl. 136—146 **15 Claims**

Int. Cl. H01m *3/02*

A separator for secondary alkaline cells comprising a thin sheet of a graft copolymer of a polyethylene base and a graft of a polymer of an ethylenically unsaturated carboxylic acid, such as an acrylic acid. The polyethylene may first be crosslinked by irradiation and then immersed in a solution of an acrylic acid and subjected to further irradiation to form the graft copolymer.

3,427,207
BATTERIES WITH HALOGEN FLUORIDE ELECTROLYTE

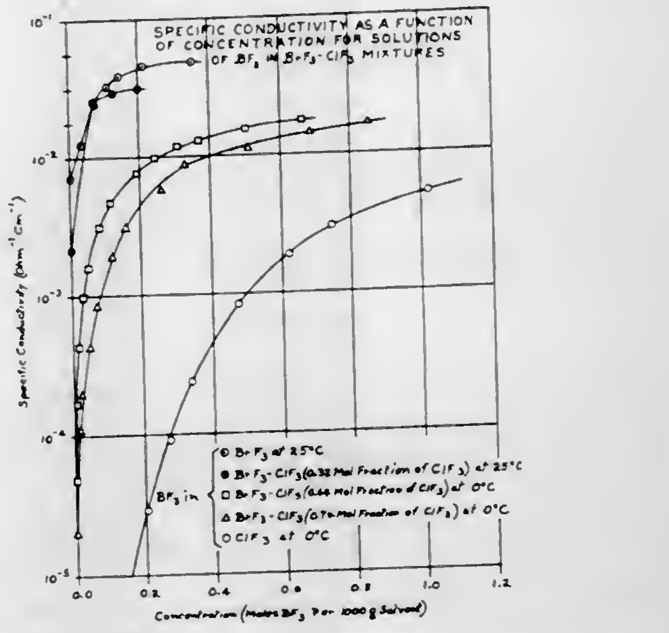
Madeline S. Toy, Fountain Valley, William A. Cannon, Costa Mesa, William David English, Orange, and Carl Berger, Santa Ana, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Oct. 28, 1966, Ser. No. 591,059

U.S. Cl. 136—155 **10 Claims**

Int. Cl. H01m *11/00*

Non-aqueous, non-protonic electrolytes comprising halogen fluorides, or halogen fluorides in combination with covalent fluorides for use in electrochemical cells or batteries. The electrolyte containing electrochemical cells or batteries operates efficiently at low temperatures.



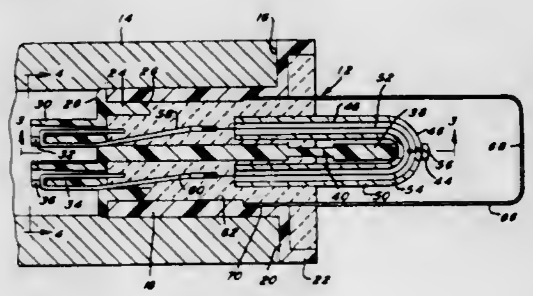
3,427,208
EXPENDABLE THERMOCOUPLE WITH LOCATER MEANS

Marvin J. Lowdermilk, Haddonfield, N.J., assignor to Electro-Nite Co., a corporation of Pennsylvania

Filed July 26, 1965, Ser. No. 474,618

U.S. Cl. 136—235 **5 Claims**

Int. Cl. H01v *1/02*



An expendable thermocouple is disclosed mounted on one end of an expendable tube. The thermocouple unit includes a centrally located post which embraces a portion of a thermocouple protection tube to preposition the thermocouple hot junction a specified distance from a support for the post.

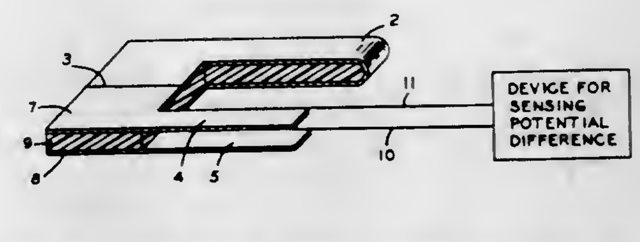
3,427,209
QUICK RESPONSE HEAT-SENSING ELEMENT

Nathaniel E. Hager, Jr., Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed May 18, 1965, Ser. No. 456,700

U.S. Cl. 136—225 **7 Claims**

Int. Cl. H01v *1/10*



A heat-sensing element made from thin foils. A strip of a thin thermocouple material is doubled back on itself with electrical insulation positioned between the resulting opposing faces. A first platelet of a thermocouple material different from that of the strip is edge-abutted one of the faces of the strip. An electrical contact is positioned on this first platelet. A second platelet is edge-abutted the other face of the strip and opposed to the first platelet and is electrically insulated from the first platelet. An electrical contact is also positioned on this second platelet. No electrical connections exist between the first platelet and the second platelet except through the thermocouple junctions. Heat can transfer from the first platelet to the second platelet only by passing through the insulaion which separates the two platelets.

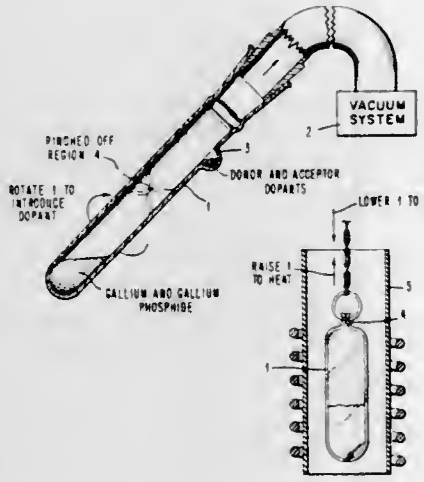
3,427,210
METHOD OF PRODUCING ALLOYS OF ZIRCONIUM WITH IRON, VANADIUM AND CHROMIUM FOR USE IN NUCLEAR REACTORS COOLED WITH AN ORGANIC COOLANT

Giancarlo Imarisio, Varese, Italy, assignor to European Atomic Energy Community (Euratom), Brussels, Belgium
No Drawing. Filed June 5, 1967, Ser. No. 643,398
Claims priority, application Germany, July 27, 1966, E 32,153
U.S. Cl. 148—2 **1 Claim**
Int. Cl. C22f *1/18;* **C22c** *15/00*

A method of producing structural parts of an alloy consisting of iron, vanadium and chromium comprising the steps of twice melting the alloying constituents in a furnace, forging the alloy at about 1000° C., annealing at about 1000° C., quenching, repeating the forging, annealing and quenching, hot rolling, tempering, and cold rolling.

3,427,211
PROCESS OF MAKING GALLIUM PHOSPHIDE DENDRITIC CRYSTALS WITH GROWN IN p-n LIGHT EMITTING JUNCTIONS

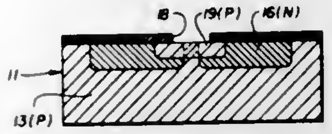
Luther M. Foster, Chappaqua, and John E. Scardefield, New Hamburg, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 28, 1965, Ser. No. 475,541
U.S. Cl. 148—171 **14 Claims**
Int. Cl. H01l *7/32*


VACUUM SYSTEM
2
PINCHED OFF REGION 4
5
DONOR AND ACCEPTOR DOPANTS
ROTATE 1 TO INTRODUCE DOPANT
1
LOWER 1 TO COOL
RAISE 1 TO HEAT
GALLIUM AND GALLIUM PHOSPHIDE
5
4
1

1. A method for producing gallium phosphide diodes having emission in the region of 5680 A. comprising the steps of:
- introducing gallium and gallium phosphide into non-contaminating vessels in a ratio sufficient to form a dilute solution when heated,
- heating said gallium and gallium phosphide at a temperature sufficient to remove all gases,
- simultaneously introducing donor and acceptor dopants into said vessel,
- sealing off said vessel,
- heating said gallium, gallium phosphide and said dopants in the absence of oxygen at a temperature and for a time sufficient to dissolve said gallium phosphide, and
- cooling said solution at a rate sufficient to cause dendritic crystal growth during which said dopants segregate to form p-n light emitting junctions.

3,427,212
METHOD FOR MAKING FIELD EFFECT TRANSISTOR

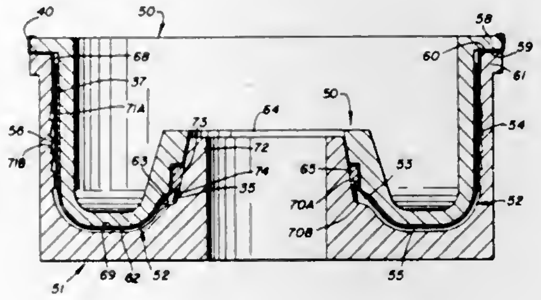
David Frank Allison, Los Altos, Calif., assignor to Signetics Corporation, Sunnyvale, Calif., a corporation of California
Original application Dec. 18, 1963, Ser. No. 331,547, now Patent No. 3,295,030, dated Dec. 27, 1966. Divided and this application Nov. 14, 1966, Ser. No. 593,778
U.S. Cl. 148—187 **3 Claims**
Int. Cl. H01l *7/32*



A method of forming a field-effect transistor by forming adjacent a surface of a semiconductor body of a first conductivity type two gate regions of a second conductivity type leaving a channel of the first conductivity type extending to the same surface of the body therebetween, diffusing an impurity of the first conductivity type into the body from the same surface such that the width of the upper portion of the channel is controllably increased and applying contacts.

3,427,213
METHOD FOR PRODUCING MOLDED TIRES

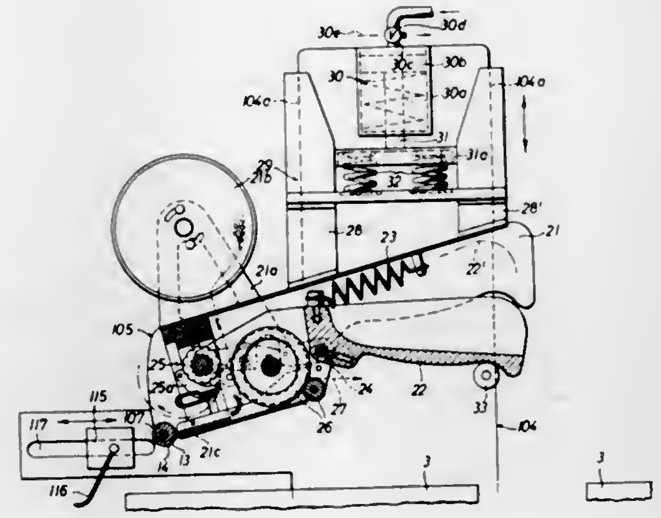
Sterling W. Alderfer, Akron, Ohio, assignor to Sterling Alderfer Company, Akron, Ohio, a corporation of Ohio
Original application Aug. 3, 1965, Ser. No. 476,907, now Patent No. 3,379,236, dated Apr. 23, 1968. Divided and this application Feb. 23, 1967, Ser. No. 632,860
U.S. Cl. 156—129 **6 Claims**
Int. Cl. B29h *17/10, 17/34*



A pneumatic tire and method for making same. The tire comprises at least two opposed sections molded of elastomeric material. Each section has an annular mounting base at the radially innermost extent thereof and side walls which extend radially outwardly of the mounting base. The radially outer extremity of the side wall terminates in a transverse joinder flange. Serrated interlocking means are provided to join the joinder flanges on two opposed tire sections so that a tread is presented. To mold these tire sections a cavity of generally sickle-shaped cross section is formed in a mold. Reinforcing materials are positioned at selected locations within this sickle-shaped cavity, and the elastomeric material from which the tire is to be made is introduced into the cavity and cured. Two such molded sections are joined to form the tire, the tread section being either separate or integral with one of the sections so molded.

3,427,214
LABELLING APPARATUS

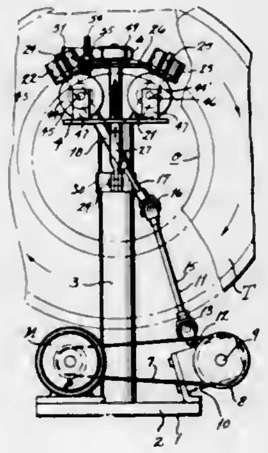
Wilhelm Voigt, Zwingenberg, Baden, Germany, assignor to Meto-Gesellschaft Oscar Kind K.G., Hirschhorn (Neckar), Germany
Filed Sept. 13, 1965, Ser. No. 486,824
U.S. Cl. 156—361 **18 Claims**
Int. Cl. B65c *9/42*



An apparatus for applying labels to moving articles includes a conveyor for advancing the articles. A dispenser is arranged at a labelling station adjacent the conveyor and feeds labels seriatim from a supply to a partly dispensed position in which the respective label is partly unsupported. A movable applicator overlies the respectively unsupported portion and is actuated by a drive means, which latter is controlled by an actuating means governed by the advancing articles, so as to move the label into contact with a respective article.

3,427,215
TIRE TREATMENT DEVICE

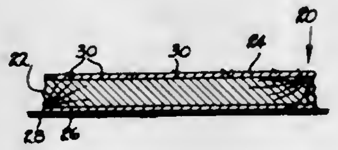
William R. Crocker, General Delivery, Irondale, Mo. 63648
Filed Aug. 6, 1965, Ser. No. 477,690
U.S. Cl. 156—408 **14 Claims**
Int. Cl. B29h *17/10*



A machine for applying white sidewalls to the outer sidewall portion of a tire utilizing a pair of horizontally presented bed rolls for supporting a tire in upright position, and a plurality of roller members which are adapted for presentation in confronting relationship to the outer and inner sidewall portions of said tire in compressed relationship whereby upon driving one of said rollers the tire will be rotated in a vertical plane for the application of white sidewall material thereon.

3,427,216
BUILDING MATERIAL LAMINATE

Robert Gerard Quinn, Bound Brook, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 435,002
U.S. Cl. 161—205 **12 Claims**
Int. Cl. B32b *19/04, 19/08*



A building material laminate with good weathering and fire resistance characteristics is comprised of a cellulosic sheet and asbestos paper.

3,427,217
REPULPING OF WET-STRENGTH BROKE CONTAINING WET-STRENGTH RESIN

Harold R. Miller, Holyoke, Mass., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Jan. 28, 1960, Ser. No. 5,131
U.S. Cl. 162—6 **3 Claims**
Int. Cl. D21c *3/04, 3/22, 5/02*

A process of repulping wet-strength broke containing wet-strength resins by slurrying the broke with a dilute aqueous solution of an inorganic oxidizing salt.

3,427,218
METHOD OF PERFORMING COUNTER-CURRENT CONTINUOUS CELLULOSE DIGESTION

Johan C. F. C. Richter, St. Jean-Cap-Ferrat, France, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden
Filed July 2, 1965, Ser. No. 469,065
Claims priority, application Sweden, July 10, 1964, 8,441/64
U.S. Cl. 162—19 **2 Claims**
Int. Cl. D21c *3/26, 3/24*

There is provided an improved process and apparatus for digesting cellulosic fiber materials. the materials are passed through a elongated digester which has provisions for a final wash of the digested materials prior to discharge. Digesting liquor is passed through the digester counter-currently with respect to the materials. The improvement resides in the use of a plurality of inlets for the total digesting liquor and wherein the inlets are disposed along the digesting zone at mutually different axial distances from the material discharge end of the digester. The amount of digesting liquor passed through the respective inlets is so controlled that the concentration of the digesting liquor in the digesting zone is less near the material discharge end of the digester than near the material entrance end of the digester.

3,427,219
PAPER SIZING WITH A DIAMINE AMIDE DERIVATIVE

Francis A. Bonzagni, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,279
U.S. Cl. 162—168 **8 Claims**
Int. Cl. D21h *3/44, 3/38*

The use of a diamine amide derivative of an interpolymer of a hydrophobic alkenyl ester of a fatty acid and an alpha, beta olefinically unsaturated polycarboxylic acid anhydride as a sizing agent in the preparation of sized paper having increased resistance to the penetration of aqueous liquids.

3,427,220
NUCLEAR REACTORS

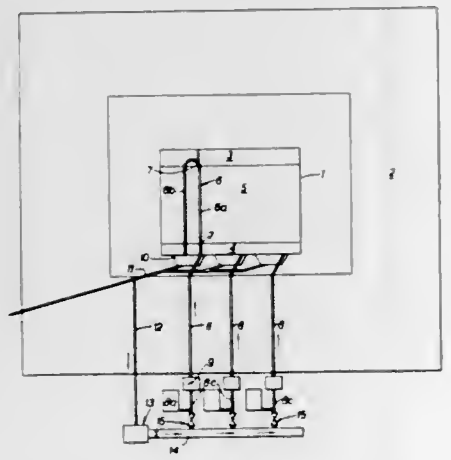
Compton Alexander Rennie, Wareham, Dorset, George Edward Lockett, Parkstone, Poole, Dorset, and Pietro Acciarri, Wareham, Dorset, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Nov. 22, 1965, Ser. No. 508,911

Claims priority, application Great Britain, Nov. 24, 1964, 47,765/64

U.S. Cl. 176—31 **22 Claims**

Int. Cl. G21c *19/22*



A nuclear reactor core is composed of driven fuel having a conversion ratio near to unity and being a net consumer of neutrons, in which is provided channels containing a readily replacable driver fuel which produces excess neutrons to maintain criticality during operation of the reactor. As the driver fuel pieces are replaced, the bulk of the core remains stationary for long periods, yet this latter portion also contributes to the power output of the core.

3,427,221
CARBON-DIOXIDE COOLED, GRAPHITE-MODERATED NUCLEAR REACTOR

Peter Campion, Croft, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,727

Claims priority, application Great Britain, Nov. 16, 1965, 48,719/65; Feb. 15, 1966, 6,675/66

U.S. Cl. 176—58 **5 Claims**

Int. Cl. G21c *15/28, 19/28*

A carbon dioxide coolant circuit of a graphite-moderated nuclear reactor is provided with a catalyst bed containing nickel to promote the formation of methane from carbon monoxide and hydrogen in the coolant circuit to reduce the corrosive effects of the carbon dioxide coolant on the reactor graphite.

3,427,222
NUCLEAR FUEL ELEMENTS

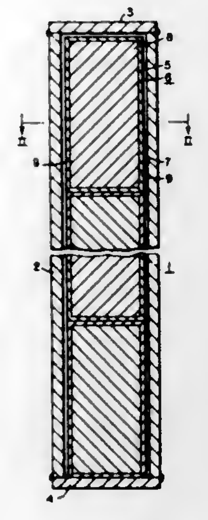
Amilcare Biancheria and Robert J. Allio, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 15, 1965, Ser. No. 496,353

U.S. Cl. 176—68 **2 Claims**

Int. Cl. G21c *3/02, 3/30, 3/06*

A nuclear fuel element having a configuration of an elongated tube with closed ends; the tube containing ceramic bodies of sintered fissionable material; a coating on the bodies which coating comprises a predetermined amount of an element functioning as a burnable poison.



3,427,223
COAGULATING MICROBIAL CELLS TO ENHANCE THEIR SEPARATION

John W. Frankenfeld, Atlantic Highlands, Robert P. Cahn, Millburn, and Philip Zaybekian, Parsippany, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 10, 1964, Ser. No. 374,141

U.S. Cl. 195—1 **15 Claims**

Int. Cl. C12d *13/06, 13/00;* **C12b** *1/00*

Coagulating microbial cells by adding to an aqueous effluent of a culture media either a cell nutrient containing acid or mixtures of the nutrient containing acid and a cell nutrient containing salt, sufficient to lower the pH of said effluent to a pH in the range of 2.0 to 6.0, thereafter heating said aqueous effluent for sufficient time to coagulate the cells and thereafter separating the coagulated cells from the effluent.

3,427,224
SHORTENED FERMENTATION PROCESS FOR OBTAINING D-MANNITOL

Karl L. Smiley, Groveland, Martin C. Cadmus, Peoria, and Seymour Peter Rogovin, Pekin, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 15, 1967, Ser. No. 624,120

U.S. Cl. 195—35 **1 Claim**

Int. Cl. C12d *13/02, 13/00*

D-Mannitol is obtained from glucose in nearly 50% yields in only 8 to 13 days by highly aerated submerged fermentations of either *Aspergillus candidus* NRRL 305 or NRRL 3248 if the glucose content of the medium is periodically replenished prior to virtual exhaustion, thus preventing the mold from materially metabolizing the very mannitol it has produced.

3,427,225
TEST COMPOSITION, DEVICE AND METHOD FOR DETECTING UREA IN AQUEOUS FLUIDS

Edward K. Harvill, deceased, late of Elkhart, Ind., by Jeanne T. Harvill, legatee and devisee, Elkhart, Ind., and Elsie J. Shrawder, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 383,996, July 20, 1964. This application June 5, 1967, Ser. No. 647,885

U.S. Cl. 195—103.5 **17 Claims**

Int. Cl. C12k *1/10*

Improved test composition, device and method for detecting urea in aqueous fluids comprising urease, a pH indicator, a buffer for controlling the pH of the test composition, and an amide sensitizing agent. The test composition is preferably incorporated with a carrier member such as bibulous filter paper.

3,427,226
PROCESS FOR PREPARING POLYSACCHARIDE

William H. McNeely, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Jan. 27, 1966, Ser. No. 523,276

U.S. Cl. 195—31 **9 Claims**

Int. Cl. A61k *27/00;* **C12b** *3/06;* **C12d** *13/00*

A process for growing Xanthomonas bacteria in a seed fermentor, said process comprising incubating a fermentation medium including an inoculum organism of the genus Xanthomonas, and said medium containing flour or bran in amount ranging from about 1.0 to about 5% by weight with the flour and bran constituting about 100% of the total carbohydrate, the fermentation medium also containing magnesium ions and phosphorus in at least trace amounts, an organic nitrogen source in minor amount, and water; aerating the fermentation medium under conditions sufficient to produce a sulfite oxidation value ranging from about 1.5 to about 3.5 millimoles of oxygen per liter per minute; maintaining the pH of the fermentation medium within the range from about 6.5 to about 7.5, and removing the Xanthomonas bacteria from the seed fermentor for use as the inoculum organism in producing a Xanthomonas hydrophilic colloid through bacterial fermentation. A process for utilizing the seed bacteria produced by the above process for production of a Xanthomonas hydrophilic colloid in a final fermentation medium containing glucose in and amount ranging from about 1.0 to about 5.0% magnesium ions and phosphorus in at least trace amounts, a nitrogen source in minor amount, and water. The final fermentation medium is aerated under conditions sufficient to produce a sulfite oxidation value ranging from about 1.5 to about 3.5 millimoles of oxygen per liter per minute while the pH of the fermentation medium is maintained within the range from about 6.5 to about 7.5. After the fermentation is essentially completed, the Xanthomonas hydrophilic colloid is recovered.

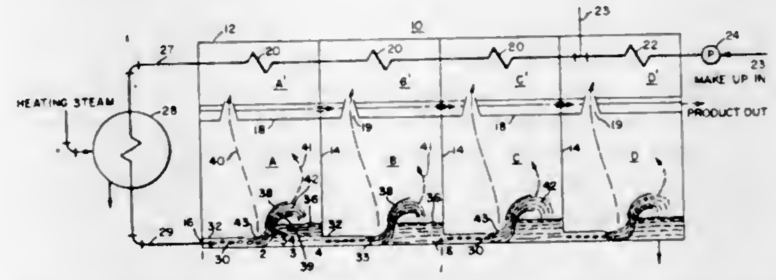
3,427,227
FLASH EVAPORATOR WITH DUCT AND BAFFLE MEANS

Richard M. Chamberlin, McKeesport, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 25, 1967, Ser. No. 611,665

U.S. Cl. 202—173 **4 Claims**

Int. Cl. B01d *3/06*



The invention comprises a narrow cross-sectional area duct extending part way into a flash chamber of a flash evaporator and a diffusing channel spaced downstream from the duct and disposed at a higher level within the chamber than the duct. The lower portion of the diffusing channel comprises an ogee curved shaped baffle structure. The impure liquid to be flashed is directed into the narrow duct which causes vapor bubbles to be created in the liquid flow. The vapor expands which increases the velocity of the flow in the duct. The liquid leaves the duct at the high velocity and is directed against the ogee shaped baffle which causes the vapor to leave the liquid. The liquid is diffused and directed to a higher level in the diffusing channel where it falls to a reservoir to await flow into the next chamber. The above recited structure and operation effectively performs the functions of equilibration, phase separation, injection and stabilization in the flash evaporator.

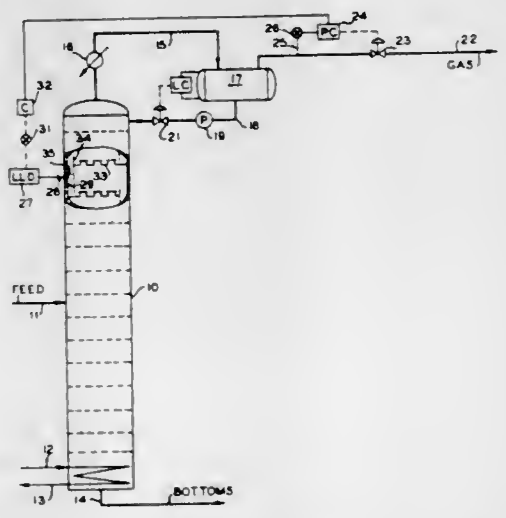
3,427,228
PREVENTION OF FLOODING IN A DISTILLATION COLUMN BY CONTROL OF COLUMN TOP PRESSURE

George J. Constantikes and Robert D. Bauer, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,482

U.S. Cl. 203—1 **7 Claims**

Int. Cl. B01d *3/42*



Incipient flooding in a distillation column is detected as a liquid level in a downspout or downcomer and the condition that is tending to produce flooding is corrected by reducing the pressure on the distillation column.

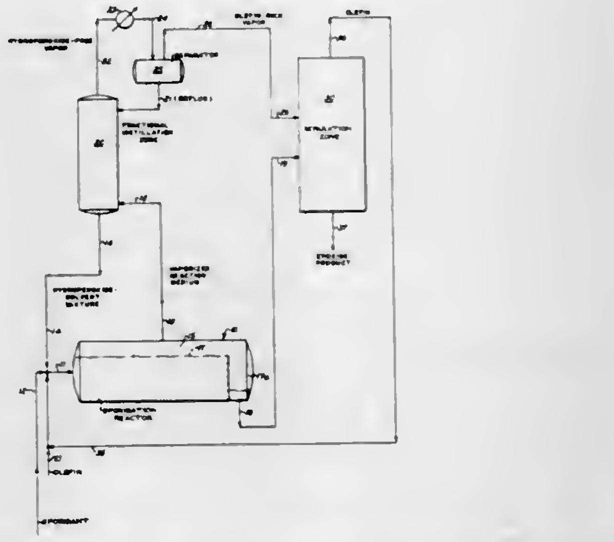
3,427,229
RECOVERY OF TERTIARY-BUTYL HYDROPEROXIDE BY FRACTIONATION IN THE PRESENCE OF A REFLUXING AGENT

Stanley Herzog, Cliffside Park, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Filed May 22, 1967, Ser. No. 640,003

U.S. Cl. 203—63 **5 Claims**

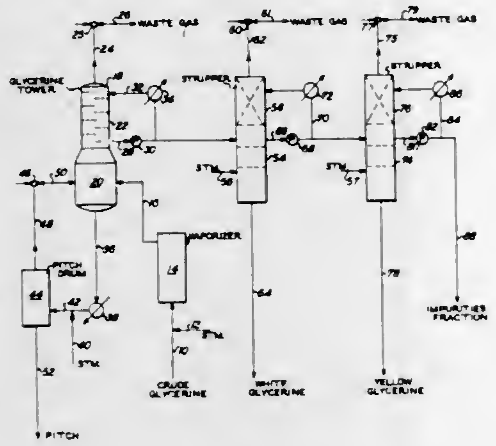
Int. Cl. B01d *3/40*



This invention is directed to the recovery of tertiary-butyl hydroperoxide that has escaped into the vapor phase from a liquid phase epoxidation reaction, said vapor phase containing an olefin and a tertiary-butyl alcohol, by distilling a vapor stream of the reaction product in a fractionation zone and contacting the stream with a refluxing agent within the fractionation zone in such a manner as to recover an overhead stream essentially free of tertiary-butyl hydroperoxide and recovering, as a bottoms stream, a dilute solution of the hydroperoxide in a predominant amount of the refluxing agent. The bottoms stream is returned to the epoxidation reaction zone.

3,427,230
SAPONIFICATION GLYCERINE REFINING BY PLURAL STAGE FLASH DISTILLATION WITH LIVE STEAM

James J. Graham, Wayland, Mass., assignor to Badger Manufacturing Company, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 9, 1965, Ser. No. 506,923
U.S. Cl. 203—75 **5 Claims**
Int. Cl. B01d *3/06*



1. The method of purifying crude saponification glycerine comprising commingling said crude glycerine with super-heated steam in quantity and at a temperature and pressure to flash the glycerine values and volatile impurities therein into vapors and separate non-volatile impurities and separately condensing the glycerine from said vapors, reflashing the glycerine condensate admixed with a second quantity of live steam to vaporize additional impurities from a liquid purified and concentrated glycerine bottoms product.

3,427,231
METHOD OF ELECTROPLATING AND ELECTROFORMING GOLD IN AN ULTRASONIC FIELD

Edward B. Schneider and Melvin E. Lindell, Canoga Park, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed July 21, 1965, Ser. No. 473,746
U.S. Cl. 204—3 **12 Claims**
Int. Cl. C23b *5/28, 7/00*

A method of electrodepositing gold as a coating or to electroform articles. The method ultrasonically agitates an aqueous solution comprising at least 5 troy ounces of gold as alkali metal gold cyanide per gallon of solution. The combination of high gold content of the solution and ultrasonic agitation during deposition permits pure gold deposits which are also very hard.

3,427,232
METHOD OF ELECTRODE PLATING SILVER ON MAGNESIUM

John W. Natwick, Palo Alto, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Mar. 13, 1967, Ser. No. 623,513
U.S. Cl. 204—32 **3 Claims**
Int. Cl. C23b *7/08, 5/62, 5/26*

A process for electrodepositing an adherent coating of silver on the surface of a magnesium work piece in order to provide a low resistance current path for microwave energy transmission. The process comprises the steps of cleaning the magnesium work piece surface in a basic solution by generating hydrogen thereon, etching the surface in a dilute solution of carboxylic acids and then immersing the work piece into a plating solution containing silver ions and a combination of alkali metal phosphate salts to effect deposition of the silver.

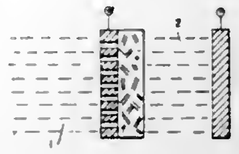
3,427,233
ELECTROLYTIC POLYMERIZATION OF MALEIC ANHYDRIDE

Chappelle C. Cochrane, Maywood, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 18, 1966, Ser. No. 535,317
U.S. Cl. 204—59 **8 Claims**
Int. Cl. B01k *1/00;* **C08f** *3/48*

1. An electrochemical method of homopolymerizing maleic anhydride monomer which comprises providing a divided cell with each compartment separated by a porous diaphragm, one compartment containing a solution comprising said monomer and a non-aqueous organic solvent capable of solubilizing said monomer, and the other compartment containing a solution comprising said solvent and conducting polymerization of said monomer by electrolyzing said solutions using an anode and cathode respectively immersed in said solutions, and recovering a polymer.

3,427,234
ELECTROCHEMICAL HYDRODIMERIZATION OF ALIPHATIC α,β-MONO-OLEFINICALLY UNSATURATED NITRILES

Harald Guthke, Frankenthal, Pfalz, Karl Wintersberger, Fritz Beck, and Josef Georg Floss, Ludwigshafen (Rhine), and Wolfgang Habermann, Mainz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Apr. 13, 1966, Ser. No. 542,255
Claims priority, application Germany, Apr. 14, 1965, B 81,447
U.S. Cl. 204—73 **9 Claims**
Int. Cl. B01k *1/00*



1. A process for hydrodimerizing mononitrile of the formula $R''R'C=CR-CN$ in which R, R' and R'' each represent hydrogen or alkyl having 1 to 5 carbon atoms to form a dinitrile of the formula

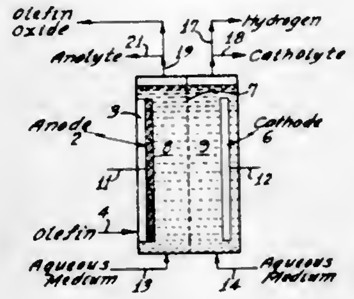
$$\mathrm{NC{-}CHR{-}CR'R''{-}CR'R''{-}CHR{-}CN}$$

in which R, R' and R'' have the same meaning as indicated above which comprises passing electric current through a catholyte containing at least 5% of the mononitrile and being separated by a solid polyelectrolyte from the anolyte, the solid polyelectrolyte covering at least one of the electrodes on the side facing the other electrode and the coated electrode having a certain permeability for the catholyte or the anolyte, respectively, and for the oxygen disengaged.

3,427,235
ELECTROLYTIC PRODUCTION OF OLEFINE OXIDES

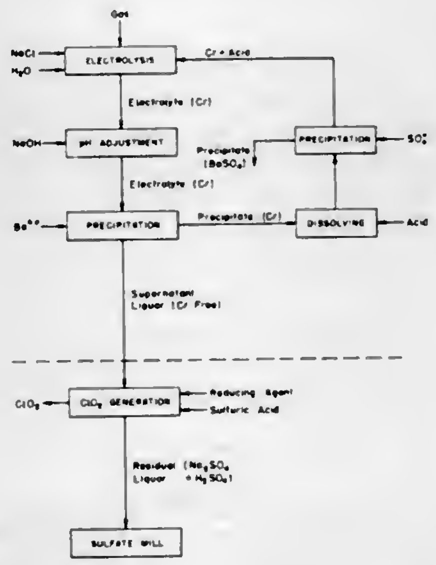
Joseph Adrien M. Le Duc, Short Hills, N.J., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,758
U.S. Cl. 204—78 **18 Claims**
Int. Cl. C07d *1/08;* **B01k** *1/00;* **C07b** *3/00*

1. A process for the formation of an oxide of an olefinic compound which comprises providing an electrochemical cell having an anodic and cathodic surface and containing an aqueous medium, generating oxygen at the anodic surface by subjecting the aqueous medium to the action of an electrical current, passing an olefinic compound to said cell such that it is contacted with oxygen generated at the anodic surface, operating said cell under conditions such that the aqueous medium is maintained in the liquid phase and at a temperature of at least 75° F., and withdrawing effluent from said cell containing an oxide of said olefinic compound.



3,427,236
PROCESS FOR THE PREPARATION OF AN ALKALI METAL CHLORATE SOLUTION FOR USE IN A CHLORINE DIOXIDE GENERATION PROCESS

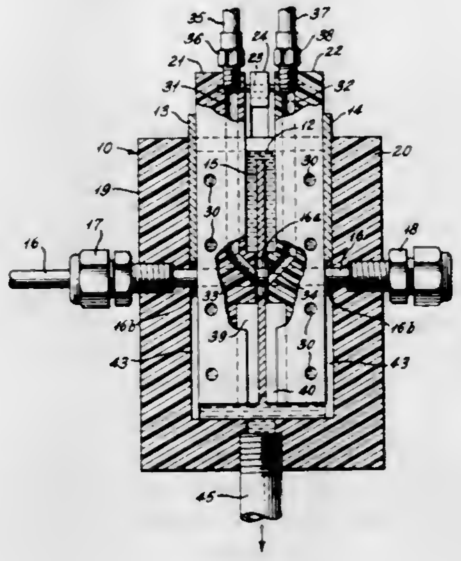
Axel Fredrik Scholander, Ornskoldsvik, and Rolf Karl August Brännland, Alfredshem, Sweden, assignors to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a limited company of Sweden
Filed Mar. 14, 1966, Ser. No. 533,892
Claims priority, application Sweden, Mar. 16, 1965, 3,428/65
U.S. Cl. 204—95 **11 Claims**
Int. Cl. C01b *11/14*



1. A process for the preparation of an alkali metal chlorate solution comprising electrolyzing an alkali metal chloride solution in the presence of chromium salts to produce an alkali metal chlorate solution, adjusting the pH to such a value that the principal part of the chromium is in the form of chromate ions, precipitating the chromate ions by addition of cations forming slightly soluble chromates, separating a precipitate of the slightly soluble chromates from the chlorate solution, dissolving the chromate precipitate in hydrochloric acid or sulfuric acid, precipitating the cations from the resulting acid solution as slightly soluble salts, and returning the residual chromium-containing solution to the electrolysis step.

3,427,237
ELECTROLYSIS METHOD AND ELECTROLYTIC CELL

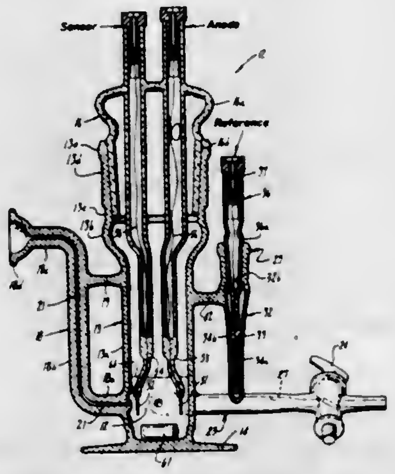
Thomas M. Morris, 7131 E. 32nd Place, Tucson, Ariz. 85710
Continuation-in-part of application Ser. No. 414,597, Nov. 30, 1964. This application May 1, 1967, Ser. No. 641,099
U.S. Cl. 204—124 **11 Claims**
Int. Cl. C22d *1/26, 1/02, 1/00*



This application discloses a method and apparatus for removing valuable metals from aqueous solutions by electrolytically depositing such metals on a moving mercury cathode and removing mercury enriched by the electrodeposited metal.

3,427,238
ELECTROLYTIC TITRATION APPARATUS

Alva Robert Myers, Edmonds, Wash., and James A. McNulty, Belmont, Calif., assignors to Dobrmann Instruments Company, San Carlos, Calif., a corporation of California
Filed Nov. 18, 1964, Ser. No. 412,146
U.S. Cl. 204—195 **8 Claims**
Int. Cl. B01k *3/00*



Electrolytic titration apparatus which has chopper means for supplying power to the generating electrodes only when the sensing electrode assembly is disconnected and which has isolation means for providing a predetermined impedance between the sensing electrode and the reference electrode of the sensing assembly.

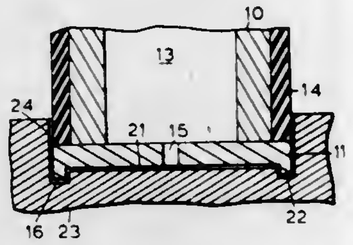
3,427,239
TOOL ELECTRODE FOR ELECTRO-EROSIVE MACHINERY

Ronald C. Abt and Robert R. Adams, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 11, 1966, Ser. No. 541,638

U.S. Cl. 204—284 **3 Claims**

Int. Cl. B01k *3/04;* **C23b** *57/74*



There is described herein a tool electrode for use in the electro-chemical machining process which has a narrow rim extending forward of its machining face and around the periphery thereof to produce a high resistance to flow. This tool produces smoothly machined surfaces on through holes which do not have the electrolyte flow lines that frequently are objectionable in a part machined by the electro-chemical process.

3,427,240
CARBONACEOUS COMPACTION USING HIGH TEMPERATURE FLUID COKE

Thomas Collum Landrum and Robert Harry Waghorne, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 17, 1966, Ser. No. 550,591

U.S. Cl. 204—294 **5 Claims**

Int. Cl. B01k *3/08*

1. A carbonaceous compaction suitable for dusting-resistant alumina reduction cell electrode use comprising high temperature fluid coke, carbon black in an amount ranging from about 5 to about 10 parts per 100 parts by weight of high temperature fluid coke, and a carbonaceous material selected from the group consisting of carbonaceous binder and the coked residue thereof.

3,427,241
PHOTOCHEMICAL METHOD OF PREPARING BICYCLO[1.1.0]BUTANE AND CYCLOBUTENE

Rangaswamy Srinivasan, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 9, 1964, Ser. No. 410,005

U.S. Cl. 204—162 **21 Claims**

Int. Cl. C07c *3/24, 13/06, 13/34*

A photochemical method of preparing bicyclo [1.1.0] butanes and cyclobutenes is described. A solution of a linear 1,3 diene or an alkyl substituted linear 1,3 diene is exposed to ultraviolet radiation for a time sufficient to convert about 90% of the 1,3 diene to cyclobutene and bicyclo [1.1.0] butane. The products are separated by distillation and gas chromatography. The products can be utilized as high energy fuels or as starting materials for polymerization reactions.

3,427,242
APPARATUS FOR CONTINUOUS PHOTO-ELECTROPHORETIC IMAGING

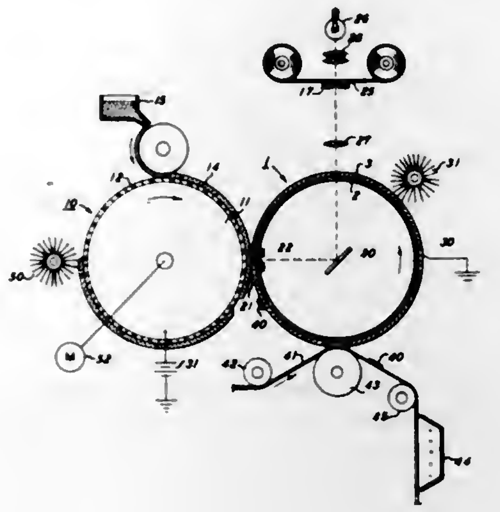
Vsevolod S. Mihajlov, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 18, 1966, Ser. No. 543,125

U.S. Cl. 204—300 **11 Claims**

Int. Cl. B01k *5/00*

1. An apparatus for photoelectrophoretic imaging comprising in combination a rotatably mounted first electrode, means to apply a film of an imaging suspension to the surface of said first electrode, an optically transparent second electrode rotatably mounted in close proximity and parallel to the axis of said first electrode such that the surface of said second electrode is in area contact with the film on the surface of said first electrode, means to rotate said first and second electrodes, means to project an image onto said suspension at the area of contact of said second electrode with said film coated first electrode, and means to apply an electric field across said suspension at said area contact whereby an image is produced on at least one of said electrodes.



3,427,243
HYDROCRACKING PROCESS

Robert H. Hass, Fullerton, Paul F. Helfrey, Whittier, and Frank C. Riddick, Orange, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Continuation-in-part of application Ser. No. 573,203, Aug. 18, 1966. This application May 8, 1967, Ser. No. 636,659

U.S. Cl. 208—111 **15 Claims**

Int. Cl. C10g *13/10*

Group VIII noble metal-promoted zeolite hydrocracking catalysts are employed for the hydrocracking of hydrocarbon oils under a novel combination of conditions to achieve a high efficiency operation wherein each volume of catalyst is forced to convert at least about 2.4 volumes of liquid feed per hour to products boiling below the initial boiling point of the feed, while still maintaining low catalyst deactivation rates. These objectives are achieved essentially by employing a combination of (1) relatively high feed throughput rates, (2) relatively high temperatures, and (3) relatively high pressures.

3,427,244
SOLID LUBRICANT COMPOSITES

David J. Boes, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 6, 1967, Ser. No. 643,899

U.S. Cl. 252—12 **10 Claims**

Int. Cl. C10m *7/00, 5/00*

A self-lubricating body having a combination of mechanical strength and wear-resistance at temperatures ranging from —40° F. to 1500° F. and comprising a heat treated reaction product (a) from about 10% to 30% by weight of a low melting metal selected from a group consisting of gallium and gallium-base alloys with one or more of the metals indium, tin, cadmium, and bismuth, from 90% to 10% by weight of a solid lubricant selected from at least one of the group consisting of sulfides and selenides of tungsten and molybdenum, and (b) a filler of powered copper, molybdenum, tantalum, or silver or tungsten, with blended powders of copper and tungsten giving highest physical properties.

3,427,245
LUBRICANT ADDITIVE COMPOSED OF A MIXTURE OF AMINE SALTS OF MONOAMIDES AND MONOAMIDES OF ALKENYL SUCCINIC ACIDS

Bruce W. Hotten, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 423,316, Jan. 4, 1965. This application Aug. 15, 1966, Ser. No. 572,218

U.S. Cl. 252—34.7 **10 Claims**

Int. Cl. C10m *1/36, 1/08*

Mixtures of aliphatic hydrocarbon substituted succinamic acid amine salts, wherein the amine is a secondary amine, are provided for use under extreme corrosion conditions, particularly phosphate lubricants.

3,427,246
TRITHIONE-TERVALENT PHOSPHORUS REACTION PRODUCT AND LUBRICATING OIL CONTAINING SAME

Donald J. Anderson, San Anselmo, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,495

U.S. Cl. 252—46.6 **10 Claims**

Int. Cl. C10m *1/38, 3/32;* **C07d** *61/00*

Reaction products of phosphorus esters and trithiones are obtained by contacting the 2 materials under mild conditions. The products find use as additives in lubricating oils.

3,427,247
ELECTROVISCOUS COMPOSITIONS

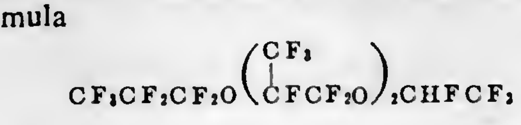
Robert L. Peck, Woodbridge, Conn., assignor to Textron, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 133,874, Aug. 25, 1961. This application Aug. 2, 1965, Ser. No. 476,728

U.S. Cl. 252—75 **7 Claims**

Int. Cl. C09k *3/00;* **F16d** *27/00*

7. An electroviscous composition consisting essentially of a quantity of a finely divided non-conductive solid selected from the group consisting of pyrogenic silica, and corundum having a mean particle diameter no greater than 0.1 micron, and based upon the weight of the solid, at least 1% of a hydrogen bonding acid selected from the group consisting of acetic acid, formic acid, lactic acid, malic acid, malonic acid, octanoic acid, oxalic acid, pyruvic acid, and trichloroacetic acid, at least 1% of a hydrogen bonding base selected from the group consisting of methanol, ethyl alcohol, glycerol, ethylene glycol, diethylene glycol, sorbitol, guaiacol, acetamide, formamide, aniline, ethylenediamine, triethanolamine, hydroxyethylcyclohexylamine, cyanoethylcyclohexylamine, phenylcyclohexylamine, benzophenone, phenol, resorcinol, pyridine, and ammonium hydroxide, the total quantity of said solid, acid and base not exceeding 35% of the total weight of the composition, and the remainder being a dielectric liquid vehicle selected from the group consisting of carbon tetrachloride, xylene, silicone oil with a viscosity of 0.49 centipoise, a liquid fluorocarbon having the formula



$$CF_3CF_2CF_2O\left(\overset{\displaystyle CF_3}{\overset{|}{C}}FCF_2O\right)_2CHFCF_3$$

mineral oil, olive oil, castor oil, cottonseed oil, and linseed oil.

3,427,248
DETERGENT

Vincent Lamberti, Upper Saddle River, and Henry Lemair, Leonia, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,299

U.S. Cl. 252—117 **7 Claims**

Int. Cl. C11d *9/32, 9/30, 9/02*

The specification is concerned with certain polyolethers, polyolpolyethers or sulfur analogs thereof which can be used alone as a detergent or in combination with other compounds.

3,427,249
CONDITIONING POWDER FOR DRYCLEANING SOLVENT

Raymond George Riede, Martinsville, and Clifford William Cain, Jr., Bound Brook, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Mar. 18, 1965, Ser. No. 440,686

U.S. Cl. 252—163 **9 Claims**

Int. Cl. B08b *3/08;* **B01d** *15/00;* **B01j** *1/22*

The removal of fatty acid soil from an organic drycleaning solvent is improved by using as a sweetener hydrothermal calcium silicate having a lime to silica ratio of about 1.5 to 2.0:1. A combination of about 5–15% by weight of calcium silicate and about 85–95% by weight of filter aid is mixed with the drycleaning solvent, and fatty acid soil is removed from the system by filtering.

3,427,250
MICROSCOPIC CAPSULES AND PROCESS FOR THEIR PREPARATION

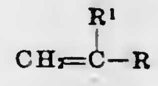
Howard C. Haas, Arlington, and Lloyd D. Taylor, Everett, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,768

U.S. Cl. 252—316 **4 Claims**

Int. Cl. B01j *13/02*

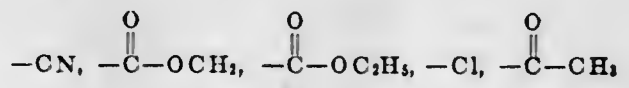
1. A process for the preparation of microscopic capsules which comprises, in combination, the steps of dispersing an aqueous solution of an anionic polymerization initiator selected from the group consisting of alkali metal hydroxides, aliphatic secondary amines, and aliphatic tertiary amines in a water-immiscible organic liquid solvent for a monomer capable of being anionically polymerized upon contact with said initiator, said monomer being represented by the structural formula:



$$CH_2{=}\overset{\displaystyle R^1}{\overset{|}{C}}{-}R$$

wherein:

R is an electron withdrawing group selected from the group consisting of



$$-CN,\ -\overset{\displaystyle O}{\overset{\|}{C}}-OCH_3,\ -\overset{\displaystyle O}{\overset{\|}{C}}-OC_2H_5,\ -Cl,\ -\overset{\displaystyle O}{\overset{\|}{C}}-CH_3$$

and —NO_2; and R^1 is selected from the group consisting of hydrogen and R; thereby providing a dispersion of aqueous droplets containing said initiator in said solvent, and dissolving in said solvent said monomer thereby polymerizing said monomer at the interface between said droplets and said solvent to provide a separate, substantially continuous wall of polymer around individual droplets.

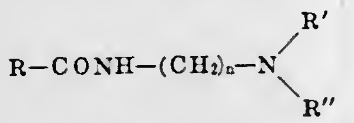
2. Microscopic capsules prepared according to the process of claim 1.

3,427,251

GELATINOUS PREPARATIONS CONTAINING QUATERNARY AMMONIUM SALT DERIVATIVES

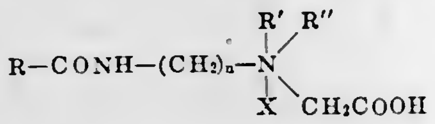
Alfred Berger, Reinach, and Burkhart Lange, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Apr. 29, 1964, Ser. No. 363,632
Claims priority, application Switzerland, May 3, 1963, 5,586/63
U.S. Cl. 252—316 **2 Claims**
Int. Cl. B01j *13/00;* **C07c** *103/54*

1. Gelatinous compositions consisting essentially of water and as gel-former, in an amount of 5 to 10 percent by weight calculated on the water present, a salt of (1) a basic compound corresponding to the formula



$$R{-}CONH{-}(CH_2)_n{-}N\begin{matrix}R'\\ R''\end{matrix}$$

where R represents an aliphatic hydrocarbon radical containing 13 to 17 carbon atoms, R′ and R″ each represents an alkyl group selected from the group consisting of methyl and ethyl, and *n* is at least 2 and most 3, and of (2) an acid quaternary compound corresponding to the formula



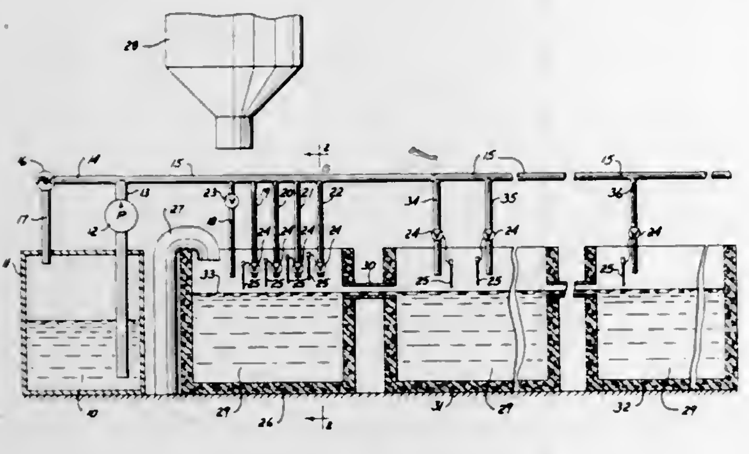
$$R{-}CONH{-}(CH_2)_n{-}\overset{R'\ R''}{\underset{X\ \ CH_2COOH}{N}}$$

where R represents an aliphatic hydrocarbon radical containing 13 to 17 carbon atoms, R′ and R″ each represents an alkyl group selected from the group consisting of methyl and ethyl, X represents a halogen atom selected from the group consisting of chlorine and bromine and *n* is at least 2 and at most 3.

3,427,252

APPARATUS FOR THE CONTROL OF FOAM FORMATION DURING THE PROCESSING OF LIQUIDS

Philip J. Gaughan, Philadelphia, George E. Dorwart, Southampton, and John B. Lord, Abington, Pa., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1966, Ser. No. 539,085
U.S. Cl. 252—361 **9 Claims**
Int. Cl. B01d *19/04, 19/02*

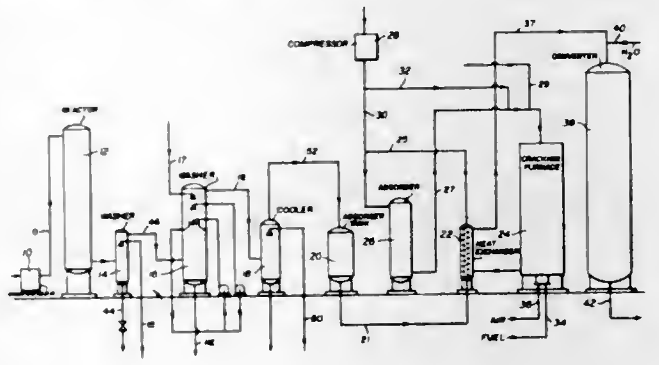


The present invention relates generally to the control of foam formation in the processing of liquids and to apparatus therefor, and particularly to feeding anti-foam agents to wet processes for the synthesis of phosphoric acid by means of an anti-foam distribution system. The anti-foam distribution system features a plurality of valves through which the anti-foam agents pass, which valves operate in response to a plurality of sensing means located at gradually increased distances from the surface of the liquid being processed.

3,427,253

METHOD FOR PRODUCING CARBON MONOXIDE AND HYDROGEN FROM COAL DISTILLATION GAS

Erich Heinz Becker-Boost, Saarbrucken, Otto Gross, Wanne-Eickel, and Walter Heinrich Bill, Heinitz, Saar, Germany, assignors to Otto Construction Corporation, New York, N.Y., a corporation of New York
Filed July 31, 1963, Ser. No. 300,123
Claims priority, application Germany, Aug. 1, 1962, O 8,896
U.S. Cl. 252—373 **4 Claims**
Int. Cl. C10j *3/00;* **C10b** *53/04*



1. In a method of producing carbon monoxide and hydrogen from coal distillation gas containing nitric oxide and unsaturated carbons, said distillation gas having previously been freed of any benzol, ammonia, and tar therein, this method comprising catalytically cracking said gas to carbon monoxide and hydrogen, the improvement comprising, prior to said catalytic cracking, compressing said gas and raising the temperature thereof to from about 90 to 120° C., passing the heated gas into a chamber and permitting the preponderance of the nitric oxide present to be converted to nitrogen dioxide followed by reaction of said nitrogen dioxide with the unsaturated hydrocarbons to form gums, removing said gums by washing with oil or water adapted to cool said gas to a temperature of about 45° C. to permit removal of hydrogen sulfide therefrom, removing said hydrogen sulfide by washing with an alkaline arsenite solution, cooling said gas by cold water and thereby removing any HCN present therein, contacting the resultant gases with activated carbon to adsorb and remove from said gases easily adsorbable sulfur compounds, and thereafter contacting said gases in the presence of oxygen with an adsorbent consisting of a material selected from the group consisting of lime and zinc oxide at a temperature in excess of about 300° C. to adsorb sulfur compounds still contained in said gases, the temperature being at least about 420° C. when said adsorbent is lime.

3,427,254

REGENERATION OF ALUMINUM HALIDE-ABSORBENT SOLID CATALYST

Herman L. Muller, Valparaiso, Ind., and Tao Ping Li, Texas City, Tex., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Continuation-in-part of application Ser. No. 379,325, June 30, 1964. This application Nov. 14, 1966, Ser. No. 593,705
The portion of the term of the patent subsequent to May 9, 1984, has been disclaimed
U.S. Cl. 252—415 **5 Claims**
Int. Cl. B01j *11/78, 11/66, 11/02*

A method of improving the initial hydrocarbon conversion activity of a catalyst which has been regenerated by treating the regenerated catalyst with hydrogen gas at an elevated temperature and pressure, which catalyst consists essentially of the reaction product of aluminum chloride with the surface hydroxyl groups of a surface-hydroxyl-containing adsorbent solid. The method includes contacting the regenerated catalyst with gaseous anhydrous hydrogen chloride at a pressure in the range of about 15 to 500 p.s.i. for a time sufficient to permit essentially complete association of the hydrogen chloride with the catalyst. The hydrogen chloride contacting must take place prior to contacting the regenerated catalyst with the hydrocarbon to be converted.

3,427,255

FLUID COMPOSITIONS FROM MALEIC ANHYDRIDE AND CARBOXYL-TERMINATED COMPOSITIONS

Leslie C. Case, 14 Lockeland Road, Winchester, Mass. 01890
No Drawing. Filed Nov. 15, 1966, Ser. No. 594,382
U.S. Cl. 252—426 **9 Claims**
Int. Cl. C08g *30/12*

Homogeneous compositions prepared by admixture of maleic anhydride and compositions having terminal carboxylic acid groups are described. These compositions are fluid and readily miscible with other materials at room temperature and are particularly suitable as cross-linking agents for epoxy resins.

3,427,256

DOUBLE METAL CYANIDE COMPLEX COMPOUNDS

Jack Milgrom, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Original application Feb. 14, 1963, Ser. No. 258,530, now Patent No. 3,278,457, dated Oct. 11, 1966. Divided and this application Jan. 13, 1966, Ser. No. 520,357
U.S. Cl. 252—431 **19 Claims**
Int. Cl. B01j *11/84*

A double metal cyanide complex compound is provided, wherein one of the metals of said complex compound is selected from the group consisting of Zn (II), Fe (II), Fe (III), Co (II), Ni (II), Mo (IV), Mo (VI), Al (III), V (IV), V (V), Sr (II), W (IV), W (VI), Mn (II), and Cr (III), and mixtures thereof, and wherein the other metal of said complex compound is selected from the group consisting of Fe (II) Fe (III), Co (II), Co (III), Cr (II), Cr (III), Mn (II), Mn (III), V (IV), and V (V), and mixtures thereof, containing, in an amount sufficient to increase the activity of said complex for the polymerization of organic cyclic oxides, at least one organic material selected from the group consisting of an acyclic aliphatic polyether, a sulfide, an amide and a nitrile, said organic material being inert to polymerization by said compound and further being complexed with said compound, said compound containing at least a majority of CN^- bridging groups. These compounds are useful in polymerizing epoxides such as propylene oxide, ethylene oxide, allyl glycidyl ether and the like to make polyethers.

3,427,257

POLYMERIZATION CATALYST CONTAINING VANADIUM, PHOSPHORUS AND ALUMINUM

John W. Bayer, Perrysburg, and Donald W. Gagnon and William C. Grinonneau, Toledo, Ohio, assignors to Owens-Illinois, Incorporated, a corporation of Ohio
No Drawing. Filed June 18, 1965, Ser. No. 465,210
U.S. Cl. 252—431 **7 Claims**
Int. Cl. B01j *11/32*

Disclosed herein is a catalyst composition, a method for making it, and a method of polymerization of unsaturated compounds; the catalyst composition contains a primary component (produced by the reaction of a vanadium oxide with an organic phosphorus oxy compound) which is employed in conjunction with an organo-aluminum compound as a cocatalyst.

3,427,258

ELECTROSTATIC IMAGE DEVELOPER POWDER COMPOSITION

Ralph E. Trease, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Nov. 12, 1965, Ser. No. 507,518
U.S. Cl. 252—500 **7 Claims**
Int. Cl. H01b *1/04;* **H01c** *1/00*

This invention relates to a novel, finely divided, encapsulated, decorative ink particle having an outer layer or coating of organic amine and an intimately dispersed core of dicarboxylic acid and organic resin, the ink particle having a resistivity of 10^5 to 10^{10} ohm-centimeters.

3,427,259

POLYMERIZING OF OXIRANE MONOEPOXIDES IN THE PRESENCE OF A REACTION PRODUCT OF AN ORGANOMETALLIC COMPOUND AND A POLYOXYALKYLENE GLYCOL

Kenneth T. Garty, Somerville, and Thomas B. Gibb, Jr., Murray Hill, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 824,191, July 1, 1959. This application Oct. 16, 1963, Ser. No. 316,522
U.S. Cl. 260—2 **21 Claims**
Int. Cl. C08g *30/02;* **C07f** *3/00*

1 Method for the production of a polymer of an epoxide compound which comprises polymerizing a monomeric oxirane monoepoxide which is free of ester, acid, amino and aldehyde groups, in the presence of the reaction product of a mixture consisting of at least about 0.01 percent by weight, based on the weight of said oxirane monoepoxide, of an organometallic compound having the formula:

$$R_1—Me—R_2$$

wherein R_1 and R_2 are hydrocarbon radicals containing a maximum of 18 carbon atoms and Me is a metal of Group II of the Periodic Table and from about 0.3 to about 4 moles, per mole of said organometallic compound, of a polyoxyalkylene glycol having the formula:

$$HO(C_nH_{2m}O)_xH$$

wherein *n* is an integer having a value of 2 to 50, inclusive, and *x* is an integer having a value of 2 to 25, inclusive.

3,427,260

POLYMERIZATION OF 1,2 OR 1,3-EPOXIDES WITH A CATALYST COMPRISED OF TRIVALENT METAL CARBOXYLATE

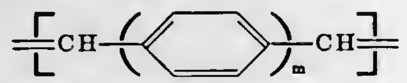
Françoise Maguet-Martin, Garches, Maseh Osgan, Rueil-Malmaison, and Philippe Teyssie, Le Vesinet, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,078
Claims priority, application France, Feb. 19, 1965, 6,403
U.S. Cl. 260—2 **13 Claims**
Int. Cl. C08g *23/14, 23/06;* **B01j** *11/00*

In a process for the polymerization of 1,2 or 1,3-monoepoxides, the improvement comprising using a catalyst produced by hydrolyzing a basic carboxylate of a trivalent metal having an atomic number of 21 through 27, inclusive, at a temperature of 5–200° C. with a quantity of water equal to about 0.01–100 times the weight of the carboxylate, and then dehydrating the resultant hydrolyzed carboxylate at about 80–200° C., whereby the rate of polymerization is greatly enhanced.

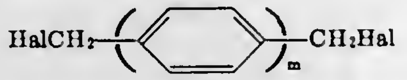
3,427,261
AROMATIC POLYMERS

Hans R. Meyer, Kilchberg, Switzerland, assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Mar. 29, 1966, Ser. No. 538,205
U.S. Cl. 260—2 **5 Claims**
Int. Cl. C08g *33/00*

This invention relates to a process for preparing a polymer having the formula:



where *m* has one of the values 1 and 2, which comprises reacting a halide of the formula:

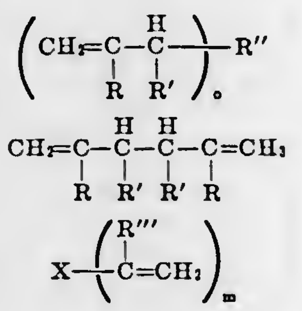


where Hal is a member of the halogen group consisting of chlorine, bromine and iodine, with a member of the alkali metal group consisting of an alkali metal hydroxide and an alkali metal alkoxide, the mole ratio of the alkali metal group member to the halogen group member being 1 to 3:1 respectively in an inert diluent medium at a temperature in the range of about 0° to 250° C. The aforestated unsaturated polymer can be reduced to the corresponding saturated polymer by nascent hydrogen.

3,427,262
CROSS-LINKED ACRYLATE POLYMERS

Herbert Corte, Opladen, and Harold Heller, Leichlingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 15, 1966, Ser. No. 594,413
Claims priority, application Germany, Dec. 31, 1965, F 48,066
U.S. Cl. 260—2.2 **10 Claims**
Int. Cl. C08f *15/16;* **B01j** *1/08*

A homogeneous of macroreticular copolymer of an acrylic acid ester and 2–20% of a cross-linking agent of the formula



wherein

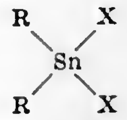
R″ is a polyvalent alkyl radical having 1–14 carbon atoms;
R, R′ and R‴ are defined as hydrogen or alkly having 1–6 carbon atoms;
X is cyclohexane or cyclopentane; and
m and *n* are 2–3;

and the corresponding insoluble anion and cation exchangers utilizing the defined copolymer as a matrix.

3,427,263
PROCESS FOR THE MANUFACTURE OF POLYURETHANE FOAMS

Henricus Gerardus Josef Overmars, Zeist, Netherlands, assignor to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands
No Drawing. Filed May 27, 1965, Ser. No. 459,457
Claims priority, application Netherlands, June 9, 1964, 6406534
U.S. Cl. 260—2.5 **2 Claims**
Int. Cl. C08g *22/04, 53/10*

Polyurethane foams having a high degree of thermal stability are made by reacting one or more polyhydroxy compounds with one or more polyfunctional isocyanates in the presence of a blowing agent and a catalyst for the gelation reaction consisting of a di-organotin compound of the formula



wherein R represents a hydrocarbon radical and X represents a halogenated aliphatic carboxylic acid radical containing at least one halogen atom.

3,427,264
METAL-FILLED PLASTICS COMPRISING A STYRENE POLYMER AND AN ELASTOMER

Eric O. Forster, Scotch Plains, and Byron M. Vanderbilt, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,475
U.S. Cl. 260—4 **15 Claims**
Int. Cl. C08f *45/02;* **C08c** *11/04*

A metal-filled resinifiable mix having good dielectric properties suitable as an electrical insulator comprising a substantially hydrocarbon material including a polymer having 1,2-ethylene type unsaturation and a styrene type monomer wherein said metal has an average particle size of about 0.1 to about 100 microns.

3,427,265
COMPOSITION OF MATTER CONTAINING WAX AND A RESINOUS COPOLYMER OF ETHYLENE

Keith C. Brinker, Fairfax, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 9, 1965, Ser. No. 507,062
U.S. Cl. 260—17.4 **7 Claims**
Int. Cl. C08f *45/52;* **C09d** *5/20*

A resinous, thermoplastic protective coating composition which is readily strippable from the substrate to which it is applied is disclosed. The composition basically comprises an ethylene copolymer-wax blend containing a small amount of a particular water-soluble surface active agent. The surface active agents include, among others, sucrose or raffinose esters of certain fally acids, nonylphenoxy polyoxyethylene ethanol, dihexyl sodium sulfosuccinate, polyoxyethylene sorbitan monostearate, and polyoxyethylene cocoa amine.

3,427,266
WATER-DISPERSIBLE EPOXY-MODIFIED ALKYD RESIN AND PROCESS THEREFOR

Gordon Phillips, Parkview, and Tony R. Casshie, Cleveland, Ohio, assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 23, 1965, Ser. No. 450,541
U.S. Cl. 260—22 **6 Claims**
Int. Cl. C08g *30/04*

Water dispersible epoxy-modified alkyd resins which may be employed in aqueous media to produce stable film forming compositions which produce air dryable water insoluble alkali and acid resistant, durable films when applied to surfaces are obtained by,

(1) reacting a glycidyl polyether of a dihydric phenol and a monocarboxylic fatty acid to form a partial ester of said polyether and said monocarboxylic fatty acid;
(2) reacting said partial ester with a polycarboxylic acid, a polyhydric alcohol, and a hydroxyl substituted aliphatic acid to form a hydroxyl substituted acid-containing reaction product;

(3) reacting said hydroxyl substituted acid-containing reaction product with an alkaline compound having a low vapor pressure to form a partially neutralized product; and
(4) reacting the partially neutralized product with ammonia.

3,427,267
POLYESTER RESINS FROM HIGH MOLECULAR WEIGHT POLYESTERS AND PROCESS FOR PREPARING THEM

Gerhard Stieger, Wiesbaden, and Josef Flasch, Mainz-Bischofsheim, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany
No Drawing. Continuation-in-part of applications Ser. No. 230,260, Oct. 12, 1962, and Ser. No. 342,791, Feb. 5, 1964. This application May 23, 1967, Ser. No. 640,484
Claims priority, application Germany, Oct. 12, 1961, C 25,265; Aug. 27, 1962, C 27,791, C 27,792; Feb. 9, 1963, C 29,117
U.S. Cl. 260—22 **18 Claims**
Int. Cl. C08g *17/10*

Improvement in or relating to polyester resins. More particularly the invention is concerned with the preparation of polyester resins from high molecular weight polyesters of iso- and /or terephthalic acid.

3,427,268
NON-PHASING NEOPRENE CEMENT COMPOSITIONS

John A. Fries, Piscataway, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 511,653, Dec. 6, 1965. This application Nov. 13, 1967, Ser. No. 682,635
U.S. Cl. 260—25 **6 Claims**
Int. Cl. C08d *9/00;* **C09j** *3/12*

Non-phasing contact cement compositions based upon polychloroprene containing less than about 2%, by weight, of rosin; said polychloroprene having certain specified crystallinity characteristics and being dissolved in an organic solvent wherein a metallic oxide and a modified phenolic resin are also dispersed.

3,427,269
ADHESIVE COMPOSITIONS COMPRISING CERTAIN BLOCK COPOLYMERS AND SELECTED RESINS

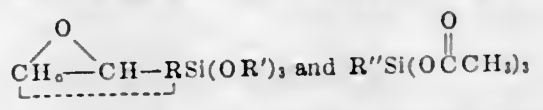
Frank C. Davis, Orinda, and William B. Luther and Donald L. Martinson, Long Beach, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 22, 1966, Ser. No. 544,374
U.S. Cl. 260—27 **6 Claims**
Int. Cl. C09j *3/26, 3/14;* **C08f** *43/02*

Contact adhesive compositions which are essentially dry to the touch at ambient temperatures are provided comprising certain block copolymers in combination with coumarone-indene resins and a rosin based resin in critically defined proportions.

3,427,270
PRIMER FOR CURED SILICONE RELEASE AGENTS

Hal J. Northrup, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Sept. 29, 1965, Ser. No. 491,414
U.S. Cl. 260—29.1 **1 Claim**
Int. Cl. C08g *31/12;* **C09d** *3/82*

A composition useful for coating cellulose substrates with a silicone release agent and a coupling agent is disclosed. The composition is a mixture of a curable organopolysiloxane release agent, a reaction product of



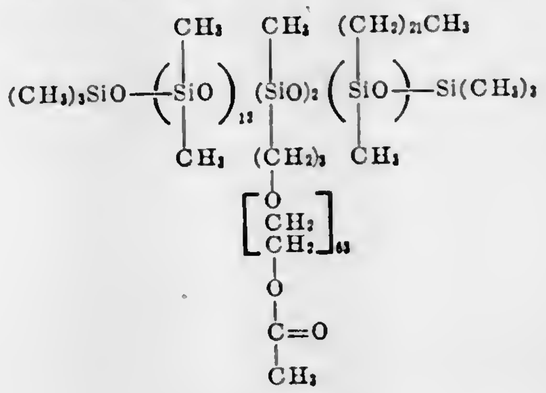
$$\overset{\text{O}}{CH_2\text{—}CH}-RSi(OR')_3 \text{ and } R''Si(O\overset{\text{O}}{\overset{\|}{C}}CH_3)_3$$

where R is a divalent or trivalent organic radical, R′ is a lower alkyl and R″ is a monovalent hydrocarbon radical of no more than 3 carbon atoms and a volatile organic solvent for the curable organopolysiloxane release agent.

3,427,271
NOVEL ORGANOSILICON COMPOSITIONS

Robert L. McKellar, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Nov. 4, 1966, Ser. No. 591,957
U.S. Cl. 260—29.2 **9 Claims**
Int. Cl. C08g *31/20, 53/18, 47/02*

Organosilicon compositions that are particularly useful as water dispersible waxes. Illustrative of the organosilicon composition is one of the formula



3,427,272
WATER-SOLUBLE POLYURETHANE PRODUCED BY REACTING AN ALDEHYDE AND THE REACTION PRODUCT OF AN ORGANIC DIISOCYANATE AND AN ANHYDROUS POLYALKYLENE ETHER GLYCOL

Edgar Dare Bolinger and Emile E. Habib, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
No Drawing. Continuation-in-part of application Ser. No. 597,221, Nov. 28, 1966. This application Mar. 22, 1968, Ser. No. 715,158
U.S. Cl. 260—29.4 **25 Claims**
Int. Cl. C08g *22/04*

A water-soluble aldehyde modified polyurethane produced by the reaction of an aldehyde and a water-soluble polyurethane in a dilute aqueous solution at a pH between about 3 and 10 and a temperature between about 0° and 100° C.; said polyurethane having polymeric constituents reactive toward carbonyl groups and being the reaction product of a substantially anhydrous polyalkylene ether glycol and at least 0.5 molar equivalent of an organic diisocyanate; said aldehyde modified polyurethane being characterized by higher film strength than the unmodified polyurethane at high relative humidities. Also, the process for producing the above product.

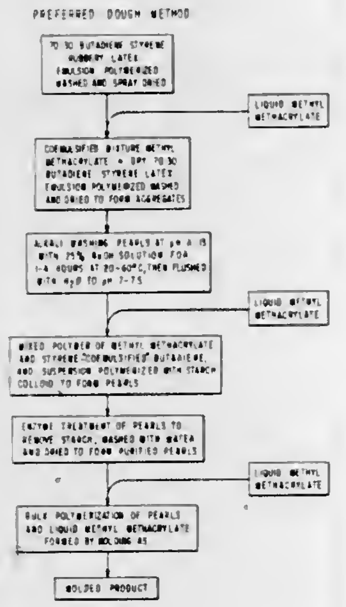
3,427,273
PROCESS FOR MAKING LUMINESCENT ORGANOPOLYSILOXANES AND COMPOSITIONS THEREOF

Charles W. Newing, Jr., Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Aug. 10, 1964, Ser. No. 388,628
U.S. Cl. 260—30.4 **14 Claims**
Int. Cl. C09k *1/02;* **C08g** *31/16, 31/09*

Process for the production of organopolysiloxanes containing monovalent polynuclear aromatic hydrocarbon radicals. The compositions provide a hard fluorescent coating on substrates and generate luminescent emission under energizing radiation.

3,427,274
IMPACT RESISTANT, ALKALI-WASHED MIXED BUTADIENE-STYRENE AND METHYL METHACRYLATE MOLDING COMPOSITION

John A. Cornell, Philadelphia, Pa., assignor to Sartomer Resins Inc., Essington, Pa., a corporation of Delaware
Filed May 10, 1966, Ser. No. 548,891
U.S. Cl. 260—31.8 **7 Claims**
Int. Cl. C08f *29/50, 47/04, 15/16*


PREFERRED DOUGH METHOD
70-30 BUTADIENE STYRENE RUBBERY LATEX EMULSION POLYMERIZED WASHED AND SPRAY DRIED
LIQUID METHYL METHACRYLATE
COEMULSIFIED MIXTURE METHYL METHACRYLATE + DRY 70-30 BUTADIENE STYRENE LATEX EMULSION POLYMERIZED WASHED AND DRIED TO FORM AGGREGATES
ALKALI WASHING PEARLS AT pH 8-13 WITH 25% NaOH SOLUTION FOR 1-4 HOURS AT 20-60°C, THEN FLUSHED WITH H₂O TO pH 7-7.5
LIQUID METHYL METHACRYLATE
MIXED POLYMER OF METHYL METHACRYLATE AND STYRENE "COEMULSIFIED" BUTADIENE, AND SUSPENSION POLYMERIZED WITH STARCH COLLOID TO FORM PEARLS
ENZYME TREATMENT OF PEARLS TO REMOVE STARCH, WASHED WITH WATER AND DRIED TO FORM PURIFIED PEARLS
LIQUID METHYL METHACRYLATE
BULK POLYMERIZATION OF PEARLS AND LIQUID METHYL METHACRYLATE FORMED BY MOLDING AS
MOLDED PRODUCT

Impact resistant translucent or transparent molding composition adapted to produce rigid molded products consisting of at least 90% by weight of suspension or bulk polymerized methylmethacrylate resin of molecular weight 300,000 to 600,000 and from 2–5% of rubbery butadiene-styrene copolymer containing at least 65% butadiene, the rubbery copolymer being in the form of latex particles of from 0.1 to 10 microns in size and being co-emulsified with 40–60% of methylmethacrylate in aqueous dispersion polymerization whereby each latex particle is coated with methylmethacrylate polymer formed in situ by a free radical catalyst present in the aqueous dispersion. Prior to incorporation of the coated rubbery butadiene-styrene copolymer latex in the methylmethacrylate medium, the co-emulsified product is washed with strong alkali at temperatures of 20–60° C. for one to four hours. If the co-emulsified latex is not so washed with alkali, the molded product loses its rigidity if subjected to a prolonged water boiling test and crumbles. Only the alkali-washed product used in the molding composition produces tough, age-resistant, transparent or translucent plastics for dental or automobile headlight lens use.

3,427,275
VINYL AROMATIC-ACRYLIC COPOLYMERS AND PROCESS OF PRODUCING THE SAME

Bernard J. Davis, Biloxi, and Wesley J. Ranson, Gulfport, Miss., assignors to Reichhold Chemicals, Inc., White Plains, N.Y.
No Drawing. Filed Aug. 16, 1967, Ser. No. 660,929
U.S. Cl. 260—31.8 **8 Claims**
Int. Cl. C08f *15/40, 45/40, 1/08*

The present application discloses a resin produced by reacting (A) a mixture of monomers consisting essentially of from (1) about 30%–40% by weight of alpha methyl styrene, (2) about 50%–60% by weight of a member of a group consisting of vinyl toluene and styrene and mixtures thereof and (3) about 2%–15% by weight of at least one member selected from the group consisting of acrylic esters, methacrylic esters, acrylic acid, methacrylic acid and mixtures thereof, with (B) triphenylphosphite and mercaptan in an inert solvent.

3,427,276
DISPERSIONS OF POLYMERIC ORGANIC COMPOUNDS AND PROCESS FOR MAKING THEM

Helmut Hahn, Frankfurt am Main, and Claus Beermann, Neu-Isenburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,308
Claims priority, application Germany, Nov. 9, 1965, F 47,625
U.S. Cl. 260—32.6 **8 Claims**
Int. Cl. C08f *45/44, 29/16, 29/18*

Organosols of high molecular weight polymers, e.g., polytetrafluoroethylene, polyethylene, polyvinyl chloride or copolymers of tetrafluoroethylene with a fluorine-containing comonomer or with vinyl acetate, having a very low water content are disclosed. The organosols may be prepared by mixing an aqueous dispersion of the polymer with formamide or a mixture of formamide with an alcohol, ether or amide having an atmospheric pressure boiling point of 150° to 350° C., and 3 to 25% by weight, based on the weight of polymer, of an nonionic or anionic surface-active agent which is soluble in water and the liquid organic phase. The water is evaporated from the mixture at a reduced pressure to yield an organosol having less than .5% water. The products are useful for casting films and impregnating paper, textiles and other materials, particularly if the materials to be coated are sensitive to water.

3,427,277
METHOD OF MAKING PRESSURE-SENSITIVE LIQUID-DISPENSING DEVICE FROM POLYAMIDES AND ARTICLE THEREFROM

William J. Davis, Wyomissing, Pa., assignor to The Polymer Corporation, Reading, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 218,546, Aug. 22, 1962. This application Oct. 23, 1965, Ser. No. 504,218
U.S. Cl. 260—33.4 **7 Claims**
Int. Cl. C08g *51/66, 41/02;* **C09d** *5/00*

Micro-porous gel-like irregular, unsymmetrical polyamide and liquid which is a non-solvent at room temperature and solvent at elevated temperature. Method of manufacture involves heating mixture to form a homogeneous liquid and cooling to gel. A substance to be dispensed from the gel, e.g., ink, is dispersed in the liquid.

3,427,278
PHOTO CHEMICALLY INERT RESINOUS COMPOSITIONS PIGMENTED BY TITANIUM DIOXIDE AND CONTAINING AN INORGANIC NITRATE

Walter T. Siuta, Metuchen, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
U.S. Cl. 260—39 **4 Claims**
Int. Cl. C08g *51/02, 9/10, 9/30*

This invention covers a new and novel composition of matter comprising a TiO_2 pigment, an inorganic nitrate compound and a resinous material selected from the group consisting of urea, formaldehyde, and melamine formaldehyde. This TiO_2 pigmented resinous composition is substantially photochemically inert when exposed to ultraviolet light.

3,427,279
NITROGEN TETROXIDE RESISTANT CARBOXY-NITROSO TERPOLYMER

Joseph Green, Dover, Nathan B. Levine, Colonia, and William R. Sheehan, Hopatcong, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed June 14, 1966, Ser. No. 557,357
U.S. Cl. 260—41 **9 Claims**
Int. Cl. C08g *45/04;* **C08f** *45/72, 15/40*

An elastomer which is resistant to attack from nitrogen tetroxide is obtained from a carboxy-nitroso terpolymer polymerized from a mixture of trifluoronitrosomethane, gamma-nitrosoperfluorobutyric acid and tetrafluoroethylene monomers by curing the terpolymer with dicyclopentadiene dioxide curing agent. The resulting cured elastomer, which can include fillers, is a solid rubbery material which can be shaped for use as a sealant or gasket and the like.

3,427,280
CURABLE CARBOXYL-CONTAINING OLEFIN POLYMER COMPOSITIONS

Lawrence G. Imhof, Westfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 13, 1966, Ser. No. 564,761
U.S. Cl. 260—41 **12 Claims**
Int. Cl. C08f *15/14, 1/64*

Cured ethylene-acrylic acid copolymer compositions have been obtained by mixing and heating the copolymers with refined, water dispersed and open chrysotile asbestos fibers. The resultant products have enhanced physical properties when compared with the unmodified ethylene-acrylic acid copolymers.

3,427,281
N,N'-DI(1,3,3-TRIMETHYLBUTYL)-p-PHENYLENEDIAMINE AS RUBBER STABILIZER

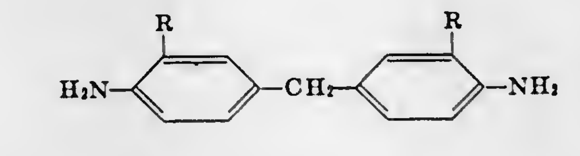
Evan J. Young and Gene R. Wilder, St. Albans, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 9, 1965, Ser. No. 512,768
U.S. Cl. 260—45.9 **3 Claims**
Int. Cl. A61l *13/00;* **C08d** *5/00;* **C07c** *87/62*

The normally solid compound, N,N'-di(1,3,3-trimethylbutyl)-p-phenylenediamine is described which is useful as a rubber antiozonant and for inhibiting germination of the pathogen *Venturia inaequalis.*

3,427,282
USE OF SELECTED 4,4'-METHYLENE-BIS(2-ALKYLANILINES) AS CURING AGENT FOR EPOXY RESINS

Norman K. Sundholm, Middlebury, Conn., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,395
U.S. Cl. 260—47 **4 Claims**
Int. Cl. C08g *30/14*

Epoxy resins are cured with 4,4'-methylene-bis(2-alkylanilines) having the structural formula:

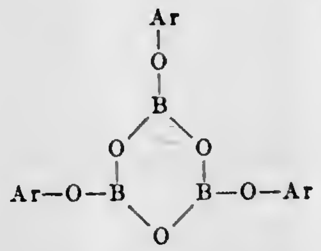


where R is an ethyl group or a secondary alkyl group having 3 to 6 carbon atoms.

3,427,283
HARDENABLE BORON-CONTAINING SYNTHETIC RESINS COMPRISING THE REACTION PRODUCT OF A CYCLIC ARYL BORATE AND ANHYDROUS FORMALDEHYDE

Franz-Joseph Huster, Troisdorf, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Cologne, Germany, a corporation of Germany
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,963
Claims priority, application Germany, Oct. 16, 1964, D 45,650
U.S. Cl. 260—51 **10 Claims**
Int. Cl. C08g *33/18*

Method for the preparation of hardenable, boron containing synthetic resins, which comprises condensing anhydrous formaldehyde and a cyclic aryl borate of the formula



wherein Ar is an aryl radical. These hardenable resins are characterized by a low viscosity which renders them highly suitable for handling in industrial utilizations. The method and the hardenable resins are claimed.

3,427,284
MANUFACTURE OF RESINOUS CONDENSATION PRODUCTS COMPRISING REACTING AN AMINE, PHENOL, OR UREA WITH FORMALDEHYDE IN THE PRESENCE OF AN ALLYLIC COMPOUND

Elvin M. Bright, 15940 Valley Vista Blvd., Encino, Calif. 91316; David R. Zachry, 5020 Hazeltine St., Sherman Oaks, Calif. 91403; and Joseph T. Cardone, 18348 Lahey St., Northridge, Calif. 91324
Continuation-in-part of application Ser. No. 249,039, Jan. 2, 1963. This application Oct. 17, 1966, Ser. No. 620,565
U.S. Cl. 260—57 **9 Claims**
Int. Cl. C08g *5/18*

A process of making a condensation product by reacting an aldehyde such as formaldehyde with a compound from the classes of phenols, amines and ureas, for example, phenol. Prior to any condensation reaction between the aldehyde and the phenol, amine or urea, 0.1 to 15 mol percent, based on the percent of the phenol, amine or urea, of an allylic monomer which will not condense with the aldehyde and which is from the classes of allyl ethers, allyl esters of organic acids and allyl hydrocarbons, is added to the reactants. The aldehyde is then reacted with the phenol, amine or urea, in the presence of the allylic monomer.

3,427,285
PROCESS FOR THE PREPARATION OF POLYEPISULPHIDES

Stephen Adamek, Islington, Ontario, and Bertie B. J. Wood, Oakville, Ontario, Canada, assignors to The Dunlop Company Limited
No Drawing. Filed May 9, 1966, Ser. No. 548,425
Claims priority, application Great Britain, May 6, 1966, 20,151/66
U.S. Cl. 260—67 **13 Claims**
Int. Cl. C08g *33/62, 33/08*

Preparation of a poly(episulphide) by reacting a poly(episulphide) having one terminal thiol or hydroxyl group and another terminal hydroxyl or amino group in the molecule with a reagent selected from the class consisting of monoepisulphides, saturated aliphatic and cycloaliphatic aldehydes, hydrochloric acid, sulfuric acid, nitrous acid and nickel powder.

3,427,286

OXIDIZED POLYACROLEINS AS TEXTILE SIZING AGENT

Heinz Hartel and Ilse Ursula Nebel, Oberlar, and Gerhard Bier, Troisdorf, Germany, assignors to Dynamit-Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany

No Drawing. Filed July 14, 1966, Ser. No. 565,067
Claims priority, application Germany, July 16, 1965, D 47,737

U.S. Cl. 260—67 **5 Claims**
Int. Cl. C08f *3/40, 3/44, 3/46*

The use of the product of oxidizing polyacroleins in alkaline medium as sizing agents.

3,427,287

METHOD FOR PREPARING POLYESTER RESINS

Brian W. Pengilly, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Continuation of application Ser. No. 134,936, Aug. 30, 1961. This application June 30, 1966, Ser. No. 561,950

U.S. Cl. 260—75 **4 Claims**
Int. Cl. C08g *17/003, 17/08*

2. The method of preparing a highly polymeric linear polyester which comprises adding (a) at least one acid selected from the group consisting of terephthalic acid and isophthalic acid and (b) ethylene glycol in the mol ratio of acid to glycol of from 1:1.05 to 1:1.3 to a low molecular weight linear polyester resin derived from at least one acid selected from the group consisting of terephthalic acid and isophthalic acid and ethylene glycol, said resin having a degree of polymerization in the range of from 3 to 20, heating and reacting the mixture at a temperature in the range of from the melting temperature of the low molecular weight linear polyester to the temperature at which glycol distills from the mixture at atmospheric pressure and then heating and reacting the mixture at a temperature of from about 265° C. to 280° C. at a pressure of about 1 millimeter of mercury in the presence of a catalyst until a high molecular weight linear polyester having an intrinsic viscosity of at least 0.4 is formed.

3,427,288

SALTS OF ETHYLENE DIAMINE TETRAACETIC ACID AS POLYCONDENSATION CATALYSTS

John A. Price, Swarthmore, and Mary J. Stewart, Media, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,184

U.S. Cl. 260—75 **6 Claims**
Int. Cl. C08g *17/003, 17/08*

A process of preparing polyethylene terephthalate comprising carrying out a transesterification reaction between ethylene glycol and dimethyl terephthalate to form a polyester prepolymer and then polycondensing the resulting polyester prepolymer in the presence of a catalytic amount of a suitable metal salt of ethylene diamine tetraacetic acid.

3,427,289

CONTROLLED ANIONIC POLYMERIZATION OF HIGHER LACTAMS

Robert Edmund Warner, Hendersonville, N.C., assignor to The Polymer Corporation, Reading, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 261,473, Feb. 27, 1963. This application Mar. 14, 1967, Ser. No. 622,942

U.S. Cl. 260—78 **11 Claims**
Int. Cl. C08g *20/18*

In the anionic polymerization of a higher lactam, the elapsed time between initiation of the polymerization and the formation of a viscous polymer is controllably extended by selecting at least two different promoters that are effective at different temperatures.

3,427,290

PROCESS FOR PREPARING STEREOSPECIFIC POLYMERS WITH THE AID OF METAL PEROXIDES

Kunio Nakagawa, Nishinomiya-shi, and Tadashi Nakata, Ibaraki-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,269
Claims priority, application Japan, Dec. 22, 1962, 37/58,520

U.S. Cl. 260—78.4 **8 Claims**
Int. Cl. C08f *1/60*

Stereospecific polymer is produced by treating polymerizable compound having olefinic unsaturation with a peroxide of transition metal of which the metal atom has an atomic number from 21 to 48 as a solid radical initiator under polymerizable conditions, the said metal peroxide being prepared by treating a metal salt with an oxidizing agent selected from the group consisting of alkali hypohalites and alkali persulfates in an aqueous alkaline medium.

3,427,291

POLYMERS HAVING ADJACENT PENDENT ESTERS GROUPS

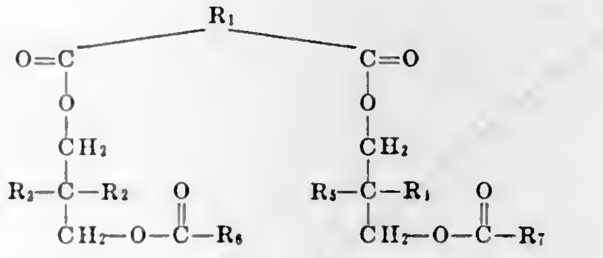
Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,209

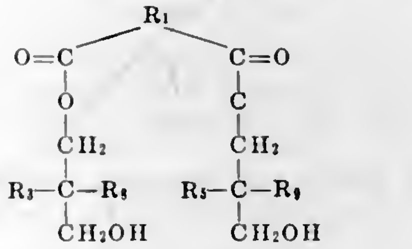
U.S. Cl. 260—78.5 **14 Claims**
Int. Cl. C08f *37/14*

1. A copolymer consisting essentially of A 50–95% by weight polymers ethylenically unsaturated monomers having 2–16 carbon atoms per monomer unit and B about 5–50% by weight of the polymer of polymerized ethylenically unsaturated esterified monomers selected from the group consisting of

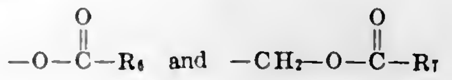
(I)



(II)



and mixtures thereof; said A monomers being different from said B monomers wherein R_1 is a hydrocarbon group having 2–6 carbon atoms and at least one site of ethylenic unsaturation; R_2 and R_4 are each selected from the group of —OH and —CH_2OH; R_3 and R_5 are each selected from the group of —H, —CH_3, and C_2H_5; R_6 and R_7 are each selected from the group consisting of saturated aliphatic hydrocarbon radicals of 3–17 carbon atoms and aromatic radical, R_8 and R_9 are selected from the group consisting of



$$-O-\overset{O}{\overset{\|}{C}}-R_6 \quad \text{and} \quad -CH_2-O-\overset{O}{\overset{\|}{C}}-R_7$$

3,427,292

MODIFIED SULFUR

Leonard E. A. Godfrey, Princeton, N.J., and John A. Garman, Catonsville, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,237

U.S. Cl. 260—79 **6 Claims**
Int. Cl. C01b *17/02;* **C09d** *1/00*

Compositions are prepared containing elemental sulfur and a bis(dialkoxyphosphinothioyl) polysulfide or a bis(alkoxythiocarbonyl) polysulfide. The polysulfides act as plasticizers for ordinary sulfur and as stabilizers for polymeric sulfur.

3,427,293

PHOSPHORYLATION OF HYDROCARBON RESINS

Roby Bearden, Jr., and Clyde L. Aldridge, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 412,846, Nov. 20, 1964. This application Oct. 27, 1967, Ser. No. 678,563

U.S. Cl. 260—82 **10 Claims**
Int. Cl. C08d *5/00;* **C08f** *27/00*

Steam-cracked petroleum resins are reacted with PCl_5, PCl_3, $POCl_3$, $RPCl_2$, R_2PCl, $ROPCl_2$, or $(RO)_2PCl$ where R is alkyl or aryl in the presence of a Lewis acid, such as $AlCl_3$ or clay and the reaction is quenched with water, alcohols, glycols, ammonia, amines or diamines to increase softening point flame resistance and improve odor and dyeability.

3,427,294

STORAGE-STABLE MONOMER COMPOSITION

Charles T. Arkens, Havertown, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. a corporation of Delaware

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,986

U.S. Cl. 260—86.1 **9 Claims**
Int. Cl. C08f *19/00, 85/26*

A mixture of an oxazolidine monomer such as 3-(β-methacryloxyethyl)-2,2-pentamethylene - oxazolidine and an acrylic monomer such as methyl methacrylate is provided which has surprisingly good storage stability even at ordinary room temperature plus excellent utility for the manufacture of light-colored polymer coatings and the like; the mixture contains an inhibitor component in the form of 2-ethylhexyl-octylphenyl phosphite and/or a N,N-dialkylhydroxyl amine such as N,N-diethylhydroxyl amine; also provided is a process for preparing such a mixture wherein one or both of the inhibitors is added to the monomer during or after its preparation.

3,427,295

PENTAERYTHRITOL DERIVATIVES

Samuel F. Reed, Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 10, 1958, Ser. No. 779,503

U.S. Cl. 260—86.1 **11 Claims**
Int. Cl. C06b *3/00;* **C08f** *3/38, 15/26*

1. A compound selected from the group consisting of vinyl trinitratopentaerythrityl ether, poly(vinyl trinitratopentaerythrityl ether) and copolymers of vinyl trinitratopentaerythrityl ether with a monomer selected from the group consisting of trinitratopentaerythrityl acrylate and alkyl acrylates.

7. A process for the preparation of vinyl trinitratopentaerythrityl ether which comprises reacting trinitratopentaerythritol with a vinyl ether selected from the group consisting of alkyl vinyl ethers and monohaloalkyl vinyl ethers, mercuric acetate being present in the reaction mixture as an esterification catalyst, and recovering the vinyl trinitratopentaerythrityl ether so formed.

3,427,296

PREPARATION OF ETHYLENE/VINYL-PYRROLIDINONE COPOLYMERS IN THE PRESENCE OF AMMONIA

Harry D. Anspon, Kansas City, Mo., and Richard L. Alexander, Orange, Tex., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 26, 1965, Ser. No. 443,045

U.S. Cl. 260—88.1 **6 Claims**
Int. Cl. C08f *19/00, 1/76*

Ethylene-1-vinyl-2-pyrrolidinone polymers are prepared by the high-pressure polymerization of ethylene and 1-vinyl-2-pyrrolidinone in the presence of ammonia to obtain a product which is useful in improving the dye receptivity of certain specifically defined polymers.

3,427,297

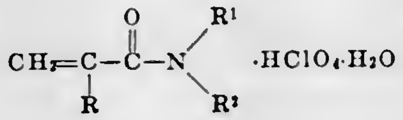
ACRYLAMIDE PERCHLORATES AND POLYMERS THEREOF

James L. Chaille and Warren D. Niederhauser, Huntsville, Ala., and Al Kennedy, Fayetteville, Tenn., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

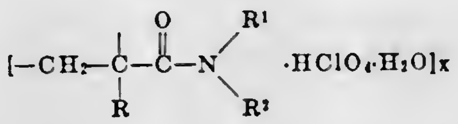
No Drawing. Filed Mar. 9, 1959, Ser. No. 798,291

U.S. Cl. 260—89.7 **14 Claims**
Int. Cl. C06b *3/00;* **C08f** *3/90;* **C07c** *103/12*

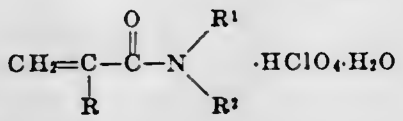
1. Compounds selected from the group consisting of (1) monomers of the formula



in which R, R^1 and R^2 are selected from the group consisting of hydrogen and a lower alkyl group containing 1 to 8 carbon atoms, (2) polymers selected from the group consisting of polymers of the formula:



wherein R, R^1 and R^2 are selected from the group consisting of hydrogen and a lower alkyl group containing 1 to 8 carbon atoms, and X is an integer from 5 to 5000, and (3) copolymers of monomers of the formula:



in which R, R^1 and R^2 are as described hereinbefore, with a monoethylenically unsaturated polymerizable compound selected from the group consisting of methyl acrylate, ethyl acrylate, butyl acrylate, 2-ethylhexyl acrylate, the higher alkyl esters of methacrylic and ethacrylic acids, propyl acrylate, isopropyl acrylate, tert-butyl acrylate, cyclohexyl acrylate, isobornyl acrylate, benzyl acrylate, phenyl acrylate, alkylphenyl acrylate, ethoxymethyl acrylate, ethoxyethyl acrylate, ethoxypropyl acrylate, propoxymethyl acrylate, propoxyethyl acrylate, propoxypropyl acrylate, ethoxyphenyl acrylate, ethoxybenzyl acrylate, ethoxycyclohexyl acrylate, the corresponding esters of methacrylic acid, styrene, vinyltoluene, vinylnaphthalene, dialkyl maleates, dialkyl fumarates, dialkyl crotonates, dialkyl itaconates, and dialkyl glutaconates.

2. Polymers as set forth in claim 1 containing a small but plasticizing amount of a polyhydric alcohol selected from the group consisting of ethylene glycol, triethylene glycol, propylene glycol, glycerol, and 1,2,6-hexanetriol.

3,427,298

POLYVINYL ALCOHOL MATERIALS AND COMPOSITIONS

Kiyoshi Tsuboi and Takani Mochizuki, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan

No Drawing. Filed Feb. 25, 1964, Ser. No. 352,711

Claims priority, application Japan, Mar. 11, 1963, 38/12,386, 38/12,387, 38/12,388, 38/12,389; Mar. 23, 1963, 38/15,116

U.S. Cl. 260—91.3 **35 Claims**

Int. Cl. C08f *47/03, 27/16;* **D01f** *7/06*

Polyvinyl alcohol crystals having a crystal habit, that is, a high degree of crystallinity and containing substantially no amorphous regions. The crystals have a generally plate-like parallelogram structure and individual crystal dimensions are about 0.5μ to about 1μ in width, about 2μ to about 5μ in length, and about 100 A. to about 300 A. in thickness. The polyvinyl alcohol crystals are prepared by forming a uniform solution of polyvinyl alcohol in either a polyhydric alcohol or an acid amide and then precipitating the crystals. The method and product are suitable for use in the manufacture of fibers and shaped products.

3,427,299

ETHYLENE POLYMERIZATION

Erik Tornqvist, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,553

U.S. Cl. 260—94.9 **10 Claims**

Int. Cl. C08f *1/42, 3/06*

Ethylene is polymerized in the presence of a catalyst system made up of a titanium halide and a cocatalyst system formed by dry ball milling aluminum, aluminum choride, and an ammonium halide.

3,427,300

ANTI-INFLAMMATORY STEROID 2'-ACETAMIDO-2'-DEOXY-GLUCOSIDE COMPOUNDS

Lewis H. Sarett, Princeton, Robert G. Strachan, North Plainfield, and Ralph F. Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 402,015, Oct. 6, 1964. This application Nov. 12, 1965, Ser. No. 507,522

U.S. Cl. 260—210 **21 Claims**

Int. Cl. A61k *17/06;* **C07c** *169/26*

The invention disclosed herein is concerned generally with novel derivatives of hydroxylated anti-inflammatory compounds. More particularly, it is concerned with 2'-(amino or acylamido)-2'-deoxy-glucosides and 2'-(amino or acylamido)-2'-deoxy-galactosides of the following hydroxylated anti-inflammatory compounds: Ring A unsaturated 11,17 - bis - oxygenated - 20 - keto - (16 - hydroxy and/or 21-hydroxy)-steroids of the anti-inflammatory pregnane series; hydroxy-butazolidine; salicyclic acid, its esters, its amide and its N-alkyl and N,N-dialkyl derivatives, and phenyl substitution products thereof. This invention includes within its scope the novel process, and the new intermediate compounds therein, in which a 2' - substituted - 3,4,6 - tri - O - acetyl - 1 - halo-2-deoxy-α-D-(glucoside or galactoside) is reacted with an alkali metal derivative of the hydroxylated anti-inflammatory compound, and the resulting product reacted with aqueous alkali thereby hydrolyzing the O-acetyl groupings to form the corresponding 2'-substituted-2'-deoxy-(glucoside or galactoside) of said hydroxylated anti-inflammatory compound. Pharmaceutical compositions containing the novel compounds of the invention as an active ingredient are also within the purview of the invention.

3,427,301

CROSSLINKING OF COLLAGENS EMPLOYING A REDOX SYSTEM COMPRISING PERSULPHATE AND A REDUCING AGENT

Howard L. Needles, Pinole, and Robert E. Whitfield, Pleasant Hill, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,504

U.S. Cl. 260—117 **3 Claims**

Int. Cl. C09h *11/00*

Gelatin or other collagen is cross-linked by reacting it with about 0.1 to 2 parts of a persulphate per part of collagen. By adding a reducing agent such as silver nitrate to the system, the reaction can be conducted at room temperature or slightly above, i.e., 20–40° C. The products are useful as coatings and sizings for paper, fabrics, yarns, etc.

3,427,302

α-TETRAZOLYLBENZYLPENICILLINS

John Michael Essery, Liverpool, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 11, 1967, Ser. No. 666,964

U.S. Cl. 260—239.1 **10 Claims**

Int. Cl. C07d *99/16;* **A61k** *21/00*

6 - (α-tetrazolylphenylacetamido)- and 6 - (α - tetrazolylthienylacetamido)-penicillanic acids are valuable as antibacterial agents, nutritional supplements in animal feeds, therapeutic agents in poultry and animals, including man, and are especially useful in the treatment of infectious diseases caused by Gram-positive and Gram-negative bacteria, most particularly those caused by the *Pseudomonas genus.* 6 - (α - tetrazolylphenylacetamido)-penicillanic acid, a preferred embodiment of the invention, is prepared by the treatment of 6-aminopenicillanic acid with p-nitrophenyl α-(5-tetrazolyl)-phenylacetate.

3,427,303

PROCESS FOR THE PREPARATION OF CYCLOALKANONE OXIMES AND LACTAMS IN THE PRESENCE OF STRONG ACIDS

Michailas Genas, Paris, and René Kern, Savigny-sur-Orge, France, assignors to Societe Organico, a corporation of France

No Drawing. Filed July 23, 1964, Ser. No. 384,800

Claims priority, application France, July 30, 1963, 943,157

U.S. Cl. 260—239.3 **6 Claims**

Int. Cl. C07e *131/02*

The present invention relates to an improved method of preparing oximes and lactams which allows recycling of the concentrated acids used for their preparation.

3,427,304

PROCESS FOR PREPARING 5-PHENYL-3H-1,4-BENZODIAZEPIN-2(1H)-ONES

Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 858,564, Dec. 10, 1959. This application Mar. 24, 1967, Ser. No. 625,638

Claims priority, application Switzerland, Dec. 2, 1960, 13,489/60, 13,490/60, 13,491/60, 13,492/60, 13,493/60, 13,494/60, 13,495/60

U.S. Cl. 260—239.3 **9 Claims**

Int. Cl. C07d *53/06;* **A61k** *27/00*

5 - phenyl - 3H - 1,4-benzodiazepin-2(1H)-ones and 4-oxides thereof are prepared by a variety of routes. These end-products are useful as sedatives, muscle relaxants and anticonvulsants and also as intermediates for the preparation of other 1,4-benzodiazepines.

3,427,305

5 - [(HALO/ALKOXY)PHENYL] - 1 - [p - SULFONAMIDO(PHENYL/BENZYL)] - 2 - PYRROLEPROPIONIC ACIDS

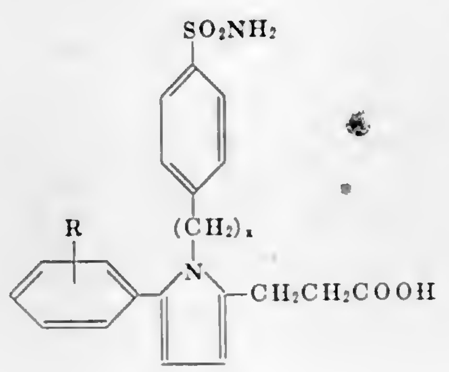
Leland J. Chinn, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 1, 1966, Ser. No. 591,120

U.S. Cl. 260—239.6 **6 Claims**

Int. Cl. C07d *27/26;* **A61k** *27/00*

1. A compound of the formula



wherein R represents halogen of atomic number less than 53 or lower alkoxy and *x* represents 0 or 1.

3,427,306

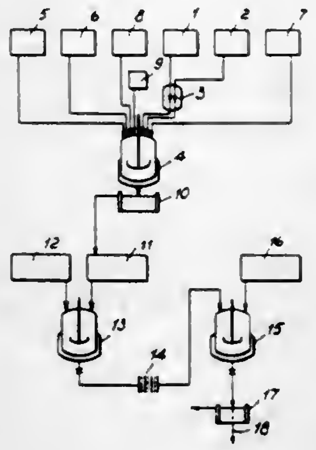
PROCESS FOR THE MANUFACTURE OF N-(5 - NITRO - 2 - FURFURYLIDEN) - 1 - AMINO-HYDANTOIN

Mario Portelli, Vicenza, Italy, assignor to Zambon S.p.A. (Bresso), Milan, Italy

Filed Aug. 13, 1965, Ser. No. 480,252

U.S. Cl. 260—240 **2 Claims**

Int. Cl. C07d *49/32*



A process for preparing N-(5-nitro-2-furfuryliden)-1-amino-hydantoin from monochloroacetic acid, hydrazine hydrate, and alkali cyanate and 5-nitro-2-furfuraldehyde diacetate in a single aqueous phase, without separation of any intermediate compound, characterized in that the monochloroacetic acid is slowly added to an aqueous solution of hydrazine hydrate and sodium hydroxide at a temperature of 0°–5° C., and allowed to react under stirring for several more hours. To the reaction mixture alkali cyanate is added under suitable pH and temperature conditions, and to this reacted mixture nitrofurfuraldehyde diacetate in acid medium is added at a temperature between 70° and 90° C. The formed product is separated by cooling and crystallization, and may be used as an antibacterial drug.

3,427,307

BENZOXAZOLE OPTICAL BRIGHTENERS

Erich Schinzel, Frankfurt am Main, Ulrich Pintschovius, Kelkheim, Taunus, and Karl Heinz Lebkucher, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,703

Claims priority, application Germany, Oct. 17, 1964, F 37,032

U.S. Cl. 260—240 **1 Claim**

Int. Cl. C07d *85/48;* **C09b** *23/10*

There are disclosed herein 2-(cyanostyryl)-benzoxazoles having at the 5,6- or the 6,7-position a hydroaromatic 5- or 6-membered ring, which compounds are excellent optical brighteners for polyester fiber and the like synthetic fiber materials.

3,427,308

WATER-SOLUBLE REACTIVE ANTHRAQUINONE DYESTUFFS, THEIR PREPARATION AND USE

Ian Knowles Barben and Dennis Eckersley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,703

Claims priority, application Great Britain, Aug. 23, 1965, 36,027/65

U.S. Cl. 260—240 **4 Claims**

Int. Cl. C09b *1/34*

Water-soluble halogeno- or sulpho-s-triazine or pyrimidine reactive anthraquinone dyestuffs for colouring textiles, the dyestuffs being characterized by their high degree of fixation.

3,427,309

NOVEL TROPOLONE DERIVATIVES

John Krapcho, Somerset, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Dec. 26, 1962, Ser. No. 247,274, now Patent No. 3,326,963, dated June 20, 1967. Divided and this application Dec. 27, 1966, Ser. No. 604,609

U.S. Cl. 260—240 **5 Claims**

Int. Cl. A61k *27/00;* **C07c** *69/74*

This disclosure relates to substituted thienyl, furyl, nitrofuryl, pyridyl, naphthyl and indole derivatives of 6-hydroxy-7-oxo-1,3,5 - cycloheptatriene-1-carboxylic acids and salts thereof. The compounds of this disclosure have been found to possess anti-microbial activity.

3,427,310

SENSITIZING METHINE DYES AND INTERMEDIATES, PROCESS FOR PREPARING SAME AND PHOTOGRAPHIC ELEMENT CONTAINING THESE DYES

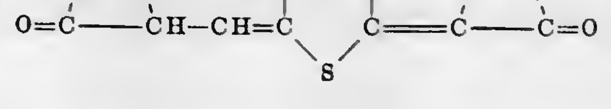
Bela Gaspar, 240 S. Oakhurst Drive,
Beverly Hills, Calif. 90212

No Drawing. Original application Feb. 9, 1961, Ser. No. 87,989, now Patent No. 3,152,905. Divided and this application Dec. 18, 1963, Ser. No. 335,973

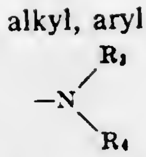
U.S. Cl. 260—240.1 **19 Claims**

Int. Cl. C09b *23/02, 23/10*

19. A dye having the general formula



where Z represents the non-metallic atoms necessary to complete a member of the group consisting of thiazolidone, oxazolidone, imidazolidone, thionaphthenone, pyrazolone and pyrimidone nuclei, and R_1 is a member of the group consisting of alkyl, aryl, pyridyl, thiazolyl benzoyl and



radicals, where R_3 is a member of the group consisting of hydrogen, alkyl, aryl, and acyl groups, and R_4 is acyl.

3,427,311

5,11-DIHYDROINDOLO[3,2-c][2,1]-BENZOTHIAZINE-6,6-DIOXIDE COMPOUNDS

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 549,476, May 12, 1966. This application Feb. 13, 1968, Ser. No. 705,020

U.S. Cl. 260—243 **7 Claims**

Int. Cl. C07d *99/10;* **A61k** *27/00*

5-di-lower alkylaminoalkyl-5,11-dihydroindolo[3,2 - c] [2,1]benzothiazine-6,6-dioxides are prepared by reacting a phenylhydrazine with 3,4-dihydro-4-oxosulfostyril, cyclizing the resulting phenylhydrazone to give a 5,11-dihydroindolo[3,2-c] [2,1]benzothiazine-6,6-dioxide intermediate and then reacting with a N,N-di-lower alkyl-haloalkylamine. The products have hypotensive and diuretic activity.

3,427,312

SEPARATION OF AZAPHENOTHIAZINES FROM MIXTURES THEREOF WITH PHENYL PYRIDYL AMINES

Wilhelm Alfons Schuler, Bad Homburg vor der Hohe, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,313

Claims priority, application Germany, Apr. 3, 1965, D 46,958

U.S. Cl. 260—243 **5 Claims**

Int. Cl. C07d *93/16;* **B01d** *11/04*

Method for recovering azaphenothiazine contained in a mixture of an azaphenothiazine and a secondary phenyl pyridyl amine obtained in the production of said azaphenothiazine from said phenyl pyridyl amine which comprises dissolving said mixture in an inert substantially water immiscible solvent, adding a quantity of acid to said solution which is about equivalent to the quantity of phenyl pyridyl amine contained therein to form the acid addition salt of the phenyl pyridyl amine, providing a sufficient quantity of water in contact with said reaction mixture to dissolve the acid addition salt of the phenyl pyridyl amine produced, separating the resulting aqueous phase from the organic phase and recovering the azaphenothiazine retained in the organic phase.

3,427,313

CARBOXAMIDOALKYL-1,3-BENZOXAZINES

Luigi Bernardi, Severina Coda, Lorenzo Pegrassi, and Giselbert Karl Suchowsky, Milan, Italy, assignors to Societá Farmacentici Italia, Milan, Italy, a corporation of Italy

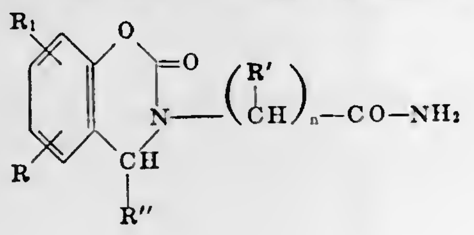
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,583

Claims priority, application Italy, Dec. 23, 1965, 28,507/65; Sept. 14, 1966, 21,075/66

U.S. Cl. 260—244 **12 Claims**

Int. Cl. C07d *87/08;* **A61k** *27/00*

The present invention relates to carboxamidoalkyl-1,3-benzoxazines. Also described is a process for their preparation. The new class of benzoxazines has the structure:



wherein R and R_1 may be the same or different and are selected from hydrogen, halogen, cyano, nitro or alkoxy having from 1 to 4 carbon atoms; R′ and R″ may be the same or different and are hydrogen, unsubstituted or phenyl substituted alkyl having from 1 to 4 carbon atoms; and *n* is 1 or 2. The compounds show an interesting activity in preventing the depression from reserpine.

3,427,314

METHODS OF PRODUCING TRICHLOROCYANURIC ACID

Marc J. Sims, Columbia, and William F. Symes, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,210

U.S. Cl. 260—248 **4 Claims**

Int. Cl. C07d *55/40;* **B01j** *2/00*

Trichlorocyanuric acid, a substantial portion of which is of particle size sufficiently small to pass through a No. 200 mesh U.S. Standard screen, is agglomerated by heating to a temperature range of from 130–225° C. and agitating the particles. The agglomerated material reduces hazards and handling problems associated with dusting and is more conveniently utilized in bleaching, sterilizing, oxidizing and disinfecting operations.

3,427,315

PROCESS FOR PREPARING PURINE DERIVATIVES

Hiroaki Nomura, Nishinomiya, and Keiichi Sugimoto and Norihiro Uno, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

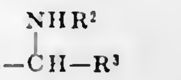
No Drawing. Filed Nov. 16, 1965, Ser. No. 508,141

Claims priority, application Japan, Nov. 17, 1964, 39/65,106

U.S. Cl. 260—252 **8 Claims**

Int. Cl. C07d *57/40*

A process for preparing adenine or hypoxanthine wherein free formamidine is reacted in a non-aqueous solvent in the presence of ammonia with an α-amino-α-cyanoacetic acid derivative of the formula



$$N{\equiv}C{-}\overset{\substack{NHR^2\\ |}}{C}H{-}R^3$$

wherein R^2 is hydrogen, formyl, acetyl or propionyl, and R^3 is lower alkoxycarbonyl or carbamoyl.

3,427,316

QUATERNARY AMMONIUM HYDROXAMATES

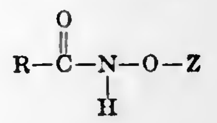
Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors to Millmaster-Onyx Corporation, Jersey City, N.J., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 375,952, June 17, 1964. This application May 2, 1966, Ser. No. 546,575

U.S. Cl. 260—286 **5 Claims**

Int. Cl. C07c *103/54, 103/30;* **A61k** *27/00*

A microbiocidal quaternary ammonium hydroxamate having the structure:



$$R{-}\overset{\substack{O\\ \|}}{C}{-}\underset{\substack{|\\ H}}{N}{-}O{-}Z$$

wherein R is an aliphatic or aromatic group having 5–21 carbon atoms and Z is the cation of a microbiocidal quaternary ammonium compound having at least one alkyl of 8–22 carbon atoms and an aryl group attached to the quaternary nitrogen and having a phenol coefficient of at least 100 with respect to *Staphylococcus aureus* and *Salmonella tpyhosa* at 20° C.

3,427,317

CERTAIN PSEUDO OXATRIAZOLE DERIVATIVES

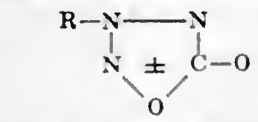
Lemont B. Kier, Worthington, Ohio, and John W. Keating, Rochester, N.Y., assignors to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware

No Drawing. Original application Apr. 23, 1963, Ser. No. 274,906. Divided and this application Apr. 27, 1966, Ser. No. 545,541

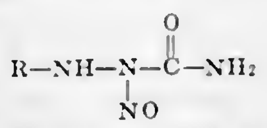
U.S. Cl. 260—292 **10 Claims**

Int. Cl. C07d *85/06;* **A61k** *27/00*

A pseudo-oxatriazole having the formula



wherein R is an alkyl, cycloalkyl, aralkyl, alkoxyalkyl, alkaryl, alkarylalkyl, alkoxyaryl, and unsaturated alkyl (alkenyl) amino-alkyl, or heterocyclic group. The heterocyclic group includes such members as pyridyl, piperidyl, tropanyl, and pseudo-oxatriazole alkyl. The above compounds are obtained by heating a N-nitrososemicarbazide having the formula:



$$R{-}NH{-}\underset{\substack{|\\ NO}}{N}{-}\overset{\substack{O\\ \|}}{C}{-}NH_2$$

wherein R has the same meaning as R above, at a temperature and for a time such as to bring out cyclization.

The above pseudo-oxatriazole compounds are physiologically absorbed at an extremely fast rate. The cycloalkyl pseudo-oxatriazoles are particularly useful as central nervous system stimulants, and the aralkyl and alkyl pseudo-oxatriazoles as hypotensive agents.

3,427,318

CERTAIN 2-ALKANOYLAMINO-5-HALOTHIAZOLES

Michael Stuart Barber, South Benfleet, David Rex Broad, Romford, and Basil Jason Heywood, Hornchurch, England, assignors to May & Baker Limited, Dagenham, Essex, England, a British company

No Drawing. Filed Mar. 8, 1966, Ser. No. 532,557

Claims priority, application Great Britain, Mar. 10, 1965, 10,232/65; Dec. 3, 1965, 51,443/65

U.S. Cl. 260—306.8 **9 Claims**

Int. Cl. C07d *91/34;* **A01n** *9/14*

The invention provides novel 2-alkanoylamido-5-halothiazoles which are useful as post-emergence herbicides.

3,427,319

BENZIMIDAZOLINONES

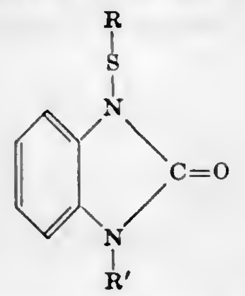
Aubert Yaucher Coran, Creve Coeur, Mo., and Joseph Edward Kerwood, St. Albans, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of three applications Ser. No. 579,493, Sept. 15, 1966; Ser. No. 549,730, May 12, 1966; Ser. No. 459,466, May 27, 1965. This application Jan. 8, 1968, Ser. No. 696,104

U.S. Cl. 260—309.2 **14 Claims**

Int. Cl. C07c *49/34;* **A61k** *27/00*

Sulfenamides characterized by the formula



where R is alkyl, aryl, cycloalkyl, and R′ is hydrogen, alkylthio, arylthio, or cycloalkylthio, are new compounds which inhibit premature vulcanization of vulcanizable elastometers.

3,427,320

PERFLUORO(ALKYL SUBSTITUTED IMIDAZOLINES) AND PROCESS FOR MAKING

Paul H. Ogden, Oakdale Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,678

U.S. Cl. 260—309.6 **5 Claims**

Int. Cl. C07d *49/34;* **C07c** *121/02;* **C08g** *51/44*

Perfluoro (1-methyl-4,5 polyalkyl-3-imidazolines) and process for making same by isomerization of perfluoro-(3,4 - dialkylsubstituted - 2,5 - diazahexa - 1,5 - dienes) or perfluoro - (3,3,4 - trialkylsubstituted - 2,5 - diazahexa-1,5-dienes) using ionic fluoride. The perfluoro (1-ethyl-4,5 polyalkyl-3-imidazolines) may be hydrolyzed by water to perfluoro(N-cyano-β-gem diols) which are useful as solvents for polymers.

3,427,321

N,N′,9-O-TRI-LOWERALKANOYL-ACTINOSPECTACINS

Herman Hoeksema, Cooper Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 167,915, Jan. 22, 1962, and Ser. No. 386,742, July 31, 1964. This application Apr. 29, 1966, Ser. No. 546,171

The portion of the term of the patent subsequent to May 18, 1982, has been disclaimed

U.S. Cl. 260—340.3 **8 Claims**

Int. Cl. C07d *21/00;* **A61k** *21/00*

N,N′-diacylactinospectacin and N,N′,9-O-triacylactinospectacin and process for preparing these compounds. These compounds are acyl derivatives of the antibiotic actinospectacin. N,N′-diacylactinospectacin and N,N′,9-O-triacylactinospectacin can be used to upgrade crude preparations of actinospectacin.

3,427,322

PREPARATION OF CYANOETHERS

Perry A. Argabright, Littleton, and David W. Hall, Englewood, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,224

U.S. Cl. 260—340.6 **8 Claims**

Int. Cl. C07d *5/04;* **C07c** *121/06*

1. The process for the preparation of cyanoethers comprising reacting with an alkali cyanide an ether dissolved in an inert, substantially anhydrous, aprotic solvent of high dielectric constant; said ether being substituted on the carbon atom alpha to an ether oxygen with a halogen selected from the group consisting of iodine, bromine, and chlorine.

3,427,323

α-ALKOXYALKYLCYANAMIDES AND THEIR PREPARATION

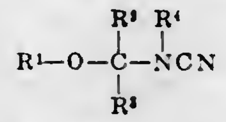
Frank D. Marsh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 383,233, July 16, 1964, and Ser. No. 215,800, Aug. 9, 1962. This application July 12, 1966, Ser. No. 564,534

U.S. Cl. 260—340.6 **7 Claims**

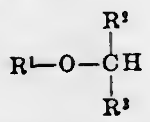
Int. Cl. C07c *125/08*

Monomeric α-alkoxyalkylcyanamides of the formula



$$R^1{-}O{-}\underset{\substack{|\\ R^3}}{\overset{\substack{R^2\\ |}}{C}}{-}\overset{\substack{R^4\\ |}}{N}CN$$

where R^2, R^3 and R^4 are hydrogen or lower alkyl and R is alkyl or substituted alkyl of up to 12 carbons. The compounds are prepared by reacting cyanogen azide with an ether of the formula

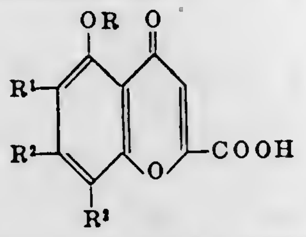


$$R^1{-}O{-}\overset{R^2}{\underset{R^3}{CH}}$$

3,427,324
DERIVATIVES OF CHROMONE-2-CARBOXYLIC ACID

Colin Fitzmaurice, Holmes Chapel, England, assignor to Fisons Pharmaceuticals Limited, Loughborough, England
No Drawing. Continuation-in-part of application Ser. No. 398,756, Sept. 23, 1964. This application Jan. 16, 1967, Ser. No. 610,212
U.S. Cl. 260—340.7 **16 Claims**
Int. Cl. C07d *7/34, 13/08;* **A61k** *13/00*

Compounds of the formula:



and their salts, esters and amides, wherein the variables are defined in the following specification, for example:

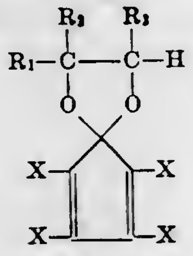
5-(2-hydroxypropoxy)chromone-2-carboxylic acid;
5-(2-phenoxyethoxy)chromone-2-carboxylic acid;
5-(2-hydroxypropoxy)-7-methyl-chromone-2-carboxylic acid;
5-(2-ethoxyethoxy)chromone-2-carboxylic acid;
5-(2-acetoxypropoxy)chromone-2-carboxylic acid;
5-(tetrahydrofurfurylmethoxy)chromone-2-carboxylic acid;
5-[4-(1,3-dioxan-4-ylmethoxy)]chromone-2-carboxylic acid;
5,7-bis-(2-ethoxyethoxy)chromone-2-carboxylic acid; and
4-(2-ethoxyethoxy)-9-methoxy-5-oxo-5H-furo[3,2-g][1] benzo-pyran-7-carboxylic acid,

and are useful in the treatment of asthma and the like.

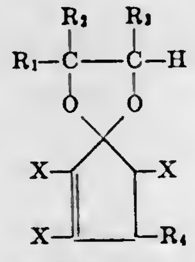
3,427,325
1,2,3 - TRIHALO-3-SUBSTITUTED-6,9-DIOXA-1-SPIRO[4.4]NONENES AND METHOD OF PREPARATION

Wen-Hsuan Chang, Gibsonia, Pa., assignor to PPG Industries Inc., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 234,846, Nov. 1, 1962. This application Apr. 10, 1967, Ser. No. 629,381
U.S. Cl. 260—340.9 **17 Claims**
Int. Cl. C07d *13/02;* **A01n** *9/28*

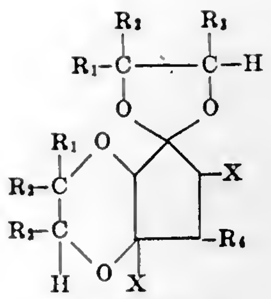
This application relates to compounds produced from the reaction of a hexahalocyclopentadiene and a polyol having hydroxyl groups on adjacent carbon atoms corresponding to the formulae:



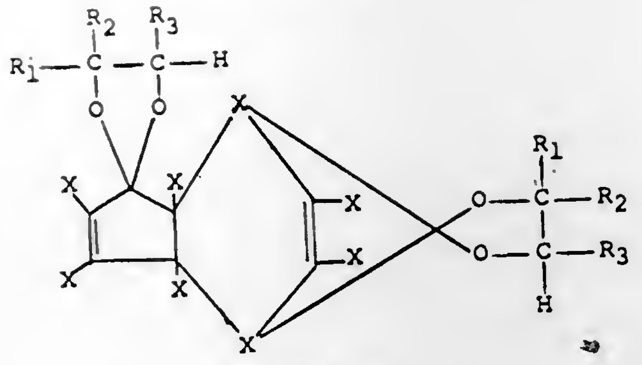
FORMULA A



FORMULA B

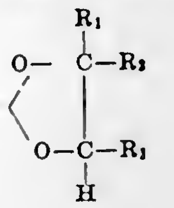


FORMULA C

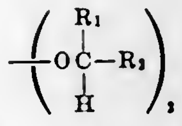


FORMULA D

In the above formulae, X represents chlorine or bromine and R_1, R_2, and R_3 are each selected from the class consisting of hydrogen and alkyl, cycloalkyl, aryl, alkoxyalkyl, aryloxyalkyl and hydroxyalkyl radicals usually having up to 20 carbon atoms, and preferably 1 to 10 carbon atoms. R_4 is either the structure:



or the structure:



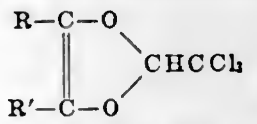
$$-\left(O\overset{R_1}{\underset{H}{C}}-R_3\right)_2,$$

where R_1, R_2 and R_3 are as above.

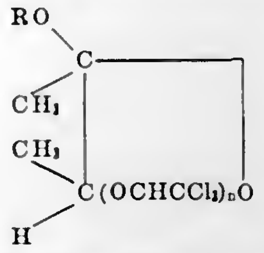
3,427,326
2-TRICHLOROMETHYL-1,3-DIOXOLES AND THEIR PREPARATION

Heinz J. Dietrich, Bethany, Joseph V. Karabinos, Orange, and Robert J. Raynor, North Branford, Conn., assignors to Olin Mathieson Chemical Corporation
No Drawing. Filed Nov. 5, 1965, Ser. No. 506,591
U.S. Cl. 260—340.9 **5 Claims**
Int. Cl. C07d *13/04, 13/08;* **A01n** *9/28*

The 2-trichloromethyl-1,3-dioxoles having the formula



where R is phenyl or alkyl of 1 to 6 carbons and R′ is hydrogen, phenyl or alkyl of 1 to 6 carbons are prepared from intermediates having the formula

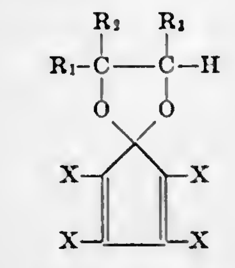


where R is acyl or hydrogen and *n* is 1 or 2. The 2-trichloromethyl-4-methyl-1,3-dioxole is prepared from 2-trichloromethyl-4-methylene - 1,3 - dioxolane using an alkaline reacting clay catalyst.

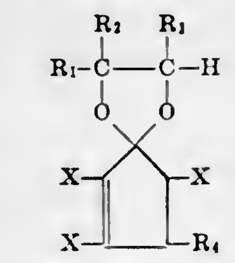
3,427,327
1,2,3,4 - TETRAHALO - 6,9 - DIOXA-1,3-SPIRO[4.4] NONADIENES AND METHOD OF PREPARATION

Wen-Hsuan Chang, Gibsonia, Pa., assignor to PPG Industries Inc., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 234,846, Nov. 1, 1962. This application Apr. 10, 1967, Ser. No. 629,356
U.S. Cl. 260—340.9 **10 Claims**
Int. Cl. C07d *13/02, 21/00;* **A01n** *9/25*

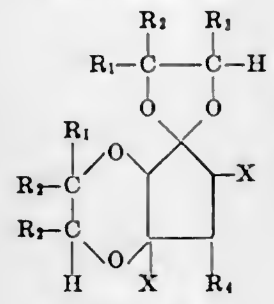
This application relates to compounds produced from the reaction of a hexahalocyclopentadiene and a polyol having hydroxyl groups on adjacent carbon atoms corresponding to the formulae:



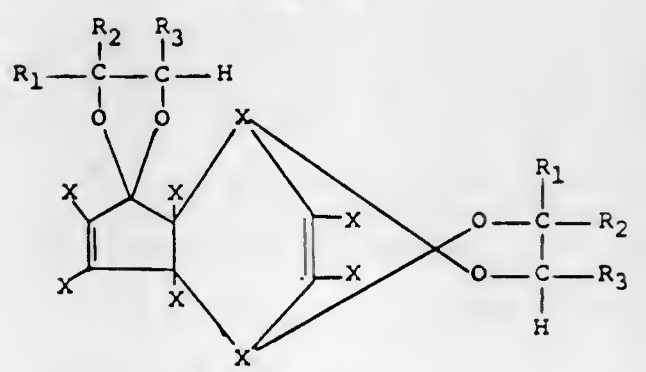
FORMULA A



FORMULA B

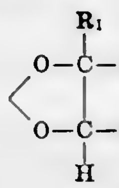


FORMULA C

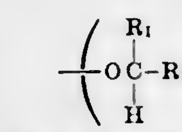


FORMULA D

In the above formulae, X represents chlorine or bromine and R_1, R_2, and R_3 are each selected from the class consisting of hydrogen and alkyl, cycloalkyl, aryl, alkoxyalkyl, aryloxyalkyl and hydroxyalkyl radicals usually having up to 20 carbon atoms, and preferably 1 to 10 carbon atoms. R_4 is either the structure:



or the structure:



$$-\left(O\overset{R_1}{\underset{H}{C}}-R_3\right)_2,$$

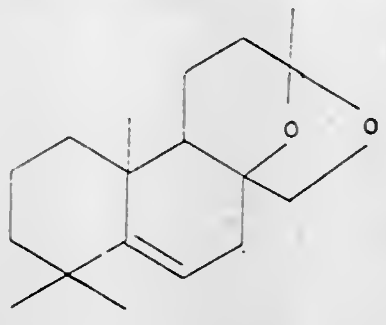
where R_1, R_2 and R_3 are as above.

3,427,328
ODORANTS OF THE AMBER TYPE AND PROCESS FOR THE MANUFACTURE THEREOF

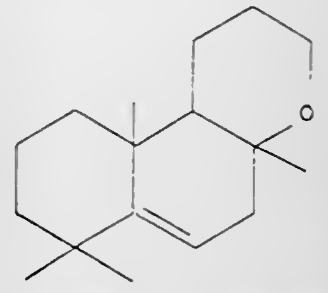
Wilhelm Sandermann and Klaus Bruns, Reinbek, Bezirk Hamburg, Germany, assignors to Givaudan Corporation, Delawanna, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,471
Claims priority, application Germany, Aug. 27, 1964, S 92,847
U.S. Cl. 260—340.9 **1 Claim**
Int. Cl. C07d *7/18, 13/07;* **C11b** *9/00*

New chemical compounds having amber-type odors are disclosed.

The new odorants may be represented by the structural formulae:



and



Detailed examples for preparing these compounds, as well as intermediates therefor, are given.

3,427,329
N¹-CYANO-5-NITRO-2-FURAMIDINE

Homer Albert Burch, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York
No Drawing. Filed Dec. 5, 1966, Ser. No. 598,938
U.S. Cl. 260—347.7 **2 Claims**
Int. Cl. C07d *5/30;* **A61k** *27/00*

Antibacterially active N^1-cyano-5-nitro-2-furamidine and a method for its preparation.

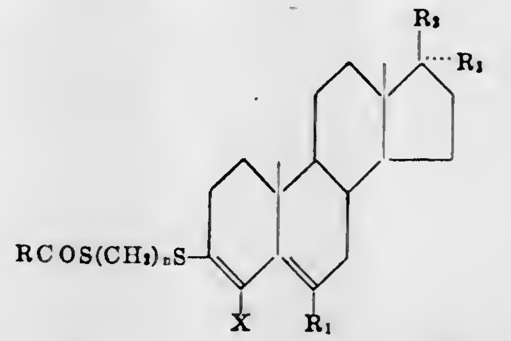
3,427,330
ACYLTHIOALKYLTHIOENOL ETHERS AND METHOD OF PREPARATION

George Karmas, Bound Brook, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,762
U.S. Cl. 260—397.3 **17 Claims**
Int. Cl. C07c *167/36, 167/30, 173/00*

1. A method of preparing acylthioalkylthioenol ethers which comprises treating a cyclic thioketal with a mixture selected from the group consisting of a hydrocarbon carboxylic anhydride and an acid catalyst, an acid halide, wherein the halide is selected from the group consisting of bromine, chlorine and iodine, and an acid catalyst, and a hydrocarbon carboxylic acid and trifluoroacetic anhydride.

8. A compound selected from the group consisting of:

(I)



wherein R is selected from the group consisting of lower alkyl of from 1 to 5 carbon atoms, which may be saturated, straight chain, and branched chain and phenyl;

R_1 is selected from the group consisting of hydrogen and methyl;

R_2 is selected from the group consisting of acetyl, acetoxy, and lower alkyl of from 1 to 8 carbon atoms, which may be saturated, unsaturated, straight chain, branched chain and cyclic;

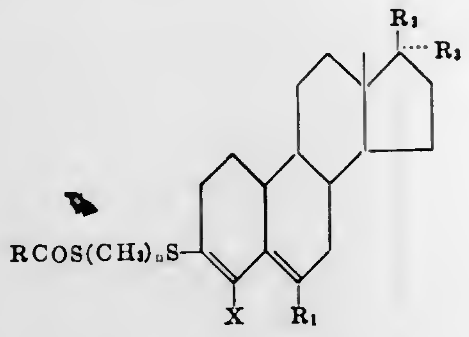
R_3 is selected from the group consisting of hydrogen, methyl, ethynyl and acetoxy;

R_2 and R_3, taken together, being oxygen;

X is selected from the group consisting of hydrogen, bromine, chlorine and iodine; and

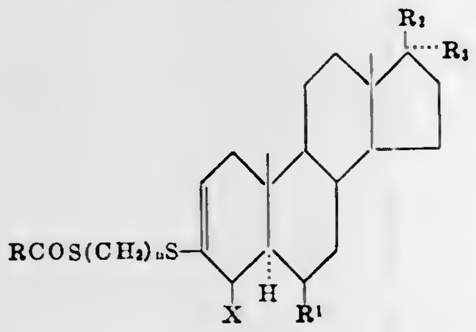
n is an integer from 2 to 3;

(II)



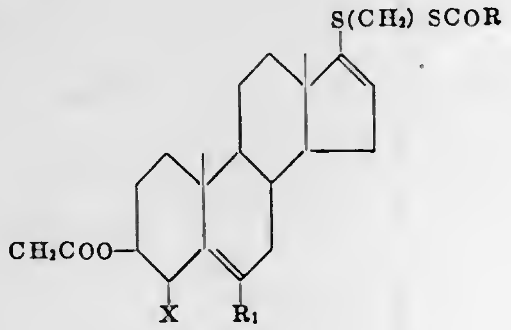
wherein R, R_1, R_2, R_3, X and *n* have the above designated meanings;

(III)



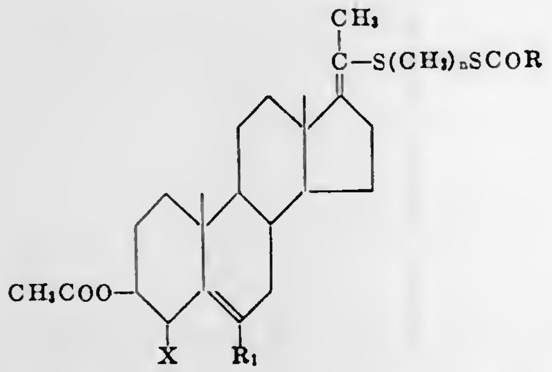
wherein R, R_1, R_2, R_3, X and *n* have the above designated meanings;

(IV)



wherein R, R_1, X and *n* have the above designated meanings; and

(V)



wherein R, R_1, X and *n* have the above designated meanings.

3,427,331

17 - SUBSTITUTED-PREGNA - 5,20 - DIENE COMPOUNDS AND METHODS FOR THEIR PRODUCTION

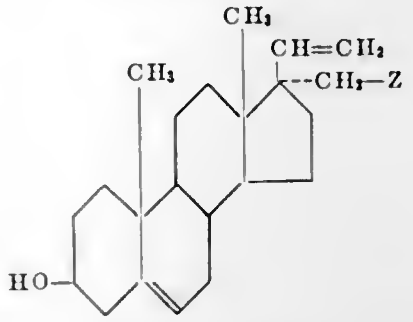
Duane F. Morrow, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Dec. 29, 1966, Ser. No. 605,563

U.S. Cl. 260—397.1 **6 Claims**

Int. Cl. C07c *167/36*

1. A compound of the formula



where Z is a member of the class consisting of di-lower alkyl-carbamoyl, carboxyl, and carboxylate salts.

3,427,332

PERFLUOROALKYL AMIDE DERIVATIVES OF POLYOXYALKYLENE CARBAMATES

Thomas Clark Allen, King of Prussia, and Robert Charles Koestler, Wayne, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,245

U.S. Cl. 260—404.5 **14 Claims**

Int. Cl. C07c *125/04;* **D06m**

This invention concerns novel carbamates containing terminal perfluoroalkyl groups and their methylol derivatives which are particularly useful as textile finishes and other similar applications for imparting valuable stain repellancy and stain release properties.

3,427,333

PROPARGYL 2-BROMODECANOATE

Raiford L. Holmes and Jerry P. Moreau, New Orleans, and Arthur F. Novak, Baton Rouge, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Dec. 19, 1963, Ser. No. 331,977, now Patent No. 3,294,794, dated Dec. 27, 1966. Divided and this application July 6, 1966, Ser. No. 574,858

U.S. Cl. 260—408 **1 Claim**

Int. Cl. C07c *69/24;* **A61l** *13/00*

This invention relates to the ester of propargyl alcohol and 2-bromodecanoic acid. This compound is characterized by the fact that as a growth inhibitor it is effective against a variety of pathogenic molds.

3,427,334

DOUBLE METAL CYANIDES COMPLEXED WITH AN ALCOHOL ALDEHYDE OR KETONE TO INCREASE CATALYTIC ACTIVITY

Robert J. Belner, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Original application Feb. 14, 1963, Ser. No. 258,595, now Patent No. 3,278,458, dated Oct. 11, 1966. Divided and this application Jan. 13, 1966, Ser. No. 520,378

U.S. Cl. 260—429 **18 Claims**

Int. Cl. C08g *23/00;* **B01j** *11/00*

A double metal cyanide complex compound is provided, wherein one of the metals of said complex compound is selected from the group consisting of Zn (II), Fe (II), Fe (III), Co (II), Ni (II), Mo (IV), Mo (VI), Al (III), V (IV), V (V), Sr (II), W (IV), W (VI), Mn (II), and Cr (III), and mixtures thereof, and wherein the other metal of said complex compound is selected from the group consisting of Fe (II), Fe (III), Co (II), Co (III), Cr (II), Cr (III), Mn (II), Mn (III), V (IV), and V (V), and mixtures thereof, containing, in an amount sufficient to increase the activity of said complex for the polymerization of organic cyclic oxides, at least one organic material selected from the group consisting of an alcohol, an aldehyde, and a ketone, said organic material being inert to polymerization by said compound and further being complexed with said compound, said compound containing at least a majority of CN^- bridging groups. These compounds are useful in polymerizing epoxides such as propylene oxide, ethylene oxide, allyl glycidyl ether and the like to make polyethers.

3,427,335

DOUBLE METAL CYANIDES COMPLEXED WITH AN ACYCLIC ALIPHATIC SATURATED MONOETHER, AN ESTER AND A CYCLIC ETHER AND METHODS FOR MAKING THE SAME

Robert J. Herold, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Original application Feb. 14, 1963, Ser. No. 258,603, now Patent No. 3,278,459, dated Oct. 11, 1966. Divided and this application Jan. 13, 1966, Ser. No. 532,487

U.S. Cl. 260—429 **13 Claims**

Int. Cl. C08g *23/00;* **B01j** *11/00*

A double metal cyanide complex compound is provided, wherein one of the metals of said complex compound is selected from the group consisting of Zn (II), Fe (II), Fe (III), Co (II), Ni (II), Mo (IV), Mo (VI), Al (III), V (IV), V (V), Sr (II), W (IV), W (VI), Mn (II), and Cr (III), and mixtures thereof, and wherein the other metal of said complex compound is selected from the group consisting of Fe (II), Fe (III), Co (II), Co (III), Cr (II), Cr (III), Mn (II), Mn (III), V (IV), and V (V), and mixtures thereof, containing, in an amount sufficient to increase the activity of said complex for the polymerization of organic cyclic oxides, at least one organic material selected from the group consisting of an ester, a cyclic ether and an acyclic aliphatic saturated monoether, said organic material being inert to polymerization by said compound and further being complexed with said compound, said compound containing at least a majority of CN^- bridging groups. These compounds are useful in polymerizing epoxides such as propylene oxide, ethylene oxide, allyl glycidyl ether and the like to make polyethers.

3,427,336

FLUORINE CONTAINING ORGANOSILICON COMPOUNDS AND METHOD OF MAKING

George Van Dyke Tiers, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. 769,061, Oct. 23, 1958. This application Mar. 22, 1965, Ser. No. 441,924

U.S. Cl. 260—448.2 **18 Claims**

Int. Cl. C07g *7/12*

Perfluorocarbon substituted organosilanes having at least one readily hydrolyzable radical attached to silicon are prepared by free-radical-induced reaction between a silane having a cyclohexenyl or terminally unsaturated alkenyl radical attached to silicon, and a saturated-fluorocarbon sulfonyl halide, with liberation of SO_2. The novel compounds find use as oil, water, and ketone repellants.

3,427,337

SUBSTITUTED SILYLALKYL ACRYLATES

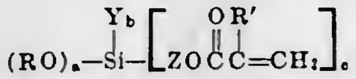
Robert E. Miller, Ballwin, and Robert J. McManimie, Glendale, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 423,842, Jan. 6, 1965. This application Apr. 5, 1965, Ser. No. 445,781

U.S. Cl. 260—448.2 **10 Claims**

Int. Cl. C07f *7/18;* **C09j** *3/00;* **C03c** *25/02*

Substituted silylacrylates of the formula



$$(RO)_a-\overset{Y_b}{\overset{|}{Si}}-\left[ZO\overset{O}{\overset{\|}{C}}\overset{R'}{\overset{|}{C}}=CH_2\right]_c$$

where R is selected from the group consisting of hydrogen and hydrocarbyl and alkyl carbonyl having up to 8 carbon atoms, R′ is selected from the group consisting of hydrogen and alkyl having up to 2 carbon atoms, Y is hydrocarbyl, Z is alkylene having from 7 to about 20 carbon atoms, *a* is an integer from 1 to 3, *b* is an integer from 0 to 2, *c* is an integer from 1 to 3 and the sum of $a+b+c$ equals 4. Also described in a process for preparing the above compounds comprising reacting an alkenyl alkanoate with a halosilane, reacting the resulting product with a hydroxy compound, and reacting this product with an acrylic acid or ester.

3,427,338

FUNCTIONAL OXYDISILETHYLENE MONOMERS

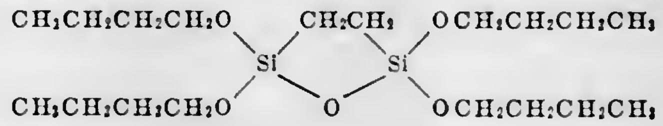
Cecil L. Frye, Midland, Mich., assignor to Dow Corning Corporation, Midland Mich., a corporation of Michigan

No Drawing. Filed Dec. 8, 1965, Ser. No. 512,529

U.S. Cl. 260—448.2 **12 Claims**

Int. Cl. C07d *103/02;* **C08g** *31/00, 51/74*

Cyclic silethylenesiloxanes in which alkoxy and functional halogens are present on the silicon atom. They are useful as additives to obtain copolymers which can be vulcanized at room temperature and for increasing desirable crosslinking characteristics. Illustrative of a cyclic silethylenesiloxane is one of the formula



3,427,339

ALKOXYALKARYLALKYLSILANES AND CONDENSATES THEREOF

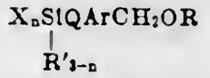
Edwin P. Plueddemann, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,864

U.S. Cl. 260—448.2 **13 Claims**

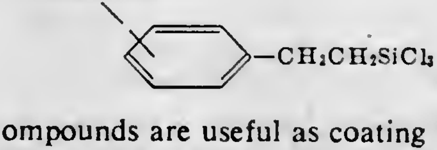
Int. Cl. C07f *7/18;* **C08g** *31/09*

The invention provides silanes of the formula



$$X_n\underset{R'_{3-n}}{\underset{|}{Si}}QArCH_2OR$$

and siloxane condensates thereof, where R is a lower alkyl radical, Q is a divalent alkyl radical, Ar is selected from the group consisting of divalent aryl radicals and divalent aryl ether radicals, X is the hydroxyl or a hydrolyzable group, R′ is a monovalent hydrocarbon radical of no more than 18 carbon atoms, and *n* has a value of 1 to 3, and illustrative silane is

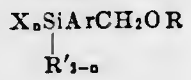


The novel compounds are useful as coating resins, chemical intermediates, and primers of high thermal stability for the adhesion of siliceous materials and metals to organic resins.

3,427,340
ALKOXYALKARYLSILANES AND CONDENSATES THEREOF

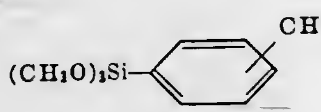
Edwin P. Plueddemann, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,931
U.S. Cl. 260—448.2 **11 Claims**
Int. Cl. C07f *7/18;* **C08g** *47/00*

The invention provides silanes of the formula



$$X_nSiArCH_2OR \quad (Si\text{–}R'_{3-n})$$

and siloxane condensates thereof, where R is a lower alkyl radical, Ar is selected from the group consisting of divalent aryl radicals and divalent aryl ether radicals, X is the hydroxyl or a hydrolyzable group, R′ is a monovalent hydrocarbon radical of no more than 18 carbon atoms, and n has a value of 1 to 3, and illustrative silane is

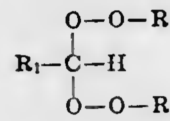


The novel compounds are useful as coating resins, chemical intermediates, and as primers of high thermal stability for the adhesion of siliceous materials and metals to organic resins.

3,427,341
PREPARATION OF PEROXY-ESTERS BY REACTION OF A PERACETAL AND A BASE

Philip S. Bailey and Yun Ger Chang, Austin, Tex., assignors to Reichhold Chemicals Inc., White Plains, N.Y.
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,774
U.S. Cl. 260—453 **10 Claims**
Int. Cl. C08f *1/60;* **C07c** *67/00*

A method of producing peroxy esters which comprises reacting a base with a peracetal having the following formula



$$R_1-\underset{\substack{|\\O-O-R_2}}{\overset{\substack{O-O-R_2\\|}}{C}}-H$$

wherein R_1 is an alkyl or aryl group, and R_2 represents an alkyl group, the quantity of the base used being less than the equivalent amount based on the peracetal.

3,427,342
CONTINUOUS SULFONATION PROCESS

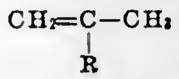
Richard J. Brooks and Burton Brooks, Seattle, Wash., assignors to Chemithon Corporation, Seattle, Wash.
Continuation of application Ser. No. 405,215, Oct. 20, 1964. This application Nov. 21, 1966, Ser. No. 596,000
U.S. Cl. 260—458 **18 Claims**
Int. Cl. C07b *13/02;* **C07c** *143/00*

A continuous process for sulfonating a sulfonatable organic reactant wherein the organic reactant is reacted with sulfur trioxide to provide a corresponding sulfonic acid which comprises passing parallel streams of said organic reactant and a mixture of sulfur trioxide and a gaseous-inert diluent into a reaction zone wherein no prereaction takes place between the stream or organic reactant and said stream of sulfur trioxide-gaseous inert diluent prior to entry into said reaction zone, thoroughly mixing said organic reactant and said sulfur trioxide-gaseous inert diluent in said reaction zone and rapidly cooling the resultant reaction mixture as it passes from the reaction zone, said reaction zone consisting of two externally cooled, substantially concentric, circular reaction surfaces.

3,427,343
PROCESS FOR PREPARING OLEFINICALLY UNSATURATED ALDEHYDES AND NITRILES

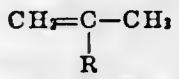
James L. Callahan, Bedford, Ernest C. Milberger, Maple Heights, and Robert K. Grasselli, Garfield Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 4, 1964, Ser. No. 408,723
U.S. Cl. 260—465.3 **12 Claims**
Int. Cl. C07c *45/04, 121/02*

1. The process for producing olefinically unsaturated nitriles or olefinically unsaturated aldehydes comprising introducing molecular oxygen into the bottom-most reaction zone of a vertical enclosed reaction area having a series of at least four communicating reaction zones containing a fluidized solid oxidation catalyst in each zone and introducing into a communicating zone other than that into which the molecular oxygen was introduced as reactant (a) a monoolefin having the structure



$$CH_2=\underset{\substack{|\\R}}{C}-CH_3$$

wherein R is hydrogen or methyl and ammonia or (b) a monoolefin having the structure



$$CH_2=\underset{\substack{|\\R}}{C}-CH_3$$

wherein R has the foregoing designation, respectively, maintaining a temperature in the range of 500 to 1000° F. throughout the reaction area and passing the reactant vapors upward through the successive zones containing fluidized catalyst and recovering the product from the top of the reaction area.

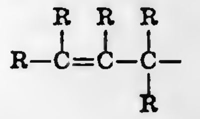
3,427,344
PROCESS FOR THE MANUFACTURE OF UNSATURATED CARBOXYLIC ACID ESTERS

Jiro Tsuji, 937–1 Koshigoe, Kamakura-shi, Kanagawa-ken, Japan, and Jitsuo Kiji, Masanobu Morikawa, and Shinzo Imamura, all of 660–1, Aza Mine, Tebiro, Kamakura-shi, Kanagawa-ken, Japan
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,294
Claims priority, application Japan, July 29, 1963, 38/37,730
U.S. Cl. 260—468 **9 Claims**
Int. Cl. C07c *67/00, 69/52;* **C07b** *29/06*

1. A process for the preparation of β,γ- unsaturated carboxylic acid ester, wherein an allylic compound of the formula

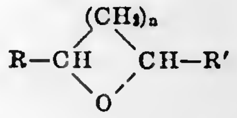
A—X

wherein A is an allylic group of the formula



$$R-\overset{\substack{R\\|}}{C}=\overset{\substack{R\\|}}{C}-\underset{\substack{|\\R}}{\overset{\substack{R\\|}}{C}}-$$

R is a substituent selected from the group consisting of hydrogen and alkyl, the α-carbon atom and γ-carbon atom in the said allylic group being able to form a ring through at least one carbon atom, the total number of carbon atoms in the R substituents ranging from 3 to 6, and X is halogen, is reacted with carbon monoxide and a cyclic ether of the formula

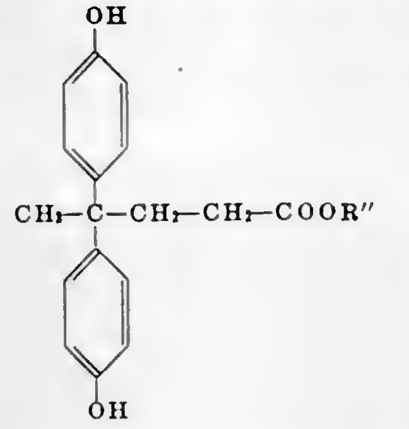


wherein $n=0$ to 3 inclusive and R and R′ are hydrogen, alkyl or haloalkyl, in the presence of at least one noble metal catalyst selected from Group VII and Group VIII at a temperature of 50–300° C. and a pressure of 50–300 kg./cm.^{2}.

3,427,345
LONG-CHAIN BISPHENOL ESTERS

Reynold E. Holmen, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 194,987, May 15, 1962. This application Sept. 20, 1965, Ser. No. 488,722
U.S. Cl. 260—473 **3 Claims**
Int. Cl. C07c *69/76*

Long-chain bisphenol esters having utility as antioxidants, plasticizers, germicides and fungicides and characterized by surprisingly good compatibility with oleophilic materials. These bisphenol esters are typified by the formula

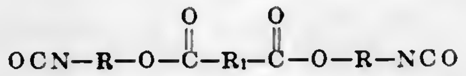


where R″ is an alkyl group of at least 8 carbon atoms.

3,427,346
NOVEL OLEFINICALLY UNSATURATED DIISOCYANATES

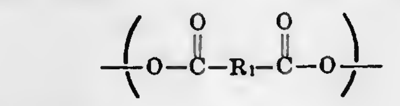
Thomas K. Brotherton, South Charleston, and John W. Lynn, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 212,480, July 25, 1962. This application Nov. 9, 1964, Ser. No. 409,921
U.S. Cl. 260—485 **24 Claims**
Int. Cl. C07c *119/04;* **C08g** *22/28*

1. A composition having the general formula:



$$OCN-R-O-\overset{\substack{O\\\|}}{C}-R_1-\overset{\substack{O\\\|}}{C}-O-R-NCO$$

wherein R represents a divalent hydrocarbon group containing from 2 to 12 carbon atoms and which is of the group consisting of aliphatic, alicyclic and aromatic groups, and wherein R_1 represents a divalent olefinically unsaturated aliphatic hydrocarbon group containing from 2 to 10 carbon atoms, with the provisos that (1) when both R variables represent alkylene groups, R_1 is not the cis-vinylene group, and (2) each isocyanato moiety, individually, is at least two carbon atoms removed from the



$$-\left(O-\overset{\substack{O\\\|}}{C}-R_1-\overset{\substack{O\\\|}}{C}-O\right)-$$

moiety of the above formula.

3,427,347
CHLOROACETOXYLATION OF OLEFINS

Seymour J. Lapporte, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,704
U.S. Cl. 260—491 **4 Claims**
Int. Cl. C07c *67/00, 17/02*

The chloroacetoxylation of 1-olefins with chlorine and a tertiary alkyl acetate provides a less corrosive reaction medium and a reaction product containing a high ratio of chlorohydrin acetate and diacetate to dichloride which reaction product can be readily hydrolyzed to glycol.

3,427,348
PREPARATION OF GLYCOLS AND GLYCOL ESTERS BY OXIDATION OF OLEFINS WITH SELENIUM DIOXIDE

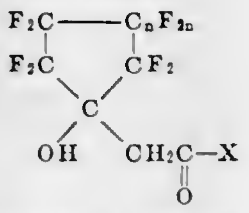
Danford H. Olson, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,389
U.S. Cl. 260—497 **11 Claims**
Int. Cl. C07c *67/00;* **C07b** *3/00*

The present invention comprises a process for the oxidation of hydrocarbon olefins having from 2 to 4 carbon atoms comprising treating said olefins with selenium dioxide in the conjoint presence of mineral acid and organic acid at about 50 to about 150° C.

3,427,349
1-HYDROXYPERFLUOROCYCLO ALKYL ACETIC ACID AND CORRESPONDING CHLORIDES

Alson K. Price, Mine Hill, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 9, 1966, Ser. No. 526,023
U.S. Cl. 260—514 **9 Claims**
Int. Cl. C07c *61/32;* **A61k** *27/00*

1. Compounds of the formula:



wherein X may be OH or Cl and *n* is 0–2.

3,427,350
PRODUCTION OF DICARBOXYLIC ACIDS

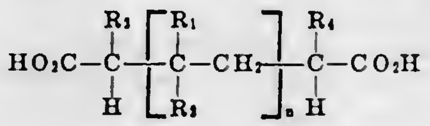
Stanley Frederic Marrian, Aberdour, Fife, and Max Marin Wirth, Dollar, Clackmannanshire, Scotland, assignors, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England
No Drawing. Filed Apr. 14, 1966, Ser. No. 542,475
Claims priority, application Great Britain, Apr. 23, 1965, 17,267/65
U.S. Cl. 260—537 **11 Claims**
Int. Cl. C07c *51/18, 55/04, 139/04*

A cycloalkane containing between 4 and 12 carbon atoms is sulphoxidized with sulfur dioxide and oxygen and the resulting cycloalkane sulfonic acid or a salt is treated with molecular oxygen under conditions that the material remains in the liquid phase. A temperature between 90° and 200° C. and a pressure between 10–200 atmospheres are satisfactory. The commercially valuable dicarboxylic acids are produced. The starting material may be used while still in the crude form and di- and polysulfonic acids in which the sulfonic groups are on different carbon atoms, may also be used.

3,427,351
LIQUID-SATURATED CARBOXYLATED ELASTOMERS AND PROCESS OF MANUFACTURING

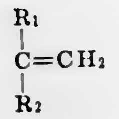
Toshio William Nakagawa, San Jose, and Thomas P. Rudy, Saratoga, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 357,147, Apr. 3, 1964. This application Oct. 10, 1966, Ser. No. 585,513
U.S. Cl. 260—537 **7 Claims**
Int. Cl. C07c *55/02;* **C08f** *3/00*

A carboxy-terminated polymer of the general structural formula:



$$HO_2C-\underset{\substack{|\\H}}{\overset{\substack{R_3\\|}}{C}}-\left[\underset{\substack{|\\R_2}}{\overset{\substack{R_1\\|}}{C}}-CH_2\right]_n-\underset{\substack{|\\H}}{\overset{\substack{R_4\\|}}{C}}-CO_2H$$

wherein R_1 and R_2 are lower alkyl groups containing from 1–10 carbon atoms, R_3 and R_4 are selected from the group consisting of hydrogen and lower alkyl groups and *n* is an integer from 4 to 250 inclusive. The compound is synthesized by copolymerizing a monoolefin of the formula:



$$R_1-\underset{\displaystyle R_2}{C}=CH_2$$

with an acyclic conjugated diene, subjecting the copolymer formed to ozonolysis to cleave the polymer at the double bonds and oxidizing the termine of the cleavage products to carboxylic acid groups.

3,427,352

PURIFICATION OF N-METHYL-2-CHLOROACETO-ACETAMIDE AND N,N-DIMETHYL-2-CHLORO-ACETOACETOACETAMIDE

Jon B. Reid and David L. Pearson, Aurora, Colo., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,896

U.S. Cl. 260—561 **6 Claims**

Int. Cl. C07c *103/62, 17/00*

Mixtures of 2,2-dichloro- and 2-monochloro-acetoacetamides are subjected to hydrolytic degradation in a weakly acid to weakly basic medium, i.e., pH 6–8.5, to selectively degrade the 2,2-dichloroacetoacetamide.

3,427,353

BICYCLO[3.3.2]DECANE AMINES

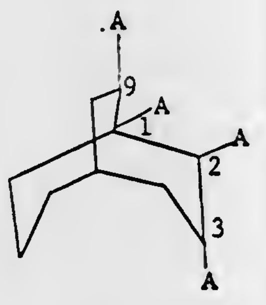
Alfred W. Chow, Radnor, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 12, 1966, Ser. No. 549,496

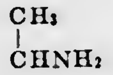
U.S. Cl. 260—563 **10 Claims**

Int. Cl. C07c *87/40, 85/00*

1. A compound of the formula



where one A group is NH_2, $NHCH_3$, $N(CH_3)_2$,



$$\overset{\displaystyle CH_3}{\overset{|}{C}}HNH_2$$

or CH_2NH_2, and the other A groups are hydrogen, or a pharmaceutically acceptable acid addition salt thereof.

3,427,354

AMINOACETYLENES AND METHOD OF PREPARATION THEREFOR

Heinz G. Viehe, Linkebeek, Belgium, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 376,203, June 18, 1964. This application Oct. 27, 1964, Ser. No. 406,908

U.S. Cl. 260—570.8 **7 Claims**

Int. Cl. C07c *85/04, 11/00;* **C07f** *1/00*

A process for producing aminoacetylenes by reacting a halogen-acetylene compound with an alkali metal amide or a tertiary amine. There are also disclosed alkali metal aminoacetylenes and fluoroacetylenes and their trimer derivatives.

3,427,355

PROCESS FOR PREPARING ANILINE AND ALKYL ANILINE

John W. Le Maistre and Albert H. Sherman, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 3, 1966, Ser. No. 555,003

U.S. Cl. 260—580 **6 Claims**

Int. Cl. C07c *85/10, 87/52*

1. The process for preparing aniline and ring substituted lower alkyl aniline which comprises contacting a compound selected from the group consisting of nitrocyclohexane and lower alkyl nitrocyclohexane with a dehydrogenation catalyst at a temperature between about 250° C. and about 500° C.

3,427,356

PRODUCTION OF 1,3-PROPYLENEDIAMINES

Karl Baer, Weinheim, Bergstrasse, Herwig Hoffmann, Frankenthal, Pfalz, and Hermann Suessenguth, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany,

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,911

Claims priority, application, Germany, Mar. 22, 1966, B 86,311

U.S. Cl. 260—583 **3 Claims**

Int. Cl. C07c *85/12;* **B01j** *11/22*

A process for the production of 1,3-propylenediamines by hydrogenating β-aminopropionitriles in the presence of ammonia at temperatures below 200° C. and at superatmospheric pressure and using cobalt or nickel catalysts, wherein the hydrogenation is carried out in the presence of a small amount of a manganese compound dissolved in the hydrogenation mixture.

3,427,357

METHOD OF SEPARATING CHLORINATED HYDROCARBONS

Arnaud M. J. de Gramont, Gonfreville l'Orcher, Seine-Maritime, France; Philippe J. P. Maillot, 161 Rue Victor Hugo, Le Havre, Seine-Maritime, France; and Joseph Edouard Weisang, 15 Rue du Docteur Suriray, Le Havre, Seine-Maritime, France

Filed Aug. 26, 1965, Ser. No. 483,392

Claims priority, application France, Aug. 26, 1964, 986,267; Aug. 5, 1965, 27,391

U.S. Cl. 260—652 **15 Claims**

Int. Cl. C07c *17/38;* **B01d** *11/00*

1. In a method for separating the chlorinated derivatives from a mixture of paraffinic hydrocarbons and their chlorinated derivatives containing 10 to 13 carbon atoms, the steps which comprise contacting said mixture in liquid phase at a temperaturee within the range of room temperature to 60° C. in an extraction zone with a polar solvent and a non-polar solvent, said polar solvent being selected from the group consisting of tetrahydrofurfuryl alcohol, the monomethyl ether of ethylene glycol, the monomethyl ether of diethylene glycol, acetonyl acetone, dimethyl formamide, acetonitrile, an acetone and N-methyl pyrrolidone, and said non-polar solvent being a paraffinic hydrocarbon having from 3 to 8 carbon atoms with the ratio of polar solvent to non-polar solvent being below 15, withdrawing from the top of said extraction zone a raffinate phase containing said paraffinic hydrocarbons and a portion of said non-polar solvent and being substantially free of said chlorinated derivatives of the said paraffinic hydrocarbons, and withdrawing from the bottom of said extraction zone an extract phase containing said chlorinated derivatives, said polar solvent, a substantial portion of said non-polar solvent and being substantially free of said non-chlorinated paraffinic hydrocarbons.

3,427,358

SELECTIVE SOLVENT SEPARATION OF POLYCHLOROALKANES FROM MONO-CHLOROALKANES

Thomas A. Washall, Claymont, Del., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,966

U.S. Cl. 260—652 **5 Claims**

Int. Cl. C07c *17/38;* **B01d** *11/04*

Extraction of polychloroalkanes having from 8 to 16 carbon atoms in the molecule from monochloroalkanes having from 8 to 16 carbon atoms in the molecule utilizing dimethyl formamide as the selective solvent.

3,427,359

OXYCHLORINATION OF HYDROCARBONS AND A CATALYST THEREFOR

Charles E. Rectenwald and George E. Keller II, South Charleston, and Jared W. Clark, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 8, 1964, Ser. No. 373,546

U.S. Cl. 260—659 **15 Claims**

Int. Cl. C07c *17/10;* **B01j** *11/22, 11/08*

1. A novel catalyst composition consisting essentially of from about 1 to about 10 wt. percent copper chloride, from about 1 to about 10 wt. percent of chloride of a metal selected from the group consisting of the alkali metals and from about 1 to about 10 wt. percent of chloride of a metal selected from the group consisting of the rare earth metals, said percentages being based on and said chlorides being supported by an inert carrier material having a low surface area no greater than about 10 square meters per gram.

9. In a process of oxidative chlorination of hydrocarbons to produce chlorinated hydrocarbons therefrom, which process comprises contacting a vaporous mixture of aliphatic hydrocarbon, a chlorinating agent and oxygen-containing gas with a catalyst disposed in a reaction zone, said aliphatic hydrocarbon containing up to 4 carbon atoms, wherein adjacent carbon atoms are linked by 1 to 2 valence bonds, said catalyst consisting essentially of a mixture of from about 1 to about 10 wt. percent copper chloride, from about 1 to about 10 wt. percent of chloride of a metal selected from the group consisting of alkali metals and from about 1 to about 10 wt. percent of chloride of a metal selected from the group consisting of rare earth metals, said percentages being based on and said chloride being supported by an inert carrier material having a low surface area no greater than about 10 square meters per gram, maintaining said reaction zone at a temperature ranging from about 275° C. to about 600° C. and under a pressure ranging from about 0 p.s.i.g. to about 200 p.s.i.g. and recovering the chlorinated hydrocarbons from the effluent of the reaction zone.

3,427,360

PROCESS FOR THE MANUFACTURE OF 5-ALKENYL-2-NORBORNENES

Henry S. Makowski, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,887

U.S. Cl. 260—666 **10 Claims**

Int. Cl. C07b *15/00;* **C07c** *3/60, 3/04*

This invention relates to a new and improved process for the manufacture of 5-alkenyl-2-norbornenes, especially 5-propenyl-2-norbornene, a particularly valuable third monomer for the manufacture of sulfur curable ethylene-α-olefin terpolymers. Highly selective condensation reactions are produced between cyclopentadiene and cis forms of 4-alkyl-1,3-butadienes, particularly those wherein the alkyl substituent contains from 1 to about 6 carbon atoms. The condensation reactions are effected at autogenous pressures at temperatures ranging from about 100° C. to about 275° C., and preferably at from about 135° C. to about 200° C. The ratio of the cis form of 4-alkyl-1,3-butadiene:cyclopentadiene should be at least about 1:1 and preferably higher, i.e., to as high as about 10:1. A ratio of about 2:1 to about 5:1 is preferred.

3,427,361

HYDROGENATION

William O. Arnold, Sweeny, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 17, 1966, Ser. No. 535,061

U.S. Cl. 260—667 **3 Claims**

Int. Cl. C07c *5/10;* **B01d** *15/00*

In the adiabatic hydrogenation of benzene in the presence of cyclohexane diluent, the concentration of benzene in the feed is increased above the maximum amount which would result in a reaction effluent of a desired purity, and at least a portion of the resulting reaction effluent of lowered purity is passed through a molecular sieve bed to obtain the desired product purity. Thus, for nickel on kieselguhr with an initial feed temperature of 330° F., the benzene concentration is raised to approximately 7 volume percent, resulting in a final temperature of about 470° F. and a reaction effluent containing approximately 98 volume percent cyclohexane, part of which is passed through a molecular sieve bed and readmixed with the remainder to obtain a purity of 99.7 volume percent.

3,427,362

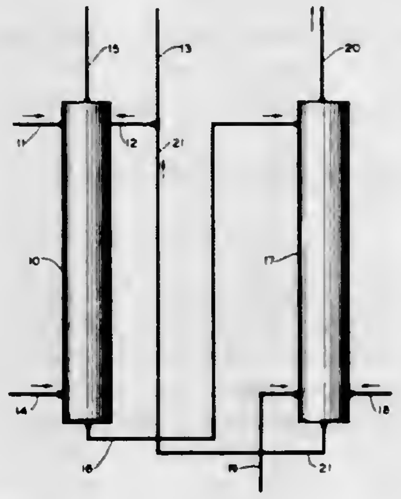
SEPARATION OF AROMATIC HYDROCARBONS

Rodney D. Beckham and Earle C. Makin, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 19, 1966, Ser. No. 587,930

U.S. Cl. 260—674 **9 Claims**

Int. Cl. C07c *7/10, 15/10;* **B01d** *11/00*



Mixtures of vinyl aromatic hydrocarbons and alkyl aromatic hydrocarbons are separated by contacting the mixture with an aqueous solution of silver fluoroborate and/or silver fluorosilicate to produce an extract fraction and a raffinate fraction. The extract fraction is then contacted with an unsaturated aliphatic hydrocarbon to produce a hydrocarbon fraction substantially richer in the vinyl aromatic hydrocarbon than the initial aromatic hydrocarbon mixture.

3,427,363

REACTION PRODUCT OF ACRYLATE ESTER AND BUTADIENE POLYMER

Walter Lautenschlager, Christian Srna, and Ludwig Schuster, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,035

Claims priority, application Germany, Sept. 24, 1964, B 78,646

U.S. Cl. 260—879 **6 Claims**

Int. Cl. C08f *45/68, 47/12, 15/26*

Moldable compositions of (1) a butadiene polymer containing polymerizable ethylenically unsaturated groups with (2) a liquid organic monomer consisting mainly of the acrylic ester of tricyclo-[5,2,1,$0^{2,6}$]-decene-(3)-ol-(9) and processes for production of molded articles therewith.

3,427,364

REACTION OF LITHIUM-TERMINATED POLYMERS WITH CARBON MONOXIDE

Alfred W. Shaw, Moraga, Charles H. Wilcoxen, Jr., San Lorenzo, and Frank D. Mango, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,066

U.S. Cl. 260—879 **7 Claims**

Int. Cl. C08f *27/00, 7/04;* **C08d** *5/04*

A process for the preparation of polymers of increased molecular weight by reacting lithium terminated homopolymers and copolymers of conjugated dienes and monovinyl arenes with carbon monoxide as a coupling agent. The process is conducted at a temperature of from 0 to 75° C. with from 0.5 to 25 equivalents of carbon monoxide per equivalent of lithium.

3,427,365

NITROSYL NICKEL COMPLEXES FOR OLEFIN DIMERIZATION

Perry L. Maxfield, Durango, Colo., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 12, 1966, Ser. No. 600,706

U.S. Cl. 260—683.15 **9 Claims**

Int. Cl. C07c *3/10;* **B01j** *11/00*

1. A process for dimerizing a monoolefin comprising contacting at least one monoolefin selected from acyclic and cyclic monoolefins with a catalyst formed by admixing:

(a) a complex of the general formula

$$(NO)Ni(L)B$$

wherein L is a ligand selected from (1) R_3Y wherein Y is selected from phosphorus, arsenic, and antimony, and R is selected from alkyl, cycloalkyl, and aryl radicals, and combinations thereof, (2) thiophene, and (3) alkyl-substituted thiophenes, and wherein B is selected from a halogen, and an anion formed by a halogen and a Lewis acid; and

(b) an aluminum compound of the general formula

$$R'_xAlX_y$$

wherein R′ is selected from alkyl, cycloalkyl, and aryl radicals, and combinations thereof, X is a halogen, x and y are integers the sum of which is 3, and neither x nor y is 0.

3,427,366

HYDROCARBON RUBBER AND POLYURETHANE PREPARED FROM A POLYISOCYANATE AND AN HYDROXY TERMINATED DIENE POLYMER

Joseph A. Verdol, Dolton, and Patrick W. Ryan, Chicago Heights, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 536,292, Mar. 22, 1966. This application Mar. 15, 1968, Ser. No. 713,543

U.S. Cl. 260—859 **23 Claims**

Int. Cl. C08f *45/72, 27/10*

Rubber compositions containing hydrocarbon rubber and urethane resin which is the reaction product of a diisocyanate with an intermediate polyhydroxy polymer having an average of at least about 1.8 predominantly primary, terminal, allylic hydroxyl groups per average molecule and being an addition polymer of 0–75% by weight of an alpha-olefin monomer of 2 to 12 carbon atoms, and about 25 to 100% of a 1,3-diene hydrocarbon of 4 to about 12 carbon atoms, the intermediate polyhydroxy polymer having a viscosity at 30° C. of about 5–20,000 poises and a number average molecular weight of about 400–25,000. The urethane component is at least partially uncured when combined with the hydrocarbon rubber. These rubber compositions have improved tack and handling characteristics, improved resistance to attack by hydrocarbon oils and solvents as well as increased abrasion resistance and other desirable features, such as high tensile strength.

3,427,367

PREFIRING OF REFRACTORY MATERIALS

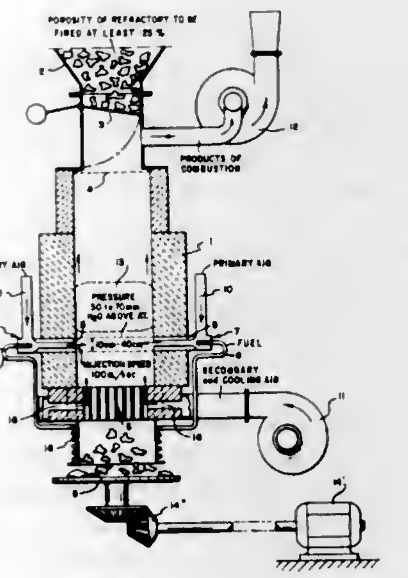
Jean-Pierre Kiehl, Lyon, France, assignor to Societe Generale Des Produits Refractaires, Paris, France, a corporation of France

Filed Oct. 4, 1966, Ser. No. 584,167

Claims priority, application France, Oct. 5, 1965, 33,724

U.S. Cl. 263—52 **14 Claims**

Int. Cl. F27b *1/08, 1/20*


POROSITY OF REFRACTORY TO BE FIRED AT LEAST 25 %
PRODUCTS OF COMBUSTION
PRIMARY AIR
PRIMARY AIR
PRESSURE 30 to 70 mm H₂O ABOVE AT.
10cm–40cm
INJECTION SPEED 100 m./sec
FUEL
FUEL
SECONDARY and COOLING AIR
1
2
3
4
6
7
8
10
11
12
13
14'
14''
16

There is disclosed a method of roasting or calcining refractory materials in which crushed refractory material having a porosity of at least 25%, and preferably between 35% and 45%, preferably with an average particle size between 5 mm. and 40 mm., is fed to the upper end of a column. A mixture of fuel and combustion-supporting gas is injected into the column over a zone of limited height of the order of 10 to 30 cm., at a level below the upper end of the charge of material therein, and at a velocity of at least 100 meters per second, to maintain in that zone a pressure between 30 and 70 mm. of water above atmospheric. Secondary air is introduced into the column below that zone, the calcined product being evacuated through the lower end of the column while the products of combustion pass out at the upper end of the column.

3,427,368

PROCESS FOR FORMING A GEL WITHIN A CONTAINER

Ralph Anderson, Saratoga, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed May 15, 1967, Ser. No. 638,603

U.S. Cl. 264—3 **6 Claims**

Int. Cl. C10l *7/02;* **B01j** *13/00*

A method for filling a container with a gel formed by dissolving a solid in a solvent. The solid material is formed into Raschig rings, berl saddles or other configurations having a bulk density such that a container filled with solid material will be capable of receiving the amount of solvent required to form the gel. The container is subsequently filled with solvent and the gel is formed in situ.

3,427,369

CARBON GUN MIXES

Joseph R. Parsons, Park Forest, Ill., assignor to Chicago Fire Brick Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,118

U.S. Cl. 264—30 **10 Claims**

Int. Cl. C04b *35/52;* **B44d** *1/094*

A mixture of particles of carbon and particles of a gel or gel forming material which with water forms a temporary bonding medium for the carbon. Pitch may also be present to serve as a permanent bond. Ordinary plastic clays may be used in place of the gel material but must be present in higher proportion than the gel.

3,427,370

RESIN RECOVERY SYSTEM

Hermann Schnell, Krefeld-Urdingen, and Hans Helmut Schwarz, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 25, 1963, Ser. No. 297,681

Claims priority, application Germany, Aug. 13, 1962, F 37,583

U.S. Cl. 264—37 **11 Claims**

Int. Cl. B01d *12/00*

1. A process for removing from a water insoluble synthetic resin solution a solvent for said resin which comprises introducing a mixture of said solution, steam and water into a tubular passage while heating said mixture to a temperature of at least the boiling point of said solvent, said mixture at the point of introduction into said tubular passage under flow conditions having a Reynolds number of at least about 5,000 and a residence time in said tubular passage of at least about 5×10^{-2} seconds, volatilizing said solvent from said mixture and obtaining thereby a substantially solvent-free solid resin in an aqueous medium.

3,427,371

PROCESS AND APPARATUS FOR EXTRUDING FOAMED ARTICLES FREE FROM WARPING

Stanley John Skinner, Malpas, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company

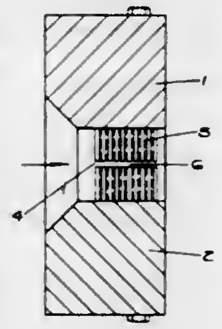
Filed Dec. 16, 1965, Ser. No. 514,234

Claims priority, application Great Britain, Dec. 29, 1964, 52,636/64

U.S. Cl. 264—41 **9 Claims**

Int. Cl. B29f *3/01*

Dies and processes for extruding a foamable thermoplastic synthetic resin through a die having a plurality of obstructions distributed therein transversely to the direction of resin flow so as to provide a substantial resistance to the flow of the foamable resin, the obstructions being so positioned that any streams of resin separated by an obstruction coalesce before reaching an area of lower pressure wherein foaming occurs. The dies and processes are particularly useful for inhibiting warping and surface-wrinkling of foamed boards produced by extrusion.



3,427,372

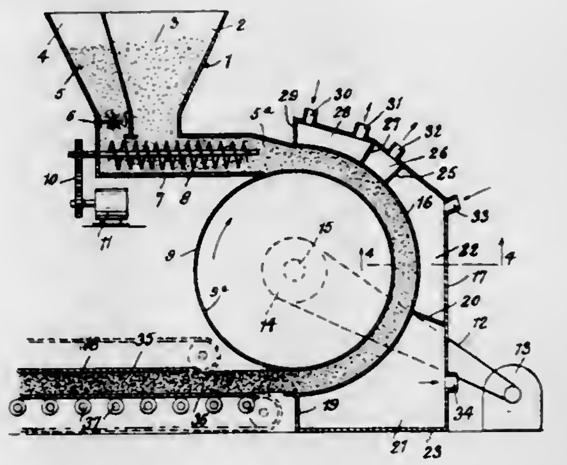
APPARATUS AND METHOD FOR CONTINUOUS PRODUCTION OF SLABS OR SHEETS

Erling Berner, New Castle, Pa., assignor to Berner Industries, Inc., New Castle, Pa., a corporation of Pennsylvania

Filed Oct. 17, 1966, Ser. No. 587,038

U.S. Cl. 264—51 **21 Claims**

Int. Cl. B29f *3/01*



1. The method of producing a foamed plastic body comprising delivering plastic granules containing a foaming agent between closely spaced arcuate surfaces of a molding channel, only one of said surfaces being movable, at least one of said surfaces having perforations therein, and passing a heating medium through said perforations to expand and mold the granules passing through said channel.

3,427,373

METHOD FOR THE MANUFACTURE OF ALUMINA REFRACTORIES HAVING AN ALUMINUM NITRIDE COATING

Shigetomo Matsuo, Tokyo, and Yosiaki Matsuki and Katsutoshi Kometya, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

No Drawing. Filed June 7, 1965, Ser. No. 462,069

Claims priority, application Japan, June 11, 1964, 39/32,902

U.S. Cl. 264—60 **3 Claims**

Int. Cl. C04b *35/64, 35/10, 33/32*

A method of manufacturing an alumina refractory body, wherein a compression molded or a sintered body containing alumina is heated in a nitrogen atmosphere while the surface of the body is maintained in contact with carbon, so that a coating of aluminum nitride is formed on said surface.

3,427,374

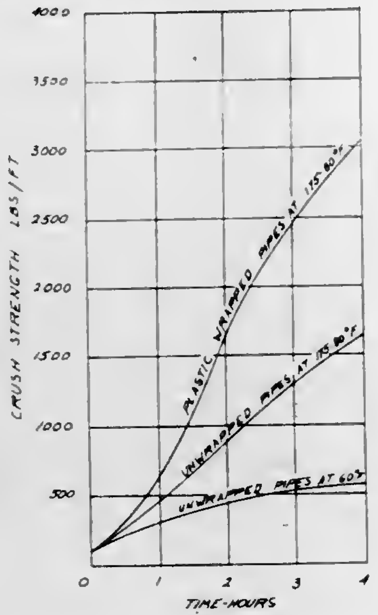
METHOD OF CURING CEMENTITIOUS ARTICLES

Joseph C. Jackson, Ambler, and Willard R. Seipt, Glenside, Pa., assignors to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland

Filed Sept. 6, 1966, Ser. No. 577,387

U.S. Cl. 264—79 **10 Claims**

Int. Cl. C04f *7/00;* **C04b** *41/30*



Process for curing hydraulic cement articles wherein the freshly formed wet cement article is wrapped in a plastic film, for example, a sheet of polyethylene, which is substantially impermeable to liquid water and water vapor and transferring heat into the article when it is so wrapped, the heat being effective to accelerate the reaction between the cement and water and thereby promote cement hydration, the water impermeable film functioning to prevent loss of water from the cement article.

3,427,375

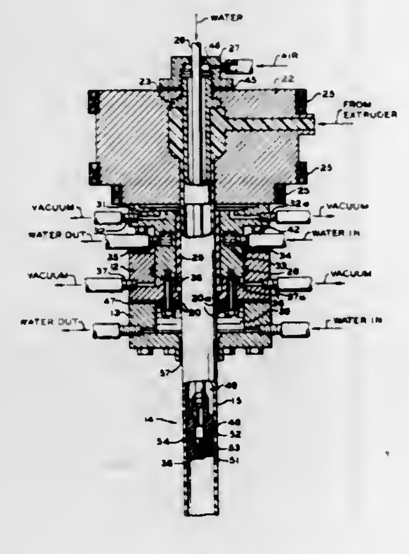
EXTERNAL AND INTERNAL FALLING WATER FILM QUENCH OF POLYMER TUBING

Edward W. Turner, Hazardville, Conn., assignor to Phillips Petroleum Company, a corporation of Delaware

Continuation of application Ser. No. 396,115, Sept. 14, 1964. This application Dec. 18, 1967, Ser. No. 695,819

U.S. Cl. 264—95 **6 Claims**

Int. Cl. B29f *3/08*



A tube, suitable for use as a parison in blow molding transparent articles, is extruded downwardly through a cooled sizing sleeve and over a cooled internal sizing plug and is then contacted with internal and external solid falling films of water so as to maintain the surface quenched until the entire wall thickness of the tube is cooled to below the crystalline melt point.

3,427,376

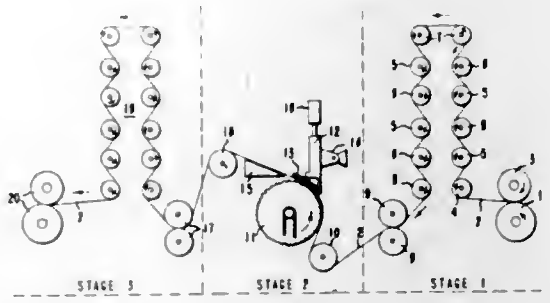
SOFTENING NONWOVEN FABRICS

James Joseph Dempsey, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 27, 1966, Ser. No. 582,292

U.S. Cl. 264—282 **4 Claims**

Int. Cl. B31f *1/12;* **D06c** *3/06*



Point-bonded, nonwoven film-fibril sheets are softened by a three step process which includes, in order, button breaking, creping, and button breaking. The button breaker is modified to permit stroking of the sheets counter to the direction of sheet travel. This method permits attainment of a desired level of softness, without delamination, at a commercially practical rate of sheet throughput.

3,427,377

COMPOSITION CONTAINING PENICILLIN AND DYE INDICATOR FOR TREATING UDDERS

Fritz Bauer, Bad Soden, Taunus, Peter Klatt, Kelkheim, Taunus, and Kurt Sellhorn, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,619

Claims priority, application Germany, Aug. 19, 1964. F 43,782

U.S. Cl. 424—7 **5 Claims**

Int. Cl. A01j *1/00;* **A61k** *21/00;* **A23c** *7/00*

A composition has been provided to detect in milk excreted penicillin which has been used in the treatment of udders. This composition comprises as the indicator for penicillin the dyestuff 2,4-disulfo-5-hydroxy-4′,4″-bis-(diethylamino)-triphenyl-carbinol (New Color Index No. 42051, Schultz No. 826, E.E.C. No. E131). Some of the advantages accruing from the use of said dyestuff are a consistent and proportional response to the amount of penicillin excreted and ability to visually detect and measure the excreted penicillin.

3,427,378

SUSTAINED RELEASE ENCAPSULATED FORMULA

Norman Leo Henderson, Park Ridge, N.J., and Louis Nasir Elowe, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,410

U.S. Cl. 424—14 **6 Claims**

Int. Cl. A61k *9/04, 27/12*

A sustained release package dosage form in a substantially completely filled gelatin capsule, the package containing a mixture of a hydrophilic gum and an ungranulated medicament in the proper prescribed therapeutic dosage, the proportion of the gum being from 70% to 99% of the total weight of the mixture.

3,427,379

DEXTROMETHORPHAN AND BENZYL ALCOHOL HARD CANDY LOZENGES FREE FROM OPAQUENESS AND/OR TINY ENTRAPPED AIR BUBBLES

Richard Henry Barry, Bloomfield, and Michael Weiss, Paramus, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 13, 1966, Ser. No. 520,369

U.S. Cl. 424—14 **3 Claims**

Int. Cl. A61k *9/00;* **A23g** *3/00*

1. An antitussive composition, in the form of a substantially translucent hard candy lozenge free from opaqueness and/or tiny air bubbles entrapped therein, which consists essentially of (a) from about 35 to about 40 parts by weight of a mixture of from about 55% to about 75% by weight of sucrose solids, from about 25% to about 45% by weight of corn syrup solids and (b) from about 0.3 to about 1.25 parts by weight of a mixture comprising from about 3.0% to about 15% by weight of a member selected from the group consisting of d-3-methoxy-N-methylmorphinan and a salt thereof with a medicinally acceptable acid, from about 20% to about 55% by weight of benzyl alcohol, from about 10% to about 50% of a complex magnesium aluminum silicate, from about 5% to about 15% by weight of sodium chloride and from about 0.3% to about 1.5% by weight of sodium saccharin.

3,427,380

ORAL COMPOSITIONS FOR RETARDING DENTAL PLAQUE FORMATION COMPRISING PARA-AMINOBENZOIC ACID

Jerry J. Kirkland, Forest Park, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,394

U.S. Cl. 424—54 **5 Claims**

Int. Cl. A61k *7/16*

Oral compositions such as dentifrice, mouthwash, and chewing gum containing para-aminobenzoic acid to inhibit capsule formation by oral microorganisms thereby retarding dental plague development.

3,427,381

ORAL COMPOSITIONS FOR RETARDING DENTAL PLAQUE FORMATION COMPRISING BENZOHYDROXAMIC ACID

Jerry J. Kirkland, Forest Park, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,430

U.S. Cl. 424—54 **5 Claims**

Int. Cl. A61k *7/16*

Oral compositions such as dentifrice, mouthwash, and chewing gum containing benzohydroxamic acid to inhibit capsule formation by oral microorganisms thereby retarding dental plaque development.

3,427,382

GEL HAIRDRESSING COMPOSITION

John W. Haefele, Mount Healthy, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 7, 1965, Ser. No. 462,065

U.S. Cl. 424—71 **4 Claims**

Int. Cl. A61k *7/10*

A gel hairdressing composition comprising a high molecular weight carboxyvinyl polymer, a hydroxypropoxyl-substituted methylcellulose ether, an alcohol and water, the composition being adjusted to a pH range of from about 6 to 8 with a basic amine.

3,427,383

SOLUBLE PTERIDINE COMPLEXES

Milton Lapidus, Rosemont, and Raymond Fagan, Radnor, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,617

U.S. Cl. 424—101 **5 Claims**

Int. Cl. A61k *23/02, 27/00;* **C07g** *7/00*

This invention is directed to pteridine and pteridinecarboxamide complexes which are stable and soluble at the physiological pH range of about 7.0 to 7.4, to a method for their preparation, and to therapeutic compositions utilizing them.

3,427,384

METHOD OF KILLING PESTS BY APPLICATION OF A PHOSPHORO DERIVATIVE OF α-(METHYLTHIO)CRESOL

Karoly Szabo, Orinda, Calif., and John Gary Brady, West Chester, Pa., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 15, 1964, Ser. No. 360,061, now Patent No. 3,337,653, dated Aug. 22, 1967. Divided and this application June 26, 1967, Ser. No. 663,907

U.S. Cl. 424—216 **4 Claims**

Int. Cl. A01m *9/36*

Insects and mites are killed by applying to their habitat a phosphoro derivative of α-(methylthio)cresol.

3,427,385

METHOD OF CONTROLLING AND ERADICATING MITES

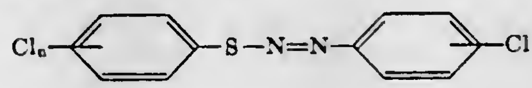
Yuzuru Uebayashi, Oiso-machi, Reiji Sakimoto, Takaoka-shi, Keiichiro Ishii, Tokyo-to, Mitsuo Asada, Kanagawa-ken, and Takuzo Taniguchi, Kamakura-shi, Japan, assignors to Nippon Soda Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

No Drawing. Continuation-in-part of application Ser. No. 300,917, Aug. 8, 1963. This application Jan. 26, 1966, Ser. No. 523,035

U.S. Cl. 424—226 **9 Claims**

Int. Cl. A01n *9/12*

1. The method of controlling and eradicating mites comprising applying to plants an effective amount of the compound of the formula:



wherein *n* represents numerals from 0 to 5.

3,427,386

3-METHYLENE-ANDROSTAN-17β-OLS AND 17-ALKYL DERIVATIVES THEREOF

Albert Bowers, John Edwards, and James C. Orr, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

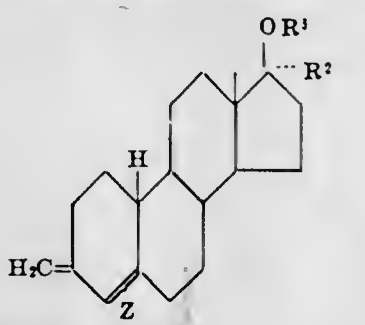
No Drawing. Filed Jan. 3, 1962, Ser. No. 164,185

Claims priority, application Mexico, June 1, 1961, 62,924

U.S. Cl. 424—238 **17 Claims**

Int. Cl. C07c *169/24;* **A61k** *17/06*

1. A compound of the following formula:



wherein Z is selected from the group consisting of a double bond and a saturated linkage between C–4 and

C–5; R^1 is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms and R^2 is lower alkyl.

12. The method of promoting anabolic effects comprising orally administering to an animal an effective amount of a compound selected from the group consisting of 3-methylene-17α-lower alkyl-androstan-17β-ol, 3-methylene-Δ⁴-17α-lower alkyl androsten-17β-ol, the hydrocarbon carboxylic acid esters of less than 12 carbon atoms of 3-methylene-17α-lower alkyl androsten-17β-ol and the hydrocarbon carboxylic acid esters of less than 12 carbon atoms of 3-methylene-Δ⁴-17α-lower alkyl androsten-17β-ol.

3,427,387

ANTIBACTERIAL COMPOSITION CONTAINING 5-NITRO-2-FURYL-1,2,4-TRIAZOLES

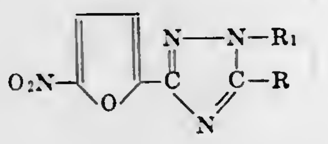
Homer Albert Burch, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Original application Mar. 10, 1965, Ser. No. 438,743, now Patent No. 3,277,110, dated Oct. 4, 1966. Divided and this application June 10, 1966, Ser. No. 560,373

U.S. Cl. 424—264 **1 Claim**

Int. Cl. C07d *55/06;* **A61k** *27/00*

1. An antibacterial composition comprising an antibacterial amount of a compound of the formula:



wherein R is a member of the group consisting of hydrogen and lower alkyl, and R_1 is a member of the group consisting of methyl, acetyl and methylcarbamoyl, in admixture with a major amount of a pharmaceutically acceptable carrier.

3,427,388

ESTERS OF BENZIMIDAZOLECARBAMIC ACID AS MITE OVICIDES

John K. Scoggin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 548,069, May 6, 1966. This application Apr. 11, 1967, Ser. No. 629,926

U.S. Cl. 424—273 **5 Claims**

Int. Cl. A01n *9/02, 9/08, 9/22*

Monocarboxy esters, dicarboxy esters and tricarboxy esters of 2-aminobenzimidazole and the salts and chelates of these esters are useful as mite ovicides.

3,427,389

D-HOMO AROMATIC STEROIDS

Derek Burn and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,753

Claims priority, application Great Britain, Apr. 8, 1964, 14,537/64

U.S. Cl. 424—341 **13 Claims**

Int. Cl. A61k *27/00;* **C07c** *41/00, 43/00*

D-homo-17a-oxo aromatic steroids having 17a-hydroxy or alkoxy and a 17a-haloalkynyl substituents and preparation of same by condensation of corresponding D-homo-17a-ketones with metallic, including Grignard types of metallic derivatives of the appropriate alkyne.

ELECTRICAL

3,427,390

INDUCTION FURNACE CONSTRUCTION

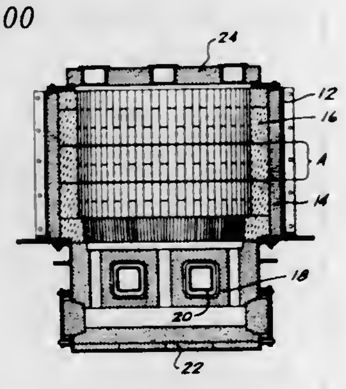
Albert L. Renkey and Peter T. Troell, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Jan. 9, 1967, Ser. No. 607,951

The portion of the term of the patent subsequent to Sept. 24, 1985, has been disclaimed

U.S. Cl. 13—35 **3 Claims**

Int. Cl. H05b *5/00*



An induction furnace construction in which the slag contact zone is composed of refractory brick containing at least 50% of fused grain.

3,427,391

COMPOSITE SUPERCONDUCTIVE CONDUCTOR

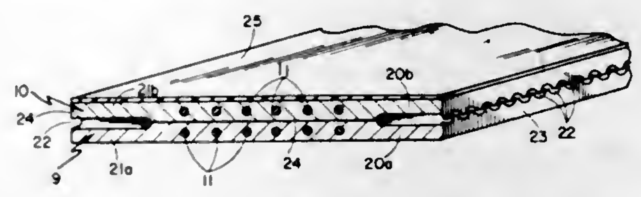
Robert E. Bernert, Boxford, Albert M. Hatch, Marblehead, and Zdenek J. J. Stekly, Topsfield, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Sept. 20, 1967, Ser. No. 669,123

U.S. Cl. 174—15 **10 Claims**

Int. Cl. H01b *7/34, 9/06, 5/00*

A composite superconductive conductor comprised of two ribbons of metal bonded together. Superconductive wires are embedded in the metal ribbons. The ribbons have passages for cooling the composite.



3,427,392

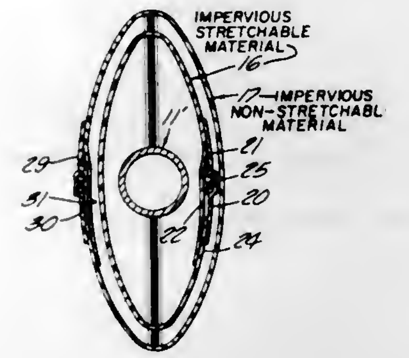
PRESSURIZABLE CABLE SPLICE ASSEMBLY

Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif. 91403

Filed Nov. 14, 1966, Ser. No. 593,862

U.S. Cl. 174—21 **7 Claims**

Int. Cl. H02g *15/24;* **H01b** *17/00*


IMPERVIOUS STRETCHABLE MATERIAL
16
17
IMPERVIOUS NON-STRETCHABL MATERIAL
11'
21
25
20
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22
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31
30

A single-use jacket assembly comprising one and preferably a pair of independent jackets of flexible sheet material each provided with a longitudinal seam bridged

interiorly by a pressure-activated guard flap. The inner jacket is inflatable to the limit permitted by the outer stronger jacket. The seams permit assembly of each jacket about a cable splice between working periods and are sealed closed following which the jacket ends are clamped in a fluid-tight manner to the cable sheath. Pressurization takes place by leakage of pressurized gas from the cable into the temporary jacketing to raise the internal pressure and prevent leakage of moisture into the jacket undergoing splicing. The inexpensive jacketing assembly is adapted to be destroyed during removal.

3,427,393

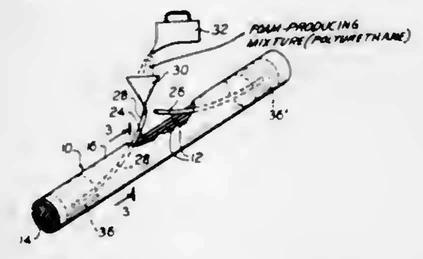
GASTIGHT PLUGS FOR COMMUNICATION CABLES

Joseph B. Masterson, Carteret, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Nov. 3, 1966, Ser. No. 591,808

U.S. Cl. 174—23 **13 Claims**

Int. Cl. H02g *15/20*



An electrical cable is plugged so that it can be pressurized along runs of the cable between plugs. A barrier is first formed across the interior of the cable by pouring in a foaming material. A harder, stronger plug material, which is an elastomer, is melted and poured into the cable alongside the barrier which prevents longitudinal flow of the melted elastomer while it is cooling and solidifying.

3,427,394

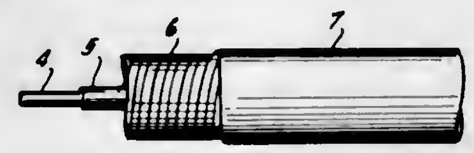
HIGH VOLTAGE CABLE

Alexander L. McKean, Ardsley, N.Y., assignor to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 593,954

U.S. Cl. 174—35 **5 Claims**

Int. Cl. H05k *9/00*



The central conductor is covered by an auxiliary shield, and between the latter and a surrounding outer shield assembly is a layer of primary insulation constituted by a laminated tape comprising a thin carrier layer of perforated resinous material and a substantially thicker layer of low density paper having plastic fibers, the paper having a density in the range of 0.4 to 0.8 gram per cubic centimeter and being bonded to and supported by the carrier layer.

3,427,395

STEEL INSERT FOR SEMICONDUCTOR DEVICE STUD

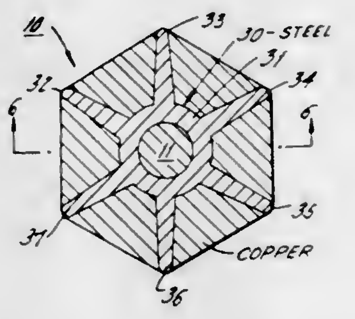
Joseph Wislocky, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Apr. 27, 1967, Ser. No. 634,190

U.S. Cl. 174—52 **4 Claims**

Int. Cl. H05k *5/02, 5/00;* **H01l** *3/00*

A steel insert having outwardly radiating sections of small cross-section are cast in copper or aluminum to form a reinforced mechanical stud for a semiconductor device. The radiating sections extend in the plate of the stud body and prevent deflection of the stud body when distorting forces are applied thereto by the compressional mounting of a semiconductor device.



3,427,396

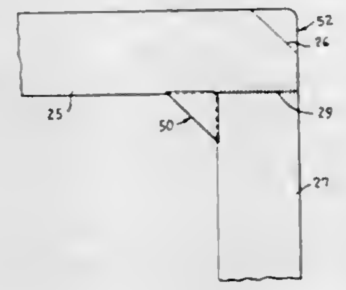
INSULATED BUSBAR ASSEMBLY AND METHOD OF MAKING SAME

Lloyd S. Durward, Jr., Fairfield, Ohio, and Walter Giger, Jr., and Werner A. Krause, West Hartford, Conn., assignors to General Electric Company, a corporation of New York

Filed Aug. 5, 1966, Ser. No. 570,535

U.S. Cl. 174—68 **13 Claims**

Int. Cl. H02g *5/02;* **H01b** *13/26, 7/34*



An insulated angular busbar assembly including at least two straight busbar lengths coming together to form an angle such as a right angle, a T, or a "cross." Inside angle portions of the assembly are insulated by providing generally triangular insulating blocks or fillers which facilitate application of layers of insulating sheet material, tape or the like. Outside corners are insulated by removing a triangular portion of the busbar assembly at the corner and replacing it with a triangular insulating block, followed by application of sheet or tape insulating material.

3,427,397

CONNECTOR FORMED OF INSULATED WIRE

Irving F. Matthysse, Danbury, Conn., assignor to Burndy Corporation, a corporation of New York

Filed June 23, 1966, Ser. No. 559,925

U.S. Cl. 174—87 **2 Claims**

Int. Cl. H02g *15/08*

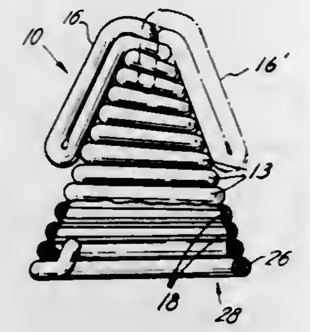
1. An article of manufacture suitable for use as an electrical connector, comprising:

a length of resilient conductive wire having a first end portion and a second end portion;

a substantially tubular jacket of electrical insulation material disposed coaxially about said length of resilient conductive wire between said first and second end portions;

said jacket of electrical insulation material being discontinuous about the circumference of said length of resilient conductive wire, forming an exposed uninsulated portion of said resilient conductive wire between the said first and second end portions;

said length of resilient conductive wire and said substantially tubular jacket of electrical insulation material being coiled in a cone-shaped helical arrangement having an apex at the said first end portion and a base at the said second end portion, and having an exterior surface and an interior surface each tapering outwardly away from said apex toward said base;

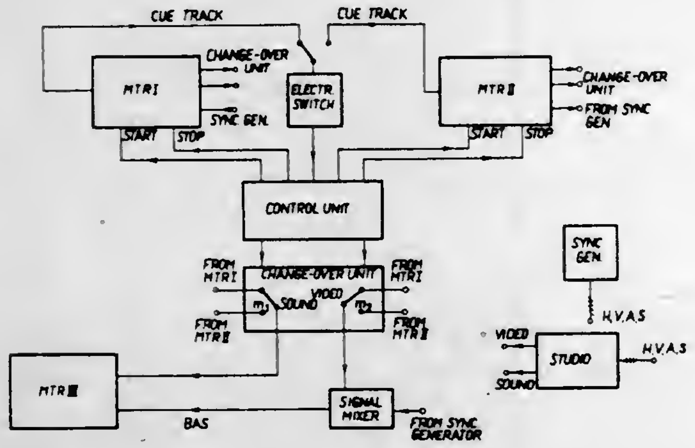


said jacket of electrical insulation material being positioned to locate said exposed uninsulated portion of said length of said resilient conductive wire on the said inner surface of said cone-shaped helical arrangement;

and a portion of said jacket of insulation material at the said second end portion being continuous about the circumference of said length of resilient conductive wire, forming a fully insulated skirt at the base of said cone-shaped helical arrangement.

3,427,398
METHOD AND SYSTEM OF ELECTRONIC EDITING OF VIDEO RECORDINGS ON MAGNETIC TAPE

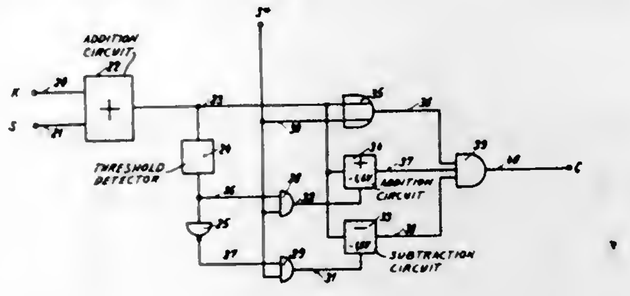
Manfred Hemmerling and Jürgen Howaldt, Delmenhorst, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany
Filed Sept. 30, 1965, Ser. No. 491,728
Claims priority, application Germany, Oct. 6, 1964, R 38,931
U.S. Cl. 178—6.6 **9 Claims**
Int. Cl. H04n *5/76*

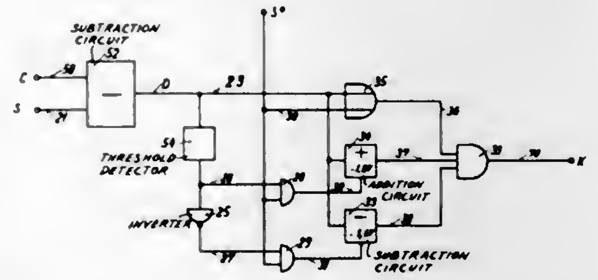


Program portions from a first and second tape recorder are transferred consecutively to a third tape. The cue track on the first tape contains a start and a splicing signal at the end of the recorded program portion, such start signal preceding said splicing signal by the length of time required for the motor of the second tape recorder to come up to operating speed. The third tape recorder receives first the signals from the first tape recorder. The motor of the second tape recorder is started upon receipt of the start signal from the first tape recorder. The third tape recorder input is switched from the first tape recorder to the second tape recorder upon receipt of the splicing signal from the first tape recorder.

3,427,399
METHOD OF AND APPARATUS FOR ENCODING AND DECODING CLEAR SIGNAL PULSE SEQUENCES

Kurt Ehrat, Zurich, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
Filed Nov. 4, 1965, Ser. No. 506,301
Claims priority, application Switzerland, Nov. 6, 1964, 14,358/64
U.S. Cl. 178—22 **16 Claims**
Int. Cl. H04l *9/00*

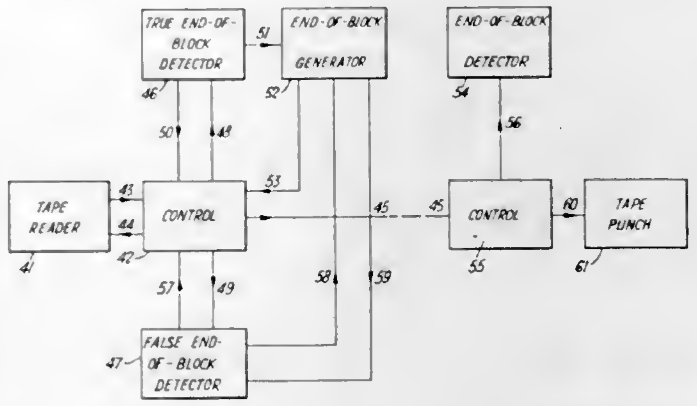




A method and apparatus for encoding and decoding clear signal pulse sequences the amplitude values of which represent the information by mixing the signal pulse sequences with code pulse sequences of the same type. The mixing is controlled by a sequence of binary pulses in dependence upon a predetermined threshold value.

3,427,400
DATA TRANSMISSION OF VARIABLE BLOCK LENGTHS OVER HALF DUPLEX NETWORKS

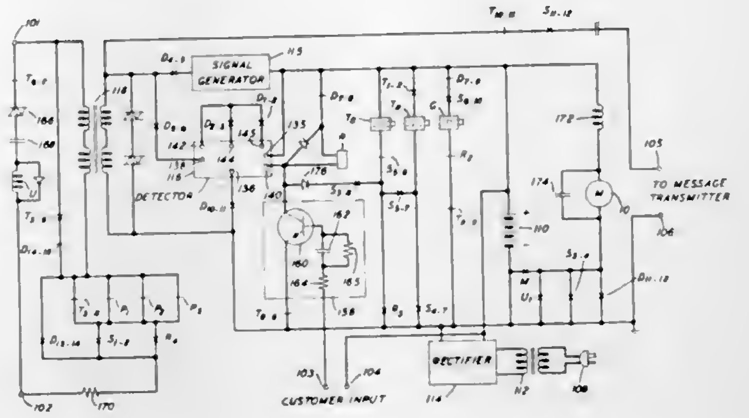
Esmond Philip Goodwin Wright, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,557
Claims priority, application Great Britain, Feb. 13, 1964, 6,098/64
U.S. Cl. 178—69 **5 Claims**
Int. Cl. H04l *25/02, 17/00, 17/16*



Data transmission system equipped to transmit variable length blocks of data. End-of-block signals are transmitted to indicate the end of each block. The transmitting stations detect false end-of-block signals and retransmit reinserted proper signals after blocking the detectors for one character time length.

3,427,401
AUTOMATIC REPORTING TELEPHONE THAT TRANSMITS MESSAGE UPON RECEIPT OF RESPONSE SIGNAL DURING PREDETERMINED INTERVALS

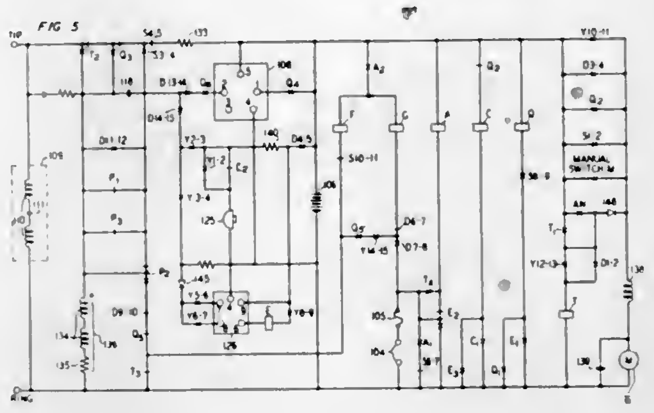
Richard E. Waddell, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,415
U.S. Cl. 179—2 **8 Claims**
Int. Cl. H04m *11/02, 11/04*



An apparatus for reporting alarm conditions at an unattended location includes motor driven printed circuit boards for providing switching logic, an automatic dialer for calling a preselected station, a transmitter for transmitting a coded audible signal to the called station, and an amplifier, monostable multivibrator, and bistable multivibrator for receiving and responding to a signal from the called station.

3,427,402
AUTOMATIC REPORTING TELEPHONE WITH RESPONSE DETECTION MEANS

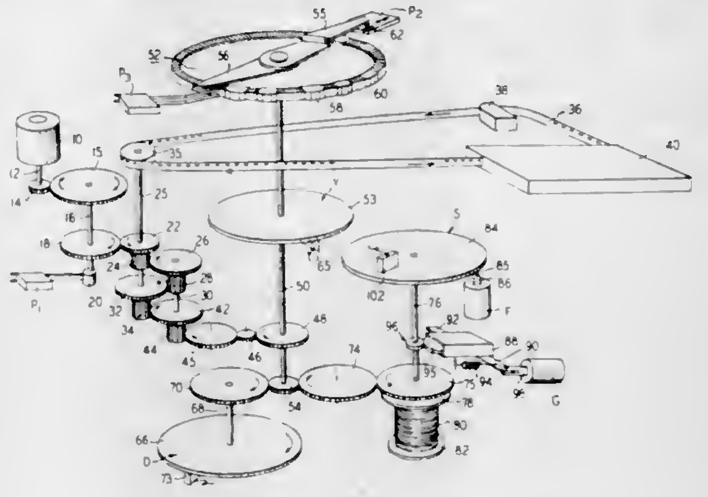
Rembert R. Stokes, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,260
U.S. Cl. 179—2 **8 Claims**
Int. Cl. H04m *11/04*



An apparatus for reporting alarm conditions at an unattended location includes motor driven printed circuit discs for providing switching logic, an automatic dialer for calling a preselected station, a transmitter for transmitting a coded audible signal to the called station, a filter and bistable multivibrator for receiving and responding to an audible signal from the called station, and a magnetic tape and record-reproduce circuit for transmitting a prerecorded message to the called station. The apparatus is powered by a battery that is charged from the telephone line.

3,427,403
AUTOMATIC REPORTING TELEPHONE WITH MESSAGE TRANSMISSION RESPONSIVE TO IDENTIFICATION REQUEST SIGNAL RESPONSES

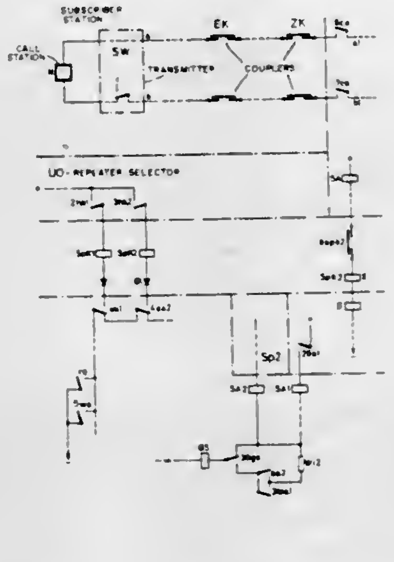
Rembert R. Stokes and Richard E. Waddell, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,416
U.S. Cl. 179—5 **10 Claims**
Int. Cl. H04m *11/04*



An apparatus for reporting alarm conditions at an unattended location includes motor driven printed circuit discs for providing switching logic, an automatic dialer for calling a preselected station, a transmitter for transmitting a coded audible signal to the called station, a filter and bistable multivibrator for receiving and responding to an audible signal from the called station, and a magnetic tape and record-reproduce circuit for transmitting a prerecorded message to the called station. The apparatus is powered by a battery that is charged from the telephone line.

3,427,404
SWITCHING ARRANGEMENT FOR A TELEPHONE INSTALLATION

Dieter Finkhäuser, Unterpfaffenhofen, and Erwin Huber, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Feb. 18, 1964, Ser. No. 345,804
Claims priority, application Germany, Feb. 20, 1963, S 83,817
U.S. Cl. 179—18 **5 Claims**
Int. Cl. H04m *3/00*



Each subscriber station of a telephone installation includes an audio frequency digit signal transmitter. Each audio frequency signal transmitted at the selection of a digit is preceded by a preparatory signal. The preparatory signal prepares a central audio signal receiver for receiving the audio signals for each digit to establish a demanded call connection and, after a connection is made, initiates special switching operations.

3,427,405

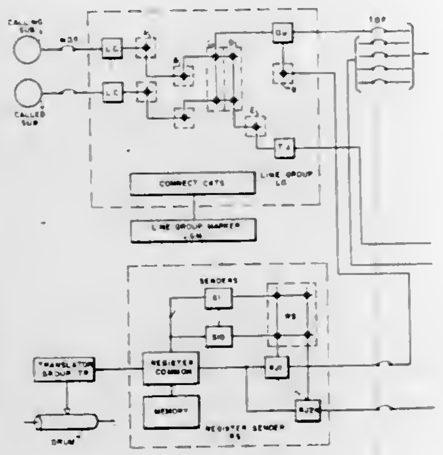
SEIZURE AND HOLD CIRCUITS FOR A COMMUNICATION SWITCHING NETWORK

John R. Vande Wege, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Oct. 19, 1964, Ser. No. 404,764

U.S. Cl. 179—18 **11 Claims**

Int. Cl. H04m *3/00, 3/20*



An extra control conductor through the network is used to extend a seizure potential forward. A hold conductor is used to extend a hold potential back through selector and originating line switching stages, and forward through a terminating line stage. After a connection is established, the extra control conductor may be used for other supervisory signal functions forward or backward through the network.

3,427,406

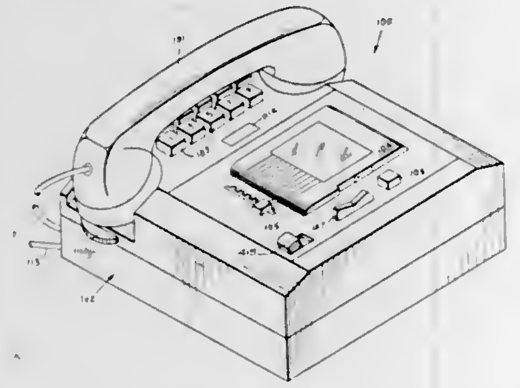
AUTOMATIC TELEPHONE DIALING APPARATUS

Manfred R. Kuehnle, Lexington, Mass., assignor, by mesne assignments, to DASA Corporation, Andover, Mass., a corporation of Massachusetts

Filed Oct. 22, 1965, Ser. No. 500,918

U.S. Cl. 179—90 **9 Claims**

Int. Cl. H04m *1/46*



Automatic telephone dialing apparatus including, in a unitary housing, a handset, a pushbutton dialing mechanism, a magnetic tape cartridge and associated circuitry. The dialing mechanism is selectively operative for manual dialing and for entry of dailing data onto the magnetic tape and includes means for controlling movement of the tape in accordance with the particular button actuated.

3,427,407

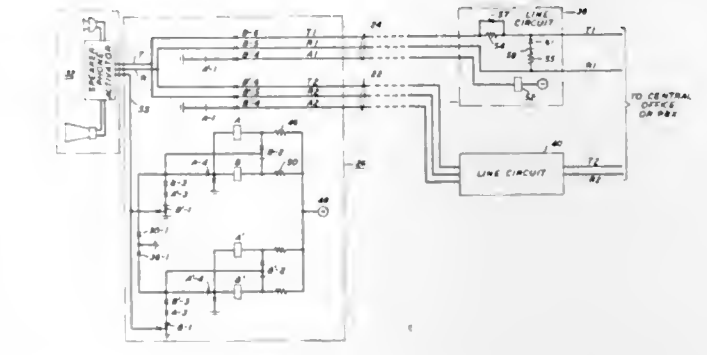
MULTI-LINE HOLDING CIRCUIT FOR SUBSCRIBERS' STATIONS

Robert L. Heck and Gerald E. Hutton, Springfield, Ill., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,522

U.S. Cl. 179—99 **6 Claims**

Int. Cl. H04m *1/00*



In a multi-line substation set, nonlocking pick-up keys enabling party to connect or disconnect station to a line; and enabling party to hold call by operating any other pick-up key.

3,427,408

MULTI-TRACK MESSAGE RECORDING APPARATUS

Irving E. Lempert and David Sillman, Metuchen, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 26, 1965, Ser. No. 474,750

U.S. Cl. 179—100.2 **2 Claims**

Int. Cl. G11b *5/02*

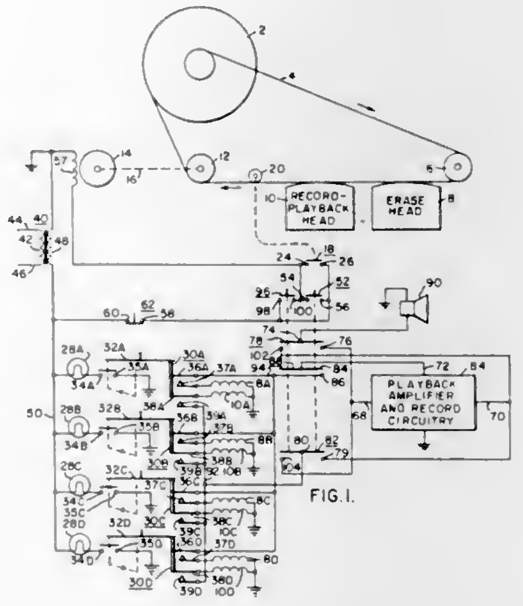


FIG. 1.

A message recording and playback system is disclosed which utilizes a continuous loop of tape having a plurality of recording tracks thereon. Multi-track playback-record and erase heads are provided so that individual messages may be recorded on each of the tracks of the tape. A separate indication, such as the lighting of an indicator lamp, is given a message that has been recorded on a given one of the tracks. After a message has been recorded, the tape is recycled to the beginning of the originally recorded message so that a subsequent user of the system can retrieve the message from the proper track. When the playback portion of the system is activated for retrieving the recorded message, the indicator lamp is turned off.

3,427,409

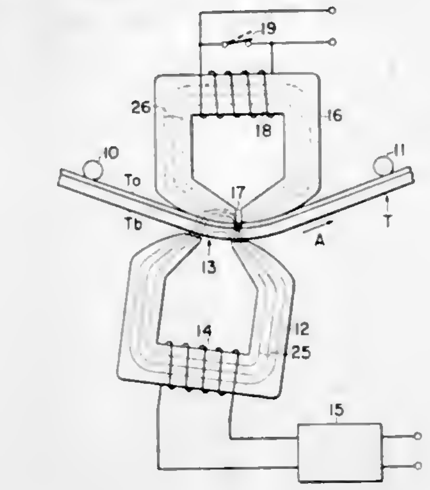
MAGNETIC HEAD ARRANGEMENT WITH RECORDING AND REPRODUCING HEADS ON OPPOSITE SIDES OF TAPE RECORD

Katsuya Atsumi, 14 2-chome-12, Higashi-Kohjiya, Ohta-ku, Tokyo, Japan

Filed Sept. 14, 1965, Ser. No. 487,125

U.S. Cl. 179—100.2 **6 Claims**

Int. Cl. G11b *5/48*



In a magnetic head assembly for tape recorders a recording head is arranged with its recording gap in contact with the non-magnetic base of the moving recording tape and a separate playback head, having a reproducing gap of a width being a substantial submultiple of the width of the recording gap, is arranged in contact with the magnetic layer of the tape. The playback head is displaced relative to the recording head in the traveling direction of the tape to a position of the reproducing gap being within the effective working range of the recording gap.

3,427,410

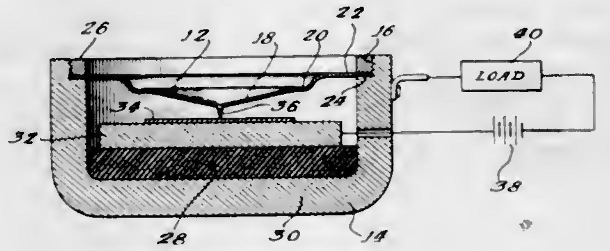
ELECTROMECHANICAL TRANSDUCER

Howard Diamond, Ann Arbor, Mich., assignor, by mesne assignments, to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Delaware

Filed Oct. 8, 1964, Ser. No. 402,500

U.S. Cl. 179—110 **10 Claims**

Int. Cl. H04r *15/00*



This application relates to transducers for generating electrical signals responsive to a force, and use of such transducers in microphones and phonograph pickups. In one embodiment, the transducer utilizes a thin slab of material of high resistivity which is disposed between an electrically conducting base and an electrical conductor. The electrically conducting base and electrical conductor are connected in a closed electrical circuit with a source of direct current and a load, and an electrical response is obtained in the form of a voltage drop across the load responsive to force exerted on the conductor to vary thep ressure between the conductor and the slab. In another embodiment, the transducer comprises a slab of semiconductor material in abutment with a layer of semiconductor material, the slab and layer being doped with impurities of opposite type. The slab and layer are reversed biased, and the layer is in abutment with a conductor which is forward biased with respect to the layer. The force to be responded to is impressed upon the conductor to vary the pressure between the conductor and the layer. In the preferred embodiments the conductor is provided with a spherical end in abutment with the layer.

3,427,411

APPARATUS FOR DRIVING ROTARY ELECTRIC SWITCHES

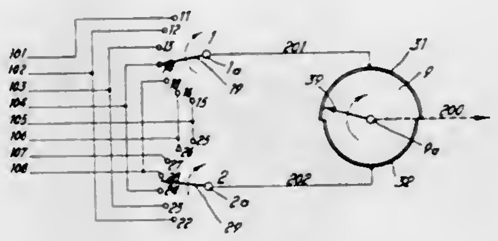
Georges Janoska, Courbevoie, France, assignor to Societe à Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches Soler, Courbevoie, Hauts-de-Seine, France, a corporation of France

Filed July 11, 1966, Ser. No. 564,219

Claims priority, application Switzerland, July 12, 1965, 9,723/65

U.S. Cl. 200—38 **6 Claims**

Int. Cl. H01h *3/32*



A programmed sequential switching mechanism wherein rotary scanning switches electrically connected to a rotary timing switch are driven by kinematic chains (interconnecting gears and rotary meshing members) providing both continuous and intermittent drives whereby operation of the scanners and timer may be independently programmed by programming the kinematic chain. In general, one nonactivated scanner moves to a new position while another scanner rests in an activated position through operation of the timer switch.

3,427,412

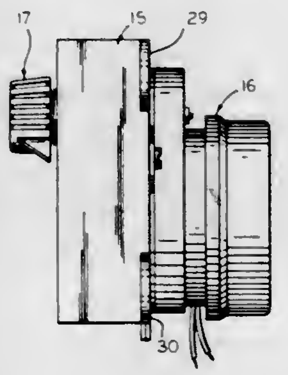
TIME DELAY TIMER

Frank J. Papa, Jr., Montville, N.J., assignor to Industrial Timer Corporation, Parsippany, N.J., a corporation of Delaware

Filed Dec. 7, 1966, Ser. No. 599,830

U.S. Cl. 200—38 **8 Claims**

Int. Cl. H01h *7/08, 43/10*

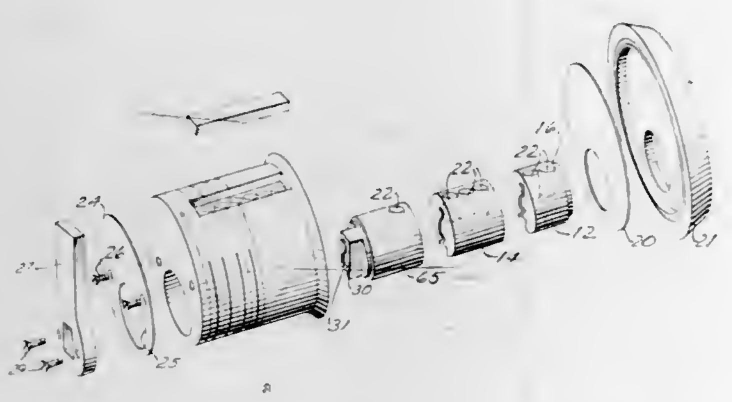


1. A time delay timer comprising a casing, a switch within the casing, an actuating lever within the casing for actuating said switch, means for pivotally mounting said lever at one end and a cam roller at the other end, a timer motor having an output shaft, a cam within said casing rotatably driven in one direction by said output shaft and having a lobe engageable with said roller to drive the lever and actuate the switch, a friction clutch between

said cam and output shaft, a selector coacting with means on the cam to adjust the time delay and define the home position of the cam, and a spring for driving the cam to home position following de-energization of the motor.

3,427,413
LOCK MECHANISM AND ALARM

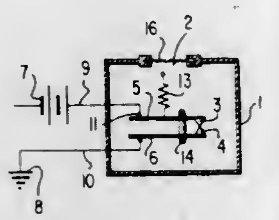
Paul Maddison, Hawkins, Brookville, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 596,840, Nov. 25, 1966. This application Mar. 15, 1967, Ser. No. 623,333
U.S. Cl. 200—44 **20 Claims**
Int. Cl. E05b *45/08;* **H01h** *27/08*



A lock mechanism employing cylinder means, a plurality of key slotted plugs supported for rotation in the cylinder means in tandem disposition and at least one pin tumbler and driver means associated with each plug and the cylinder means normally to maintain same against relative rotation but shiftable to a position to permit such rotation; and, if desired, the combination therewith of an alarm actuating switch and means normally maintaining the switch in one position and shifting same to a second position upon rotation of one of said plugs.

3,427,414
SWITCH ASSEMBLY FOR DETECTING UNDERGROUND LEAKS

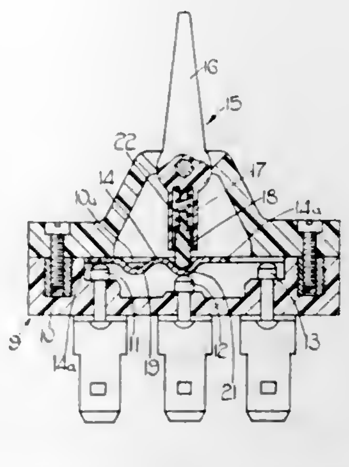
David B. Sheldahl, Griffith, Ind., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 13, 1967, Ser. No. 609,059
U.S. Cl. 200—61.04 **6 Claims**
Int. Cl. H01h *35/34*



An improved electrical safety switch assembly for detecting the leakage of hydrocarbon fluids from underground storage tanks. The assembly is composed of partially perforated housing and electrical circuit means including a switch disposed within the perforated housing which comprises a pair of oppositely disposed electrical contact points, spring means operatively attached to one of the contact points for moving the contact points between an operative position and an inoperative position, and elastomer restraining means operatively secured to at least one of such contact points and held in tension and capable of swelling upon contact with a hydrocarbon fluid. Swelling of the elastomer permits the spring means to move the contact points to the other of said inoperative and operative positions, thereby detecting the leakage or presence of hydrocarbon liquids and vapors.

3,427,415
ELECTRIC SWITCHES

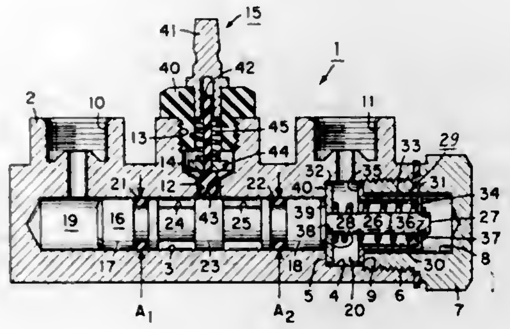
David Alan Avner, Neuilly-sur-Seine, France, assignor to Girling Limited, Tyseley, Birmingham, England, a British company
Filed May 11, 1967, Ser. No. 637,652
U.S. Cl. 200—76 **3 Claims**
Int. Cl. H01h *15/18*



An electrical switch having three fixed contacts and a bridging member movable through a lost motion linkage by a three position operating lever between first and second positions where it bridges respectively the first and second fixed contacts and the second and third fixed contacts. The operating lever having a first extreme position wherein the bridging member occupies its first position, a second extreme position wherein the bridging member occupies its second position, and a central position wherein the bridging member occupies its first or second position according to the previous position of the operating member.

3,427,416
WARNING VALVE FOR A DUAL FLUID PRESSURE SYSTEM

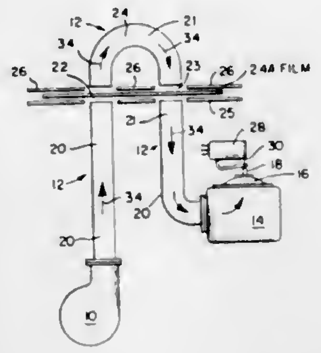
Joseph E. Papin, Florissant, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed June 8, 1967, Ser. No. 644,695
U.S. Cl. 200—82 **12 Claims**
Int. Cl. H01h *35/38, 35/24*



In a control or driver warning valve, a switch operating piston reciprocally mounted in the control valve housing for movement from a normal position toward opposed translated positions in response to predetermined differentials between the magnitudes of separately applied fluid pressures acting thereacross, and resilient means contained on said piston for engagement with said control valve housing to impede piston movement toward the translated positions.

3,427,417
AIR PRESSURE ACTUATED SWITCH FOR CONTROLLING THE OPERATION OF A MOTOR

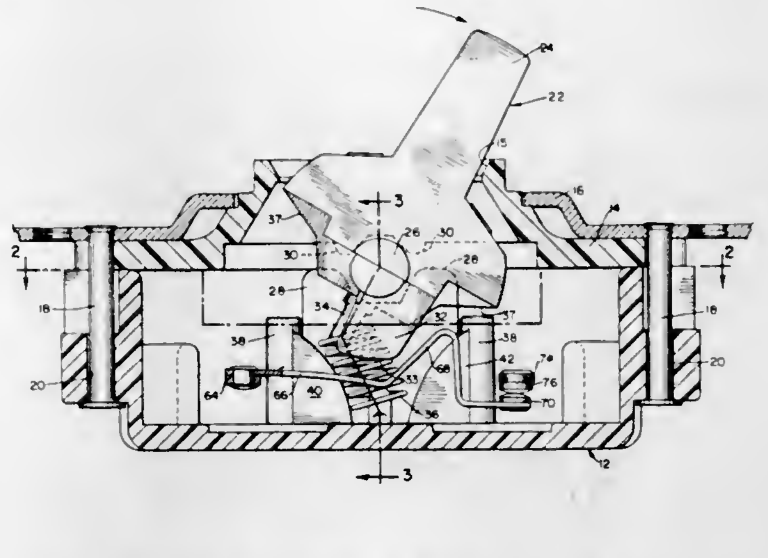
Henry F. Hope, 195 Welsh Road, Huntingdon Valley, Pa. 19006
Filed June 15, 1966, Ser. No. 557,740
U.S. Cl. 200—83 **2 Claims**
Int. Cl. H01h *35/24, 35/34, 35/40*



An air pressure actuated switch for energizing a motor when the air pressure is high and vice versa. The air pressure is constant at the source but its impact on the switch is varied by the presence and absence of an obstruction between the source and the switch.

3,427,418
SILENT A.C. SWITCH UTILIZING A COIL SPRING COACTING WITH ABUTMENT TO PROVIDE A CUSHIONED EFFECT

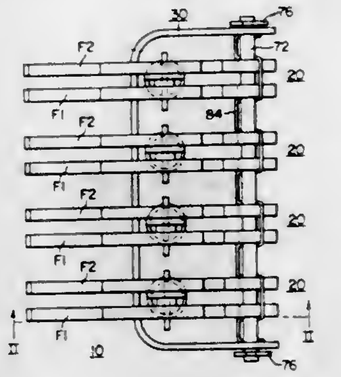
Alexander R. Norden, New York, N.Y., assignor to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York
Filed June 22, 1967, Ser. No. 648,006
U.S. Cl. 200—166 **10 Claims**
Int. Cl. H01h *9/02*



This disclosure describes a switch of the silent A.C. type for use as a wiring device in building wiring circuits with a coil spring over-center toggle action wherein silencing is provided by virtue of a structure which contacts the sides of and distorts the coil spring in the extreme positions of the operating lever movement so that the coil spring acts as a cushion preventing abrupt contact of moving parts at the extremes of the movement and reduces the noise. The coil spring is subjected to two forms of distortion, the usual axial distortion responsible for the off-center bias of the operating lever and a non-axial distortion for cushioning at the extremes of movement.

3,427,419
DISCONNECTING CONTACT ASSEMBLY FOR ELECTRICAL APPARATUS

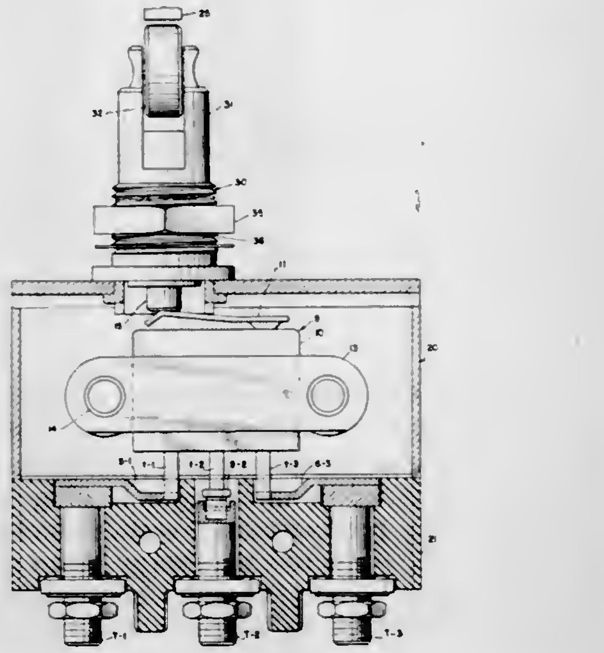
Joseph D. Findley, Jr., Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1966, Ser. No. 538,996
U.S. Cl. 200—166 **10 Claims**
Int. Cl. H01h *1/50, 3/00*



This invention relates to electrical apparatus and more particularly to disconnecting contact assemblies for electrical apparatus, such as circuit breakers or switches. Each contact assembly comprises at least one pair of laterally spaced contact fingers disposed on each side of an associated conductor and resilient means disposed between opposite pairs of contact fingers for biasing the ends of the opposite pairs of contact fingers toward one another.

3,427,420
SWITCH ASSEMBLY

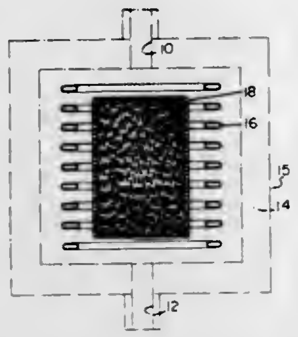
Leo Francis Geremia, Wallingford, and Arthur W. Haydon, Huntington, Conn., assignors, by mesne assignments, to Tri-Tech, Inc., Waterbury, Conn., a corporation of Connecticut
Filed Sept. 19, 1967, Ser. No. 668,838
U.S. Cl. 200—172 **8 Claims**
Int. Cl. H01h *3/02*



A signaling switch assembly for responding to the movement of a heavy actuating member such as the thrust reversing baffle of a jet engine for an aircraft. The assembly comprises a small sealed snap-action switch mounted in a massive housing with a motion reducing linkage connecting the switch to the actuating member. The switch has sealed terminals which are connected by buffer means to rugged exterior terminals to inhibit the transmission of movement which might break the seals. The assembly provides protection against motion damage due to temperature differences, vibration, buffeting, etc.

3,427,421
ELECTRICAL HEATING ELEMENTS

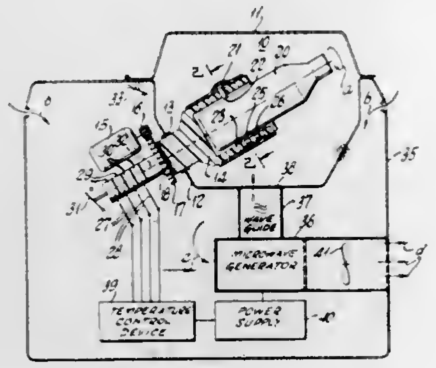
Wilfrid G. Matheson, Marblehead, James P. Clune, Danvers, and Theodore J. Pricenski, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application May 7, 1963, Ser. No. 278,660, now Patent No. 3,274,374, dated Sept. 20, 1966. Divided and this application Feb. 25, 1966, Ser. No. 547,108
U.S. Cl. 219—10.49 **6 Claims**
Int. Cl. H05b *5/02*



An induction heating furnace including a water cooled helical coil disposed about a generally-helical plexus in the shape of a susceptor which is formed of a multiplicity of intertwisted helical convolutions of refractory metal wires.

3,427,422
MICROWAVE HEATING APPARATUS

Paul Curt Müller, Wettingen, Aargan, Switzerland, assignor to Patelhold Patentverwertungs- & Elektro-Holding AG., Glarus, Switzerland
Filed May 18, 1966, Ser. No. 551,106
Claims priority, application Switzerland, May 19, 1965, 6,988/65
U.S. Cl. 219—10.55 **5 Claims**
Int. Cl. H05b *9/00, 9/06, 5/00*

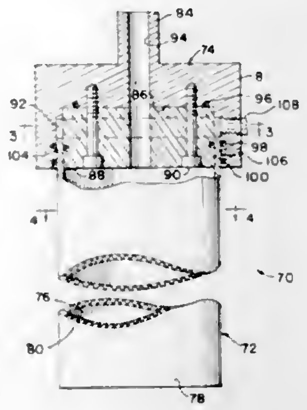


A non-metallic bottle containing a liquid to be heated is mounted by friction in a hollow open-ended cylindrical holder of microwave-permeable insulating material and rotatively mounted in an enclosed heating space about its axis forming a predetermined vertical incline angle with the horizontal. A microwave energy beam is injected into said space in a vertical direction and impinged upon said holder and bottle being rotated about said axis.

3,427,423
METHOD OF AND APPARATUS FOR ELECTRIC DISCHARGE MACHINING WITH AIR DIELECTRIC

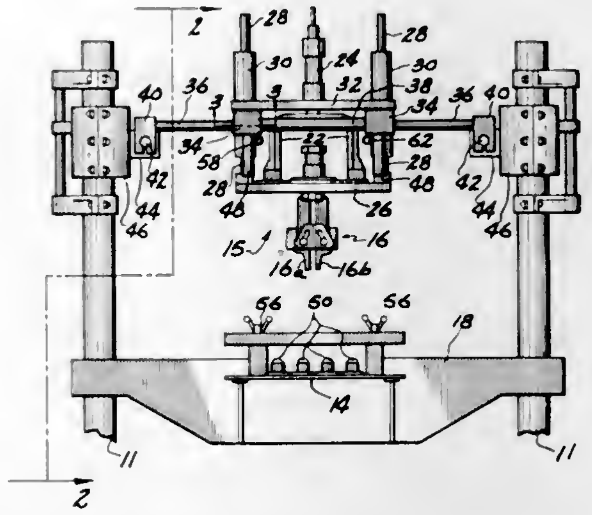
Thomas J. O'Connor, Ann Arbor, Mich., assignor to Easco Products, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed Aug. 5, 1964, Ser. No. 387,614
U.S. Cl. 219—69 **5 Claims**
Int. Cl. B23k *9/16*

A method of electrical discharge machining without using a liquid dielectric is disclosed, including connecting a highly conductive workpiece and a conductive electrode to opposite terminals of a source of electrical energy, moving the workpiece and electrode into close proximity and passing air through the spark gap at a high velocity. A structure for performing the method includes a hollow electrode having discrete axial passages therethrough for passing air longitudinally of the electrode and withdrawing air axially of the electrode, and a holder for securing the electrode to an electrical discharge machining head. A structure is also disclosed for facilitating passing of air under pressure through the spark gap between the electrode and workpiece without the discrete axial passages in the electrode, including an air-tight jacket adapted to be positioned between the electrode and workpiece. A quick-change electrode holding tool is also provided for machining of openings substantially larger in diameter than the electrode used by moving the electrode in a circular path.



3,427,424
WELDING MACHINE

Walter Carl Kirchberger, Menomonee Falls, and Daniel Orlando, Brookfield, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,660
U.S. Cl. 219—78 **3 Claims**
Int. Cl. B23k *9/00, 11/00*



A semi-automatic welding machine including a welding assembly having a welding head, and an article support both of which are carried by upright columns. The welding assembly is slidably mounted for manual movement in perpendicular directions generally parallel to a plane containing the article support. Control means are provided on the welding assembly for moving the welding head from a nonwelding position to a welding position and for moving the welding head back to the nonwelding position upon completion of the welding.

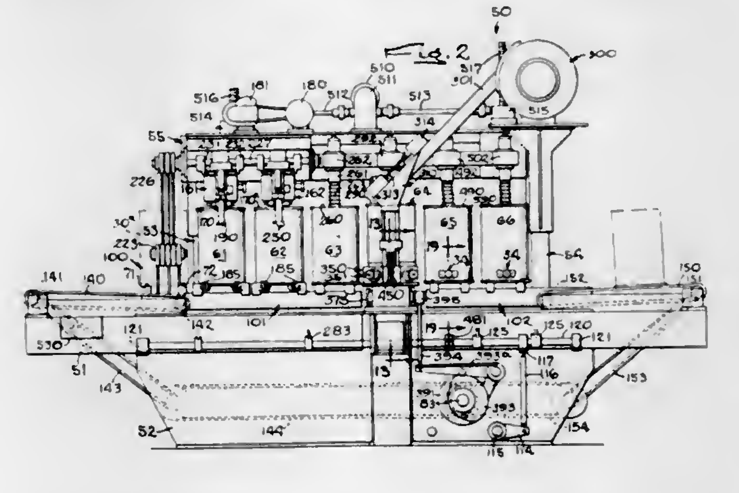
3,427,425
METHOD OF APPLYING PREFERABLY BAND-SHAPED METAL PARTS WITH GOOD MECHANICAL ADHESION TO A METAL FRAME COATED WITH INSULATING, PREFERABLY CERAMIC MATERIAL

Nils Erik Tornqvist and Sven Olof Soren Stark, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company
Continuation of application Ser. No. 364,225, May 1, 1964. This application Feb. 23, 1968, Ser. No. 708,431
Claims priority, application Sweden, May 16, 1963, 5,413/63; Mar. 5, 1964, 2,715/64
U.S. Cl. 219—78 **1 Claim**
Int. Cl. B23k *19/00*

A flexible metal strip such as an electrical resistance heating element is adhesively attached to a ceramic insulating coating on a rigid metal support by simultaneously pressing the strip against said coating and heating it by passing electric current through it.

3,427,426
WELDING MACHINE AND PROCEDURE FOR WELDING ATTACHMENTS TO BASE MEMBERS AND HAVING PROVISION FOR INHIBITING WELDING WHEN THE BASE MEMBERS ARE MISORIENTED

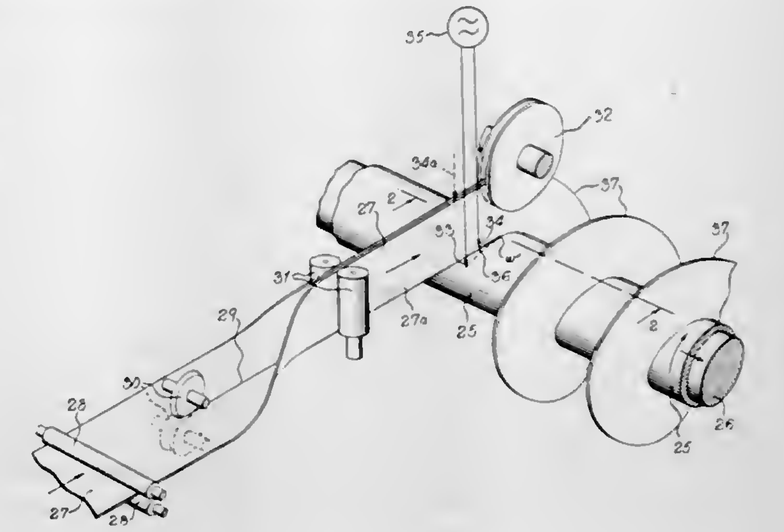
Oscar W. Garver, Indianapolis, Ind., Frederick E. Ullman, Winnetka, and Christian H. Stettler, Northbrook, Ill., and Hans W. Kopp, Saint Gall, Switzerland, assignors to Grotnes Machine Works, Inc., Chicago, Ill., a corporation of Illinois
Application Apr. 29, 1965, Ser. No. 463,062, now Patent No. 3,368,056, dated Feb. 6, 1968, which is a division of application Ser. No. 180,415, Mar. 15, 1962, now Patent No. 3,233,072, dated Feb. 1, 1966. Divided and this application Dec. 1, 1967, Ser. No. 687,350
U.S. Cl. 219—80 **8 Claims**
Int. Cl. B23k *9/12, 11/10, 11/02*



A welding machine and procedure for welding attachments to base members on a high speed production basis and wherein provision is made for detecting the position of the base members and for feeding one or more of the attachments relative to each base member only when the latter are in a preselected oriented position, thereby precluding the welding of attachments to misoriented base members.

3,427,427
WELDING METAL PARTS

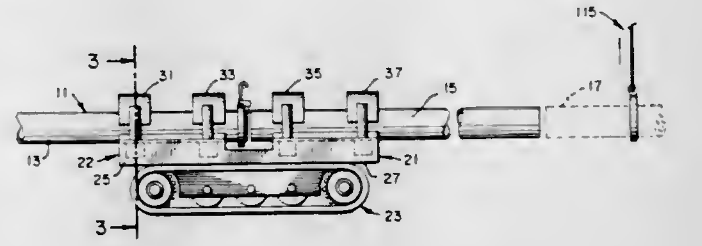
Wallace C. Rudd, Larchmont, N.Y., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1964, Ser. No. 415,911
U.S. Cl. 219—107 **14 Claims**
Int. Cl. B23k *11/00, 19/00*



Process and apparatus for producing a shaped integral member of thin strip metal having spaced-apart surfaces which is welded to another member in which the thin strip metal is, prior to being welded to the other member, folded upon itself so as to have mutually-supporting, contacting surfaces and while so folded is advanced with the other member and heated and pressed into welded engagement at an edge with the other member. Thereafter, pressure is applied to the so folded strip to cause separation of at least portions of the previously contacting surfaces.

3,427,428
APPARATUS AND METHOD FOR WELDING METAL PIPES AND THE LIKE

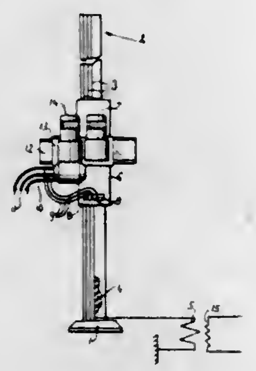
Jerome W. Nelson, Columbus, and Perry J. Rieppel, Worthington, Ohio, assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,168
U.S. Cl. 219—125 **2 Claims**
Int. Cl. B23k *9/32*



A welding apparatus is provided for aligning and welding individual pipe sections together in end to end relationship. The apparatus includes a self-propelled vehicle having a rigid elongated channel pipe alignment member extending along the longitudinal axis of the vehicle and attached thereto. The alignment member has an upwardly disposed U-shaped groove with a rear portion of the member for engagement with the end of a first pipe section and a forward portion for engagement with the end of a second pipe section. The alignment member includes individually controllable clamping means attached to opposite ends thereof and including further replaceable cradle insert means. A hydraulic actuator is connected to the clamping means for accurate alignment of the adjacent ends of the first and second pipe sections to be welded.

3,427,429
WELDING APPARATUS

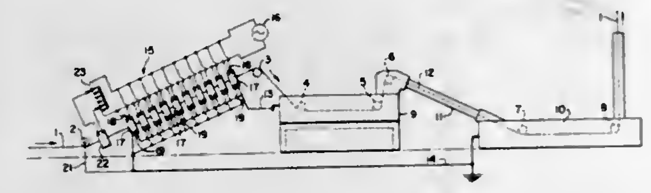
Julius Zeke, Bratislava, Czechoslovakia, assignor to Vyskumny Ustav Zvaracsky, Bratislava, Czechoslovakia
Filed Oct. 22, 1965, Ser. No. 502,653
U.S. Cl. 219—126 **11 Claims**
Int. Cl. B23k *9/12, 9/28, 11/10*



In an electrical welding apparatus a vertical column carries a plurality of bus-bar conductors extending lengthwise thereof. A carriage is mounted for movement along the column. A source of electrical energy is connected with the bus-bars. Second conductors are mounted on the carriage and are in permanent current-conducting engagement with the bus-bars via current takeoffs so that current will be transmitted between the bus-bars and the second conductors in any position of the carriage. A plurality of electrodes are supported by the carriage and each receives electrical energy through one of the bus-bars and one of the second conductors.

3,427,430
COMBINED DIRECT RESISTANCE HEATING AND VOLTAGE CANCELLATION SYSTEM

Oscar C. Trautman, 4040 Circlewood Drive, Fairview Park, Ohio 44126, and Clifford F. Taddeo, 4853 Swetland Blvd., Richmond Heights, Ohio 44124
Filed Dec. 17, 1965, Ser. No. 514,638
U.S. Cl. 219—155 **4 Claims**
Int. Cl. H05b *1/00, 3/00;* **C21d** *9/62*

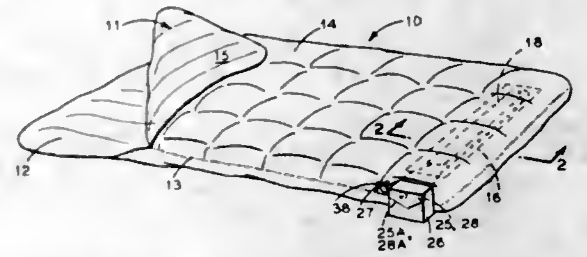


Apparatus for heat treating continuously moving wire strapping and the like consisting of a conductive bath and a grounded quench bath for electrically contacting the wire at spaced locations. A distributed open core transformer prior to the conductive bath provides voltage for effecting a difference in potential between the baths and thus, heating of the wire by the direct resistance method. The wire passes through the open cores of the transformer and has a voltage induced therein equal and opposite to the bath voltage so that voltage cancellation occurs and the remainder of the wire is reduced to ground potential.

3,427,431
SLEEPING BAG AND HEATER THEREFOR

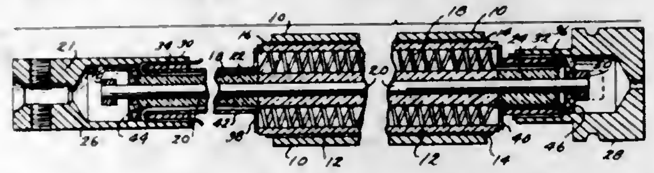
Raphael Joseph Costanzo, 119 Park St., Bridgeport, Conn. 06608
Filed Dec. 13, 1966, Ser. No. 601,485
U.S. Cl. 219—212 **4 Claims**
Int. Cl. H05b *3/36*

This disclosure is directed to an electrically heated sleeping bag and an improved low-voltage electrical heating means adapted for use therewith. In one form of the disclosure the heating means comprises a resistor element having a radiation surface connected thereto in electrically insulated, heat transferable, relationship to provide for a maximum of heat transfer with a minimum of voltage input to the resistor. A source of low-voltage electrical energy is connected in circuit with the resistor element, the source of energy being carried in a pouch which is constructed so as to be readily detachably connected to the sleeping bag.



3,427,432
SUBLIMATION DEVICE

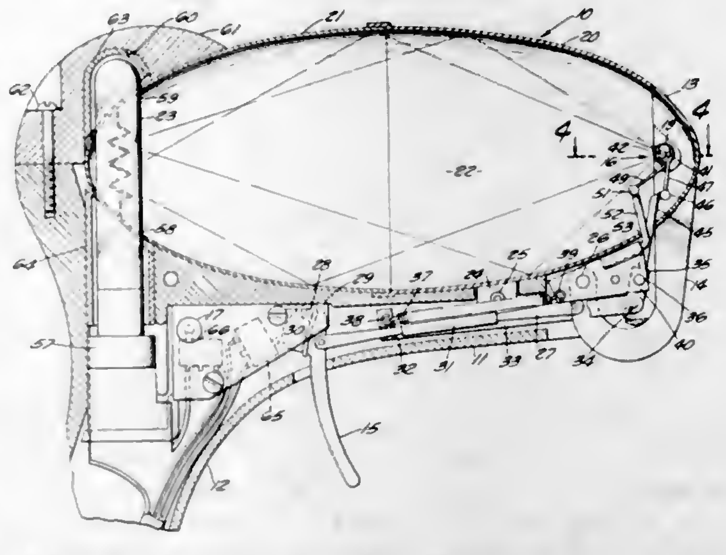
Daniel G. Bills, Dean R. Denison, and Keith A. Warren, Boulder, Colo., assignors to Granville-Phillips Company, Boulder, Colo., a corporation of Washington
Filed June 10, 1966, Ser. No. 556,683
U.S. Cl. 219—275 **17 Claims**
Int. Cl. F22b *3/00, 37/00*



Disclosed is a sublimation device wherein the material to be sublimated is mounted on a core, the core being made of a material having a high electrical resistivity and a high thermal conductivity such as beryllium oxide. Disposed within the core are a plurality of holes which extend parallel with the axis thereof. A plurality of helical, electrically conducting heating wires are respectively disposed within the plurality of holes, the helical wires being thermally bonded to the core.

3,427,433
ELECTRIC HEATING DEVICE FOR INSTALLING SOLDER SLEEVES BY RADIANT HEAT

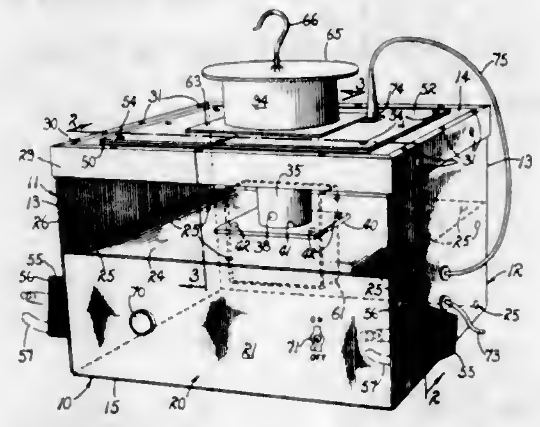
Ralph S. Foreman, Los Altos, Ronald E. Switzer and Kenneth J. Spiller, Mountain View, and Donald R. Allan, Menlo Park, Calif., assignors to Raychem Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 12, 1965, Ser. No. 495,125
U.S. Cl. 219—347 **12 Claims**
Int. Cl. H05b *1/02, 3/02*



A heating device for installing solder sleeves by radiant heat includes an ellipsoidal reflector having a pivotally openable end to provide access to a work holder at one of the focal points. An electric lamp is positioned at the other focal point. The control circuit for the lamp includes a first normally open switch for energizing the lamp, a second normally closed switch which is opened by the opening of the reflector end to prevent energization of the lamp when the end is open to expose the lamp and an automatic timer that is preset to determine the length of time the lamp is energized.

3,427,434
BEARING HEATER

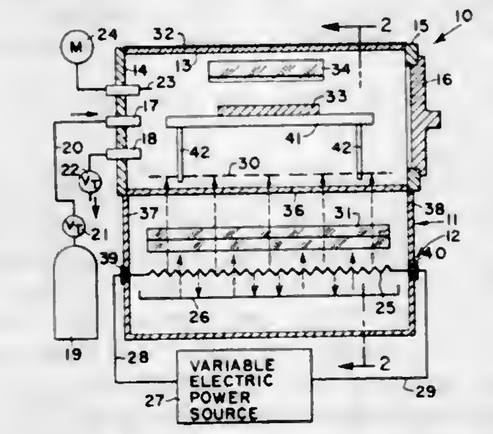
Wilson C. Gassaway, 1585 W. Keats, Fresno, Calif. 93705
Filed July 15, 1966, Ser. No. 565,614
U.S. Cl. 219—385 **9 Claims**
Int. Cl. F27d *11/00;* **B23p** *11/02*



Device for heating an annular bearing to facilitate mounting thereof including a frame vertically mounting a conduit having an open upper end and an air intake at its lower end, a heater in the conduit, a metal plate extending horizontally outwardly from the upper end of the conduit, an asbestos sheet between the plate and the frame, frusto-conical plates for supporting the bearings coaxially of the conduit, an asbestos cap for directing heated air laterally, and a thermostatic control magnetically attachable to the metal plate a predetermined distance from the conduit.

3,427,435
HIGH SPEED INFRARED FURNACE

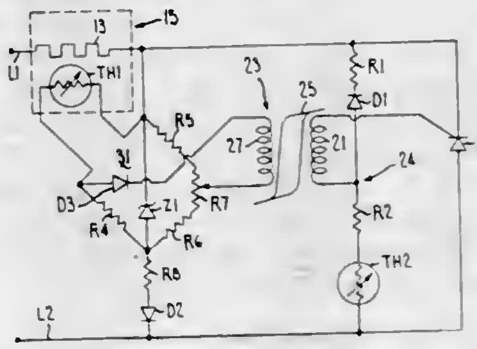
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Paul N. Eckles, Carmichael, Calif.
Filed June 2, 1967, Ser. No. 644,448
U.S. Cl. 219—411 **9 Claims**
Int. Cl. F27d *11/02;* **A21b** *1/22*



A high speed furnace including a tubular chamber having a heat reflective inner surface and provcided with an elongated heat transmitting window and a viewing window, and an elongated heat source positioned parallel to the window of the tubular chamber and means for focussing the heat rays emitted from the heat source along a line inside the tubular chamber and adjacent to the heat transmitting window to bring the interior of the chamber to a high temperature.

3,427,436
TEMPERATURE CONTROLLER

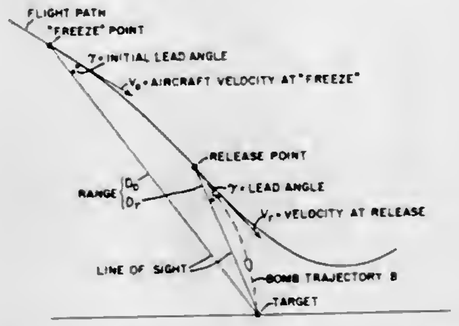
Francis Finnegan, Plainville, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 10, 1966, Ser. No. 549,053
U.S. Cl. 219—501 **9 Claims**
Int. Cl. H05b *1/02*



1. A temperature controller for maintaining the temperature in a zone at a predetermined level, said controller comprising:
means in heat exchange relationship with said zone for varying the temperature thereof when energized;
a triggerable semiconductor switching device for switching the flow or power to said means;
means for supplying A.C. electric power to said means and said semiconductor switching device;
a thermistor adapted to sense the temperature in said zone;
resistance means forming with said thermistor a resistance bridge, the unbalance of the bridge being a function of the temperature of said thermistor;
a saturable magnetic core;
first circuit means interconnected with said bridge and including a first winding on said core for magnetizing said core in one direction to an extent which is a function of the unbalance of said bridge during A.C. half cycles of one polarity; and
second circuit means including a second winding for magnetizing said core in the opposite direction to an extent which increases with time during A.C. half cycles of opposite polarity, said second winding being interconnected with said semiconductor switching device for triggering said device into conduction after said core saturates, the phase angle at which said device is triggered being a function of the previous magnetization of said core by said first circuit means whereby the proportion of time during which said device conducts varies as a function of the temperature of said zone to maintain the zone temperature at said predetermined level.

3,427,437
KINEMATIC SIGHT

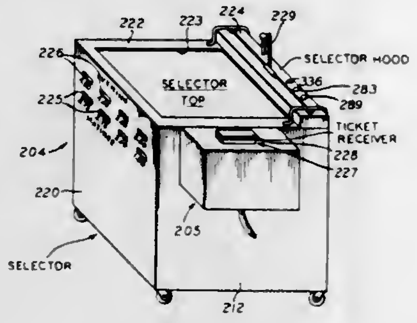
Gene Tye, Endwell, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 15, 1964, Ser. No. 396,688
U.S. Cl. 235—61.5 **4 Claims**
Int. Cl. G06f *15/58;* **G06g** *7/80*



A dive bombing sight which passively derives slant range to target from the kinematic perimeters of the problem. A minimum complexity system requiring only a pitch rate gyro as a sensor input. Range is computed in a closed loop manner by integrating air speed (nominally constant) plus a signal proportional to range error obtained as the difference between the component of air speed across the line of sight and the product of pitch rate and presently indicated range. The range computation is initiated when the pilot estimates that range is equal to the value preset as an initial range of the integrator by maintaining the sight tipper on the target from the time that the range computation is initiated until a preselect release range is reached. The error in the initial range estimate, and consequently the present range measurement, is reduced to a small value. Indicated range is displayed as an integral part of the sight reticle so that the pilot can correlate errors in indicated range with observed tracking errors, and thus make the necessary delay or advance correction in bomb release.

3,427,438
TICKET VENDING SYSTEM AND EQUIPMENT

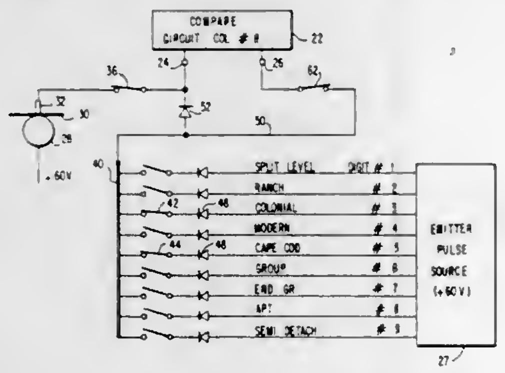
Harold Ruscher, Bedford Village, N.Y., assignor of one-fourth to Dorothy Ruscher, and one-half to Harold Ruscher, Jr., Westchester, N.Y.
Filed Jan. 7, 1964, Ser. No. 336,244
U.S. Cl. 235—61.6 **22 Claims**
Int. Cl. G06k *3/02, 17/00*



Tickets are produced in response to specific requests for individual tickets and simultaneously a record can be made of tickets sold. A chart having the seating layout of, for example, a theater, is placed in a selector having electrical components corresponding to the seating layout. The appropriate electrical component for the desired seat can be selected by reference to the chart and activated. This serves to activate a printer which prints information on a ticket. Simultaneously, with the selection and activation, the chart can be marked to indicate that a ticket for the selected space has been issued.

3,427,439
DATA RETRIEVAL CONTROL FOR CARD CONTROLLED MACHINES

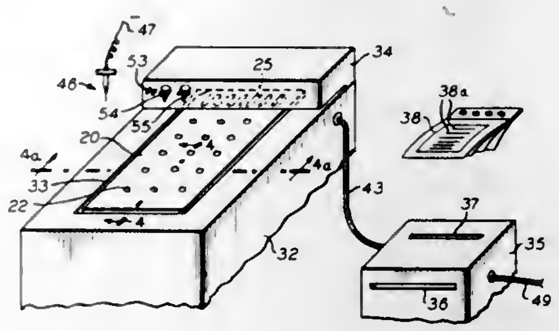
Donald E. Grempler, Timonium, Md.
(305 E. Joppa Road, Towson, Md. 21204)
Filed Sept. 15, 1964, Ser. No. 396,521
U.S. Cl. 235—61.7 **2 Claims**
Int. Cl. G06k *1/00, 1/12*



Improvement to record card controlled machines providing multiple digit selection of a single column encoded information. Automatic encoding is provided by a control panel with selectors identified with the terms of the trade where used. Control panel selection coupled with unidirectional current conducting means and switch means automatically control delivery of either sigle digit or multiple digit selection for proper comparison of encoded and scored information and selection of cards. Multiple digit selection provided by the invention adds an "and/or" function to multiple column card selection expanding the amount of information that can be stored and the selection provided by such card controlled machine.

3,427,440
PRINTING OF ORDER FORMS AND INVENTORY CONTROL

Harold Ruscher, Bedford Village, N.Y., assignor of one-fourth to Dorothy Ruscher, and one-half to Harold Ruscher, Jr., Westchester, N.Y.
Filed Aug. 12, 1964, Ser. No. 389,096
U.S. Cl. 235—61.9 **13 Claims**
Int. Cl. G06k *3/02, 17/00*

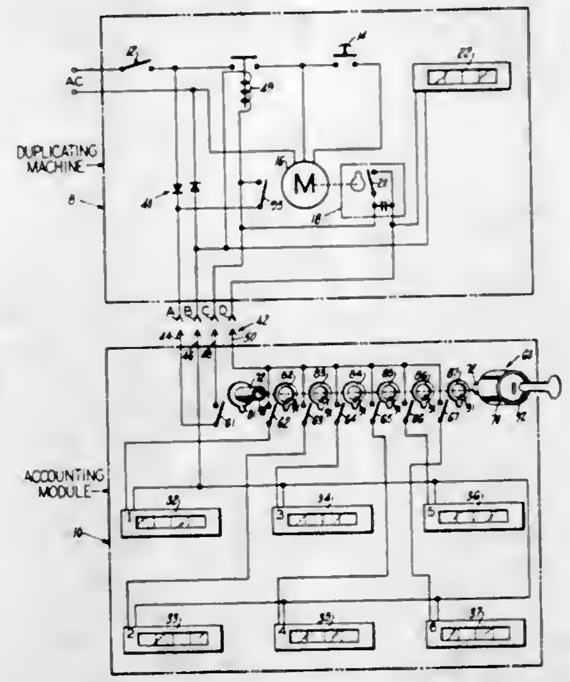


System for issuing forms bearing information with respect to goods to be withdrawn from a stock thereof and concurrently maintaining a stock inventory for the stock balance. An inventory chart is marked to provide a visual indication of a withdrawal and a visual indication of the balance of goods in stock. This marking serves to actuate a reader which reads from an information card provided for utilization with the inventory card, information applicable to the goods the inventory card represents. The reader transmits the information to a printer, and the printer prints and issues a form or forms which can be used as invoices, etc.

3,427,441
DUPLICATING MACHINE ACCOUNTING SYSTEM

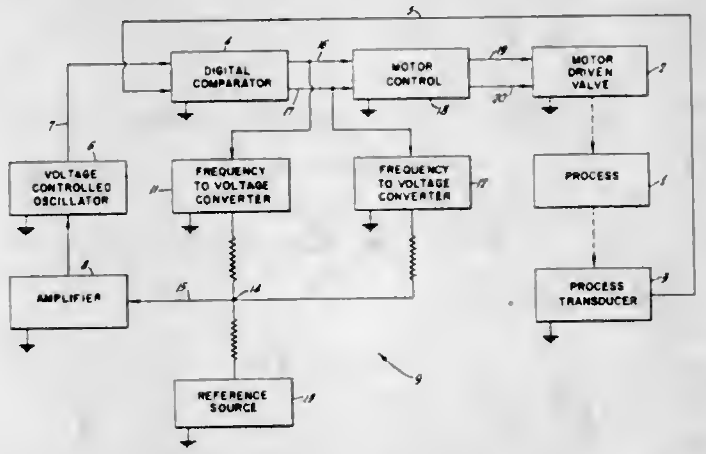
Frank J. Swords, Bloomfield, Conn., assignor to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut
Filed Oct. 5, 1965, Ser. No. 493,189
U.S. Cl. 235—92 **6 Claims**
Int. Cl. G06f *7/42*

1. In combination with a business machine having an electrical pulsing device for generating electrical pulses in accordance with the use of the machine, an accounting system for the business machine for continuously accounting for the use of the machine by the various authorized operators, comprising individual electromagnetically operated counters for the authorized operators respectively, and a lock-operated switching mechanism having individual switches for selectively connecting the individual electromagnetically operated counters respectively to the electrical pulsing device, and a single multiple-key operated lock with individual keys corresponding to the individual electromagnetically operated counters, the lock having a rotary barrel for receiving the keys, security means for locking the barrel against rotation and operable with all of the keys for releasing the barrel for rotation, and a plurality of individual actuators operable by the individual keys respectively upon rotation of the barrel with the keys for selectively connecting the corresponding counters to the electrical pulsing device of the business machine.



3,427,442
PROCESS CONTROL APPARATUS

Morton Sklaroff, Philadelphia, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,019
U.S. Cl. 235—151.1 **4 Claims**
Int. Cl. G06f *15/46;* **G06g** *7/48;* **G01r** *23/14*

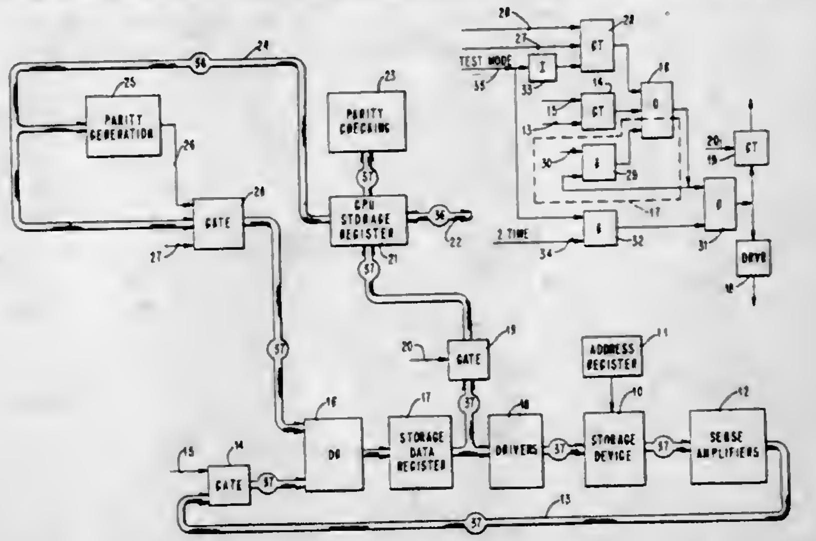


A system utilizing digital techniques to control a flow in a process which corrects set-point deviations in either direction and stabilizes at the set-point level. Control is achieved by comparing a frequency signal representative of a set-point level with a frequency signal derived from the state of the controlled process. A deviation from the set-point level produces a frequency output signal which together with a reference source causes a voltage-controlled oscillator to provide the correction.

3,427,443
INSTRUCTION EXECUTION MARKER FOR TESTING COMPUTER PROGRAMS

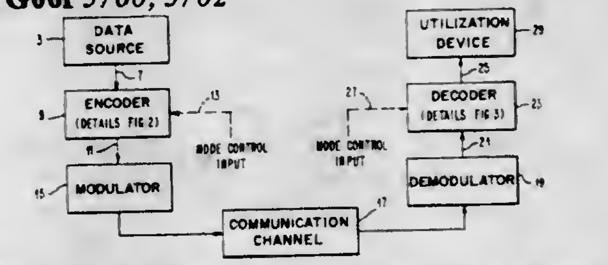
Clarence T. Apple, Poughkeepsie, and James T. Dervan, Pleasant Valley, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 8, 1965, Ser. No. 446,638
U.S. Cl. 235—153 **7 Claims**
Int. Cl. G08b *29/00;* **G08c** *25/00;* **G06f** *11/00*

A main store mapping device is disclosed wherein a computing system is placed in a testing mode to permit the use of a parity bit location in each main store word to be utilized as a marker. During the test mode, parity checking is eliminated and a marker signal is generated each time an instruction is fetched from main store. When the instruction is regenerated in the main store location, the marker signal is inserted in the parity bit position so that after the program under test has been run, an examination of the presence or absence of the marker signal in the parity bit position provides an indication of those instructions of the program which were utilized.



3,427,444
CODING CIRCUITS FOR DATA TRANSMISSION SYSTEMS

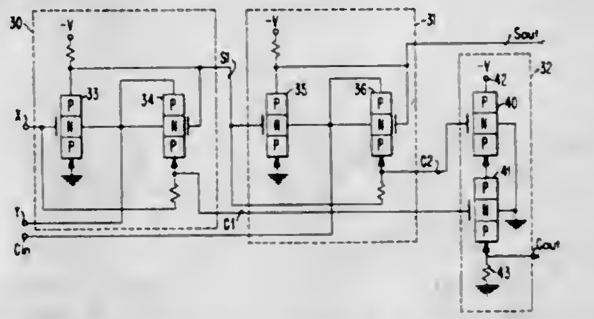
Donald T. Tang, Mount Kisco, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,480
U.S. Cl. 235—154 **12 Claims**
Int. Cl. G06f *5/00, 5/02*



An encoder is provided which includes a pair of shift registers interconnected by a pair of exclusive OR circuits and a switch. With the switch in open position, a 4 bit redundant code is generated. A 6 bit redundant code is generated when the switch is closed. One shift register operates for both codes.

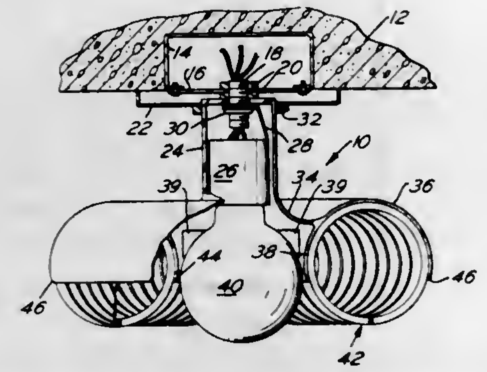
3,427,445
FULL ADDER USING FIELD EFFECT TRANSISTOR OF THE INSULATED GATE TYPE

Jack R. Dailey, Apalachin, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,622
U.S. Cl. 235—175 **7 Claims**
Int. Cl. G06f *5/02, 7/42, 7/385*



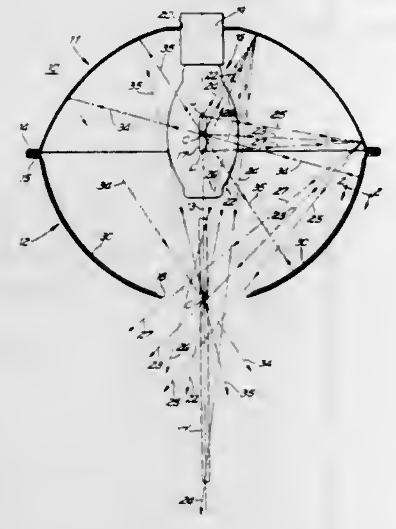
An exclusive OR logical function is performed by a single field effect transistor of the insulated gate type having logical input signals applied to the gate and having additional logical input signals applied to the substrate region. A half adder function is achieved by suitable interconnection of two such field effect transistors; and a full adder function is achieved by suitable interconnection of two such half adder arrangements and a logical OR circuit comprising an additional pair of field effect transistors of the insulated gate type. The full adder can be fabricated on a single semiconductor chip.

3,427,446
LIGHTING DEVICE
William Katavolos and Seymour Evans, New York, N.Y., assignors to Marvin Electric Manufacturing Co., Los Angeles, Calif., a corporation of California
Filed July 29, 1966, Ser. No. 568,900
U.S. Cl. 240—78 **11 Claims**
Int. Cl. F21v *7/00, 7/10, 7/18*



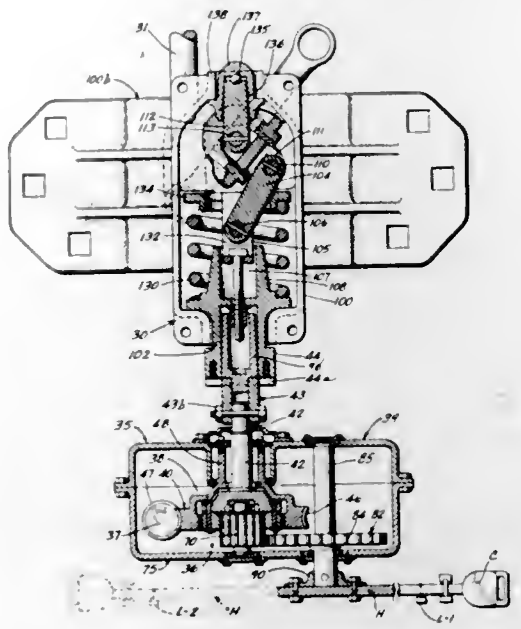
A lighting device comprising a housing of plastic or glass having a lamp socket with an electric light bulb connected to the socket. A doughnut-shaped coiled diffuser is supported by the housing in a position so that light from the electric light bulb projects through the space between the diffuser coils and reflects off surfaces of the coils.

3,427,447
LUMINAIRE OPTICAL ASSEMBLY
Philip B. Clark, Hales Corner, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,830
U.S. Cl. 240—93 **2 Claims**
Int. Cl. F21v *13/04*



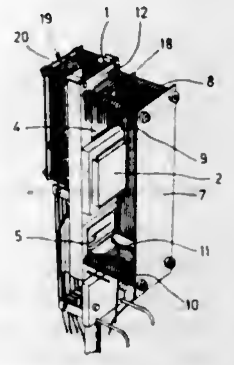
A luminaire having opposed first and second generally curvilinear light modifying elements surrounding a light source. The second light modifying element includes a central aperture formed generally along the axis of symmetry of the luminaire. The first light modifying element and the second light modifying element are arranged to direct most of the light produced by the light source through the aperture. The second light modifying element further includes refracting prismatic elements.

3,427,448
SWITCHING APPARATUS
Paul E. Redelman, South Holland, Ill., assignor to Abex Corporation, a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,404
U.S. Cl. 246—393 **9 Claims**
Int. Cl. B61l *5/02, 11/02*



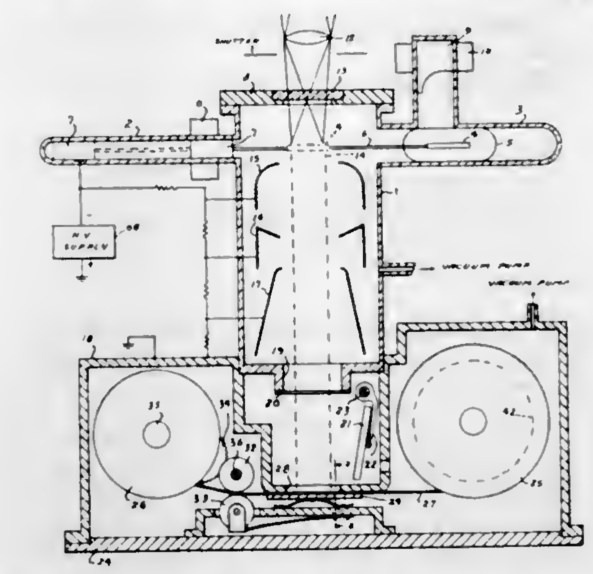
A railroad switch stand of the kind which includes a spring base and an overcenter linkage for rotating a spindle effectively coupled to the switch points, and in which the spring base is turned through 180° to operate the spindle, may be operated by a motor or manually through a handle by turning a gear on the spring base through 180°, this being accomplished by a first gear driven by the motor independently of a second gear rotated by the manual throw handle, each mode of operation imparting rotation to the gear on the spring base.

3,427,449
CYCLOIDAL MASS SPECTROMETER EMPLOYING CROSSED UNIFORM MAGNETIC AND ELECTRIC FIELDS
Derek Andrew, Charlwood, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,526
Claims priority, application Great Britain, June 30, 1965, 27,736/65
U.S. Cl. 250—41.9 **5 Claims**
Int. Cl. H01j *39/34;* **B01d** *59/44*



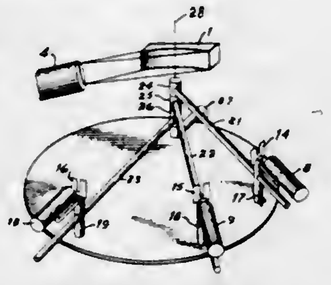
A cycloidal mass spectrometer employing crossed uniform magnetic and electric fields in which ions cover cycloidal paths, the electric field being produced by a high resistance wire wound around a region in which ions cover their paths, a potential difference being applied to the ends of the wire.

3,427,450
ELECTRONIC CAMERA UTILIZING SPECIAL FOIL COVERED FILM
Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 6, 1966, Ser. No. 585,226
U.S. Cl. 250—49.5 **4 Claims**
Int. Cl. G01n *23/04;* **H05g** *1/60*



An electronic camera designed for roll film, and a special film for use therein. The evacuated photocathode chamber of the camera communicates with a film compartment through a gas-tight gate, controllable from outside the camera, which, with the film compartment evacuated, is opened to admit the electron image to the film. The special film has a foil covering over the emulsion that is pervious to electrons but a barrier to water molecules in the emulsion.

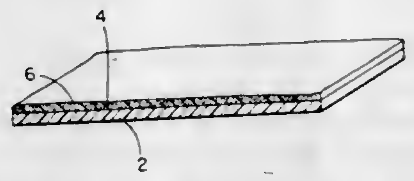
3,427,451
X-RAY DIFFRACTOMETER HAVING SEVERAL DETECTORS MOVABLE ON A GONIOMETER CIRCLE
Nathan Spielberg, Hartsdale, N.Y., assignor to North American Philips Company, Inc.
Continuation of application Ser. No. 433,283, Feb. 17, 1965. This application Feb. 2, 1968, Ser. No. 702,758
U.S. Cl. 250—51.5 **3 Claims**
Int. Cl. G01n *23/20;* **H01j** *37/20*



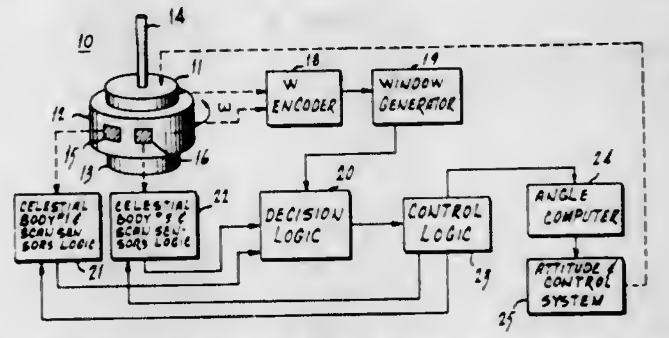
An X-ray diffractometer employing a plurality of electronic detectors positioned on a goniometer circle and pointed at a specimen with means to move each of the detectors and maintain it in alignment with the specimen in order to detect several reflections from the specimen simultaneously.

3,427,452
THERMOLUMINESCENT HEAT STABLE LITHIUM FLUORIDE DOSIMETER
William J. Hartin, Wading River, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 31, 1966, Ser. No. 576,781
U.S. Cl. 250—71 **2 Claims**
Int. Cl. H01j *1/62;* **G01n** *21/38;* **C09k** *1/00*

A radiation dosimeter having improved linear response at low levels of radiation comprised of a substrate of a heat stable polyimide-acid plastic having a layer of granular dosimetric lithium fluoride bonded to the surface of the substrate with a thin binder coating of the polyimide-acid plastic.

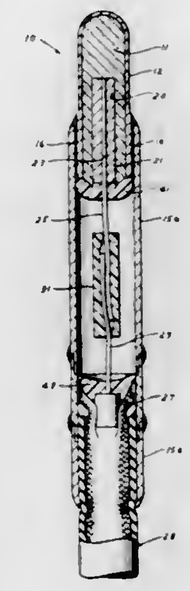


3,427,453
SYSTEM FOR SWITCHING THE ATTITUDE REFERENCE OF A SATELLITE FROM A FIRST CELESTIAL BODY TO A SECOND CELESTIAL BODY
William Lee Gill, Trenton, N.J., and Harold Perkel, Levittown, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,942
U.S. Cl. 250—83.3 **5 Claims**
Int. Cl. G01b *15/00;* **G01t** *1/16;* **B64d** *43/00*



Logic circuitry is employed to switch attitude reference from one reference celestial body to another when an interfering signal, such as the direct rays of the sun, appears within an area defined by an electrical condition of the logic circuitry. Means are provided for compensating for the known positional difference between the first and the second reference celestial bodies. After a predetermined time the control circuitry switches back to the first or primary reference celestial body.

3,427,454
BIOMEDICAL RADIATION DETECTING PROBE
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Fred P. Burns and Josef E. Friederichs, Pacific Palisades, Calif.
Filed Dec. 23, 1965, Ser. No. 516,150
U.S. Cl. 250—83 **3 Claims**
Int. Cl. G01t *1/02*



A biomedical nuclear radiation detecting probe for use in vivo comprising a semi-conductor diode of the junction type fabricated from high resistivity silicon crystal. The

P-type conductivity crystal is bullet-shaped, and the junction is formed by diffusion of phosphorous over the nose end of the crystal. A silver casing is sleeved over the crystal with only the diffused nose of the crystal protruding therefrom. A miniature coaxial cable extends through the back of the casing in hermetic sealing relation therewith. The ground lead connects with the casing which is coupled to the N-type phosphorous. The bore of the casing adjacent the electrical connection to the P-type region of the crystal is filled with a non-oxidizing gas. For operation, a reverse voltage bias is applied to the P-N junction whereby penetrating radiation gives rise to voltage pulses which are conductible by the cable to appropriate recording apparatus.

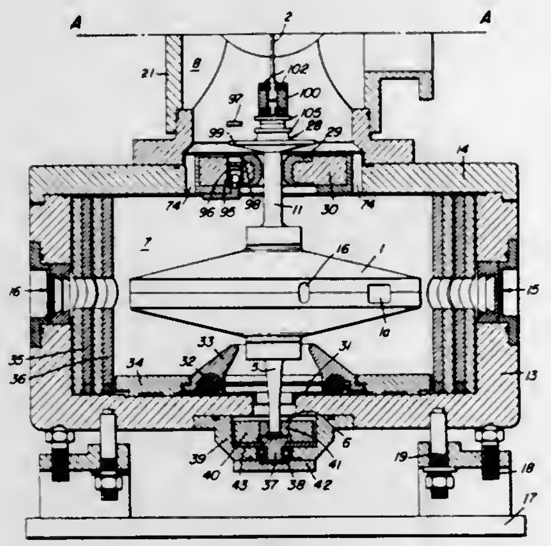
3,427,455
APPARATUS FOR NEUTRON SELECTION BY MEANS OF ROTATING SWITCH ROTOR

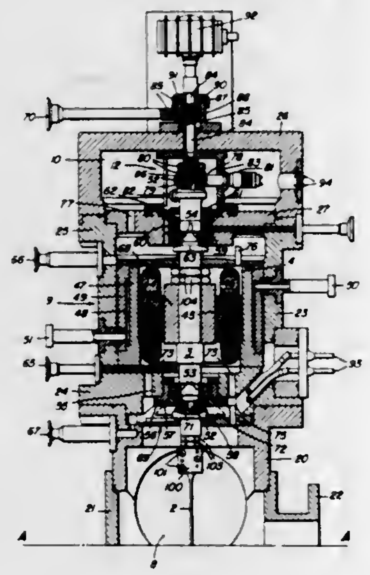
Walter Will, Taino, Heinz Geist, Lentate di Sesto Calende, and Karlheinz Krebs, Ispra, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium

Filed Apr. 25, 1966, Ser. No. 545,119

U.S. Cl. 250—105 **9 Claims**

Int. Cl. H01j *35/16;* **G21f** *5/02*





An apparatus for neutron selection comprising a neutron chopper whose rotor is vertically suspended and driven from a drive motor by a flexible drive shaft, a cradle means adapted to receive and to rotatably support the rotating rotor upon the unexpected occurrence of a rupture in said shaft.

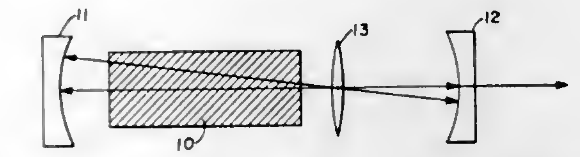
3,427,456
LASER IMAGES FORMED BY MATRIC CONTROL

Henry John Caulfield, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 24, 1966, Ser. No. 529,768

U.S. Cl. 250—199 **4 Claims**

Int. Cl. H04b *9/00;* **H01s** *3/08;* **G02f** *1/36*



Disclosed is a multi-mode laser having within the laser cavity an electro-optic, controllable, confining mirror comprising a plurality of cells of variable reflectivity, each cell controlled by a semiconductor diode which, in response to a voltage applied to it causes a current to flow in the electro-optic material to affect the lasing mode, so that active images are formed in the laser beam corresponding to the voltages applied to the diodes.

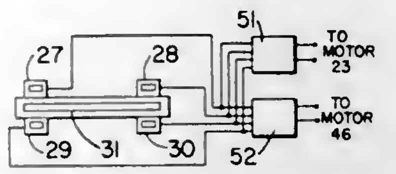
3,427,457
APPARATUS FOR AUTOMATICALLY FOLLOWING A LINE ON A CHART

Samuel N. Domenico, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Mar. 4, 1966, Ser. No. 531,820

U.S. Cl. 250—202 **8 Claims**

Int. Cl. G05b *1/00;* **G01j** *1/20;* **H01j** *39/12*



Apparatus for automatically following a line on a chart includes a source of light which forms an elongated spot of light on the chart. At least one photocell is exposed to each end of the light spot. As the chart moves with respect to the assembly including the light and photocell, signals from the photocells are combined in one way to move the assembly transversely to the direction of motion of the chart. The photocell signals are combined in another way to turn the light spot and align it with the line being followed. The assembly thus avoids being sidetracked onto intersecting lines.

3,427,458
BRIGHTNESS REGULATOR FOR AN ELECTROLUMINESCENT LAMP USING A BRIDGE THE OUTPUT OF WHICH CONTROLS THE FREQUENCY OF A VARIABLE FREQUENCY OSCILLATOR

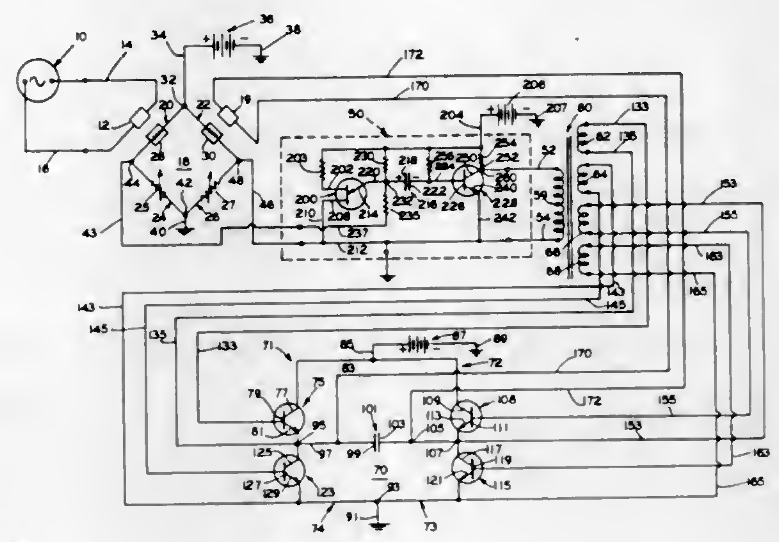
Walter Parfomak, Wallington, N.J., and Robert J. Molnar, New York, N.Y., assignors to The Bendix Corporation, a corporation of Delaware

Filed Jan. 19, 1966, Ser. No. 521,727

U.S. Cl. 250—205 **8 Claims**

Int. Cl. G01j *1/32;* **H01j** *39/12*

A regulation network for regulating the brightness of an electroluminescent lamp whereby as the electroluminescent lamp dims with age it causes a bridge network to become unbalanced. The output voltage of the unbalanced bridge network changes the frequency of the current output of a variable frequency current oscillator. The variable frequency oscillator output is applied through a control circuit and a switching means to the electroluminescent lamp. The change in frequency restores the brightness of the electroluminescent lamp until a null condition in the bridge circuit is achieved which indicates that the electroluminescent lamp has the same brightness as it had prior to aging.



3,427,459
TRANSDUCER HAVING A CONVERSION CHARACTERISTIC OF A PREDETERMINED FORMATION

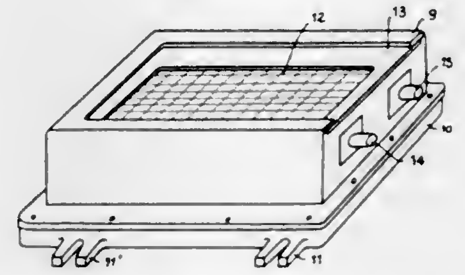
Alain Philippe Truffert, Montrouge, France, assignor to Societe Anonyme de Telecommunications, Paris, France, a French body corporate

Filed Sept. 23, 1965, Ser. No. 489,646

Claims priority, application France, Oct. 7, 1964, 990,621

U.S. Cl. 250—209 **8 Claims**

Int. Cl. H01j *39/12, 39/00;* **H01m** *15/02*



This invention relates to a thermo-electric or photoelectric transducer of which the conversion characteristic output voltage/incident energy is a predetermined function; this transducer consists essentially of a cascade of transducing units, with rectifiers being connected with reverse polarity across the said transducing units; these transducing units are arranged to have, for a constant incident energy, respective short-circuit currents of different, conveniently stepped values.

3,427,460
BEAM-OF-LIGHT TRANSISTOR UTILIZING P-N JUNCTIONS WHICH ARE NON-ABRUPT AND NON-TUNNELING WITH A BASE REGION OF DEGENERATE MATERIAL

Hans P. Kleinknecht, Bergdietikon, Aargau, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 10, 1964, Ser. No. 395,419

U.S. Cl. 250—211 **5 Claims**

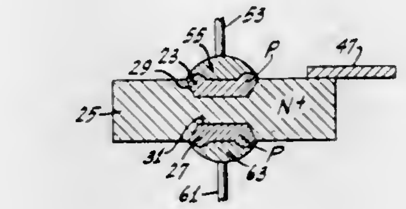
Int. Cl. H01j *39/12*

1. A semiconductor device comprising:

a body of semiconductor material including emitter, base and collector regions;

a first P-N junction between said emitter and base regions for generating recombination radiation in response to a forward voltage applied across said first junction, and

a second P-N junction therein between said base and collector regions for generating a photocurrent in response to said generated recombination radiation, both of said junctions being non-abrupt and non-tunneling,



a base region disposed between said junctions, the thickness of said base region being greater than a diffusion length for minority carriers therein and said region being composed of a degenerate semiconductor in which the ratio of the effective mass of a free charge carrier therein to the mass of an electron in free space is less than 0.15 and the optical absorption at the band edge is due to direct transitions without change of crystal momentum; and said emitter and collector regions being composed of nondegenerate material.

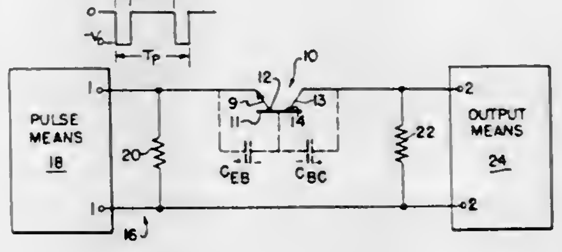
3,427,461
STORAGE MODE OPERATION OF A PHOTOSENSOR

Gene P. Weckler, Campell, Calif., assignor to Fairchild Camera and Instruments Corporation, Syosset, N.Y., a corporation of Delaware

Filed Feb. 23, 1966, Ser. No. 529,358

U.S. Cl. 250—211 **8 Claims**

Int. Cl. H01j *39/12, 31/50*



A photosensor device for sensing radiant energy including a transistor and an energizing means coupled to the transistor for periodically charging the space-charge capacitance of one of the transistor junctions, the charged capacitance remaining after the removal of the energizing means to prevent leakage currents from flowing from the one junction through the other junction during the intervening periods when the one junction is not being charged.

3,427,462

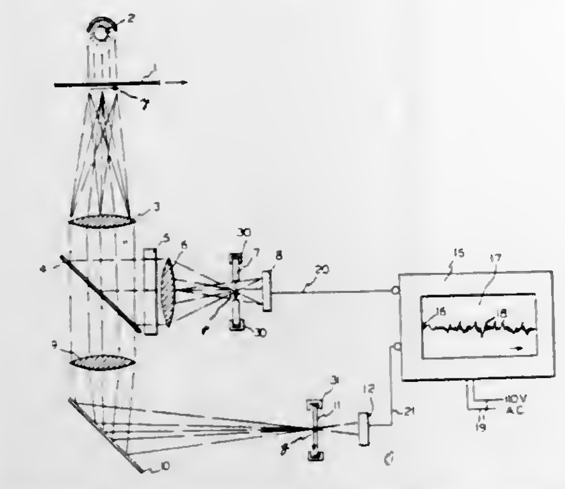
DEFECT DETECTOR WHICH SIMULTANEOUSLY VIEWS A LARGE AND SMALL AREA OF THE SAMPLE

John David Cist, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,517

U.S. Cl. 250—219 **15 Claims**

Int. Cl. G01n *21/32, 21/30*



A method and apparatus for product characterization employing paired aperture area sensing to achieve variability size discrimination.

3,427,463

DISPLACEMENT MEASURING DEVICE USING GRATINGS HAVING SLITS AT SPECIFIED SPACINGS AND AT SPECIFIED ANGLE TO ELIMINATE HARMONICS

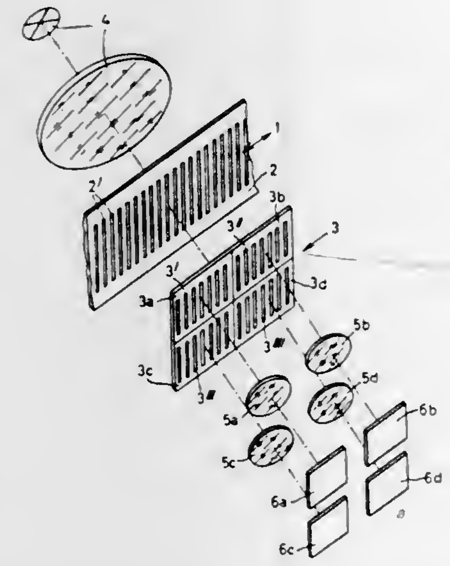
Adolf Weyrauch, Aalen, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a corporation of Germany

Filed May 18, 1966, Ser. No. 551,131

Claims priority, application Germany, May 28, 1965, Z 11,560

U.S. Cl. 250—237 **6 Claims**

Int. Cl. H01j *3/14, 5/16*



A device for measuring the change in relative position between two movable systems, such as a reciprocating carriage and the stationary frame of a machine tool. The device comprises a stationary receiver screen system of at least two screen elements having screen bars and spaces therebetween, whereby the spaces denote the scanning period length of the screen elements and the screen bars of one of said screen elements are displaced relative to the screen bars of the other screen element by one half of the scanning period length, and a transversely reciprocable emitter screen system having screen bars and spaces in predetermined relationship to the bars and spaces in the stationary receiver system. An optical illuminating system is arranged to face the emitter screen system so that the light rays passing first through the latter and then through the receiver screen system will energize photoelectric receivers facing said receiver screen system.

3,427,464

SPEED GOVERNING SYSTEMS FOR STEAM TURBINES

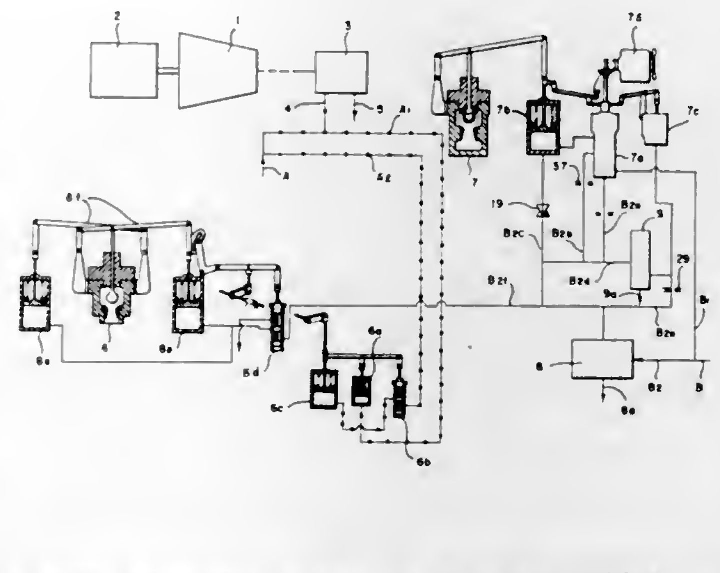
William George Watson, Whitley Bay, Northumberland, England, assignor to C. A. Parsons & Company, Limited, Newcastle-upon-Tyne, England, a corporation of Great Britain

Filed Aug. 12, 1965, Ser. No. 479,091

Claims priority, application Great Britain, Aug. 13, 1964, 33,119/64

U.S. Cl. 290—40 **7 Claims**

Int. Cl. H02p *9/04*



A speed governing system for a steam turbine comprises a governor valve for controlling the admission of steam to the turbine, governor valve control means for adjusting the opening of the governor valve in response to changes in turbine speed, an emergency stop valve for cutting off the supply of steam to the turbine, emergency stop valve control means for closing the stop valve when the turbine speed exceeds a predetermined value, and anticipatory means for temporarily closing the emergency valve in response to a change in load on the turbine before the turbine speed exceeds the predetermined value. Preferably the anticipatory means is responsive to changes in electrical load on a generator driven by the turbine.

3,427,465

SOLID STATE POWER SWITCHING MEANS

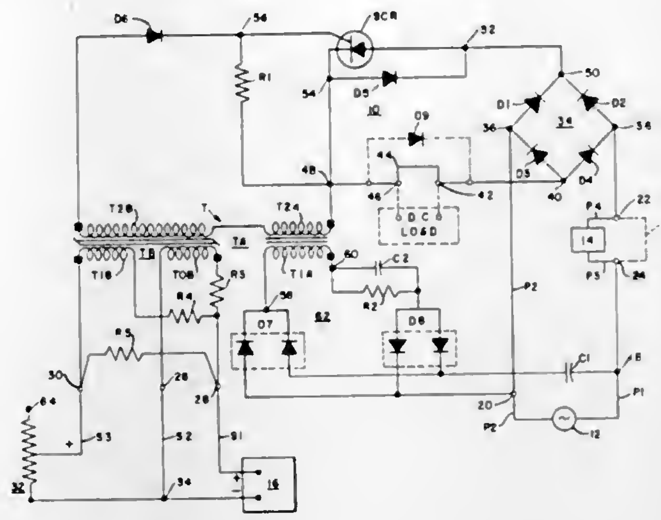
Jacob Marlow, King of Prussia, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,843

U.S. Cl. 307—38 **20 Claims**

Int. Cl. H02j *3/02, 3/14*

A solid state power switching device for controlling the flow of power to either alternating or direct current loads is provided in which a single silicon controlled rectifier effects the necessary control for both cycles of applied alternating current from a source. Two full-wave rectifier bridge circuits, both supplied at the inputs thereof by the same source are connected such that the output of one is controlled by the silicon controlled rectifier and the output of the other is controlled and/or modulated as to phase and/or wave shape by a variable bias, saturable core, magnetic amplifier circuit. The output of the latter directly controls the gating of the silicon controlled rectifier and can effect either a normally open or normally closed mode of operation of the said silicon controlled rectifier. In the case of a direct current load, the load is connected in series with the anode-cathode path of the silicon controlled rectifier, across the output of the said one rectifier bridge. In the case of an alternating current load, the load is connected in series with the source across the input of the said one rectifier bridge.



3,427,466

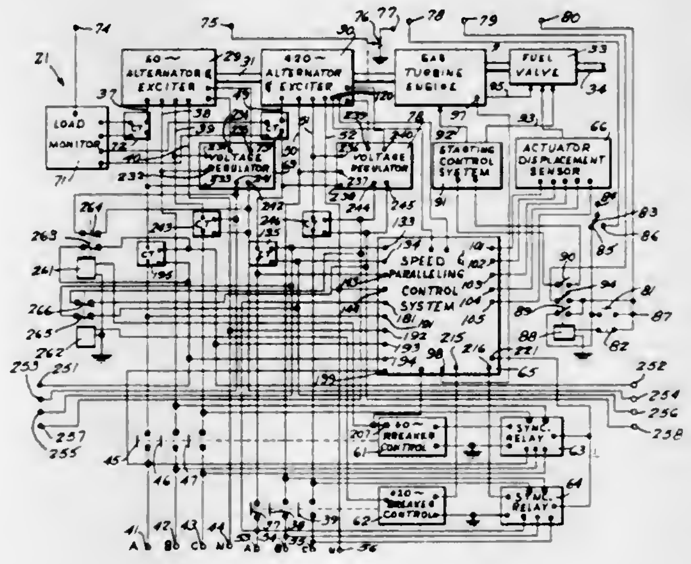
MODULAR GAS TURBINE ENERGY SYSTEM

Jugal K. Gogia, Cleveland Heights, William L. Hinde, Euclid, and Kurt Seldner, University Heights, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Oct. 28, 1963, Ser. No. 319,203

U.S. Cl. 307—57 **7 Claims**

Int. Cl. H02j *3/08, 3/40*



A system for supplying power to first and second loads at a first lower frequency and at a second higher frequency. Means are provided to establish synchronism between the output voltage of an alternator and the load voltage thereof and means are provided for connecting the synchronized alternator to the load. A load balancing circuit is provided to obtain a balance between the load supplied by the so connected alternator and the load supplied by the previously connected alternators. The second higher frequency alternator is connected to the load after the connection of the lower frequency alternator and after synchronism is achieved between the output voltage of the alternator and the load. Subsequently, the second higher frequency alternator is balanced with other alternators of the same frequency to assure that each alternator substantially equally shares the power being supplied to the load.

3,427,467

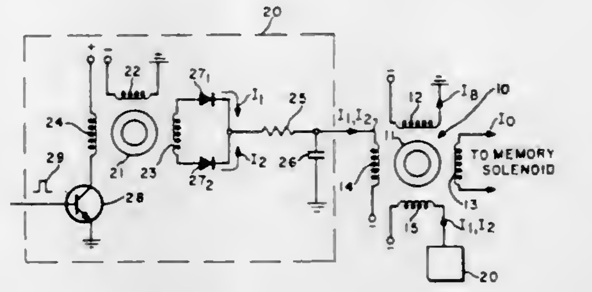
ARRANGEMENT FOR PRODUCING ASYMMETRIC BIPOLAR PULSES

Kazimierz J. Deptuch, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Dec. 9, 1964, Ser. No. 417,078

U.S. Cl. 307—88 **12 Claims**

Int. Cl. H03k *3/51*



6. Apparatus for producing an asymmetric bipolar signal, said apparatus comprising first means adapted to receive an input signal and operated thereby to generate a unidirectional bilevel signal, said first means including a two-state magnetic core means, full-wave rectifier means connected to said magnetic core means and filter means connected to said rectifier means, second means adapted to receive an input signal and operated thereby to generate a unidirectional bilevel signal, said second means including two-state magnetic core means, full-wave rectifier means connected to said magnetic core means and filter means connected to said rectifier means, and third means including magnetic core means adapted to receive said two unidirectional bilevel signals and operated thereby to generate an asymmetric bipolar signal.

3,427,468

PROTECTIVE GROUND ARRANGEMENT FOR CONTACT LINE POLES

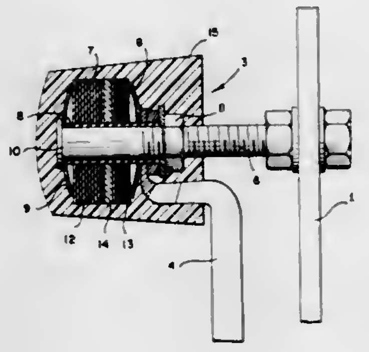
Karl J. Aversten, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden

Filed Mar. 1, 1965, Ser. No. 436,063

Claims priority, application Sweden, Mar. 3, 1964, 2,579/64

U.S. Cl. 307—94 **3 Claims**

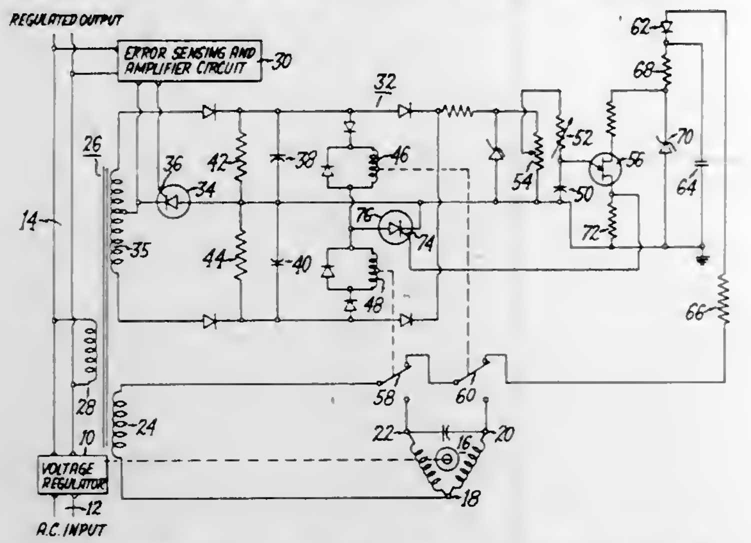
Int. Cl. H02h *9/04;* **H01b** *7/28*



A protective grounding arrangement for a contact line pole of an electric railway is provided wherein a voltage-dependent resistor is inserted between the pole and a rail. The resistor comprises series-connected dry-plate rectifying elements of opposite polarities, the resistance of the resistor being a high value within a range of voltages extending from zero to the maximum voltage caused by the return current flowing through the rail during normal operating conditions, and being of a low value for voltages higher than the maximum voltage.

3,427,469
TIME DELAY CIRCUIT FOR REGULATOR CONTROL CIRCUIT

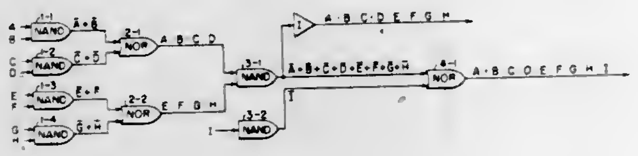
Richard D. Blackburn, Windsor, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 30, 1965, Ser. No. 510,638
U.S. Cl. 307—130 **4 Claims**
Int. Cl. H02b *1/24;* **H01b** *83/12;* **H02h** *3/20, 3/24*



A time delay circuit for a regulator control circuit in which the control circuit includes an error sensing and amplifier circuit connected to energize a switching circuit which includes a pair of motor relays. The time delay circuit comprises a time delay capacitor connected to be charged by the switching circuit and a unijunction transistor connected to discharge the time delay capacitor. The unijunction transistor is provided with a reference voltage through a pair of normally closed relay contacts connected in series and a Zener diode, the connection being such that when either relay moves from a normally closed position to a motor operating position the reference voltage of the unijunction transistor becomes zero.

3,427,470
MULTIPLE LEVEL LOGIC CIRCUITS

Lynn W. Marsh, Jr., Marblehead, and Frederick F. Ladd, Jr., Newbury, Mass., assignors, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Aug. 11, 1965, Ser. No. 478,802
U.S. Cl. 307—215 **7 Claims**
Int. Cl. H03k *19/34, 19/36*

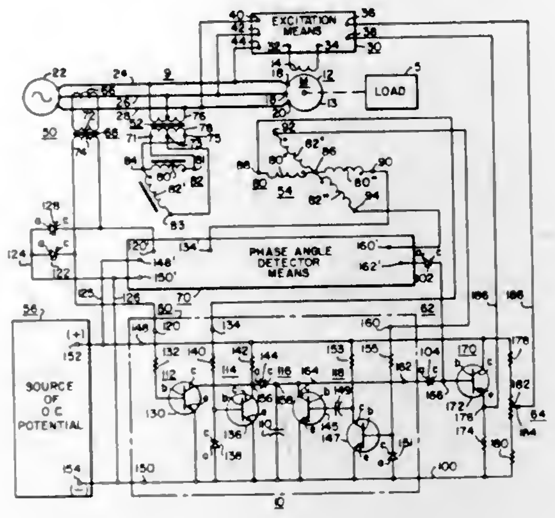


1. A fan-in circuit consisting of at least three levels of gates connected in series, said levels consisting alternately of oppositely dominant gates and comprising an odd set and an even set, one of said sets consisting of NAND gates and the other of said sets consisting of NOR gates.

3,427,471
PHASE ANGLE DETECTOR

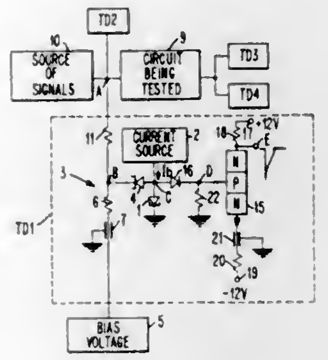
William H. South, McKeesport, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1965, Ser. No. 509,359
U.S. Cl. 307—232 **8 Claims**
Int. Cl. H03k *5/20*

A phase angle detector which provides a unidirectional output signal responsive to the phase angle between first and second alternating signals, including a capacitor, a source of unidirectional potential, means which initiates the charging of the capacitor from the source of unidirectional potential when one of the signals changes from a first to a second polarity, and means which stops the charging of the capacitor when the other of the signals changes from the second to the first polarity. The charge on the capacitor is proportional to the phase angle between the first and second signals.



3,427,472
THRESHOLD DETECTOR EMPLOYING TUNNEL DIODE-HOT CARRIER DIODE-TRANSISTOR IN COMBINATION WITH BACKWARD DIODE FOR ISOLATION

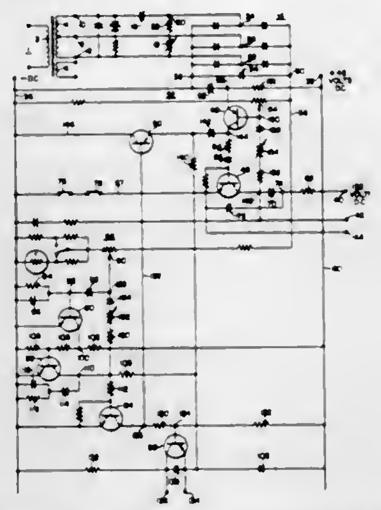
Friedrich A. Karner, Apalachin, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 12, 1965, Ser. No. 507,595
U.S. Cl. 307—235 **10 Claims**
Int. Cl. H03k *17/58, 17/04*



1. A threshold detector comprising:
a tunnel diode;
means normally biasing the diode for operation in an initial stable state;
an input circuit adapted for connection to a source of input signals;
a backward diode coupling the input circuit to the tunnel diode for switching the tunnel diode to another state when the input signal reaches a predetermined threshold value;
a transistor amplifier;
means normally biasing the amplifier for operation at one level of conduction; and
a hot carrier diode connecting the tunnel diode and the background diode to the amplifier for operating the amplifier at a different level of conduction in response only to the switching of the tunnel diode from its initial stable state to said other state.

3,427,473
STATIC SWITCHING APPARATUS FOR SELECTIVELY CONTROLLING ONE OR MORE OUTPUT CIRCUITS

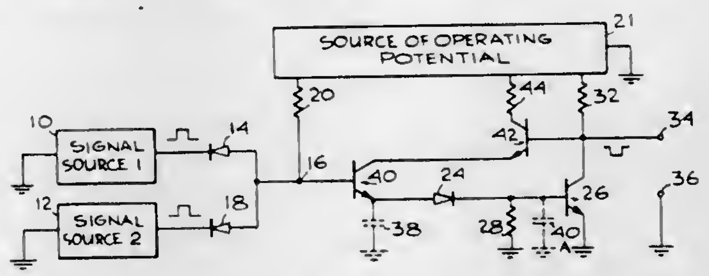
Conrad T. Altfather, Basking Ridge, and Herbert W. Lensner, East Orange, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 26, 1965, Ser. No. 458,938
U.S. Cl. 307—241 **11 Claims**
Int. Cl. H03k *17/60*



A solid state switching apparatus actuatable in response to an increasing input voltage to alter the energized condition of a first and thereafter a second circuit; the apparatus further being operable in response to the alteration of each circuit to selectively lower the magnitudes of the input voltage which will cause the respective circuit to return to its unaltered condition and to prevent the first circuit to return to its unaltered condition before the return of the second circuit to its unaltered condition.

3,427,474
TRANSIENT OVERDRIVE FOR DIODE-TRANSISTOR-LOGIC CIRCUITS

Hua Thye Chua, Sunnyvale, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,677
U.S. Cl. 307—246 **6 Claims**
Int. Cl. H03k *17/04, 19/08*

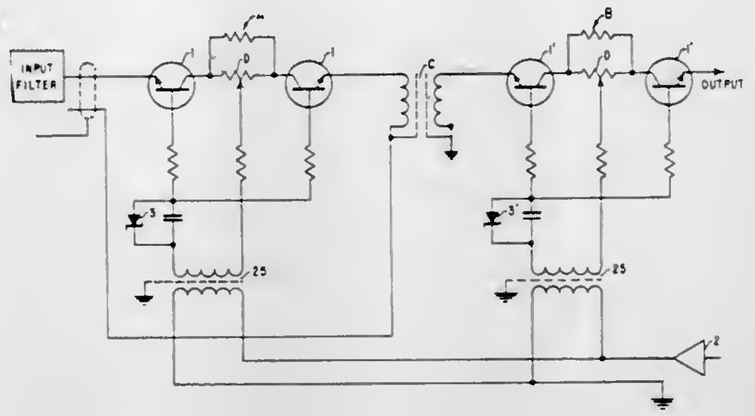


A diode-transistor logic circuit having an improved technique for charged stray capacitance, including an extra transistor coupled between the collector of one transistor and the collector of another transistor to enable a large current to flow from one transistor to the other when the first is placed in the active region until the second is placed into the active region.

3,427,475
HIGH SPEED COMMUTATING SYSTEM FOR LOW LEVEL ANALOG SIGNALS

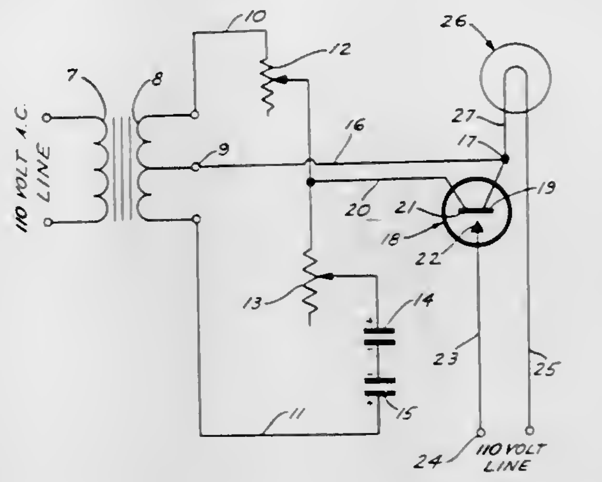
Bruce L. Wilkinson, Torrance, and Paul W. Le Vier, Pasadena, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 5, 1965, Ser. No. 506,915
U.S. Cl. 307—243 **4 Claims**
Int. Cl. H03k *17/04*

A solid state switching system has been provided which solves the problems of commutating a large number of low level analog signals at a high rate of speed. Analog signals indicative of temperature, pressure, flow rate, radioactivity, humidity, etc., in an operating reactor, for example, are monitored sequentially by means of high speed solid state circuitry passed and transformer amplified in a manner to eliminate background noise from the signals. The switching sequence is controlled by a logic address system which operates the various solid state switches to transmit the analog signals in time sequence to a single output line in a very short period of time.



3,427,476
SILICON CONTROL RECTIFIER GATE FIRING CIRCUIT

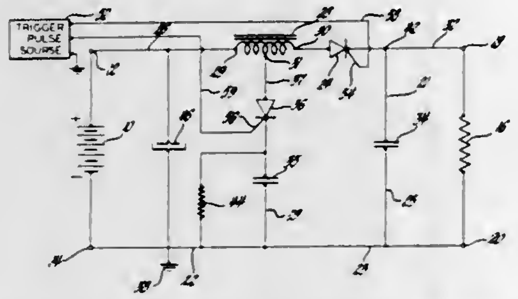
John P. Swantner, 25744 Eureka Road, Taylor, Mich. 48180
Filed May 11, 1966, Ser. No. 549,329
U.S. Cl. 307—252 **2 Claims**
Int. Cl. H03k *17/60*



1. A gate firing circuit for a silicon control rectifier comprising in combination, a transformer having a primary winding and a secondary winding, the secondary winding being tapped at the center to form two subcircuits, the common line of said sub-circuits being connected to the cathode of said solid state rectifier, the other line of the first of said sub-circuits having a potentiometer therein and being connected to the gate of said rectifier, the other line of the second of said sub-circuits having a potentiometer and a pair of condensers therein and being connected to the gate of said rectifier and to the other line of said first sub-circuit and a device to be controlled, one side of said last named device being connected to the cathode of said rectifier, the other side of said device being connected to a power source, the opposite side of said power source being connected to the anode of said rectifier.

3,427,477
ELECTRONIC DIRECT CURRENT SWITCHING CIRCUIT

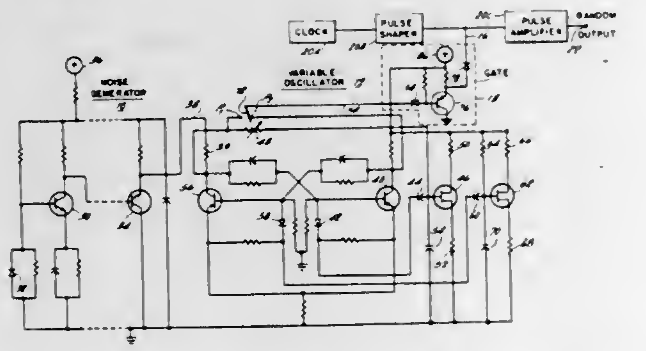
Jackson R. Templin, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 12, 1965, Ser. No. 479,261
U.S. Cl. 307—252 **5 Claims**
Int. Cl. H03k *17/00, 19/08*



An electronic direct current switching circuit for switching direct current circuits with a silicon controlled rectifier. The anode-cathode electrodes of a silicon controlled rectifier and at least a portion of an inductance element are connected in series between the positive polarity terminal of a direct current potential source and one side of an electrical load with the other side of the electrical load connected to the negative polarity terminal of the potential source. A controllable switching device is connected in series with at least at portion of the inductance element across the direct current potential source and a capacitor is connected across the potential source between the silicon controlled rectifier switching device and the electrical load.

3,427,478
RANDOM OUTPUT CONTROL CIRCUIT

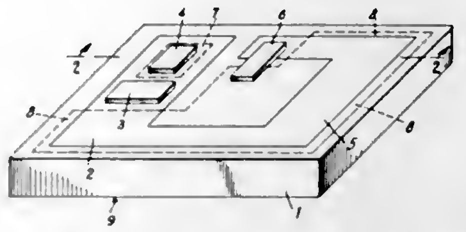
Thomas L. Etter, Suffern, N.Y., assignor to Foundation for Advancement of the Psychiatric Sciences, Inc., New York, N.Y., a corporation of New York
Filed Feb. 9, 1966, Ser. No. 526,163
U.S. Cl. 307—271 **5 Claims**
Int. Cl. H03k *3/82*



A circuit for insuring the provision of randomly spaced pulses. A noise generator is utilized to vary the frequency of a square wave oscillator, the output of which is used to open and close a gate sequentially upon the occurrence of alternate half-cycles of the oscillator. The frequency of the output is varied randomly by a component of the voltage signal supplied by the noise generator.

3,427,479
SILICON PLANAR TRANSISTOR

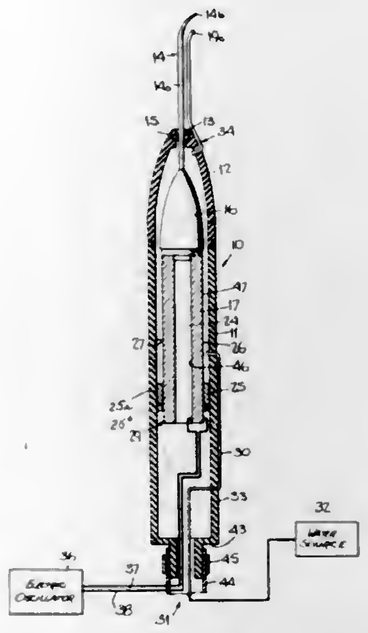
Daniel Chauvy, Corcelles, and Raymond Guye and Kurt Hübner, Neuchatel, Switzerland, assignors to Centre Electronique Horloger, Neuchatel, Switzerland, a corporation of Switzerland
Filed Jan. 19, 1966, Ser. No. 521,706
Claims priority, application Switzerland, Jan. 29, 1965, 1,288/65
U.S. Cl. 307—299 **6 Claims**
Int. Cl. H01l *3/12, 19/00*



A silicon planar transistor having a silicon body with a base region, a collector region and an emitter region. These three regions are monolithic integrated regions in the silicon body with a collector-base junction and a base-emitter junction. The base region extends over a substantial part of the collector region in the silicon body and ends in two metallic contacts, one of which is situated near the emitter region and constitutes the standard basis contact, and the other metallic contact is situated adjacent a part of the collector region and touching the latter. The base region is partly covered on the silicon body by a layer forming a part of the collector region.

3,427,480
PIEZOELECTRIC CLEANING DEVICE

Seymour D. Robinson, North Miami Beach, Fla., assignor, by mesne assignments, to Sonoptics Corporation, Miami, Fla., a corporation of Florida
Filed June 16, 1966, Ser. No. 558,028
U.S. Cl. 310—8.1 **5 Claims**
Int. Cl. H04r *1/02, 1/28;* **H02n** *7/00, 17/00*

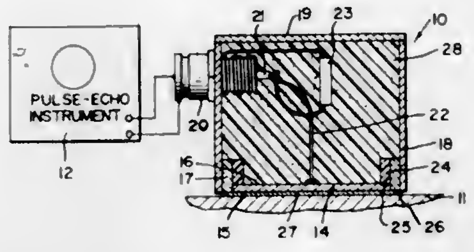


A piezoelectric dental cleaning device comprising a tubular piezoelectric crystal supported within a handle-like hollow casing by a spacer which centers said crystal and provides an elongated spacing annulus between the inner wall of the casing and outer wall of the crystal with a seal near the lower end of the crystal, a working tip having a working end mechanically secured to the upper end of said crystal to form a compound resonator therewith, means for effecting longitudinal ultrasonic vibration of said crystal and means for delivering coolant into said spacing annulus and directing it outwardly thereof in a region adjacent the working end of the tip to flush debris loosened by ultrasonic vibration of said working end of said tip.

3,427,481
ULTRASONIC TRANSDUCER WITH A FLUOROCARBON DAMPER

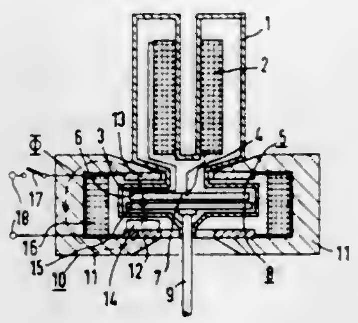
James L. Lenahan, Chicago, and John R. Colbert, Wood Dale, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Illinois
Filed June 14, 1965, Ser. No. 463,797
U.S. Cl. 310—8.2 **14 Claims**
Int. Cl. H04r *23/00, 31/00*

A fluorocarbon resin layer bonded to a face of an ultrasonic transducer. The resin layer may be thick to utilize the high absorption properties of fluorocarbons in damping the sound emanated from the transducer face, or the layer may be thin to provide waterproofing for the transducer face. Particles of the resin are imbedded in a bonding agent and pressuredly bonded to the transducer face, thus overcoming the difficulty experienced in bonding fluorocarbons to other substances.



3,427,482
APPARATUS FOR GENERATING AN ELECTRIC CURRENT IN A SUPERCONDUCTIVE COIL

Ernst Massar, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Mar. 10, 1966, Ser. No. 533,165
Claims priority, application Germany, Mar. 24, 1965, S 96,154
U.S. Cl. 310—10 **18 Claims**
Int. Cl. H02k *9/00, 1/00*

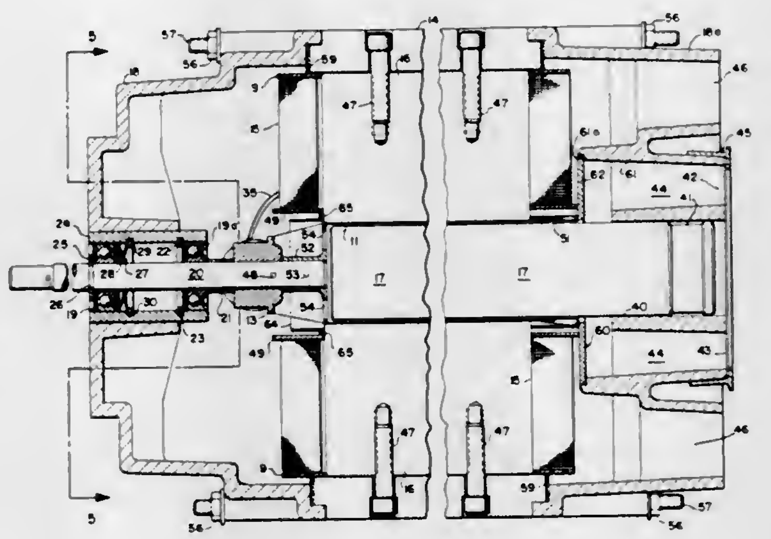


1. In a generator for generating an electric current, superconductive coil means in which a current is to be generated, rotary superconductive magnetic rotor means situated adjacent said coil means, refrigerated container means housing said coil means and rotor means for maintaining them at less than the critical temperature for rendering said coil means and rotor means superconducting, drive means extending from the exterior of said container means to the interior thereof and operatively connected to said rotor means for rotating the latter, and elecromagnetic means situated at the exterior of said container means and defining a gap in which said rotor means is situated.

3,427,483
DIRECT CURRENT MOTOR WITH HOLLOW, LOW INERTIA ARMATURE AND SPRING-BIASED BEARINGS

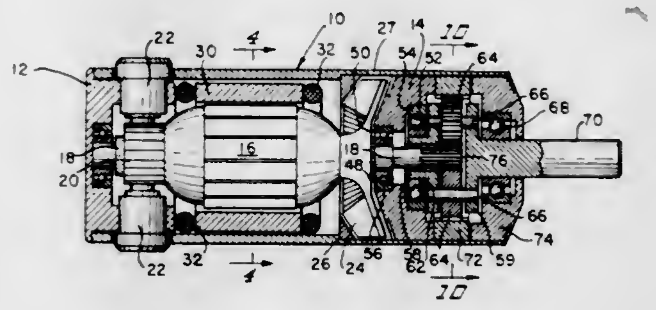
Wladimir Selltrennikoff, Anaheim, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 21, 1966, Ser. No. 529,117
U.S. Cl. 310—45 **13 Claims**
Int. Cl. H02k *15/12, 9/00, 5/16*

A direct current motor including an internal cylindrical core extending from an end bell of the motor and an outer field assembly concentrically disposed to form a cylindrical air gap around the internal core, the internal core and outer field forming a high permeability, low leakage magnetic circuit. A hollow cylindrically shaped armature having a high temperature resistant insulating encapsulation deposited over the conductive windings thereof, is supported in cantilever fashion within the air gap. The armature is supported by low friction ball bearing members which are spring-biased to place a preloading stress on the balls within their respective races thereby preventing "skidding" during rapid acceleration of the bearings.



3,427,484
PERMANENT MAGNET STATOR DC MOTOR WITH HAND TOOL GEAR TRAIN

Henning Karlby, Pittsburgh, Howard Reed Grundy, Murrysville, John R. Speer, Pittsburgh, and George D. Hall, Verona, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1965, Ser. No. 490,800
U.S. Cl. 310—47 **18 Claims**
Int. Cl. H02k *7/14*

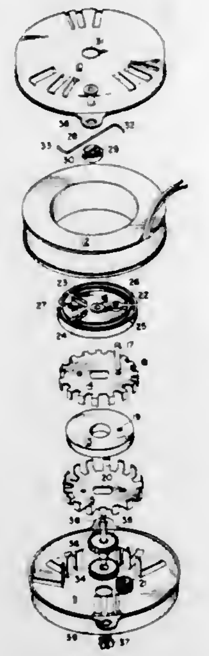


Permanent magnet stator DC motor having coils on the permanent magnets for improving commutation, increasing motor efficiency, and preventing demagnetization of the field magnets. The coils are connectible to diverse circuitry including bridge rectifiers, silicon controlled rectifiers, and a reversing switch. A gear train is provided when the motor is used with a hand tool.

3,427,485
SYNCHRONOUS MOTOR

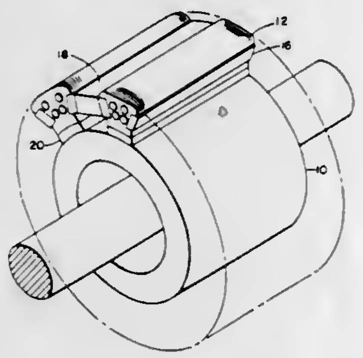
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,333
U.S. Cl. 310—164 **28 Claims**
Int. Cl. H02k *19/02, 21/02*

A self-starting synchronous motor including a plurality of stator pole groups projecting into an aperture of a field coil and adjacent the poles of the rotor of the synchronous motor. Each of the stator pole groups including at least two poles with at least one of said poles being less than the width of the other stator poles in the group.



3,427,486
DYNAMOELECTRIC MACHINES USING CERAMIC PERMANENT MAGNETS

Eugene C. Whitney, Forest Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 16, 1966, Ser. No. 558,130
U.S. Cl. 310—180 **6 Claims**
Int. Cl. H02k *1/00, 21/12, 1/22*

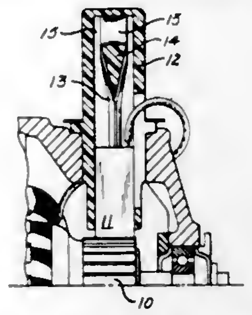


A dynamoelectric machine including a plurality of salient poles radially extending from the rotor hub portion; at least one ceramic permanent magnet supported on each side of said pole and another ceramic permanent magnet secured between the base portion of said pole and the rotor hub portion.

3,427,487
MOTOR BRUSH HOLDER

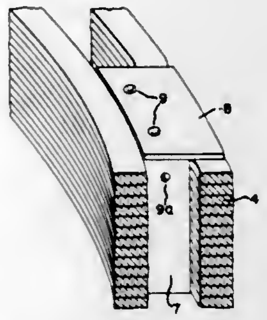
John T. Ferraris, Stamford, Conn., assignor, by mesne assignments, to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland
Filed Aug. 29, 1966, Ser. No. 575,864
U.S. Cl. 310—247 **5 Claims**
Int. Cl. H01r *39/40;* **F16f** *1/06*

1. A brush holder comprising a brush housing member, a carbon brush slidable within said member and adapted to project from said housing member, transverse spring means within said brush housing engaging said carbon brush for urging said brush into a position projecting from said brush housing; said transverse spring means having at least a tubular portion axially engageable with one end of said carbon brush, and separating means within said brush housing engaging said tubular portion for opening and flattening said tubular portion when said tubular portion is moved in one direction relative to said separating means.



3,427,488
TOP-HUNG RIVETED ROTOR END WINDING BLOCK

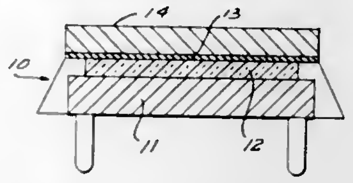
Vincent G. Terry, Jr., Beverly, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 3, 1965, Ser. No. 511,538
U.S. Cl. 310—261 **1 Claim**
Int. Cl. H02k *1/22, 3/32*



A spacer block for the end windings of a dynamoelectric machine rotor. The spacer has an attached flange extending between the rotor winding and the retaining ring to hold the spacer in place.

3,427,489
COMPACT RADIATION DETECTOR WITH SUPERIMPOSED FILTER, PHOSPHOR, GLASS AND PHOTOSENSITIVE LAYERS

John M. Walsh III, Madison, N.J., assignor to Bull & Roberts Inc., New York, N.Y., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,210
U.S. Cl. 313—101 **2 Claims**
Int. Cl. G01t *1/24;* **G01b** *15/00;* **H05b** *37/03*

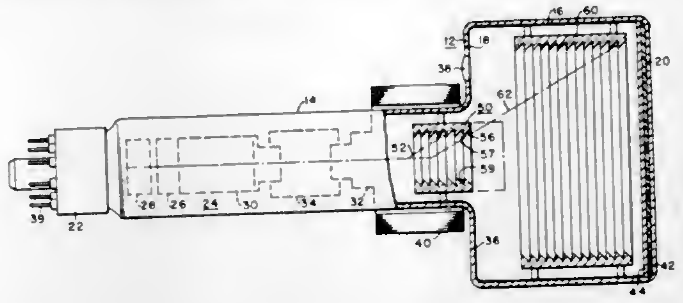


This invention relates to the art of radiation detectors and more particularly to a detector for sensing the intensity of ultra violet radiation of a predetermined frequency, said detector comprising superimposed layers of a light sensitive material, a glass window, a phosphorous layer and a filter in intimate contact with each other.

3,427,490
HIGH CONTRAST CATHODE RAY TUBE

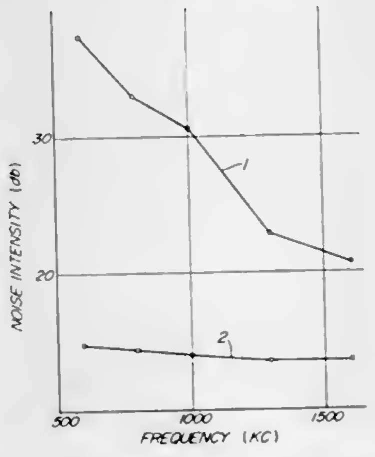
Eros Atti, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1967, Ser. No. 615,505
U.S. Cl. 313—106 **7 Claims**
Int. Cl. H01j *29/08*

A high contrast cathode ray tube in which a secondary electron suppressor structure is provided for directing and thereby preventing secondary electron bombardment of the display screen due to primary electrons striking regions other than display screen.



3,427,491
DISCHARGE TUBE

Hideo Mizuno, Takatsuki-shi, Hidezo Akutsu, Suita-shi, Eijiro Moriguchi, Kyoto, Katsuyuki Yamashita, Takatsuki-shi, Shigeru Kamiya, Hirakata-shi, Koshi Iwata, Takatsuki-shi, Yoshio Tawara, Kadoma-shi, and Atsushi Iga, Hirakata-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed Apr. 17, 1967, Ser. No. 631,221
Claims priority, application Japan, Apr. 20, 1966, 41/25,630
U.S. Cl. 313—346 **1 Claim**
Int. Cl. H01j *1/14, 19/06;* **H01k** *1/04*

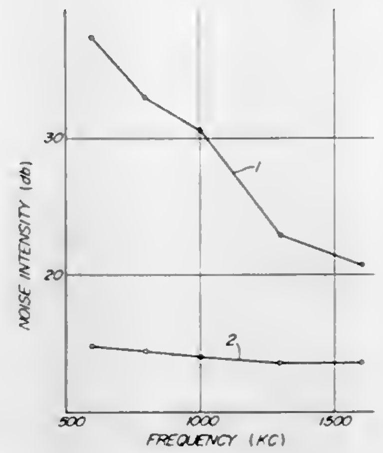


A discharge tube satisfactorily low in radio-interfering noise is obtained by using cathodes coated with a cathode emitter consisting principally of oxides of barium, strontium and calcium and containing iron-cobalt borides with part of the iron substituted by a substance selected from the group consisting of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, aluminum and silicon and also containing a reducing metal having a high melting point selected from the group consisting of zirconium, hafnium, niobium and tantalum.

3,427,492
DISCHARGE TUBE SATISFACTORILY LOW IN RADIO-INTERFERING NOISE

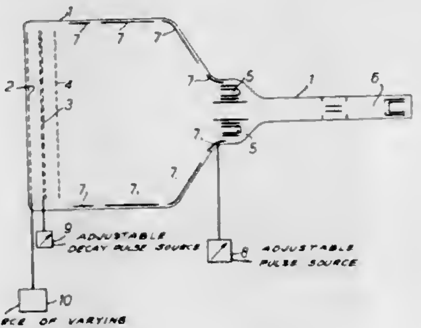
Hideo Mizuno, Takatsuki-shi, Hidezo Akutsu, Suita-shi, Eijiro Moriguchi, Kyoto, Katsuyuki Yamashita, Takatsuki-shi, Shigeru Kamiya Hirakata-shi, Koshi Iwata, Takatsuki-shi, Yoshio Tawara, Kadoma-shi, and Atsushi Iga, Hirakata-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed Apr. 17, 1967, Ser. No. 631,258
Claims priority, application Japan, Apr. 20, 1966, 41/25,631
U.S. Cl. 313—346 **1 Claim**
Int. Cl. H01j *1/14, 19/06;* **H01k** *1/04*

A discharge tube satisfactorily low in radio-interfering noise and equipped with cathodes coated with a cathode emitter consisting principally of oxides of barium, strontium and calcium and containing 0.05 to 10% by weight of a substance selected from the group consisting of cobalt boride and iron boride and further containing 1 to 8% by weight of a reducing metal having a high melting point and selected from the group consisting of zirconium, hafnium and tantalum, whereby a discharge tube low in noise intensity in the broadcasting frequency band is obtained.



3,427,493
DIRECT VIEWING STORAGE CATHODE RAY TUBE CIRCUIT ARRANGEMENT

Arthur Mylne Adam, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed July 18, 1966, Ser. No. 565,950
Claims priority, application Great Britain, Aug. 3, 1965, 33,235/65
U.S. Cl. 315—12 **6 Claims**
Int. Cl. H01j *29/41*


1
2
3
4
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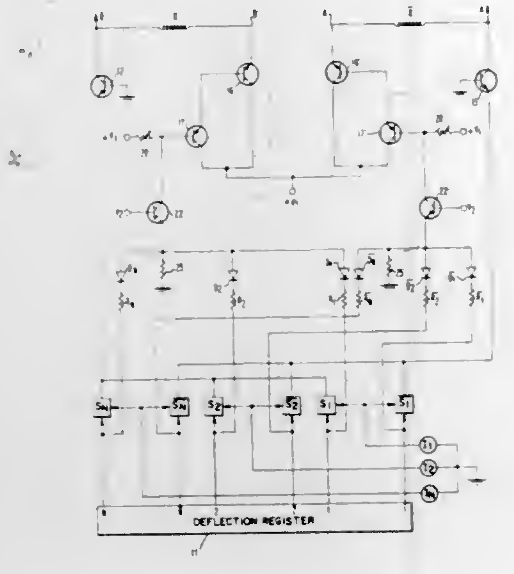
9 ADJUSTABLE DECAY PULSE SOURCE
8 ADJUSTABLE PULSE SOURCE
10 SOURCE OF VARYING SCREEN POTENTIAL

A direct viewing storage tube arrangement including a viewing screen, a storage target electrode, a reading electron gun for scanning the target electrode for writing information thereon in the form of stored charges and means for providing a repetitively pulsed flood beam for the production of visible images on the viewing screen. Decay pulses are repetitively applied to the target electrode during alternate pulses of the flood beam and the E.H.T. potential applied to the fluorescent screen in varied between a minimum potential corresponding in time to the applied decay pulses and a maximum potential corresponding in time to the remaining flood beam pulses, corresponding to the production of a visible image.

3,427,494
CORRECTED DEFLECTION CIRCUIT FOR CATHODE RAY TUBE

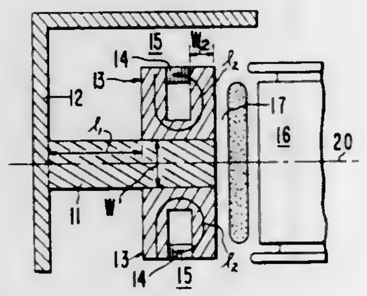
Mark E. Bradley, Red Hook, and Donald J. Hinkein, Germantown, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 28, 1965, Ser. No. 505,476
U.S. Cl. 315—27 **5 Claims**
Int. Cl. H01j *29/70*

A voltage corrected electromagnetic deflection circuit for cathode ray display devices includes means for supplying deflection current to one terminal of a deflection winding and corresponding means for establishing the voltage at the other terminal of the winding to compensate for the voltage drop across the winding due to steady state deflection currents.



3,427,495
DUAL HELIX COUPLED PERIODIC CIRCUITS AND TUBES USING SAME

George K. Farney, New Providence, N.J., assignor to S-F-D Laboratories, Inc., a corporation of New Jersey
Filed Dec. 15, 1965, Ser. No. 514,088
U.S. Cl. 315—3.5 **7 Claims**
Int. Cl. H01j *25/34*

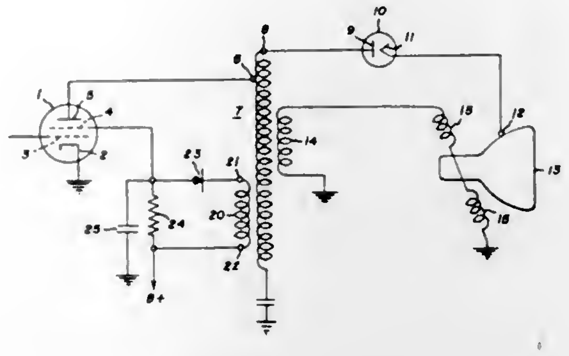


A microwave tube is disclosed. The tube includes a periodic slow wave circuit formed by an array of vanes or bars coupled together by means of a pair of helices. The helices have their axes transversely displaced and they are each directed along the line of circuit development of the slow wave circuit. A cathode electrode produces a stream of electrons adajcent the array of helix coupled periodic vanes or bars for cumulative electronic interaction with the electromagnetic fields of the vanes or bars to produce output microwave energy. The helices are preferably wound with opposite senses of rotation and located on opposite sides of a plane of symmetry of the vanes or bars to prevent excitation of certain undesired modes of propagation.

3,427,496
HIGH VOLTAGE AND WIDTH STABILIZATION

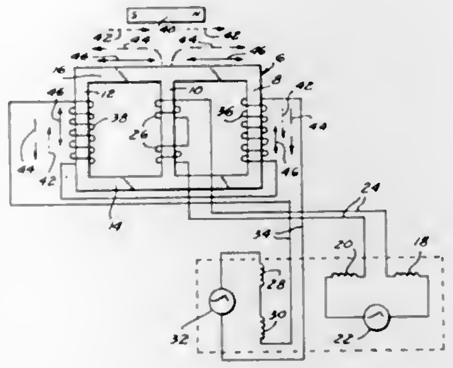
Robert F. Wood, Baldwinsville, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 1, 1965, Ser. No. 468,730
U.S. Cl. 315—27 **3 Claims**
Int. Cl. H01j *29/70*

To compensate in a television receiver for variations in both the output of a horizontal driver tube and in the picture width of a cathode ray tube with changes in the beam current of a cathode ray tube, a diode and resistor are connected across a secondary winding of a horizontal output transformer. The resistor connects a B+ voltage supply to a screen grid of the horizontal driver tube. Output pulses from the horizontal driver tube are fed back by the secondary winding to determine the conduction state of the diode and thus the bias voltage supplied by the resistor to the screen grid.



3,427,497
MEANS FOR CONTROLLING DISTORTION IN A CATHODE RAY TUBE

Ernest Gostyn, Longmeadow, Mass., assignor to General Instrument Corporation, a corporation of Delaware
Filed July 7, 1965, Ser. No. 470,024
U.S. Cl. 315—27 **17 Claims**
Int. Cl. H01j *29/70;* **H01f** *21/00*



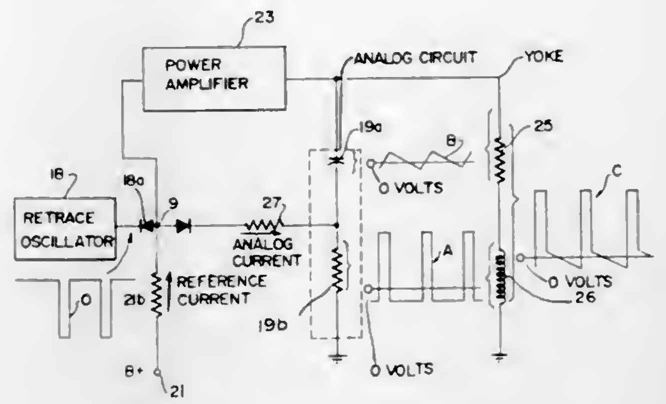
Magnetic apparatus for controlling distortion in a cathode ray tube and capable of having the magnitude and distribution of the correcting effect baried, a permanent magnet being rotatable relative to the fixed magnetic structure to vary the magnitude of the correcting effect and being shiftable along the magnetic structure for varying the distribution of the correcting effect.

3,427,498
VERTICAL DEFLECTION SYSTEM FOR TELEVISION

Douglas W. Taylor, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,839
U.S. Cl. 315—27 **7 Claims**
Int. Cl. H01j *29/70*

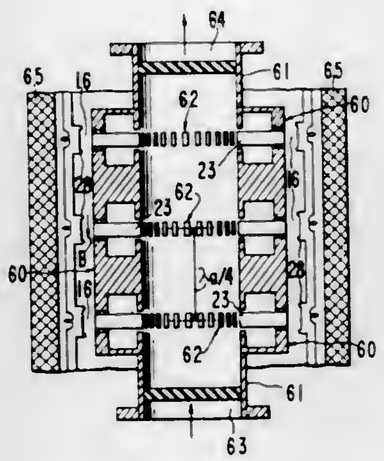
A TV deflection system for achieving a predetermined scan and including a magnetic deflection yoke connected in parallel with a yoke analog circuit. The yoke analog circuit has series resistance and capacitance components therein having a time constant equal to the time constant of the deflection yoke. Comparing means are coupled to the resistance component of the yoke analog circuit for deriving an error signal, and this error signal is applied via amplifier circuitry to the deflecting yoke to compensate

for nonlinearities in the current ramp in the deflection yoke. In addition, novel clamping circuitry is connected to the amplifying circuitry to clamp the maximum voltage induced in the deflection yoke during retrace.



3,427,499
MIXED LINE INTERACTION CIRCUITS FOR COAXIAL MAGNETRONS

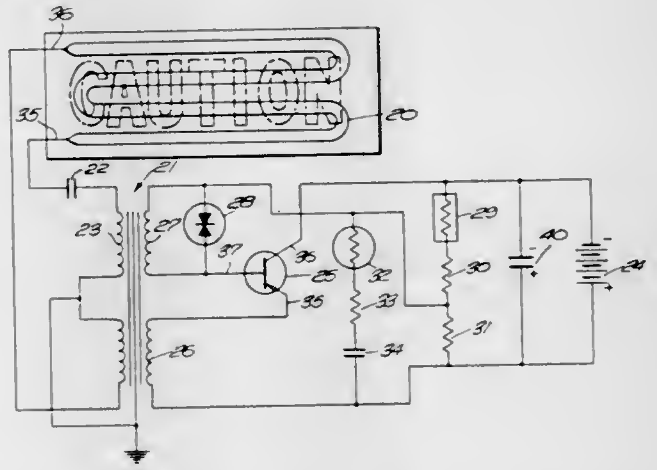
George K. Farney, New Providence, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Dec. 27, 1965, Ser. No. 516,631
U.S. Cl. 315—39.77 **11 Claims**
Int. Cl. H01j *25/50*



Mixed line coaxial magnetron oscillator and amplifier tubes are disclosed. The tubes utilize a mixed line type of magnetron interaction circuit, namely, a circuit wherein a certain length of the circuit has a first dispersion characteristic and a second section of the interaction circuit has a second dispersion characteristic with the dispersion characteristics intersecting or nearly intersecting at only one common point of operation, at the π mode, to exclude competing modes of operation, and to raise the power output substantially above that achievable with non-mixed line circuits. A circular electric mode wave supporting structure which may be a circular electric mode cavity or a circular electric mode waveguide is coaxially disposed of the mixed line interaction circuit either inside or outside of the interaction circuit. An array of conductive vanes serve to provide wave energy coupling between the circular electric mode structure and the mixed line interaction circuit. The vane array defines an array of slot resonators in the regions between adjacent vanes and the coupling slots are provided communicating between the slot resonators and the circuit electric mode structure, such coupling slots being provided only into such slot resonators having the same phase for the π mode, in the slot array, whereby the π mode of the mixed line interaction circuit is locked to the circular electric mode of the circular electric mode structure. In some embodiments, a tuning structure is provided in the circular electric mode circuit for tuning the frequency of the magnetron amplifier or oscillator. In an amplifier embodiment, the π mode for one of the sections of the mixed line circuit is substantially at a different frequency than the π mode of the other section of the mixed line circuit to provide substantial instantaneous bandwidth at the π mode.

3,427,500
FLASHING SIGNS HAVING TRANSISTORIZED OSCILLATOR CIRCUIT

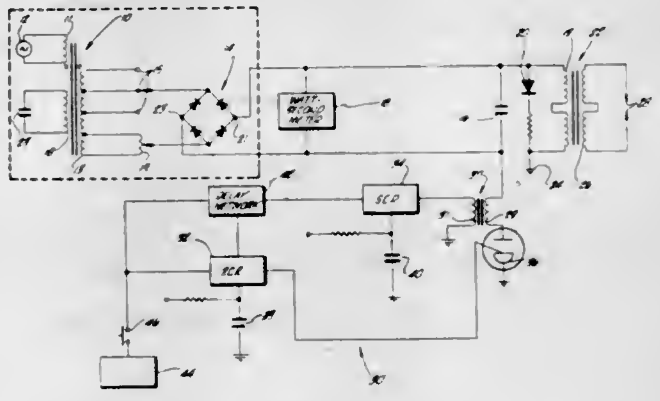
Frank L. Harney, Jr., 190 Lowell Road, Wellesley Hills, Mass. 02181, and Norman F. Hoard, 27 Wendell Park, Milton, Mass. 02186
Filed July 30, 1964, Ser. No. 386,298
U.S. Cl. 315—200 **1 Claim**
Int. Cl. H05b *37/02, 39/04, 41/36*



An illuminated sign designed to flash at a blink rate designed to capture the attention of the observer. This sign is battery operated and uses a transistorized circuit to intermittently energize a gaseous discharge lamp.

3,427,501
CAPACITOR LINEAR CHARGING POWER SUPPLY

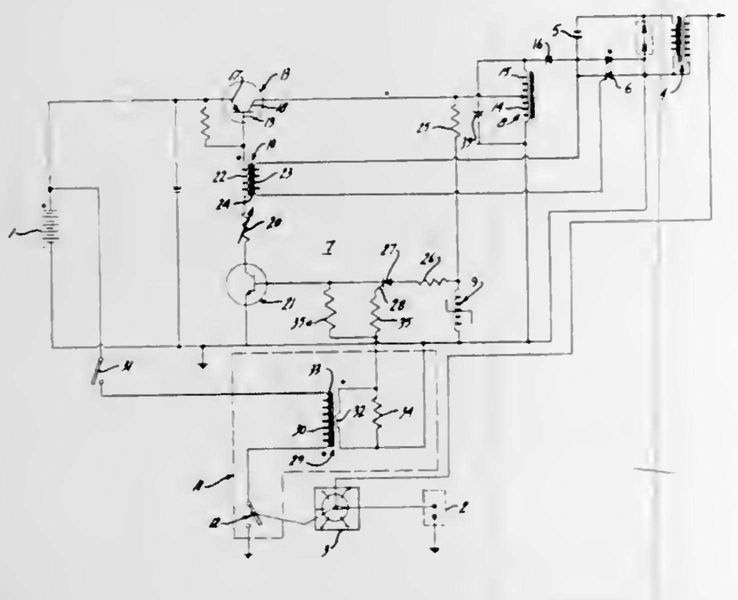
Joseph L. Laub, Claremont, and John A. Gilbert, Upland, Calif., assignors to Unitek Corporation, Monrovia, Calif., a corporation of California
Filed Sept. 3, 1965, Ser. No. 484,844
U.S. Cl. 315—200 **14 Claims**
Int. Cl. H05b *41/36*



The present disclosure is directed to an improved capacitve storage circuit means which is linearly charged from a source of electrical energy and intermittently discharged through a load circuit. The capacitive means is connected to a source of alternating current electrical energy through means for shaping the A.C. waveform into a rectified square wave. The rectified square wave supplies the energy for charging the capacitor. The remainder of the power supply comprises a load circuit and control circuit means for periodically discharging the capacitive means through the load circuit. The control circuit means discharges the capacitive means by closing a circuit between capacitive means and the load circuit and at a subsequent point in time opening the circuit and discontinuing the discharge to allow the capacitive means to be recharged to the predetermined value.

3,427,502
CAPACITOR IGNITION SYSTEM

Floyd M. Minks, Campbellsport, Wis., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 11, 1966, Ser. No. 526,732
U.S. Cl. 315—209 **10 Claims**
Int. Cl. H01g *9/00;* **H01t** *15/02*



The disclosure relates to triggering of a triggered capacitor discharge ignition system. The contacts of the point assembly such as conventionally employed for many years are serially connected in series circuit with the primary winding of a pulse transformer having the secondary winding connected to the gate of a controlled rectifier which is connected to turn on a blocking oscillator of a capacitor discharge ignition circuit. The inductance of the transformer stores energy in the core during the period the point contacts are closed and rapidly discharges the energy through the secondary winding when the contacts open to fire the rectifier. The blocking oscillator is connected directly to the battery or power supply and the ignition switch is only connected in series with the points and the primary.

3,427,503
DIAL ILLUMINATION CIRCUITRY

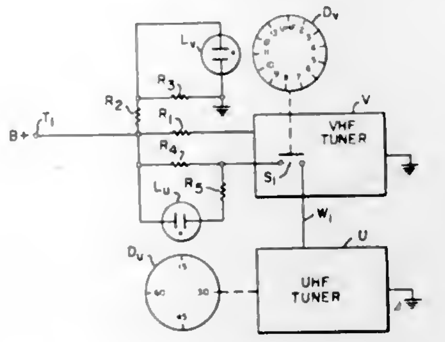
Gustave A. Knorr, Jr., Atlantic Highlands, and Jing-Jue Young, Elizabeth, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1965, Ser. No. 499,495
U.S. Cl. 315—324 **2 Claims**
Int. Cl. H05b *37/02, 39/04*

1. A dial illumination circuit for VHF and UHF tuners having a tuner switch for selecting one of the tuners to be operative and to be supplied by a source of direct potential, said dial illumination circuit comprising:

a VHF voltage developing circuit connected across said source for developing a first VHF voltage;

a VHF dial illuminator light connected to said VHF voltage developing circuit and being responsive to said first VHF voltage to be illuminated thereby only when said tuner switch is in a position to render said VHF tuner operative;

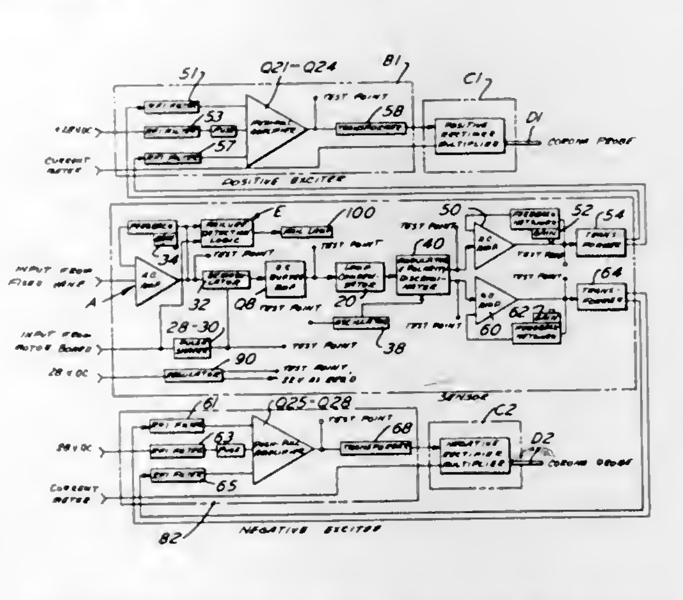
a UHF voltage developing circuit connected between said source and said tuner switch for developing a first UHF voltage when said tuner switch is in a position to render operative said UHF tuner; and



a UHF dial illuminator light connected to said UHF voltage developing circuit and being responsive to said first UHF voltage to be illuminated thereby only when said tuner switch is in a position to render said UHF tuner operative.

3,427,504
AIRCRAFT ELECTROSTATIC DISCHARGING SYSTEM

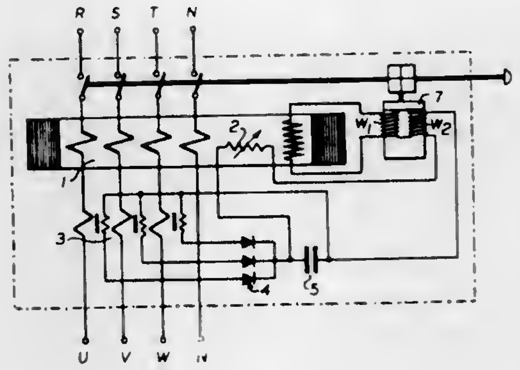
Juan de la Cierva, Oreland, Adolf A. Perlmutter, Drescher, and David B. Fraser, Philadelphia, Pa., assignors to Dynasciences Corporation, Blue Bell, Pa., a corporation of Pennsylvania
Filed July 20, 1966, Ser. No. 566,619
U.S. Cl. 317—2 **11 Claims**
Int. Cl. H05f *3/06*



1. An automatic electrostatic discharging system for aircraft comprising a rotary vane sensing head for continuously measuring the electrostatic field about the aircraft with respect to the aircraft and having an A.C. signal output proportional to the field being measured, an alternator rotatable with the rotary vane of said sensing head and having an A.C. output, means to rectify and clip the A.C. output of said alternator and deliver a D.C. output of a predetermined level, means to amplify the A.C. signal output of said sensing head, means to rectify the amplified A.C. signal and clamp therewith the D.C. output whereby the sum will be a sampled D.C. signal having a polarity and magnitude proportional to the electrostatic field with respect to the aircraft, a positive high voltage generator, a negative high voltage generator, a positive exciter network, a negative exciter network, a probe head associated with each of said high voltage generator means, and a polarity discriminator separating the D.C. signal and delivering to the respective positive and negative exciter networks a corresponding signal proportional to the magnitude of the field surrounding the aircraft whereby a current will be discharged from the probes sufficient to maintain the aircraft with respect to its environs always less than one millijoule.

3,427,505
LEAKAGE CURRENT PROTECTION SWITCH WITH EXCESS CURRENT RELEASE

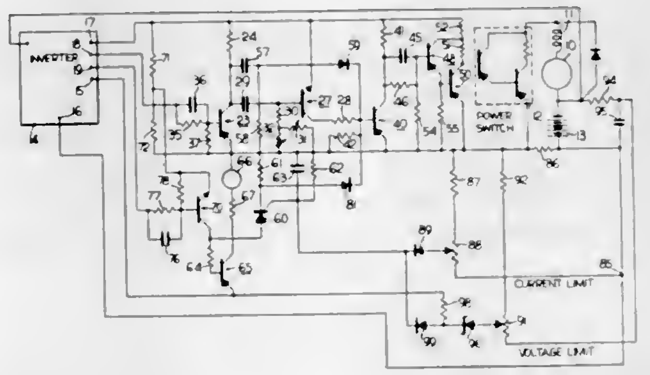
Siegfried Biedermann, Schellenberg, Liechtenstein, assignor to Uninorm Anstalt, Vanduz, Liechtenstein, a corporation of Liechtenstein
Filed Jan. 17, 1967, Ser. No. 609,850
Claims priority, application Austria, Jan. 25, 1966, A 684/66
U.S. Cl. 317—18 **8 Claims**
Int. Cl. H02h *1/02*



A leakage protection switch with excess current release, which switch comprises a summation current transformer. The latter is connected in circuit with a magnetic release to provide leakage current protection, as well as excess protection. A negative temperature coefficient resistance is in heat-conducting relationship with the summation current transformer. The latter is in circuit with a second magnetic release via transformers in the phase leads of the protected circuit with a voltage dependent upon the currents flowing in the phase leads.

3,427,506
VOLTAGE RESPONSIVE PULSE WIDTH LIMITING MEANS FOR PULSE MODULATION SYSTEM

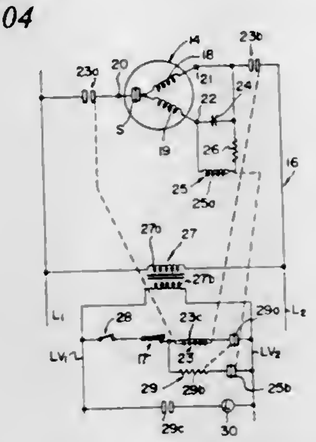
Tom N. Thiele, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Continuation of application Ser. No. 232,462, Oct. 23, 1962. This application Apr. 4, 1966, Ser. No. 539,924
U.S. Cl. 317—27 **10 Claims**
Int. Cl. H02h *3/28, 7/00*



A circuit for cyclically turning on a power transistor connected between a direct current source and a direct current motor to vary the effective voltage applied to the motor has undervoltage protection means for turning off the power transistor to instantaneously terminate each "on" pulse whenever the voltage of the direct current source falls below a selected level at which the base drive keeps the power transistor in saturation.

3,427,507
CONTROL FOR ELECTRIC MOTOR WITH SAFETY SWITCH

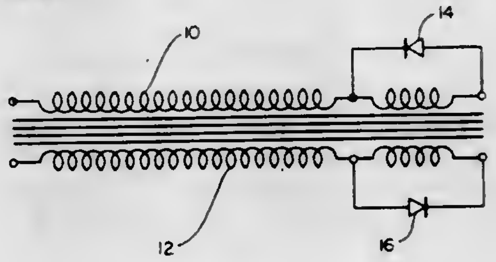
Gordon H. Brown, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,235
U.S. Cl. 317—41 **12 Claims**
Int. Cl. H02h *5/04*



A control for use with a motor having an internal safety switch. The control includes means for storing energy, such as heat energy, when the safety switch opens while yet the motor remains connected across the power supply as by a maintained closure of the motor disconnect switch. The control eliminates unnecessary time delay in restarting the motor where malfunction conditions are insufficient to have injurious effect on the motor while assuring discontinuance of the operation of the motor where serious abnormal conditions obtain. The control further is arranged to dissipate the accumulated energy to correlate the operation with the time the safety switch is closed as well as with the time the safety switch is open.

3,427,508
RELAY DAMPING

William E. Shaffer, Rochester, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 570,069
U.S. Cl. 317—123 **9 Claims**
Int. Cl. H01h *47/12*

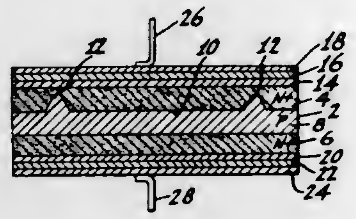


1. Method of modifying the operating characteristics of an electromechanical relay of the type having a coil and intended to be energized by direct current comprising shunting fewer than half of the turns of the coil with a diode connected in the back-wave direction.

3,427,509
ASYMMETRICAL TRIGGERING DIODE COMPOSED OF THREE OPPOSITE CONDUCTIVITY REGIONS

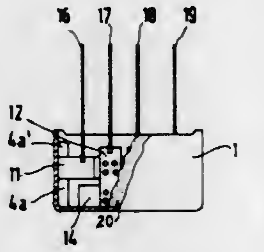
Harry Weisberg, Forty Fort, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 508,028
U.S. Cl. 317—234 **4 Claims**
Int. Cl. H01l *3/00*

Triggering diode having a negative resistance characteristic in the forward direction and a relatively low breakdown voltage in the back direction, comprising two outer relatively heavily doped layers of one conductivity type and a more lightly doped intermediate layer of opposite conductivity type wherein one of the two outer layers includes a relatively thin minor portion and the intermediate region has a correspondingly thicker portion.



3,427,510
SEMICONDUCTOR WITH ENCAPSULATING HOUSING

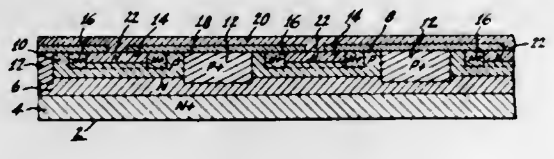
Horst Schwarz, Munich-Allach, and Siegfried Plorin, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 12, 1966, Ser. No. 572,051
Claims priority, application Germany, Aug. 12, 1965, S 98,798
U.S. Cl. 317—234 **3 Claims**
Int. Cl. H01l *3/00, 5/00*



A semiconductor device has the semiconductor member disposed between a pair of conductor plates with electrical connectors secured thereto and this unit supported within a cup-like rectangular housing. The end walls of the housing comprise guide means for positioning the unit or a plurality of units within the housing which is then filled with encapsulating insulation.

3,427,511
HIGH FREQUENCY TRANSISTOR STRUCTURE WITH TWO-CONDUCTIVITY EMITTERS

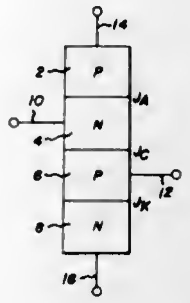
Ronald Rosenzweig, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,397
U.S. Cl. 317—235 **9 Claims**
Int. Cl. H01l *11/00*



A transistor having a particular emitter construction to inhibit "second breakdown" thus permitting safer operation at high voltages, comprising a central high resistance emitter portion concentric with a surrounding active emitting portion with the emitter connection being made only to the high resistance portion such that there is substantially equal electrical resistance between the connection and all points on the active periphery.

3,427,512
SEMICONDUCTOR LOW VOLTAGE SWITCH

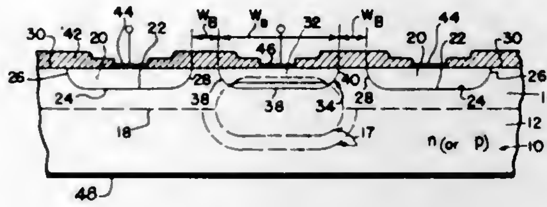
Thomas C. Mapother, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,700
U.S. Cl. 317—235 **13 Claims**
Int. Cl. H01l *11/10*



PNPN junction semiconductor devices of both unilateral and bilateral types are described which are switchable between high and low impedance states responsive to a predetermined magnitude of applied anode-cathode voltage, the low voltage magnitude required for switching being predetermined and extremely invariant with temperature. This switching characteristic is obtained by providing in parallel with the collecor junction of the NPN transistor analogue portion of the PNPN a control diode of temperature invariant breakdown voltage. A positive potential is applied to the anode terminal of the PNPN device thereby causing the emitter base junction of the PNP analogue portion of the device to become forward biased. The current then flows into the cathode region of the control diode. This causes the control junction to break down at the predetermined low voltage, permitting current flow to continue through the forward-biased emitter-base junction of the NPN transistor analogue portion of the device and to the cathode terminal, thereby switching the device to its low impedance state.

3,427,513
LATERAL TRANSISTOR WITH IMPROVED INJECTION EFFICIENCY

David F. Hilbiber, Los Altos, Calif., assignor to Fairchild Camera and Instrument Corporation, Syossett, N.Y., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532;379
U.S. Cl. 317—235 **1 Claim**
Int. Cl. H01l *19/00, 11/00*

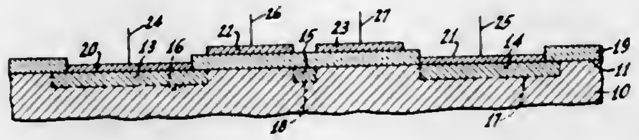


A lateral transistor with improved injection efficiency having laterally disposed emitter, base, and collector regions. The emitter-base junction of the transistor has an impurity gradient at its bottom which is substantially steeper than the impurity gradient at its lateral sides adjacent the collector region, whereby the transistor displays an improved current gain and frequency response.

3,427,514
MOS TETRODE

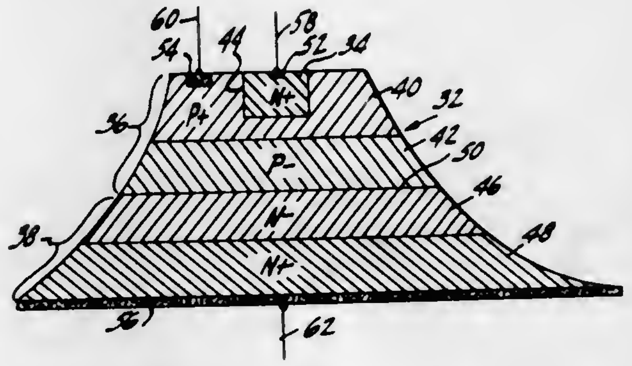
John Olmstead, Somerville, Lewis A. Jacobus, Jr., Middlesex, and Eleftherios G. Athanassiadis, Lebanon, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 13, 1966, Ser. No. 586,411
U.S. Cl. 317—235 **9 Claims**
Int. Cl. H01l *11/00, 15/00*

An insulated-gate field-effect semiconductor device is described comprising a crystalline semiconductive body having spaced source and drain regions adjacent one body face; source and drain electrodes on the one body face; two insulated gate electrodes on the one body face between the source and drain regions; and a common source-drain region less than 0.64 mil wide adjacent the one major face and between the two insulated gate electrodes.



3,427,515
HIGH VOLTAGE SEMICONDUCTOR TRANSISTOR

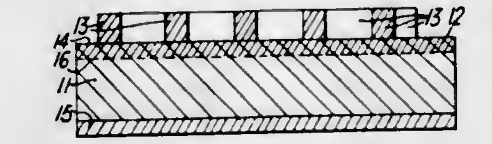
Adolph Blicher, North Plainfield, and Bohdan R. Czorny, Bound Brook, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,521
U.S. Cl. 317—235 **5 Claims**
Int. Cl. H01l *11/00, 15/00*



A transistor for providing high reverse voltage capability has relatively high resistivity subregions forming the collector PN-junction between them. One of the subregions is a part of the base region and the other a part of the collector region.

3,427,516
LIGHT EMITTING JUNCTION DEVICE USING SILICON AS A DOPANT

George Richard Antell, Harlow, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 24, 1966, Ser. No. 552,463
Claims priority, application Great Britain, July 21, 1965, 30,996/65
U.S. Cl. 317—237 **13 Claims**
Int. Cl. H01l *3/14*



This is a semiconductor device which has a light emitting pn-junction. This junction is inset to within 10 microns of the surface of a body, when this body, which is formed of a III–V semiconductor compound, is doped with silicon.

3,427,517
ORIENTING AND CONTACTING DEVICE

Jesse Aronstein and George A. Caccoma, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Original application Dec. 23, 1964, Ser. No. 420,594, Divided and this application May 19, 1966, Ser. No. 565,653
U.S. Cl. 317—262 **6 Claims**
Int. Cl. H01g *13/00;* **H01h** *49/00;* **H02b** *3/00*

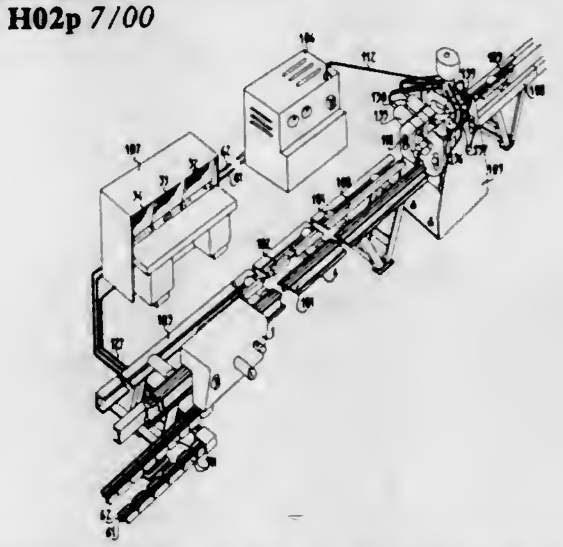
1. In an orientation sensor adapted to receive a device and produce a signal indicative of which one of a plurality of orientations the device occupies, said device provided with a plurality of contacts, at least one said contact arranged distinctively with respect to the other contacts, said sensor comprising:

a plurality of resilient sense means adapted to receive said device, one each of said means positionally aligned with said distinctive contact in each of said plurality of orientations, the receipt of a device causing the sense means which is aligned with said distinctive contact to be moved; and

means for sensing which of said plurality of sense means is moved and producing an indication of said movement.

3,427,518
DIGITALLY CONTROLLED POSITIONING DEVICE

Francis J. G. Cloup, Paris, France, assignor to Societe dite Promat, Latresne, France, a company of France
Filed Aug. 24, 1964, Ser. No. 391,457
Claims priority, application France, Aug. 31, 1963, 946,251
U.S. Cl. 318—18 **2 Claims**
Int. Cl. H02p *7/00*

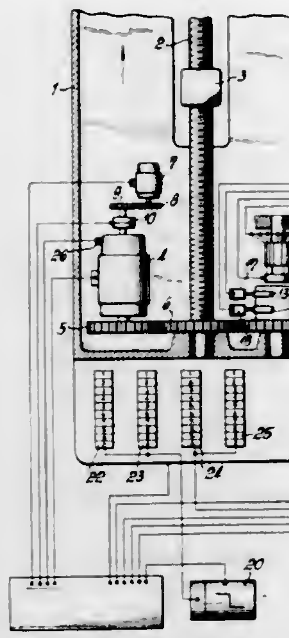


A control system for use in the processing of an elongated workpiece by means of a number of treatment operations in which the processing tools or equipment are located in a number of working planes transverse to an axis of relative movement between the tools and the workpiece, and the relative movement and actuation of the individual tools is coordinated by prior programming of the control system.

3,427,519
SYSTEM FOR AUTOMATIC CONTROL OF MOVEMENT OF A MOVABLE STRUCTURE THROUGH A PRESELECTED LENGTH OF ITS DISPLACEMENT PATH

Leo Louis, Alt-Myhl, Germany, assignor to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany
Filed Mar. 11, 1965, Ser. No. 439,032
Claims priority, application Germany, Mar. 13, 1964, H 52,042
U.S. Cl. 318—18 **8 Claims**
Int. Cl. G05b *13/02, 11/01;* **H02p** *5/46, 7/68, 7/74*

A system for automatic control of movement of a movable structure, such as a carriage for a machine tool or the like, through a preselected length of its displacement path, and including a first preselector for preselecting a number of units of a first scale of units, a second preselector for selecting a number of units of a second scale of units smaller in value than said first scale of units, and means cooperating with the first and the second preselector and with drive means connected to the structure to move the latter first through a length of the path corresponding to the preselected number of units of the first scale, then through a length corresponding to the preselected number of the second scale and for thereafter stopping the drive means.



3,427,520

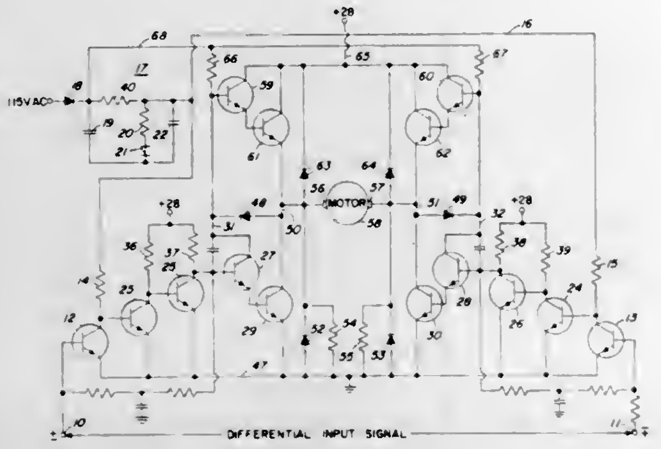
DC SERVO AMPLIFIER FOR ARMATURE DRIVE MOTOR

Charles A. Oppedahl, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Dec. 27, 1965, Ser. No. 516,567

U.S. Cl. 318—18 **5 Claims**

Int. Cl. H02p *5/50, 7/68*



A bridge drive arrangement for a direct current motor is responsive to a pair of differential pulse width control signals of a predetermined repetition rate to drive the motor in response to the magnitude and polarity of a differential direct current input signal. Current from a direct current power source is switched through the motor in one direction or the other to define rotation direction and the pulsetrain duty cycle defines speed of rotation. In response to zero input signal, the system disconnects the direct current power source from the motor.

3,427,521

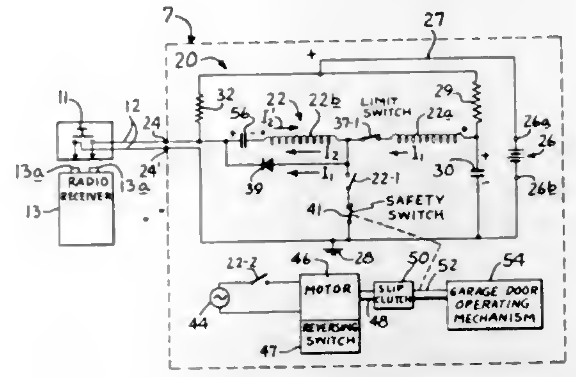
GARAGE DOOR RELAY CONTROL CIRCUIT

Richard Goldstein, Deerfield, Ill., assignor to Perma-Power Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 29, 1965, Ser. No. 517,360

U.S. Cl. 318—266 **28 Claims**

Int. Cl. H02p *1/22*



A garage door operator circuit for controlling motor means which move the garage door from one extreme position to the other each time it is energized. The operator circuit including a relay having first and second winding sections, the flow of a first current of a given magnitude and direction in said first winding section producing a relay energizing magnetomotive force which can be opposed by the magnetomotive force provided by the flow of a second current of a given magnitude and direction in said second winding section which de-energizes the relay. A first circuit including a pair of controls for the first winding section through which flows a current in said first mentioned direction and of at least said first mentioned magnitude when the control terminals are first momentarily short circuited, and a second circuit including a second winding section through which flows a current in said second mentioned given direction and of a magnitude which produces said opposing magnetomotive force which de-energizes said relay when said control terminals are subsequently momentarily short circuited while the relay contact means are in a motor energizing position.

3,427,522

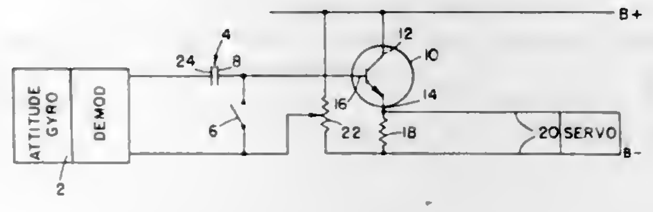
ALL-ELECTRONIC SYNCHRONIZER

William G. Redmond, Jr., Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed Sept. 18, 1964, Ser. No. 397,558

U.S. Cl. 318—489 **6 Claims**

Int. Cl. H02p *1/02*



This invention relates to means for sensing variations in a first electrical signal and for controlling a second signal in a manner responsive to such variations by connecting a capacitor across the source of the first signal in series with switch means operable, in a first condition, to cause the voltage on the capacitor to vary with the source and operable, in a second condition, to cause the capacitor to store a desired voltage and connecting a current regulating device to pass current in an amount responsive to the difference between the voltage on the capacitor and the voltage of the source.

3,427,523

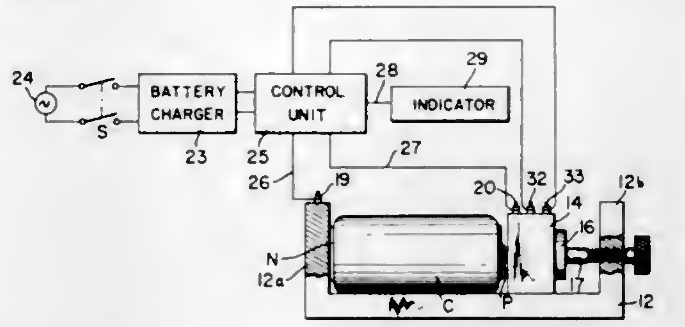
PRESSURE RESPONSIVE BATTERY CHARGING APPARATUS

James A. Howard and Raymond D. Lucas, Mountain View, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 1, 1966, Ser. No. 569,353

U.S. Cl. 320—46 **3 Claims**

Int. Cl. H02j *7/04, 7/16*



Apparatus for charging a standard rechargeable secondary cell comprises a U-shaped jig or support within which a transducer-terminal block and the cell to be charged are adapted to be releasably clamped. One electrical contact of the cell abuts a fixed wall on the support and the other cell contact engages the terminal side of the block. A source of charging current is connected through a control circuit to the support wall and to the block terminal for charging the cell. The transducer is electrically connected to the control circuit which cuts off charging current to the cell when internal pressure in the latter produces a force of predetermined magnitude against the transducer.

3,427,524

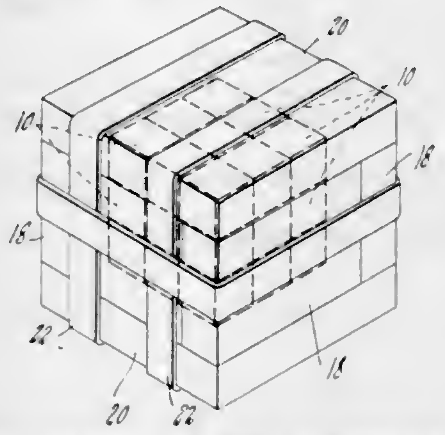
SELF-CONTAINED SHIELD FOR RADIOACTIVE GENERATOR BATTERY CHARGER

Frederic Samuel Tobey, Walpole, Mass., assignor to W. H. Brady Co., Milwaukee, Wis., a corporation of Wisconsin

Filed Dec. 21, 1965, Ser. No. 515,355

U.S. Cl. 320—61 **5 Claims**

Int. Cl. H02j *7/00;* **G21d** *7/00*



A self-contained electrical energy generator and one or more electrochemical storage batteries electrically connected to the generator for collection of the output thereof for intermittent delivery at a higher energy delivery rate than that of which the generator alone is capable, the generator being radioactive and the battery providing at least in part the shielding necessary to make handling of the power pack safe.

3,427,525

REGULATED D.C. TO D.C. CONVERTER

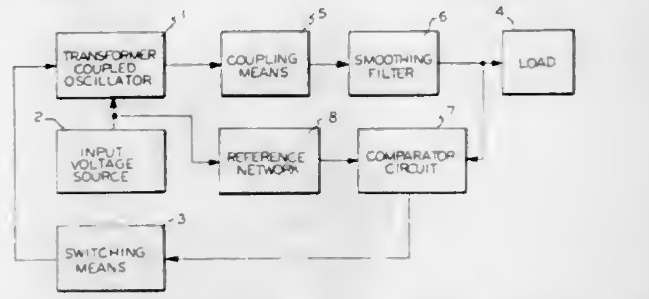
Joseph C. Thornwall, Lanham, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 3, 1966, Ser. No. 591,930

U.S. Cl. 321—2 **9 Claims**

Int. Cl. H02m *3/14, 3/32*

A power supply for providing a regulated D.C. voltage to a fixed or variable load from an unregulated D.C. voltage source. The load voltage regulation is achieved by employing a switching means to alternately clamp and release a transformer-coupled regenerative blocking oscillator. The clamping and releasing rate required to achieve output voltage regulation is determined by the relative magnitude of the input and output voltages and by the power required by the load. As the load increases, the switching means will release the blocking oscillator more often; and the oscillator rate will increase by the correct amount to hold the output voltage constant. Energy is transferred directly from the source to the load during the direct or regenerative portion of the blocking oscillator cycle and also during the collapsing flux portion of the cycle.



3,427,526

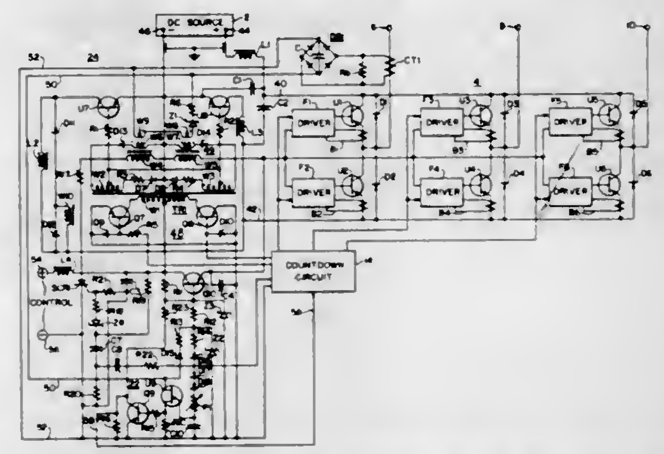
INVERTER DRIVE SYSTEM

Andress Kernick, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 13, 1967, Ser. No. 630,559

U.S. Cl. 321—5 **8 Claims**

Int. Cl. H02m *7/00, 1/18;* **H02p** *1/42*



An inverter driven motor system wherein the inrush current must be limited in order to protect the power switching devices of the inverter from damage. The system as disclosed herein permits relatively large starting torques to be developed while limiting magnitude of the inrush current by holding substantially constant the ratio of the voltage applied to the inverter to the frequency of operation.

3,427,527

THREE-PHASE WELDING TRANSFORMER

Frede Christensen, Christian Johannes Henningsen, Bernt Arne Rudolf Larson, Karl-Erik Knipström, and Björn Frost Skarpengland, Laxa, Sweden, assignors to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a corporation of Sweden

Filed Feb. 27, 1967, Ser. No. 618,624

Claims priority, application Sweden, Mar. 7, 1966, 2,928/66

U.S. Cl. 321—8 **7 Claims**

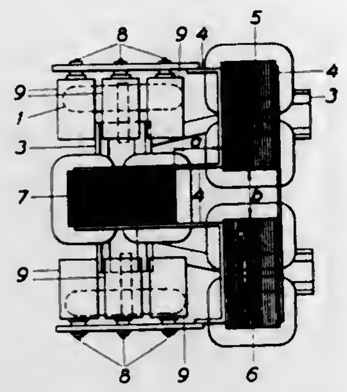
Int. Cl. H02m *7/00;* **H01f** *33/00;* **B23k** *9/10*

A three-phase welding transformer composed of three individual single-phase core transformers possessing substantial stray reactance. The three transformers are disposed as a group satisfying the following conditions:

The legs of all of the transformers are parallel with each other;

The transformer cores are confined between two parallel planes which extend at right angles to the leg axes, the distance between said planes being equal to the total height of a core in the axial direction of the legs;

The symmetry planes of two cores are parallel and form right angles with the symmetry plane of the third core;



The distance between the parallel cores is approximately equal to the distance between either of them and the third core;

The distance between any two of the cores does not exceed 0.75 times the yoke length of the cores.

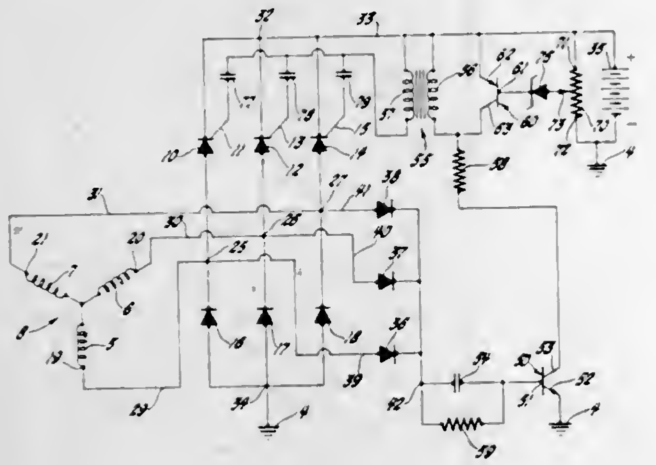
3,427,528
POTENTIAL REGULATOR CIRCUIT

Robert E. Custer, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 14, 1966, Ser. No. 579,429

U.S. Cl. 321—18 **1 Claim**

Int. Cl. H02m *1/08, 7/52*



A potential regulator circuit for regulating the system potential of an electrical generating system employing an alternator and a bridge type rectifier circuit which has a silicon controlled rectifier corresponding to each phase of the alternator output potential in the positive polarity bank thereof. The alternator output potential is full wave rectified by an auxiliary rectifier circuit to produce the pulsating control signal for triggering the silicon controlled rectifiers conductive which is amplified by a single stage transistor amplifier and transformer coupled across the gate-cathode electrodes of all of the silicon controlled rectifiers, in parallel. Connected in shunt across the primary winding of the coupling transformer are the emitter-collector electrodes of another transistor for diverting the control signal from the gate-cathode electrodes of the silicon controlled rectifiers with output potentials exceeding a predetermined maximum which trigger this transistor conductive.

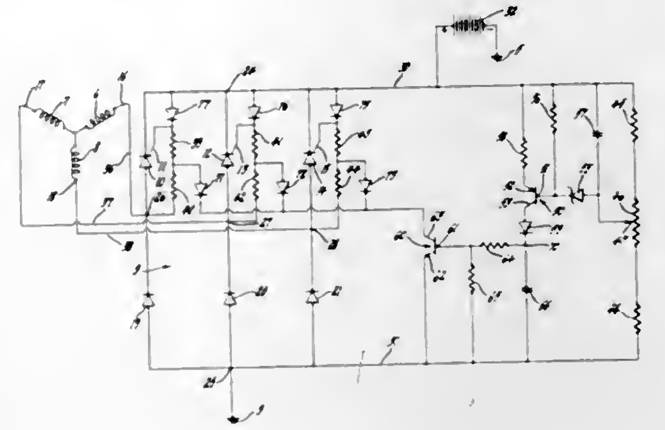
3,427,529
POTENTIAL REGULATOR CIRCUIT

Donald L. Cummins and Louis J. Raver, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,588

U.S. Cl. 321—18 **3 Claims**

Int. Cl. H02m *1/08, 7/52*



A potential regulator circuit for use with permanent magnet type alternators wherein the positive polarity bank of a full wave bridge type rectifier includes a silicon controlled rectifier device corresponding to each phase of the generated potential. Each alternator output winding is connected to the control electrode of a respective silicon controlled rectifier in the rectifier circuit. A potential sensitive circuit arrangement provides a switching signal to render a switching transistor conductive which diverts the alternator output potential from the control electrodes of the silicon controlled rectifiers to the opposite side of the direct current output line.

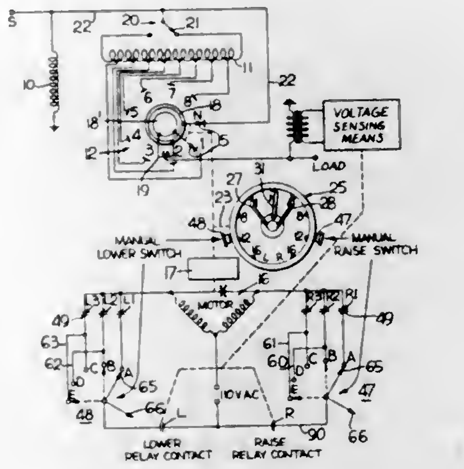
3,427,530
TAP CHANGING VOLTAGE REGULATOR HAVING MEANS FOR SELECTING LIMITS OF TAP CHANGER MOTION

Lloyd Oakes, Brown Deer, Ralph D. Wakeam, Milwaukee, and Sidney J. Hartwell, Wauwatosa, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 17, 1966, Ser. No. 587,007

U.S. Cl. 323—43.5 **20 Claims**

Int. Cl. H02m *5/12;* **H02p** *13/06*



1. In combination with a voltage regulator having a winding provided with taps, a tap changer switch having stationary contacts connected to said taps and movable contacts adapted to engage said stationary contacts, a reversible motor for driving said tap changer movable contacts in opposite directions from a neutral position through intermediate tap positions to maximum and minimum positions wherein the regulated voltage has maximum and minimum values respectively, means including voltage sensing means and raise and lower contacts controlled by said sensing means for completing forward and reverse energizing circuits to said motor in response to deviations of the regulated voltage above and below the voltage bandwidth setting;

- first and second normally closed raise switching means,
- first and second normally closed lower switching means,
- raise range selector means for selectively connecting said first and second raise switching means in the forward energizing circuit to said motor,
- lower range selector means for selectively connecting said first and second lower switching means in the reverse energizing circuit to said motor, and
- means for opening said first raise and first lower switching means when said tap changer switch movable contacts are in said maximum and minimum positions respectively and for opening said second raise and second lower switching means when said tap changer switch movable contacts are actuated to predetermined intermediate tap positions in the forward and reverse directions respectively.

3,427,531
SUPPLY CIRCUIT FOR SYNCHRO RESOLVERS

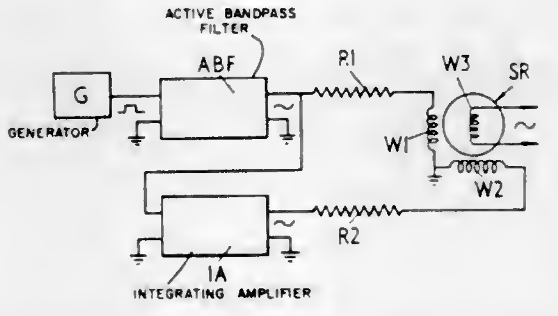
Edward James Parrott, Kent, England, assignor to Muirhead & Co. Limited, Kent, England

Filed Nov. 28, 1966, Ser. No. 597,382

Claims priority, application Great Britain, Jan. 18, 1966, 2,365/66

U.S. Cl. 323—108 **1 Claim**

Int. Cl. H03h *1/00*



1. Means for generating a sinusoidal supply the phase of which varies according to a mechanical displacement comprising a synchro resolver having a pair of stator windings and a rotor winding, a single phase square wave generator, an active bandpass filter fed from the generator, a resistance connection for the active bandpass filter to one winding of the stator of the synchro resolver, an integrating amplifier fed from the active bandpass filter and a resistance connection from the integrating amplifier to the other winding of the stator of the synchro resolver.

3,427,532
NUCLEAR MAGNETIC RESONANCE PROBE FOR SPECTROMETERS HAVING AN INTERNAL REFERENCE NUCLEI DIFFERENT THAN THE NUCLEI UNDER OBSERVATION

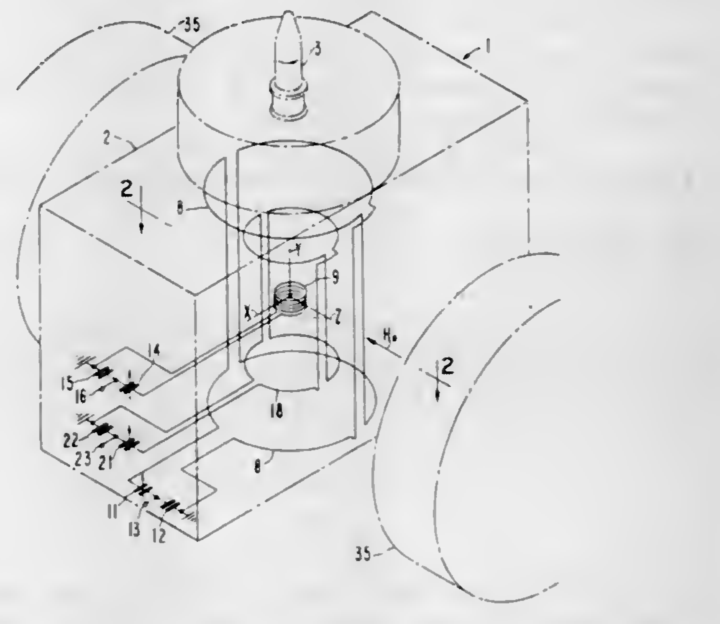
Forrest A. Nelson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 14, 1966, Ser. No. 527,152

U.S. Cl. 324—.5 **9 Claims**

Int. Cl. G01r *33/08*

A nuclear magnetic resonance spectrometer is disclosed. The spectrometer includes a probe structure for immersing a sample group of nuclei to be analyzed and a control group of nuclei of a different kind than the sample nuclei in a polarizing magnetic field. A first coil system of two coils is disposed within the probe. The first coil system includes a transmitter coil for applying a radio frequency resonance exciting magnetic field to the sample nuclei and a separate radio frequency receiver coil for detecting nuclear resonance of the sample group of nuclei. The probe also contains a second radio frequency coil system, separate from the first coil system, for exciting and detecting radio frequency magnetic resonance of the control group of nuclei to derive a spectrometer control signal. The sample group of nuclei and the control group of nuclei are both generally centrically disposed of both the first and second coil systems. In a preferred embodiment, the second coil system is concentrically disposed of the transmitter and receiver coils of the first coil system and is located intermediate the transmitter and receiver coils of the first coil system.



3,427,533
METHOD AND APPARATUS FOR GEOPHYSICAL PROSPECTING BY MEASURING THE SPEED OF PROPAGATION OF ELECTROMAGNETIC WAVES IN THE EARTH

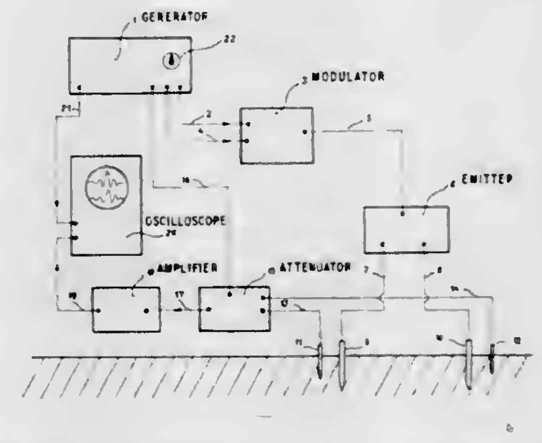
Robert Gabillard, Lille, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France

Filed Mar. 23, 1966, Ser. No. 536,745

Claims priority, application France, Mar. 24, 1965, 10,593

U.S. Cl. 324—6 **5 Claims**

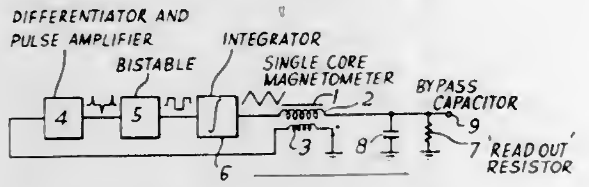
Int. Cl. G01v *3/00, 3/12;* **G01r** *11/00*



The time of propagation of electromagnetic signals in the earth between two stations is determined by providing at each station an alternance of transmission of electromagnetic signals toward the other station and of reception of the signals emanating from the other station. This alternance has substantially the same periodicity at both stations. This periodicity is adjusted at one of the stations, so as to obtain at each station a constant time interval between the transmission of signals from this station and the reception of signals from the other station. The time of propagation of the electromagnetic signals between the stations is then derived from the measurement of this constant time interval at both stations.

3,427,534
DEVICE FOR MEASURING THE MAGNITUDES OF UNIDIRECTIONAL MAGNETIC FIELDS

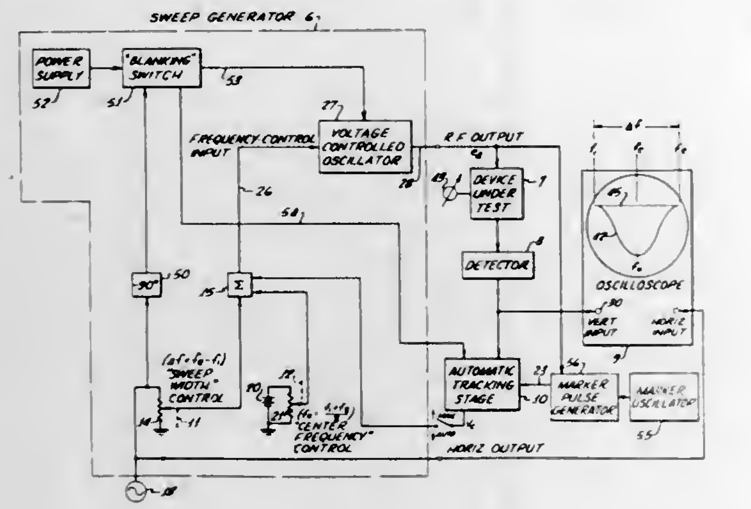
David James Maxwell, Bracknell, England, assignor, by mesne assignments, to Sperry Rand Limited, London, England, a company of England
Filed Feb. 15, 1966, Ser. No. 527,419
Claims priority, application Great Britain, Feb. 23, 1965, 7,748/65
U.S. Cl. 324—43 **4 Claims**
Int. Cl. G01r *33/02*



A device for measuring the magnitude of an external unidirectional magnetic field in which the exciting current source is controlled in accordance with the effect of the unidirectional field on a magnetically permeable core which is magnetized first in one direction and then in the opposite so that the exciting current becomes asymmetrical about the time axis whereas in the absence of such external field it would be symmetrical. The D.C. component of the exciting current is therefore a measure of the strength of the external field along the axis of the core.

3,427,535
SWEEP GENERATOR HAVING AUTOMATICALLY CONTROLLED CENTER FREQUENCY

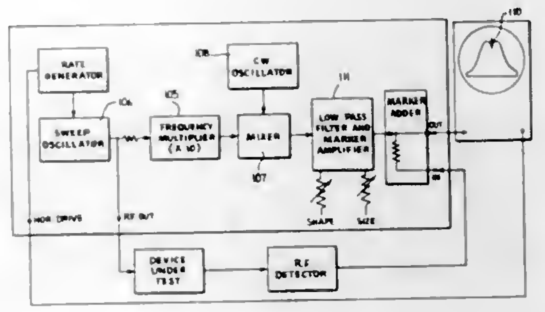
Neil R. Welsh, Dana Point, Calif., assignor to Telonic Industries, Inc., a corporation of Indiana
Continuation-in-part of application Ser. No. 621,325, Mar. 7, 1967. This application Feb. 19, 1968, Ser. No. 706,220
U.S. Cl. 324—57 **26 Claims**
Int. Cl. G01r *27/00, 23/00, 23/12*



A sweep generator whose center frequency f_c is automatically controlled in the "wave track" mode to track the frequency pass band of a device under test or in the "marker track" mode to track a frequency marker pulse. In the "waveform track" mode, a differential amplifier compares the wave front and wave tail of the demodulated output of the device under test with a threshold potential level for selectively connecting first and second constant current sources of opposite polarity to an integrating capacitor. The voltage across this capacitor supplies a feedback control voltage to the sweep generator oscillator. In the "marker track" mode, the first current source is turned on at the initiation of each sweep frequency trace interval and the second current source is turned on by the marker input pulse so that the control voltage produced across the integrating capacitor varies in accordance with the difference between f_c and the marker frequency f_m.

3,427,536
SYSTEM FOR INCREASING FREQUENCY SPECTRUM OF SWEEP GENERATOR MARKER SIGNAL

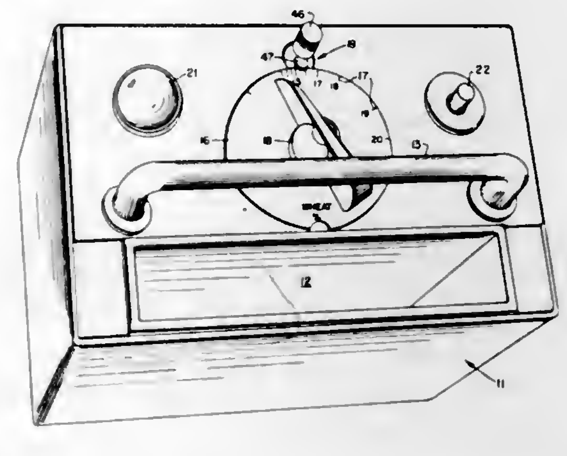
Claire R. Wainwright, Laguna Beach, Calif., assignor to Telonic Industries, Inc., a corporation of Indiana
Filed Dec. 11, 1964, Ser. No. 417,576
U.S. Cl. 324—57 **14 Claims**
Int. Cl. G01r *27/00*



A marker system for a sweep generator which reduces the portion of the sweep width of the sweep generator occupied by the marker signal. Plural multiplier and frequency mixer stages coupled to the sweep oscillator progressively widen the frequency spectrum of the marker signal. Accordingly, a few Hertz change in the sweep frequency above and below the selected marker frequency produces a marker signal comprised of a broad frequency spectrum.

3,427,537
DIRECT MEASURING MOISTURE APPARATUS INCLUDING REPLACEABLE SCALE DIALS

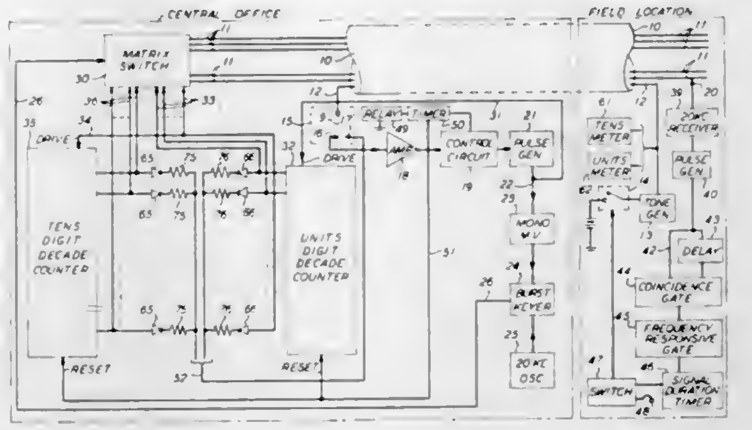
Jack D. Osborne, Brighton, Mich., assignor to Skuttle Mfg. Co., Milford, Mich., a corporation of Michigan
Filed May 5, 1965, Ser. No. 453,380
U.S. Cl. 324—65 **5 Claims**
Int. Cl. G01r *27/02;* **G08b** *21/00*



A direct measuring moisture testing apparatus comprises a casing wherein grain to be tested is deposited in a recessed receptacle between spaced electrode plates forming part of a bridge circuit containing an adjustable potentiometer having an operating shaft extending above the casing top wall and mounting a pointer movable over an adjustably positioned and removable and replaceable scale dial secured to the top wall and calibrated directly in terms of moisture content for a particular grain in the receptacle. The circuit includes a gas discharge lamp indicator visible at the casing top wall.

3,427,538
APPARATUS TO IDENTIFY CONDUCTOR PAIRS IN A MULTICONDUCTOR CABLE BY GATING IDENTIFICATION SIGNALS IN RESPONSE TO PROBE DETECTION OF AN ENERGIZED CONDUCTOR PAIR

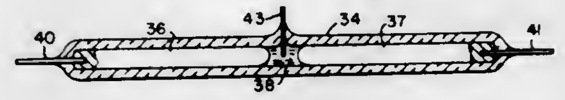
Clarence E. Bohnenblust, Saratoga, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Nov. 1, 1966, Ser. No. 591,286
U.S. Cl. 324—66 **6 Claims**
Int. Cl. G01r *19/00;* **H04b** *3/46*



A signal stepping arrangement driven by a counter applies a signal in sequence to a plurality of conductor pairs in a multiconductor cable at the central office. In response to probe detection of the signal on a conductor pair at the field location, the counter halts counting and transmits an identification signal to the field location identifying the conductor pair to which the probe is connected.

3,427,539
ELECTROCHEMICAL INTEGRATOR DEVICE

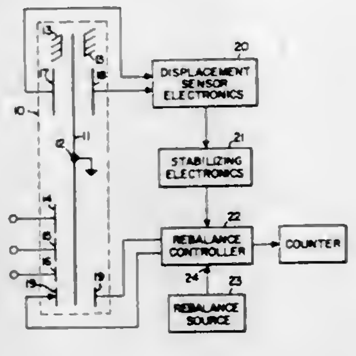
William C. Mann, Laurel, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1964, Ser. No. 400,475
U.S. Cl. 324—94 **4 Claims**
Int. Cl. G01r *27/24*



A capillary tube member including first and second electrodes extending into the capillary chamber at either end of the tube and at least a third electrode extending into the chamber intermediate the ends thereof. The capillary chamber includes a quantity of mercury and an electrolyte bubble. By selective application of relative potentials to the electrodes electro-deposition of the mercury takes place whereby the size of the electrolyte bubble may be varied and accurately controlled.

3,427,540
ELECTROSTATIC VOLTMETER HAVING VARIOUS SIZED INPUT ELECTRODES TO PROVIDE PLURAL RANGES

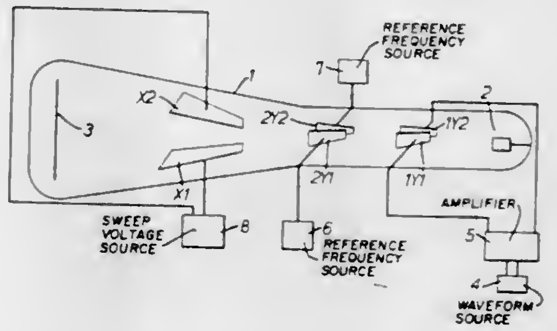
Kenneth W. Exworthy, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 21, 1965, Ser. No. 488,867
U.S. Cl. 324—109 **1 Claim**
Int. Cl. G01r *19/16*



An automatically rebalanced electrostatic voltmeter employing differential capacitor deflection sensing means and electrostatic rebalancing. Two embodiments show digital and analog voltage readouts.

3,427,541
CATHODE RAY TUBE DISPLAY OSCILLOSCOPE INCLUDING MEANS FOR APPLYING VOLTAGES TO A PAIR OF ADDITIONAL DEFLECTING PLATES FOR PRODUCING A TIME SCALE HAVING A PLURALITY OF DIVISIONS EXTENDING FROM THE DISPLAYED WAVEFORM

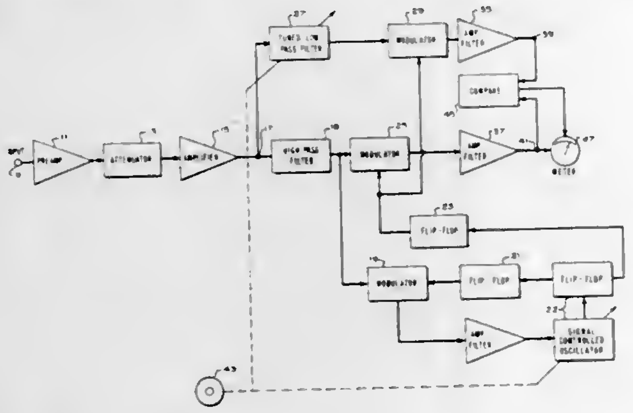
John David Middleton, Cuffley, England, assignor to Marconi Instruments Limited, English Electric House, Strand, London, England, a British company
Filed Sept. 9, 1966, Ser. No. 578,359
Claims priority, application Great Britain, Sept. 20, 1965, 39,998/65
U.S. Cl. 324—121 **2 Claims**
Int. Cl. G01r *13/20*



1. An oscilloscope instrument adapted to display a waveform having a scale on the waveform itself said instrument comprising a cathode ray display tube having at least two pairs of electro-static deflecting plates adapted to deflect the ray in the tube in one co-ordinate direction, at least one pair of electro-static deflection plates adapted to deflect said ray in the other co-ordinate direction, means for applying a voltage representative of a waveform to be examined between the plates of one of said two pairs, means for applying a voltage of a pre-determined frequency and pre-determined amplitude to one of the plates of the other of said two pairs, means for applying a voltage of a different pre-determined frequency which is in fixed relation to the first pre-determined frequency to the other plate of said other of said two pairs, and means for applying sweep voltage between the plates of said one pair, whereby upon application of the voltages of predetermined frequency, a time scale having a plurality of divisions extending from the waveform is electronically produced.

3,427,542
MODULATION PRODUCT REJECTION CIRCUIT

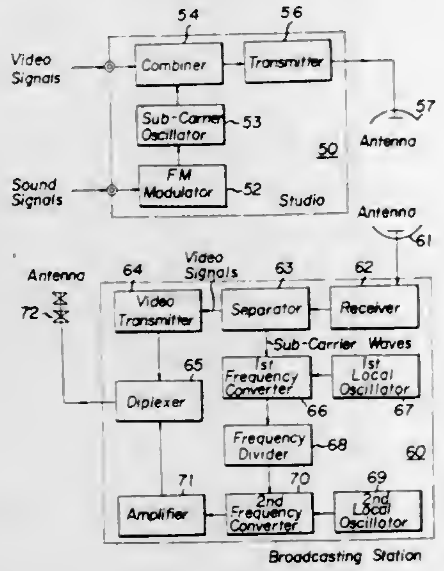
Raymond C. Hanson, Loveland, Colo., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 15, 1967, Ser. No. 623,260
U.S. Cl. 324—128 **3 Claims**
Int. Cl. G01r *23/00*



A tuned voltmeter circuit includes a meter channel which provides an indication of signal amplitude at selectable frequencies and includes an inhibit channel which discriminates against undesirable harmonics to prevent meaningless meter indications.

3,427,543
TELEVISION FM SOUND BROADCASTING WITH HIGH FREQUENCY DEVIATION IN ST LINK

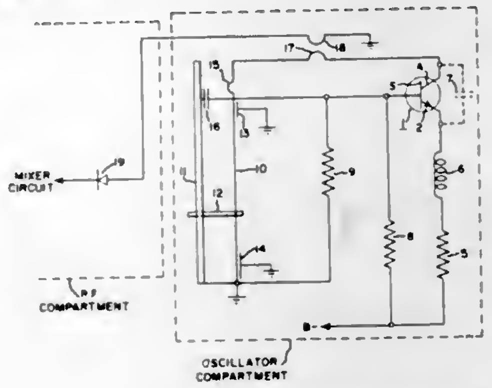
Kenichi Ito, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed May 28, 1965, Ser. No. 459,841
Claims priority, application Japan, May 29, 1964, 39/30,042
U.S. Cl. 325—7 **3 Claims**
Int. Cl. H04n *7/04*



A television sound broadcasting system including a studio and a broadcasting station interconnected by an ST link. In the studio there are provided a subcarrier wave oscillator, an FM modulator adapted to frequency shift output signals from said oscillator by means of a source of sound signals to an extent exceeding a prescribed maximum frequency shift of finally transmitted electric waves, a combiner to mix the output signals from said modulator and video signals produced in said studio, a transmitter modulated by the combined signal from said combiner and means to transmit the output signals from said transmitter to said broadcasting station. The broadcasting station is provided with a receiver adapted to receive and demodulate signals transmitted from said studio over an ST link, a separator adapted to separate said combined signals demodulated by said receiver into said video signals and said frequency modulated subcarrier wave signals, a video transmitter modulated by said video signals separated by said separator, a frequency divider to step down the frequency of said subcarrier wave separated by said separator to an extent to provide the maximum frequency shift desired for the broadcasted electric waves, means to mix the output signals from said frequency divider with the output signals from said video transmitter and means to radiate in the air said mixed signals as the television broadcasting electric wave.

3,427,544
ULTRAHIGH FREQUENCY OSCILLATOR FOR A TELEVISION TUNER

Adolf E. Wolfram, Jamesville, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,670
U.S. Cl. 325—453 **10 Claims**
Int. Cl. H04b *1/16*



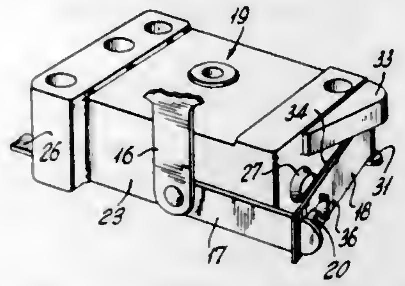
In a television tuner, an ultrahigh frequency transistor oscillator comprises a resonant transmission line including a single conducting line in parallel with and inductively coupled to a conductive shield plate which serves to separate various electronic components of a television receiver. A shorting bar intersects the single transmission line and the conductive shield plate and along with adjustable conductive tab members provides a tuning means for the resonant transmission line. The base electrode of the transistor oscillator is connected to a point on the conductive shield to provide a source of positive feedback from the phase shifted signal appearing across the conductive shield plate.

ERRATUM

For Classes 328—59 through 336—206 see:
Patents Nos. 3,427,555 through 3,427,578

3,427,545
CARBON-PILE RHEOSTAT OF THE FOOT OPERATED TYPE

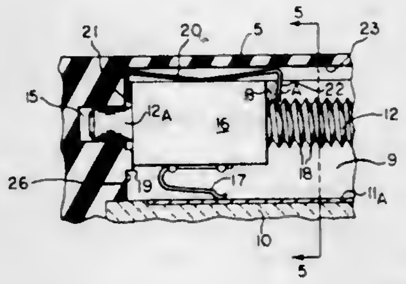
Samuel Tanzman, Great Neck Estates, N.Y., assignor to Mercury Electric Products Mfg. Corp., New Hyde Park, N.Y., a corporation of New York
Filed Nov. 9, 1967, Ser. No. 681,672
U.S. Cl. 338—108 **6 Claims**
Int. Cl. H01c *9/06*



A foot-operated rheostat of the carbon-pile type having a carbon-pile resistance element mounted in a ceramic block with one end of the resistance element being exposed for the making of electrical contact therewith and the application of pressure thereon and in which members for contacting and exerting pressure on said exposed end of the resistance element are pivotally mounted at their ends between a terminal strip and a portion of a ceramic block. One of said members being of an electrically conductive material such as brass and the other of said members being of a resilient material such as spring steel with the electrically conductive member being interposed between the exposed end of the carbon-pile resistance element and being moved into and out of engagement therewith in response to angular movement of the other of said members.

3,427,546
END OF TRAVEL INDICATOR VARIABLE RESISTANCE DEVICE

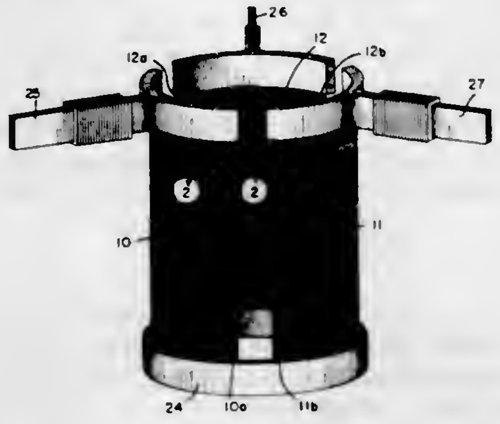
Leslie T. Peart, Santa Ana, and Charles W. Yungblut, San Diego, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Nov. 1, 1967, Ser. No. 679,919
U.S. Cl. 338—180 **2 Claims**
Int. Cl. H01c *5/02*



A variable resistance device including a resistance element mounted within a cavity of a housing and a conductive contact member supported for engagement with successive portions of the resistance element by means of a carrier block which is, in turn engaged by the threads of a threaded shaft. Stop means restrains movement of the carrier block between prescribed limits and a clicking mechanism, associated with the carrier block, indicates the condition wherein further rotation of the shaft produces no translational movement of the carrier block and its conductive contact over the resistance element.

3,427,547
ELECTRICAL HEATING ELEMENT

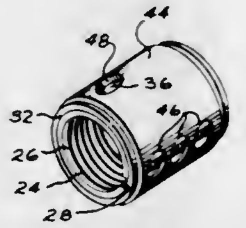
Wilfrid G. Matheson, Marblehead, and Theodore J. Pricenski, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 528,324
U.S. Cl. 338—208 **9 Claims**
Int. Cl. H01c *3/00*



Preventing distortion or warping of the edges of a self-supporting, plexus-type heating element is accomplished by turning an edge of the plexus back upon the plexus to form a less-warpable rib.

3,427,548
RESISTOR WINDING STRUCTURE

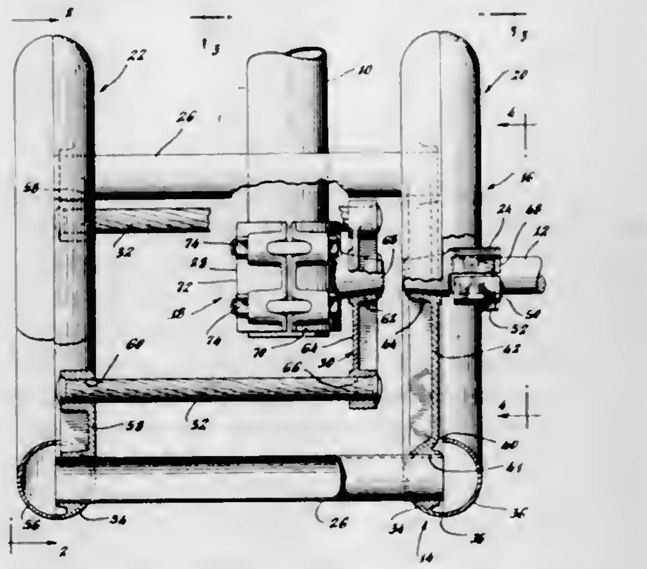
William I. Detweiler, Newbury Park, and Billie M. Connally, Granada Hills, Calif., assignors to Technology Instrument Corporation of California, Newbury Park, Calif., a corporation of California
Continuation-in-part of application Ser. No. 402,510, Oct. 8, 1964. This application June 12, 1967, Ser. No. 653,583
U.S. Cl. 338—256 **6 Claims**
Int. Cl. H01c *1/02, 3/00*



A resistance winding is formed on an expanded split mandrel, and a split insulating shell surrounds and is bonded to the winding by a layer of thermosetting material. The bonding is accomplished by heating, and the mandrel is removed. The shell is fitted in a housing which has openings aligned with the slot in the shell, to permit terminals to be conductively connected to selected portions of the winding intermediate the edges of the slot.

3,427,549
OMNIDIRECTIONAL EXPANSION CONNECTOR

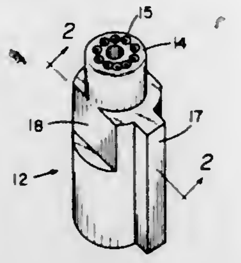
Irving F. Matthysse, Danbury, Edward S. Raila, Norwalk, William G. Osborn, Stamford, and John J. Brautigam, Darien, Conn., assignors to Burndy Corporation, a corporation of New York
Filed June 21, 1967, Ser. No. 647,751
U.S. Cl. 339—1 **9 Claims**
Int. Cl. H01r *7/26, 39/00;* **H02g** *15/08*



A connector for electrically and mechanically joining two relatively rigid conductors, such as bus bars, with provision for accommodating relative motion of the conductors such as is caused by expansion and contraction. An inner frame assembly, secured to one of the conductors, is disposed within an outer frame assembly which is secured to the other of the conductors, and the two assemblies are movably joined together by flexible coupling bars such as lengths of flexible stranded cable. The outer frame assembly includes corona protection in the form of spaced-apart shielding rings.

3,427,550
UNIT CARRIER

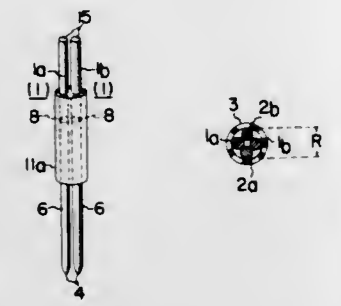
Robert W. Helda, Scottsdale, and Paul E. Scofield, Tempe, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 28, 1966, Ser. No. 582,725
U.S. Cl. 339—36 **9 Claims**
Int. Cl. H01r *13/60;* **B65d** *85/54*



Disclosed is a carrier for a unit having a plurality of deformable leads which are insertable into a corresponding plurality of passages within the carrier and transported and electrically tested in the carrier. At least one of the passages includes a portion thereof adapted to frictionally engage one of the leads and releasably retain the unit in the carrier during transport.

3,427,551
ELECTRICAL PIN CONNECTORS

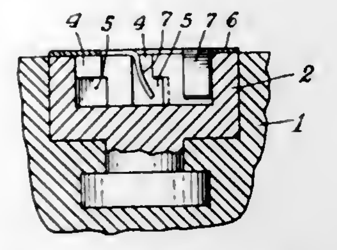
Shintaro Oshima, Musashino-shi, Tokyo-to, Japan, assignor to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Continuation-in-part of application Ser. No. 303,307, Aug. 20, 1963. This application Sept. 6, 1966, Ser. No. 577,313
U.S. Cl. 339—47 **5 Claims**
Int. Cl. H01b *25/04, 11/32*



An electrical connector arrangement in which a plug and receptacle are made of a resilient material in which is disposed a plurality of pin connector members each made of two parallel connectors each having an intermediate straight part or length coactive with another conductor in establishing an electrical connection. The pin connector members are arranged so that the conductors of the plug are at right angles to the conductors on the receptacle. Each pin connector member of the plug is disposed in a bore having a lesser diameter than the overall transverse dimension of the rim connector member portions that effect electrical connection so that when the plug has its pin connector members inserted into a respective bore the resilient material applies an elastic force circumferentially of the pin connector members and biases the conductors thereof toward each other since the force is applied toward the axis of the bore. A uniform force is thereby applied axially and circumferentially of the portions of the conductors defining the electrical connection region of the pin connector members. The pin connector members are anchored in the resilient material axially by stop means that allow the electrical contacting portions to be pivotal relative to the area of the stop means and thus allow the electrical connection.

3,427,552
ROTATABLE MOUNT FOR FLASHCUBES

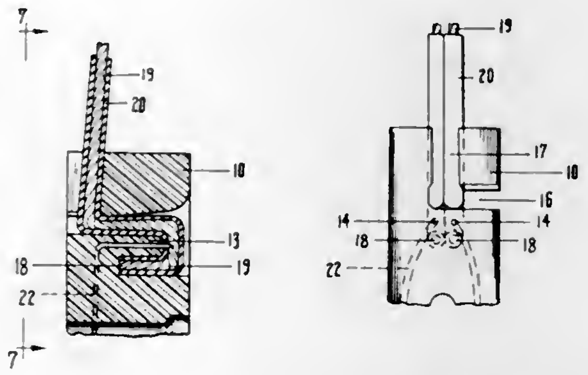
Edgar Sauer, Stuttgart-Rohr, and Gerhard Borner, Musberg, Kreis Boblingen, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed Mar. 22, 1967, Ser. No. 625,043
Claims priority, application Germany, Mar. 31, 1966, Z 12,143
U.S. Cl. 339—88 **6 Claims**
Int. Cl. H01r *13/54;* **F16b** *9/00;* **F16l** *37/24*



The rotatable mount for a flashcube is provided on its upper face with a disc from which one or more integral leaf springs extend into the mount opening into which the flash cube is inserted. These leaf springs engage the radial cams on the base of the flashcube and urge the same in engagement with an undercut abutment wall in the mount to lock the flashcube in operative position.

3,427,553
ELECTRICAL TERMINALS HAVING MEANS TO FACILITATE THE QUICK CONNECTION OF AN INSULATED CONDUCTOR THERETO

Joseph Smulowitz and Samuel Steinberg, Johannesburg, Transvaal, Republic of South Africa, assignors to Ramlink Holdings (Proprietary) Limited
Filed Feb. 28, 1967, Ser. No. 619,273
Claims priority, application Republic of South Africa, Mar. 9, 1966, 1,333/66
U.S. Cl. 339—97 **2 Claims**
Int. Cl. H01r *11/20, 13/58*

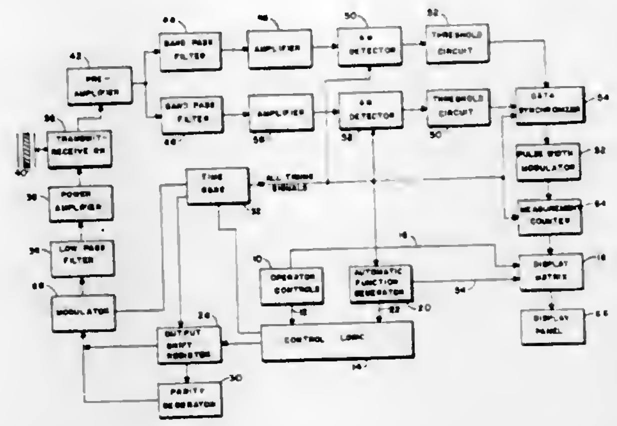


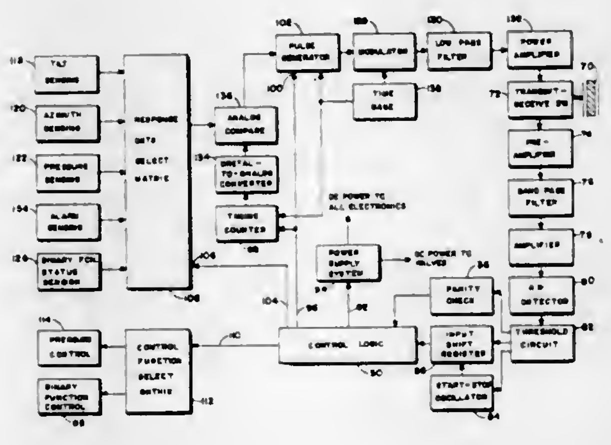
An electrical terminal for facilitating the connection of insulated wires to other wires or to electrical appliances. The terminal operates on the principle that the electrical connection between the wire and the terminal is effected by pointed prongs piercing the insulation to contact the wire. It is thus unnecessary to remove any insulation from the wires. By means of a series of passages in the terminal the connected wires are firmly gripped in the terminal.

3,427,554
CONTROL APPARATUS

James A. Lagoe, Woodinville, and Dan H. Kusaka, Seattle, Wash., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,861
U.S. Cl. 340—5 **7 Claims**
Int. Cl. H04b *11/00, 13/02*

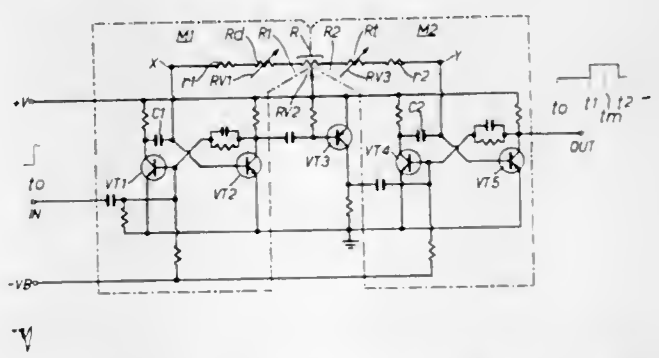
A system comprising a surface electronic unit, and underwater electronic unit, and an underwater battery unit wherein commands are generated either automatically or manually in acoustical codes by the surface unit and transmitted to the underwater unit. The underwater unit receives and decodes these commands executing a control function and generates and codes a new status word indicative of some condition in the remote unit and transmits it acoustically to the surface unit where it is received, decoded, and displayed.





3,427,555
PULSE GENERATORS

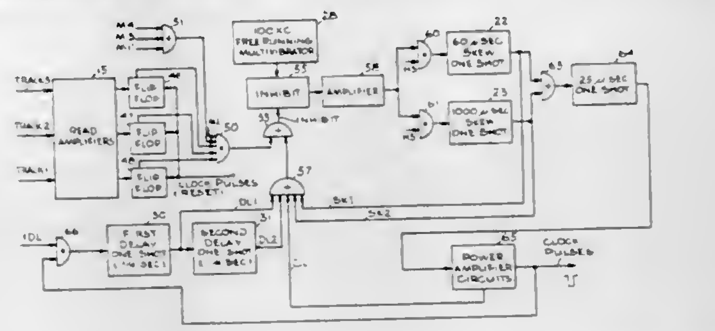
Stanley Frederick Clarke, Stuart Norman Radcliffe, and Anthony John Reeves, Essex, England, assignors to The Marconi Company Limited, London, England, a British company
Filed Nov. 12, 1965, Ser. No. 507,502
Claims priority, application Great Britain, Nov. 18, 1964, 47,039/64
U.S. Cl. 328—59 **9 Claims**
Int. Cl. H03k *3/04*



An adjustable pulse generator includes two triggerable monostable delay circuits, each including a capacitance the rate of charge of which determines the delay provided by the circuits and a resistance, the resistances forming part of a potentiometer, which may be adjusted to vary the rates of charge whilst maintaining the sum of the reciprocals of the two charging currents substantially constant.

3,427,556
SYSTEM FOR PROVIDING CLOCK PULSES AT VARYING RATES IN DEPENDENCE UPON DATA PULSES

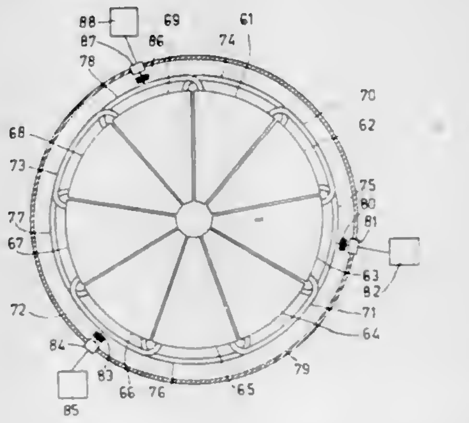
Alan K. Jennings, Anaheim, Ronald D. Cone, Saratoga, and Eugene Seid, Los Angeles, Calif., assignors to California Computer Products, Inc., Anaheim, Calif., a corporation of California
Original application May 21, 1962, Ser. No. 196,134, now Patent No. 3,199,111. Divided and this application Nov. 25, 1964, Ser. No. 413,906
U.S. Cl. 328—63 **3 Claims**
Int. Cl. H03k *3/04, 1/00, 17/00*



1. A system for clocking substantially coincident data pulses provided at different rates from a data source, dependent upon the mode of operation of the data source system, said system comprising a pulse source operating at a selected rate, inhibit gate means coupled to the pulse source and responsive to the data pulses for blocking passage of pulses from the pulse source on occurrence of data pulses, and pulse generator means responsive to pulses passed by the inhibit gate means and coupled to provide additional inhibiting pulses to the inhibit gate means, said pulse generator means providing pulses establishing different inhibit intervals in dependence upon the rate of the data pulses.

3,427,557
DEVICE FOR ACCELERATING PARTICLES

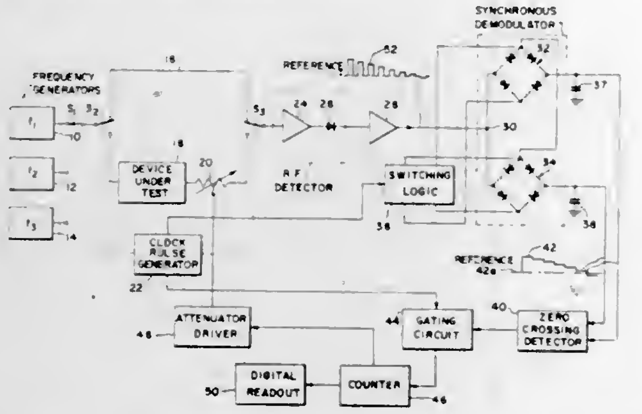
Rosario Aldo Speciale, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 541,766
Claims priority, application Netherlands, Apr. 22, 1965, 6505087
U.S. Cl. 328—234 **6 Claims**
Int. Cl. H05h *13/00*



A particle accelerating device of the cyclotron type employing at least three accelerating electrodes having equal aperture angles and comprising two opposing sections substantially in the form of sectors of a circle located on each side of a median plane. The electrodes are connected together in such manner that each electrode is connected, at its periphery, to two other electrodes located symmetrically relative to one of the electrodes. The connections, together with the electrodes constitute a delay line whose length is a whole multiple of a high-frequency wave on it and in which high frequency can circulate either in the same direction as, or in a direction opposite to the particles being accelerated. The delay line is coupled at a number of points not exceeding half the number of electrodes to a high-frequency generator.

3,427,558
SELF-BALANCING DIGITAL R.F. BRIDGE

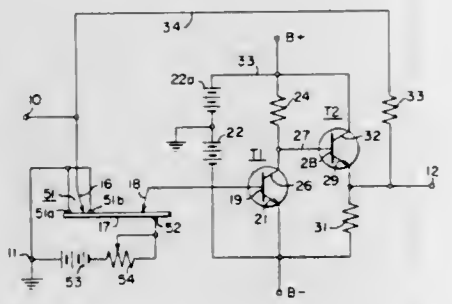
Samuel R. McCutcheon, Saratoga, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,303
U.S. Cl. 330—2 **2 Claims**
Int. Cl. G01r *23/00;* **H03f** *3/38*



Apparatus for testing electrical devices by comparing two channels, one containing the device under test, and the other containing a signal of a fixed predetermined frequency. The two channels are continually switched and compared. A variable attenuator is placed in series with the device and is continually varied in accordance with the difference between the output signal from the channel having the fixed predetermined signal and the channel having the device until the two signals are the same. The apparatus includes a digital readout proportional to the required amount of variation in the circuit containing the device as an indication of the gain of the device.

3,427,559
TUNABLE SIGNAL TRANSLATION SYSTEM USING SEMICONDUCTOR DRIFT FIELD DELAY LINE

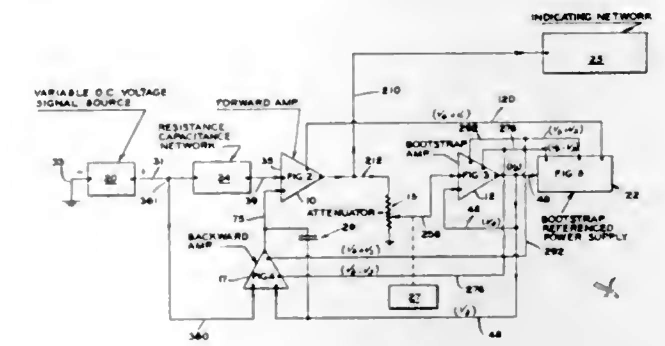
James R. Cricchi and Francis Rachal, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1966, Ser. No. 575,395
U.S. Cl. 330—21 **4 Claims**
Int. Cl. H03f *3/04, 1/38, 3/14*



Frequency selective signal translation apparatus having a grounded emitter, phase-inverting electronic amplifier such as a grounded emitter transistor, and an impedance matching device connected in a regenerative feedback loop to the input including a transport time delay line in the form of a semiconductor drift line provides a virtual phase shift in addition to the electrical phase shifting in the electronic amplifier in which an injector electrode on the delay line is interposed between two guard conductors or bars, on the delay line surface to reduce the non-linear effects of the forward biased injector on the drift field.

3,427,560
DIRECT CURRENT AMPLIFIER

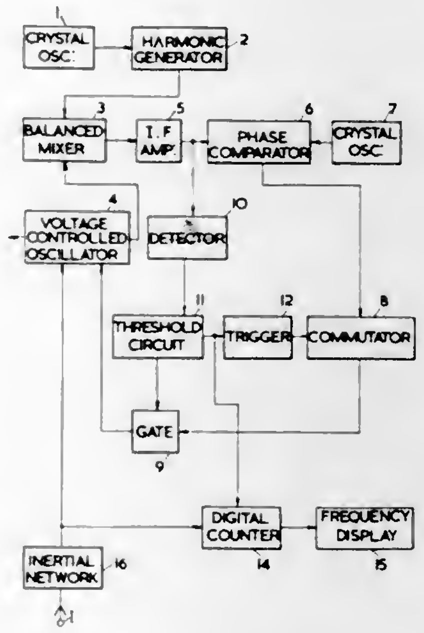
Ralph M. Pincus, Fort Lee, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,642
U.S. Cl. 330—69 **8 Claims**
Int. Cl. H03f *1/02, 21/00*


INDICATING NETWORK
VARIABLE D.C. VOLTAGE SIGNAL SOURCE
RESISTANCE CAPACITANCE NETWORK
FORWARD AMP
BOOTSTRAP AMP
ATTENUATOR
BACKWARD AMP
BOOTSTRAP REFERENCED POWER SUPPLY

An amplifier network including a first amplifier responsive to an input signal for providing a signal having high frequency response characteristics. A second amplifier imparts variable gain characteristics to the signal from the first amplifier and a third amplifier provides a signal in response to the signal from the second amplifier for affecting the first amplifier so that the signal therefrom is in accordance with a predetermined relation. The signal from the second amplifier is used to provide supply voltages to all of the amplifiers, and which supply voltages float above and below said second amplifier signal.

3,427,561
FREQUENCY SYNTHESISERS WITH STEPWISE CHANGEABLE OUTPUT FREQUENCIES

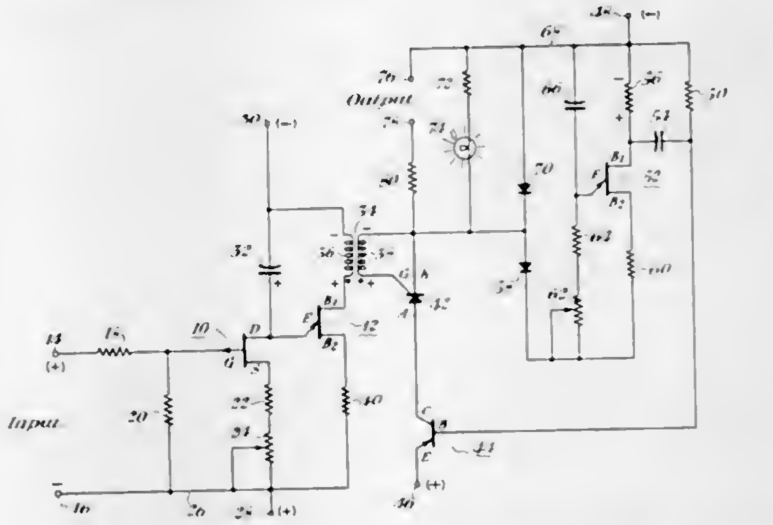
Ronald Hamer, Cheltenham, England, assignor to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Apr. 21, 1967, Ser. No. 632,625
Claims priority, application Great Britain, Apr. 22, 1966, 17,677/66; Nov. 25, 1966, 52,893/66
U.S. Cl. 331—19 **23 Claims**
Int. Cl. H03b *3/08, 3/04*



A synthesiser comprising a tunable oscillator phase or frequency locked to any one of a comb of harmonics, a frequency δf apart, produced by a stable oscillator and harmonic generator. The outputs from the harmonic generator and the tunable oscillator are mixed and passed through a band pass filter having a center frequency which may be any odd multiple of $\delta f/4$. The filter output is applied to a threshold circuit which is arranged to change the content of a counter by unity each time the frequency of the tunable oscillator is changed to another harmonic and the filter output reaches a predetermined threshold amplitude.

3,427,562
VOLTAGE CONTROLLED VARIABLE FREQUENCY RELAXATION OSCILLATOR

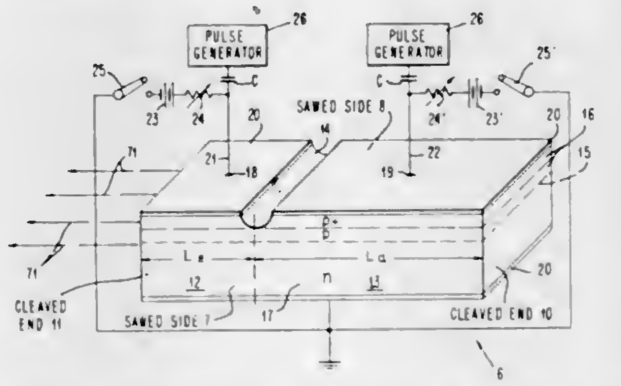
Peter A. Lajoie and Samuel S. Harbaugh, Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Oct. 26, 1966, Ser. No. 589,707
U.S. Cl. 331—111 **8 Claims**
Int. Cl. H03k *3/30*



Described is a direct current voltage to frequency converter employing a field effect transistor which enables the circuit to respond to both positive and negative input voltages. This converter may be coupled to a power switch to provide output pulses which can be integrated to provide an output voltage proportional to the input voltage.

3,427,563
MULTISTABLE DEVICE OPERATING ON THE PRINCIPLE OF STIMULATED EMISSION OF RADIATION

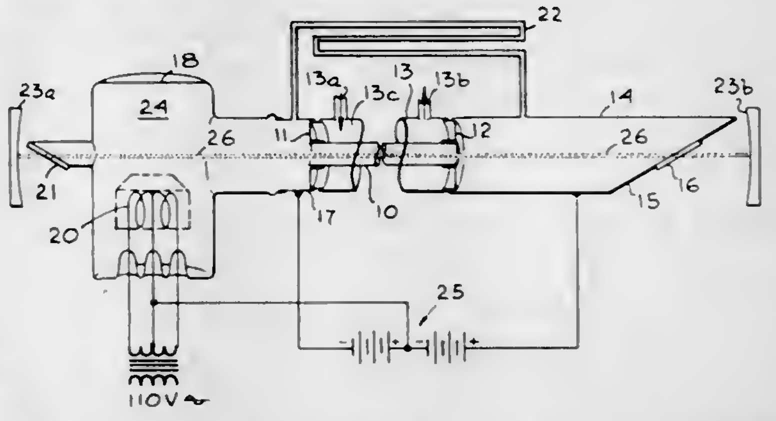
Gordon J. Lasher, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 13, 1964, Ser. No. 367,106
U.S. Cl. 331—94.5 **17 Claims**
Int. Cl. H01s *3/00, 3/16*



A multistable device is provided wherein a laser is combined with a non-linear absorber or a plurality of non-linear absorbers to achieve a bistable or multistable device. A Fabry-Perot injection laser comprising a GaAs crystal is divided into two electrically insulated portions by a slot parallel to the light reflecting sides of the crystal. An injection current just below the threshold is passed through the main contact of the laser and the other contact of such laser is biased so that a slight injection current flows through the junction portion beneath the contact; the second portion of the GaAs crystal effectively acts as a non-linear absorber of light. Under the above conditions, the injection laser has two states, the first state in which it emits coherent light when the non-linear absorber bleaches and the second state when only light by spontaneous emission takes place and the non-linear absorber absorbs such spontaneous light. By surrounding the injection laser with a plurality of non-linear absorbers, first states (emission of coherent light) can be created in more than one direction through the injection laser. The disclosure also applies to optically pumped lasers and masers that emit in frequencies other than the visible. The non-linear absorbers are then selected to suit the outputs of the masers.

3,427,564
HIGH-POWER IONIZED GAS LASER STRUCTURE

Akira Okaya, Pasadena, and William J. Kearns, Arcadia, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Sept. 29, 1965, Ser. No. 491,111
U.S. Cl. 331—94.5 **8 Claims**
Int. Cl. H01s *3/04*



1. A high-power ionized gas laser structure comprising: a cylindrically-shaped discharge tube made of an insulative heat-resistant material; a pair of annular-shaped metal caps respectively enclosing the ends of said discharge tube; a cylindrical jacket having spaced inlet and outlet ports mounted concentrically with said discharge tube, said jacket being made of an insulative material and being supported at the ends thereof by said caps; a pair of cylindrically-shaped metal members respectively mounted on said pair of caps on either side of said jacket and in alignment therewith; laser optical means respectively enclosing said members; cathode means mounted within the laser optical means enclosing one of said members; coolant means for causing a fluid to flow through said jacket via said inlet and outlet ports; and a pressure-equalizing tube intercoupling said members.

3,427,565
LASER ARRANGEMENT

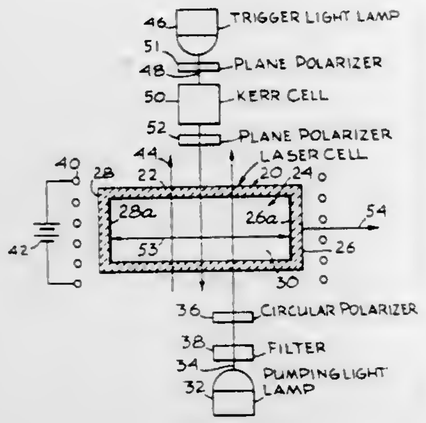
Milton Birnbaum, Palos Verdes, Calif., assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 18, 1963, Ser. No. 252,433
U.S. Cl. 331—94.5 **24 Claims**
Int. Cl. H01s *3/00*

1. In a pulsed laser of the type which emits a pulsed, coherent beam of electromagnetic radiation, the improvement comprising, in combination:

an optically orientable medium comprising a plurality of particles having predetermined allowable energy levels;

means for generating a beam of electromagnetic radiation having energy in a preselected wavelength and positioned to irradiate said medium with said beam of electromagnetic radiation to induce energy transitions of said particles from a first energy level to a second energy level different from said first energy level;

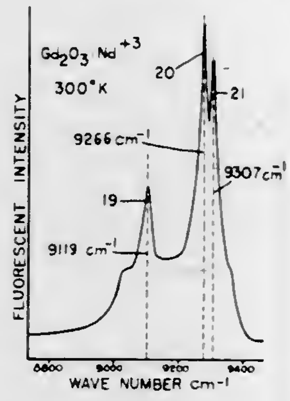
means for inducing energy transitions of said particles from said second energy level to a third energy level higher than said first and said second energy levels; and



means for inducing a stimulated energy transition of said particles from said third energy level to said first energy level whereby a coherent beam of electromagnetic radiation having energy in wavelength corresponding to the energy difference between said third energy level and said first energy level is emitted from said medium.

3,427,566
SOLID STATE LASER DEVICE USING GADOLINIUM OXIDE AS THE HOST MATERIAL

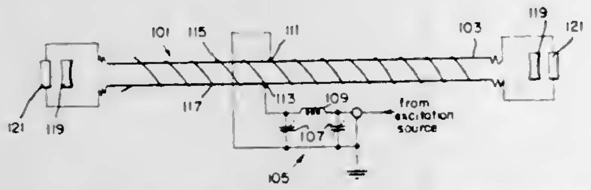
Raymond H. Hoskins, San Pedro, and Bernard H. Soffer, Northridge, Calif., assignors to Union Carbide Corporation
Filed Mar. 2, 1964, Ser. No. 348,612
U.S. Cl. 331—94.5 **10 Claims**
Int. Cl. H01s *3/00, 3/16;* **C09k** *1/04*



A solid state laser device including a host crystal of gadolinium oxide doped with from .01 to 10 atom percent of neodymium to provide the lasering ions is provided.

3,427,567
GASEOUS LASER DISCHARGE TUBE

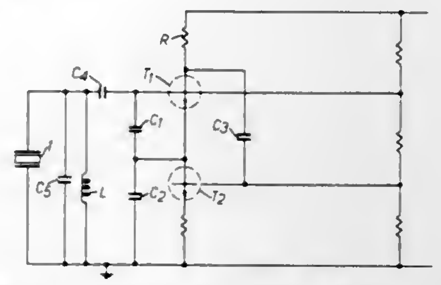
William B. Bridges, Thousand Oaks, and Peter O. Clark, Malibu, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 19, 1967, Ser. No. 642,647
U.S. Cl. 331—94.5 **8 Claims**
Int. Cl. H01s *3/00, 3/22*



This is a gaseous laser wherein a novel electrode arrangement is used for exciting a gaseous discharge. The laser comprises an elongated plasma container of a material through which electromagnetic energy of a desired frequency may propagate and wherein a gas to be excited is disposed. The novel electrode arrangement takes the form of a bifilar helix electrode configuration disposed about the container along substantially the length thereof. The electrode configuration is provided with terminals whereat alternating current electromagnetic energy at the desired frequency and of sufficient magnitude may be connected in order to excite the gas and cause a laser discharge.

3,427,568
TRANSISTORISED OSCILLATORS

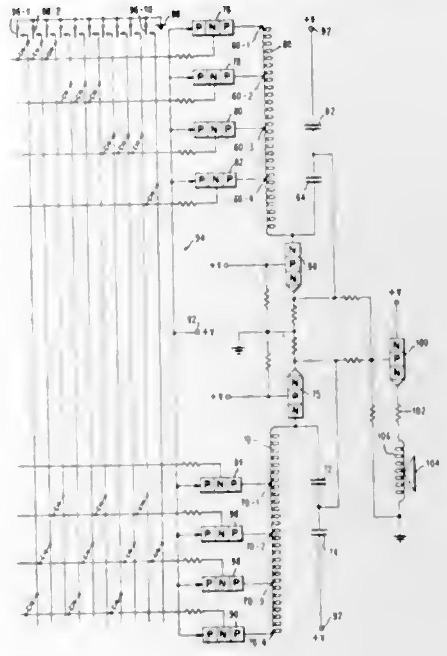
Hugh Henry Anthony Bath, Reigate, Surrey, England, assignor to Edwards High Vacuum International Limited, Crawley, Sussex, England, a British company
Filed Jan. 30, 1967, Ser. No. 612,580
U.S. Cl. 331—116 **4 Claims**
Int. Cl. H03b *5/36*



An oscillator having a piezo-electric crystal in its resonant circuit for use in conjunction with a monitoring device in vacuum deposition apparatus, in which a transistor oscillator has a constant current generator in the form of a further transistor in its emitter-collector circuit to increase the gain of the transistor oscillator. Feedback is provided between the collector of the oscillator transistor and the base of the further transistor to ensure stability and the crystal may be protected by being shunted by a path of low impedance to frequencies outside the design range of the oscillator.

3,427,569
OSCILLATOR APPARATUS FOR GENERATING TONE FREQUENCIES

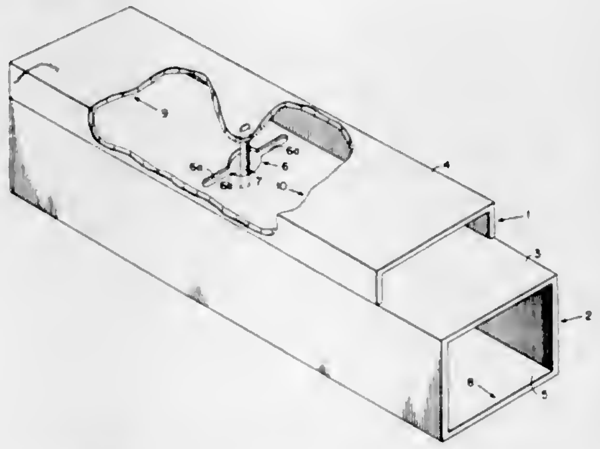
Paul Abramson, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 23, 1966, Ser. No. 604,244
U.S. Cl. 331—117 **4 Claims**
Int. Cl. H03b *5/00;* **G10h** *5/00*



This disclosure describes a device including an oscillator selected from a given class. The inductance coil of the oscillator includes a plurality of taps to each of which a uni-directional switch is connected. The coil is open-ended and when a switch is closed, the associated tap is connected to an electrical potential level such as a positive voltage source or ground. By connecting a given tap to such potential level the oscillator operates at an associated frequency. If a different switch had been closed, the potential level would be connected to a different tap and the oscillator would operate at a different frequency. The various possible operating frequencies are referred to as tones and are representative of the associated switches, which may in turn be associated with intelligence, for example, by being part of an alpha-numeric keyboard.

3,427,570
CONTRADIRECTIONAL WAVEGUIDE COUPLER

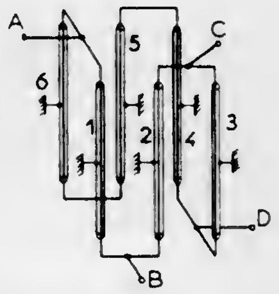
John S. Daglian, North Wales, Pa., John W. Grace, Las Vegas, Nev., and Carl P. Clasen, Cherry Hill, N.J., assignors, by mesne assignments, to the United States of America, as represented by the Secretary of the Army
Filed June 14, 1967, Ser. No. 646,125
U.S. Cl. 333—10 **4 Claims**
Int. Cl. H01p *5/14*



An arrangement for directionally coupling microwave energy between two parallel, rectangular waveguide sections sharing a common wall on a wide side of each waveguide. An elongated perforation through the common wall is normal to longitudinal axes of the waveguides. The perforation has an enlarged central portion, with a post extending from one of the waveguide non-common wide sides through the enlarged portion and into the other waveguide. Energy is coupled in one longitudinal direction in the waveguide in which the post is mounted from the other waveguide.

3,427,571
COAXIAL BRIDGE CIRCUIT

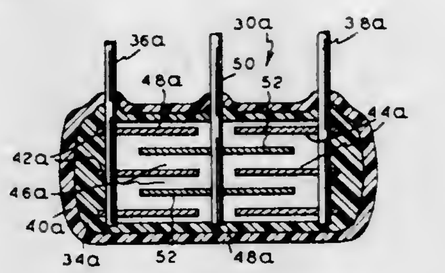
Jean Lattard, Boulogne-Billancourt, France, assignor to Ateliers de Montages Electriques, Paris, France, a corporation of France
Filed May 31, 1966, Ser. No. 553,764
Claims priority, application France, June 4, 1965, 19,646
U.S. Cl. 333—11 **8 Claims**
Int. Cl. H01p *5/12*



A hybrid coaxial junction circuit made up of parallel straight lines, each a quarter wave in length, the inner conductors of which are connected in series in a closed loop and terminals connected to the inner conductors between the straight lines except for three lines representing a branch three-quarters of a wave in length.

3,427,572
CAPACITOR-RESISTOR CONSTRUCTION

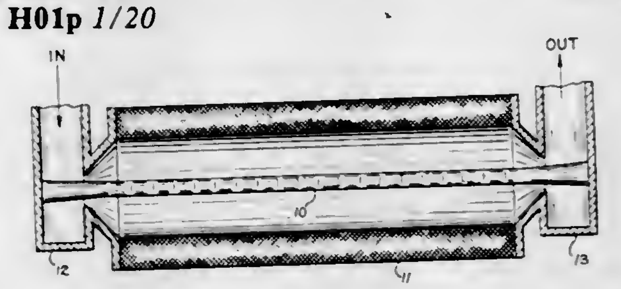
Charles C. Rayburn, Falls Church, Va., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original application Feb. 14, 1963, Ser. No. 258,449, now Patent No. 3,266,121, dated Aug. 16, 1966. Divided and this application Mar. 16, 1966, Ser. No. 534,826
U.S. Cl. 333—70 **7 Claims**
Int. Cl. H01g *3/19*



Capacitor-resistor combination has capacitor body wound of electrode foils and dielectric films with foils exposed at ends of capacitor. Lead wires are fastened to exposed foils and carbon resin material having resistive characteristics is deposited on outer surface of capacitor body so as to contact the foil end portions of the capacitor.

3,427,573
LOW-PASS NON-REACTIVE FREQUENCY SELECTIVE FILTER IN WHICH HIGH FREQUENCIES ARE ABSORBED IN DISSIPATIVE MATERIAL

Charles K. Birdsall, Lafayette, and Richard M. White, Berkeley, Calif., assignors to General Electric Company, a corporation of New York
Filed Nov. 26, 1963, Ser. No. 326,142
U.S. Cl. 333—73 **1 Claim**
Int. Cl. H01p *1/20*



1. An electromagnetic wave frequency filter system comprising:

(a) coaxial microwave transmission line means providing a source of electromagnetic wave energy of mixed frequencies above and below a predetermined frequency limit;

(b) an input coupler including a tapered transition section;

(c) wave filter means connected to said source of electromagnetic wave energy by said input coupler for filtering waves of frequency above said predetermined frequency limit from said wave energy while transmitting waves of frequencies below said predetermined frequency limit, said tapered transition section being connected directly thereto, said filter means including:

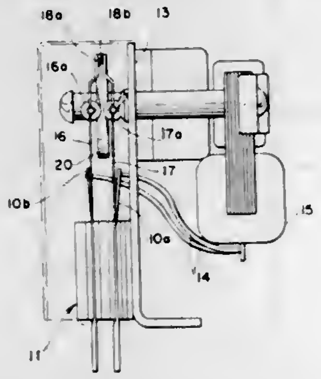
(1) a periodic wave transmission means having a pitch substantially equal to twice the length of a wavelength corresponding to the upper frequency limit so that said transmission means is at least partly open and electromagnetic waves below said predetermined frequency limit propagate along said transmission means and electromagnetic waves above said predetermined limit are radiated from said transmission means, said periodic means being a helix and

(2) a cylindrical electromagnetic wave energy absorptive structure surrounding said helix and positioned in spaced relation thereto for inserting and absorbing the electromagnetic wave energy radiated from said transmission structure, and

(d) an output coupler including a tapered transition section connected to said helix,

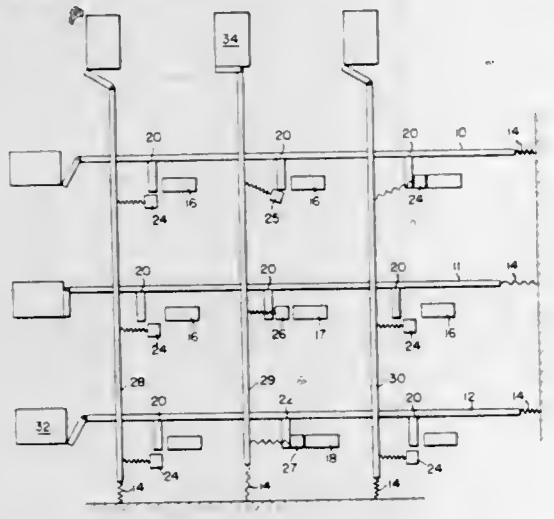
(e) means connected to said output coupler for receiving the electromagnetic waves propagated along said periodic wave transmission means.

3,427,574
CAM OPERATED SWITCHING APPARATUS
Arthur W. Haydon, Huntington, and Milton N. Ives, Wolcott, Conn., assignors, by mesne assignments, to Tri-Tech, Inc., Waterbury, Conn., a corporation of Connecticut
Filed Apr. 28, 1967, Ser. No. 634,742
U.S. Cl. 335—73 **8 Claims**
Int. Cl. H01h *3/00, 3/42, 51/00*



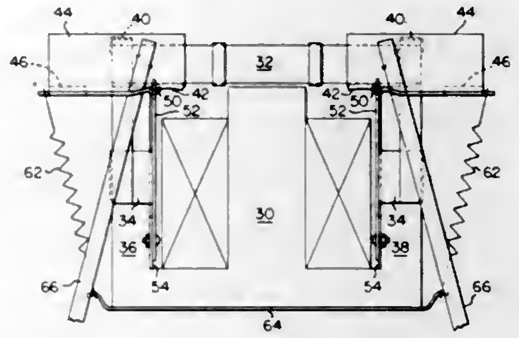
A cam operated contactor includes a pair of spring-mounted contacts having followers on their springs. The camming member comprises a disc between the two followers which has a groove on each face. The grooves are of varying depth and are arranged so that they jointly operate the contacts for a very short period of time.

3,427,575
MECHANICAL LATCHING ARRANGEMENT FOR ELECTROMECHANICALLY ACTUATED SWITCHING MATRIX
Farid M. Mustafa, Pittsford, N.Y., assignor to James Cunningham & Son Co., Inc., Honeoye Falls, N.Y., a corporation of New York
Filed June 28, 1967, Ser. No. 649,738
U.S. Cl. 335—112 **2 Claims**
Int. Cl. H01h *67/14, 67/00*



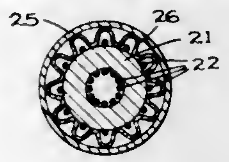
An electromechanical actuator is spring-biased toward its advanced position with sufficient force to pull up its load. It is normally disengaged from the load. To advance the load, the actuator is magnetically retracted and an interposer is drawn into place between it and the load, whereupon the magnetic force is released and the biasing spring readvances the actuator picking up the load. To release the load, the actuator is retracted and the interposer withdrawn.

3,427,576
CONSTANT FORCE ELECTROMECHANICAL ACTUATOR
Andrew W. Vincent, 65 Aberdeen St., Rochester, N.Y. 14619
Filed Feb. 6, 1967, Ser. No. 614,274
U.S. Cl. 335—276 **8 Claims**
Int. Cl. H01f *3/00, 7/08*



An electromechanical actuator including a lever between the armature and the load. The lever is supported on a floating pivot and includes a portion abuttingly engaged by the armature. The engagement is along a line upon a convexly curved surface carried either by the lever or by the armature. As the armature closes, the line of engagement moves closer to the pivot to shorten the effective lever arm and thus to compensate for the increased pull developed by the armature.

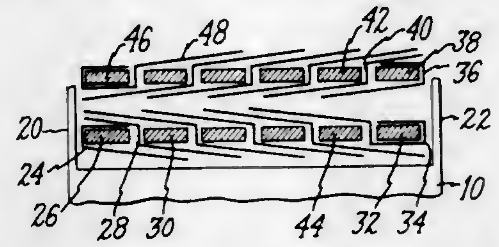
3,427,577
COOLING ARRANGEMENT FOR HIGH FREQUENCY LOW PASS FILTERS
Peter A. Denes, 9101 Crestwood NE., Albuquerque, N. Mex. 87112
Filed June 3, 1966, Ser. No. 555,047
U.S. Cl. 336—61 **14 Claims**
Int. Cl. H01f *27/08;* **H01h** *7/08;* **H01b** *7/34*



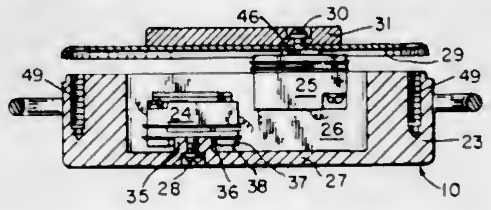
A cooling arrangement in the input inductor of high power, high frequency filters with toroidal core and coil and heat transfer elements in forms such as corrugations or vanes connecting core and casing. The heat transfer elements do not extend between the windings and the core. Therefore, a low temperature drop path is formed between the outside surface of said core and the inside surface of said casing with no substantial increase of the parallel capacitance of the winding or the parallel capacitance between the winding and the casing.

3,427,578
COIL WINDING OF BARE WIRE AND SEPARATE INSULATION AND METHOD OF MAKING SUCH COIL
Willard F. M. Gray, Hancock, and Frank S. Nichols, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Nov. 14, 1966, Ser. No. 598,142
U.S. Cl. 336—206 **5 Claims**
Int. Cl. H01f *27/30, 41/04*

A coil comprising an insulating tape and a bare wire wound together with the insulating tape providing a single thickness of tape between adjacent turns of bare wire and a plurality of thicknesses of tape between adjacent layers of the coil. The insulating tape is substantially wider than the bare wire and the bare wire is wound over each turn of tape substantially in the center thereof with portions of the strip of tape extending on both sides of the bare wire. The strip of tape at the beginning and end of each layer is folded over the bare wire to provide edge insulation.



3,427,579
UNDERWATER COMMUNICATION TRANSDUCERS
George J. Sebesta, Huntington Bay, N.Y. (200 Frank Road, Hicksville, N.Y. 10801)
Filed Oct. 6, 1966, Ser. No. 584,696
U.S. Cl. 340—14 **17 Claims**
Int. Cl. H04b *13/02*

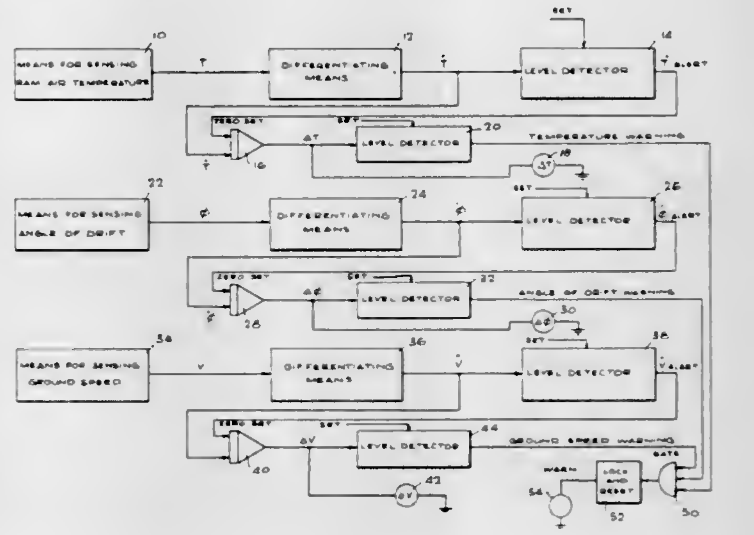


Wearable on one's head for microphone and/or reproduces operation. Two spaced diaphragms have either one or two inertial type of transducers suspended therefrom, in elastic coupling relation. The devices are enclosed and hermetically sealed; the diaphragm being exposed for operative contact. A flat stiffening member is attached to one diaphragm; serves as an efficient acoustic piston underwater. The submerged person, his ears being free-flooded, hears the sound directly through the water.

3,427,580
ELECTRICAL METHODS AND APPARATUS FOR WELL TOOLS
George W. Brock, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,977
U.S. Cl. 340—18 **23 Claims**
Int. Cl. G01v *1/40*

The particular embodiment described herein as illustrative of the invention shows methods and apparatus for use with a core slicing tool in a borehole. Various circuits for monitoring and controlling the core slicing operation are disclosed, as well as circuits for deriving directional and depth control information. Means are disclosed for transmitting information from a plurality of information sources in the tool on one conductor pair. Also, automatic bias control means at the surface of the earth are shown for accurately detecting the transmitted information. Power can be selectively applied to either the core slicing circuits or the directional and depth circuits on the same conductor set by providing two different power modes. Means in the tool are responsive to one or the other power mode to switch various circuits in the tool onto various cable conductors. Also, a plurality of core slicing operations are controlled from the surface of the earth on one conductor pair by utilizing switching means responsive to a plurality of current logic states. Additionally, a method of determining the overload operating point of a motor in a tool in a borehole is disclosed.

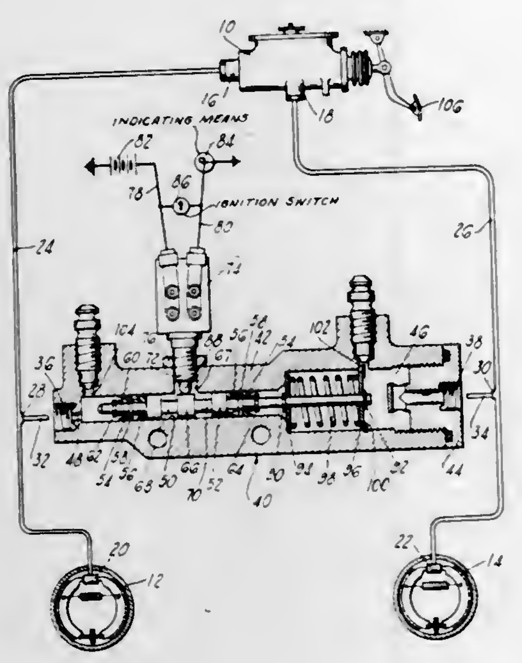
3,427,581
CLEAR AIR TURBULENCE DETECTOR
Richard H. Hartman, Woodland Hills, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Aug. 4, 1965, Ser. No. 477,221
U.S. Cl. 340—25 **10 Claims**
Int. Cl. G08g *5*



This invention comprises a means for monitoring a plurality of parameters that are indicative of clear air turbulence, e.g., ram air temperature, angle of drift, cross-track velocity, and ground speed. Means are also provided for differentiating signals indicative of the above-mentioned parameters to obtain the time rates of change of those parameters. Further means are provided to compute the change in each of the parameters during the period when its associated time rate of change exceeds a predetermined magnitude. When the change in the parameters, during the period its associated time rate of change exceeds a predetermined magnitude, also exceeds a predetermined amplitude, a signal is generated indicative of the presence of clear air turbulence.

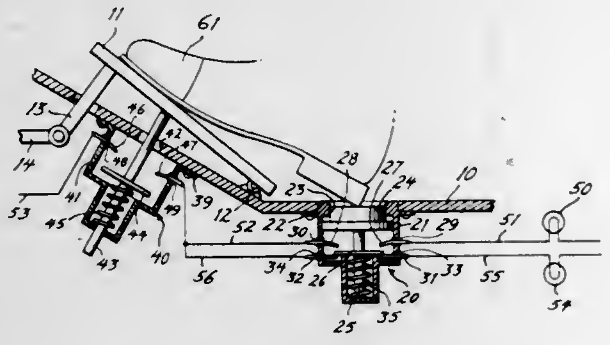
3,427,582
FAILURE INDICATING APPARATUS FOR A SPLIT BRAKE SYSTEM
Thomas A. Brandon, Jr., South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,712
U.S. Cl. 340—52 **10 Claims**
Int. Cl. B60q *1/50*

A pressure responsive means for a dual hydraulic system positioned by a caged spring and subjected to separate pressures at each end thereof having a switch means associated therewith so that upon a variance of pressure at each end thereof the shifting of the pressure responsive means will actuate the switch means to close an electrical circuit to an indicating lamp or similar device.



3,427,583
SAFETY SIGNAL FOR VEHICLES

James Zackey, 216 Charles Ave., Runnemede, N.J. 08078
Filed Nov. 1, 1967, Ser. No. 679,887
U.S. Cl. 340—66 **6 Claims**
Int. Cl. B60q *1/44, 1/50*

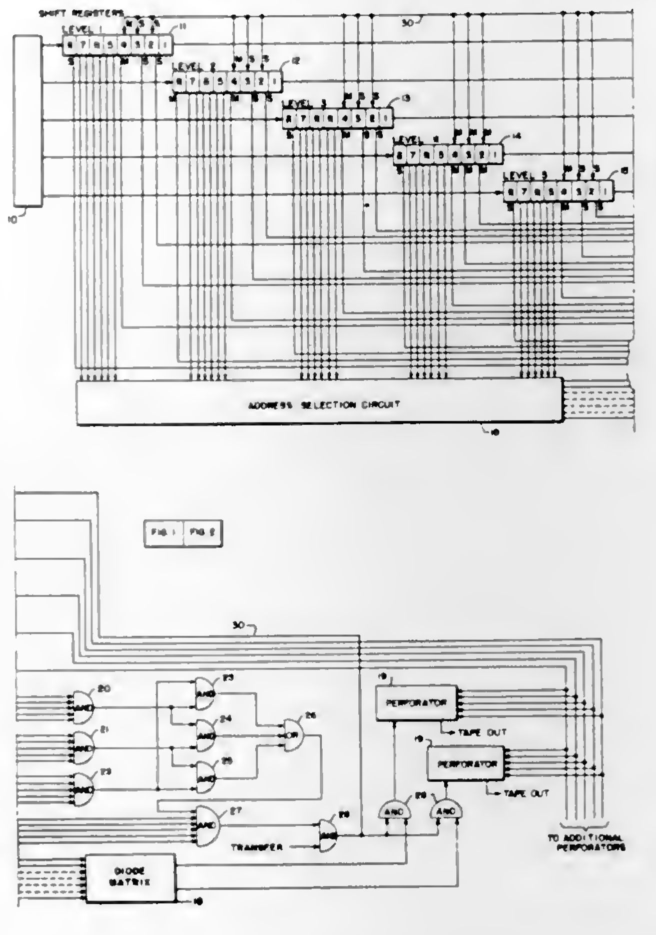


This invention is concerned essentially with a heel switch in the floor of a vehicle connected in a stoplight circuit to close the circuit and energize the stoplight when the driver's heel is removed from the floor, but without energizing the stoplight upon mere raising of the foot from the accelerator pedal.

3,427,584
SIGNAL SEQUENCE CORRECTION SYSTEM

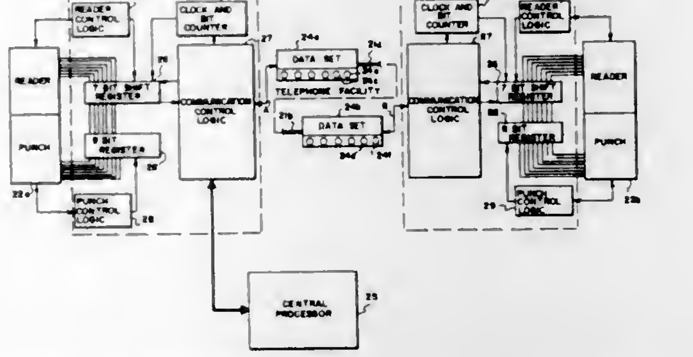
Alfons Reszka, Northbrook, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,735
U.S. Cl. 340—146.1 **6 Claims**
Int. Cl. G08b *29/00*

A communication system used in the distribution of messages, each having a predetermined sequence of signals included in an address portion of the message, includes a temporary storage device in the form of a shift register having sufficient capacity to store at least the predetermined sequence of signals. Recognition of this predetermined sequence of signals or certain variants thereof in predetermined stages of the shift register by a set of coincidence gates produces an output signal which is supplied to the predetermined stages of the shift register to change the sequence stored therein to the predetermined sequence if the stored sequence differs from the predetermined sequence.



3,427,585
DATA RECEIVING AND TRANSMITTING SYSTEM

Richard E. Milford, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed May 19, 1965, Ser. No. 456,939
U.S. Cl. 340—146.1 **18 Claims**
Int. Cl. G08b *29/00;* **H03k** *13/32*

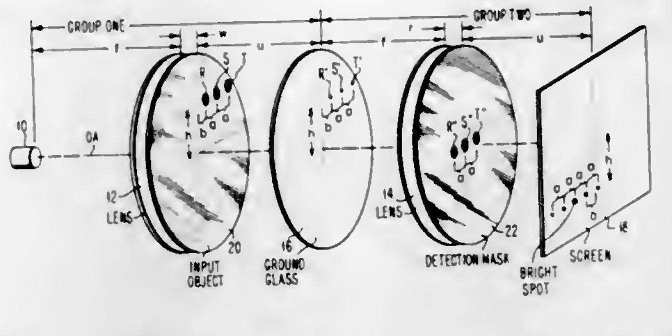


A system for sensing data in the form of characters and translating this data into a sequence of signals representing a character followed by an inverse image of the character in order to make a bit by bit comparison of the character and its inverse image to identify error conditions.

3,427,586
FRESNEL CORRELATION TECHNIQUE

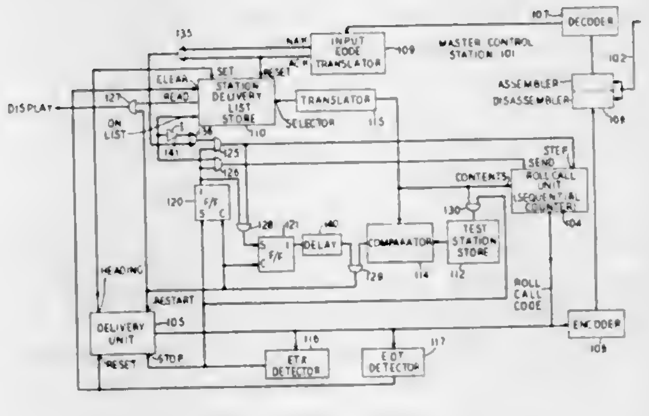
Adolf W. Lohmann, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,756
U.S. Cl. 340—146.3 **14 Claims**
Int. Cl. G06k *9/00;* **G02b** *1/00*

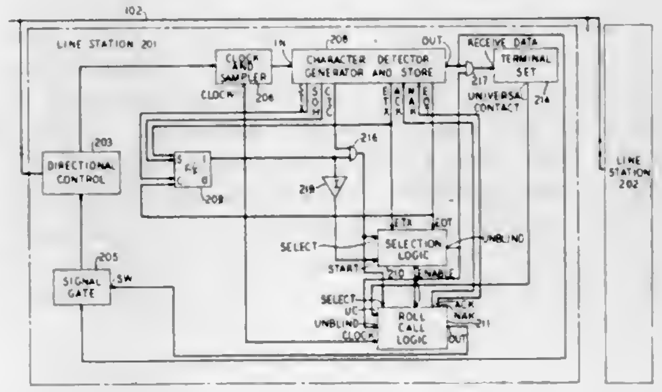
A space invariant character recognition system using Fresnel diffraction and an easily produced detection mask which merely has thereon an image of the actual character which one desires to detect: In this system an input object having characters thereon is placed next to a light diffusing element such as a piece of ground glass. A spatially and spectrally coherent light source is used to generate a Fresnel diffraction pattern of said characters on the light diffusing means. The light which is transmitted through the light diffusing means is used as a light source for a second optical system, which includes a mask which has the desired characters thereon. The second optical system generates a Fresnel diffraction pattern of the characters on the mask. Peak light intensities are created in the output plane at locations which correspond to the locations on said input object where a character corresponding to said desired character is located.



3,427,587
ROLL CALL ACKNOWLEDGMENT OF DATA STATIONS ON MULTISTATION LINES

David E. Carlson, Holmdel, and Edgar R. Robinson, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed July 7, 1967, Ser. No. 651,913
U.S. Cl. 340—147 **4 Claims**
Int. Cl. H04l *1/10;* **H04q** *5/00*

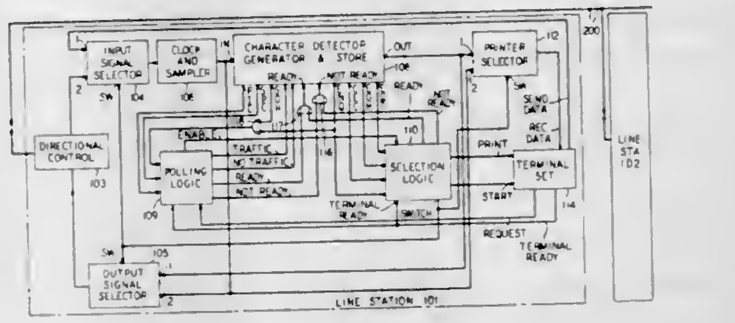


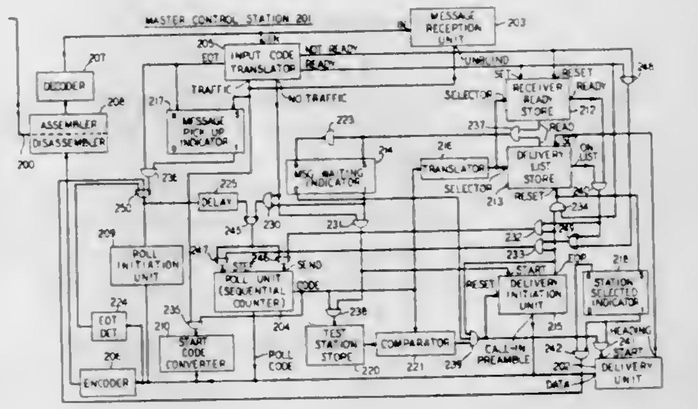


A data message is distributed to party line station recorders which are designated by call-in codes in the message heading. A master controller monitors the message heading and after the message text has been delivered provides a roll call of the designated stations which respond by indicating whether the recorder operated properly, thus providing assurance that the contents of the complete message text was recorded.

3,427,588
DISTRIBUTION OF MESSAGES TO DATA STATION RECEIVERS ON MULTISTATION LINES

Peter T. Mauzey, New York, N.Y., and Clarence J. Votaw, Elberon, and Herbert M. Zydney, Rumson, N.J., assignors to Bell Telephone Laboratories, Inc., Murray Hill, N.J., a corporation of New York
Filed June 29, 1967, Ser. No. 650,074
U.S. Cl. 340—147 **5 Claims**
Int. Cl. H04l *21/00*

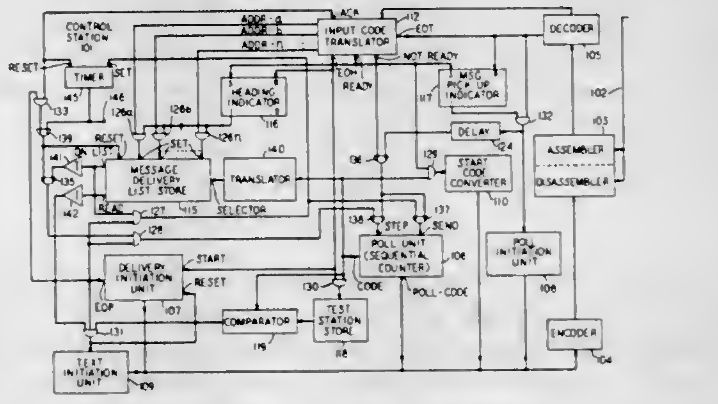




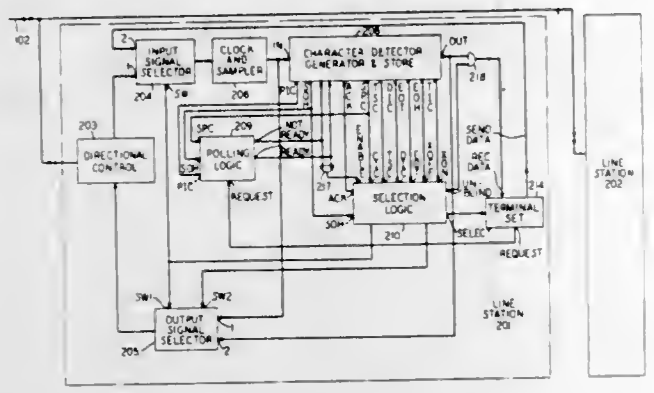
A master station polls party line data stations, each station responding by indicating whether the station transmitter has a message available and whether the station recorder is prepared to receive a message. To pick up messages, the master station selectively starts station transmitters having available messages. When distributing a message, the master station selects those station recorders which are designated by the message heading and which have indicated that they are prepared to receive.

3,427,589
ON-LINE DELIVERY OF DATA MESSAGES FROM A TRANSMITTER TO RECEIVERS ON THE SAME MULTISTATION LINE

Edgar R. Robinson, Middletown, Clarence J. Votaw, Elberon, and Herbert M. Zydney, Rumson, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 29, 1967, Ser. No. 649,947
U.S. Cl. 340—147 **5 Claims**
Int. Cl. H04q *11/20*

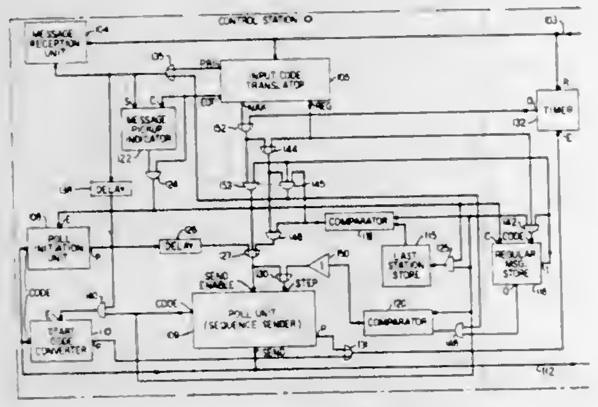


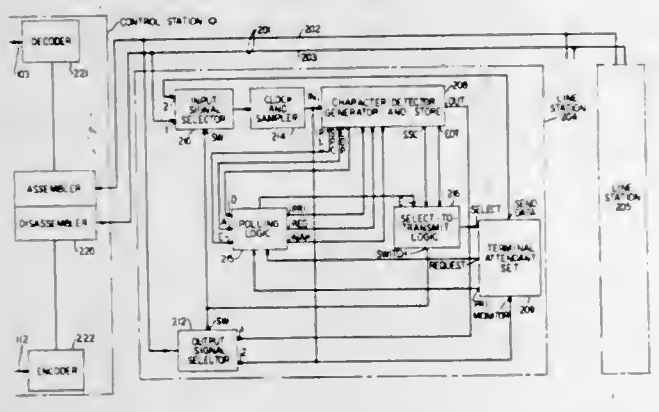
A master controller polls party line transmitters to determine whether they have data messages available, selects an available transmitter which sends the message heading, calls party line recorders designated in the heading and thereafter starts the transmitter to send the message text to the called recorders. Each recorder, when called, returns an acknowledgement which is noted by the master controller to provide assurance that the addressee stations receive the message.



3,427,590
PRIORITY AND REGULAR MESSAGE PICKUP FROM MULTISTATION LINE DATA STATION TRANSMITTERS

Peter T. Mauzey, New York, and Gabriel G. Schlanger, Bronx, N.Y., and Clarence J. Votaw, Elberon, and Herbert M. Zydney, Rumson, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 19, 1967, Ser. No. 639,799
U.S. Cl. 340—147 **7 Claims**
Int. Cl. H04q *11/20*

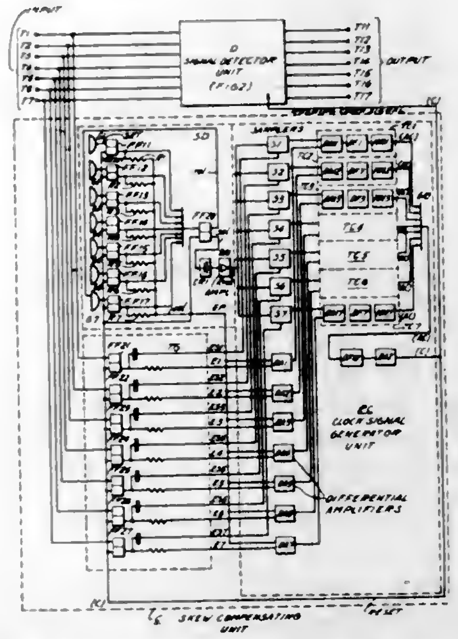




Station data message transmitters on a multistation line are sequentially polled by a master controller, each station responding thereto by indicating availability of a priority or regular message. The master controller starts each station transmitter having a priority message, stores the identity of the stations having regular messages and starts one of the station transmitters with a regular message after all priority messages have been collected.

3,427,591
SYSTEM FOR COMPENSATING TIME DELAY OR SKEW BETWEEN EQUIDIGITALLY CORRELATED MULTITRACK SIGNALS

Hideya Nishioka, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Mar. 18, 1966, Ser. No. 535,415
Claims priority, application Japan, Mar. 18, 1965, 40/15,993
U.S. Cl. 340—172.5 **3 Claims**
Int. Cl. G11b *13/00, 5/00*

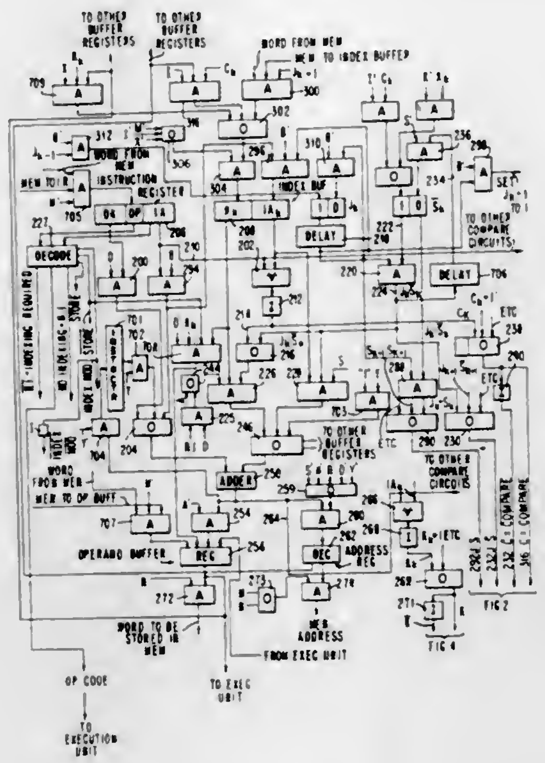


1. A system for compensating time delay or skew between equidigitally correlated multitrack signals, comprising input terminals for receiving the respective input signals, respective output pulse generating means connected to said input terminals and each having a pulse release control lead; delay-responsive means connected to said input terminals for detecting the time delay between said input signals, said delay-responsive means comprising conversion means connected to said respective input terminals for converting said input signals to respectively different quantities identifying the respective tracks; comparator means connected to said conversion means for detecting the track separation between the most advanced input signal and a subsequent signal of the same digit by comparison of said respective track-identifying quantities, said comparator means having an output signal dependent upon the result of the comparison; means for determining the time difference between said most advanced input signal and subsequent input signals; clock pulse generating means connected to said delay-responsive means for furnishing a clock pulse time-positionally controlled in accordance with said delay, said clock pulse generating means having a clock pulse output connected to said release control leads whereby delay between said input signals is compensated by time shifting of the output pulses; and logic circuit means forming from said comparison result and said time difference a control signal indicative of the amount of skew, said logic circuit means forming part of said pulse generating means for controlling the time position of said clock pulses in dependence upon said skew-indicative control signal.

3,427,592
DATA PROCESSING SYSTEM

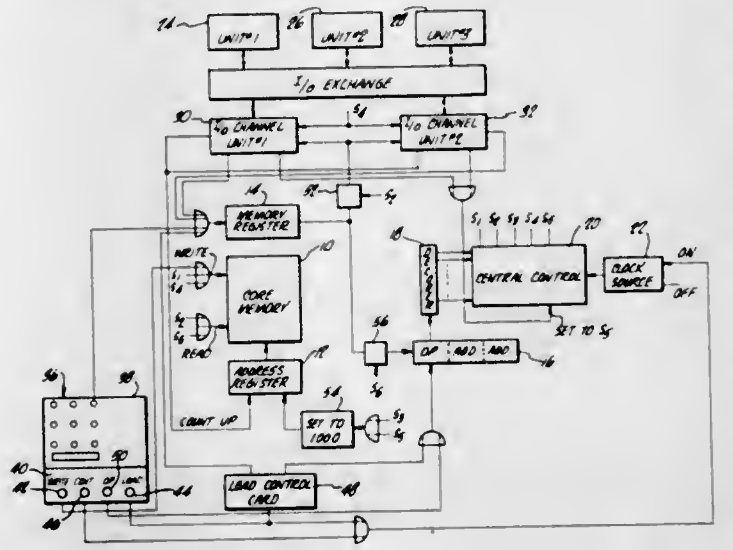
Ralph J. Bahnsen, Brighton, Mass., and John Cocke, Mount Kisco, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 858,520, Dec. 9, 1959. This application Nov. 12, 1964, Ser. No. 410,690
U.S. Cl. 340—172.5 **30 Claims**
Int. Cl. G11b *13/00*

1. A data processing system comprising means for storing a program instruction, said instruction including an operand address and an index address, memory means containing data stored at a plurality of memory locations, random access temporary storage means having plural sections each adapted to contain selected data and the memory address of said selected data, means for detecting a non-comparison between said index address and all of the memory addresses contained in said temporary storage means, means for determining the section of said temporary storage means containing the least recently acquired data, and means responsive to said non-comparison for storing in said section the data stored in said memory means at the location specified by said index address.



3,427,593
DATA PROCESSOR WITH IMPROVED PROGRAM LOADING OPERATION

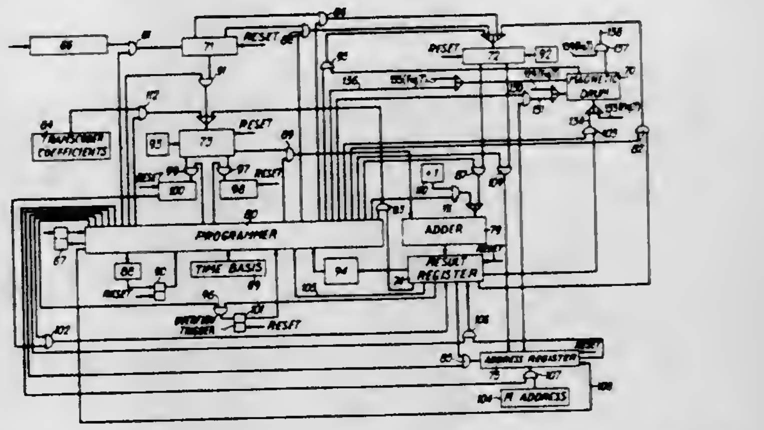
Frank W. Wells, Sierra Madre, and Roger E. Packard, Glendora, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 24, 1966, Ser. No. 537,149
U.S. Cl. 340—172.5 **9 Claims**
Int. Cl. G11b *13/00;* **G06f** *1/00*



There is described an arrangement by which instructions can be initially loaded into a high-speed memory from any one of a number of peripheral units in a computing system which normally requires a master control program to control the transfer of data between the peripheral units and memory. A keyboard control loads the necessary information in memory to effect the transfer of specified data from any designated peripheral unit to a predetermined portion of memory before the processors begin execution of any program.

3,427,594
SYSTEM FOR THE TRANSMISSION AND REGISTRATION OF TELEPHONE CHARGES

Jean Claude Lavenir, 144 Ave. des Etats-Unis, Versailles, France, and Jean Agasse, 45 Rue Charles Gounod, Palaiseau, France
Filed May 9, 1966, Ser. No. 548,458
Claims priority, application France, May 13, 1965, 16,842
U.S. Cl. 340—172.5 **3 Claims**
Int. Cl. G11b *5/00*

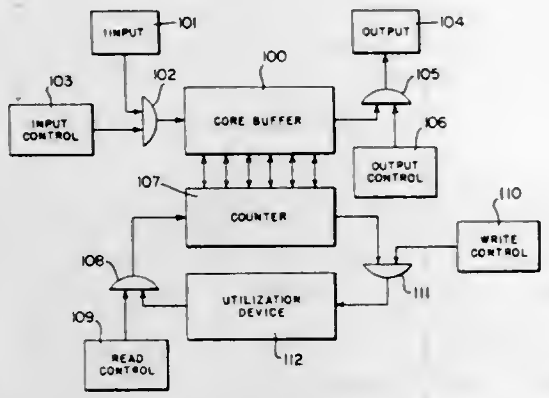


1. A centralized telephone system for charging the subscribers of a plurality of telephone exchanges comprising charge transmission centers associated with said telephone exchanges and a single charge reception and registration center, in said charge transmission centers means for transmitting from said charge transmission centers to said charge reception and registration center binary charge words formed at least by a communication charge, the address of the subscriber having applied for said communication and a check group, and in said charge reception and registration center, means for receiving said charge words, means controlled by the received check group for selectively initiating the repetition of said charge words, a memory having subscriber's compartments respectively associated with said subscribers and containing the binary coded accounts thereof and omnibus overflow compartments, means for adding the old account of a subscriber written in a memory subscriber's compartment to the charge of a communication he has applied for and which is contained in said charge word and deriving therefrom a new binary coded account, means for testing the digit number of said new account, means for writing-in the new account of the said subscriber in the memory compartment associated thereto when said new account is smaller than the subscriber's compartment capacity and means for writing-in a predetermined account equal to the subscriber's compartment capacity together with the subscriber's address in an overflow compartment and the difference between the new account and the predetermined account in the subscriber's compartment when said new account is larger than the compartment capacity.

3,427,595
INPUT/OUTPUT BUFFER

William H. Groth, Jr., Framingham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,857
U.S. Cl. 340—172.5 **8 Claims**
Int. Cl. G11b *13/00;* **G06f** *1/00*

There is provided an input/output buffer circuit which includes magnetic cores and semiconductors. The semiconductors and the core operate in a bistable mode to provide controllable storage.



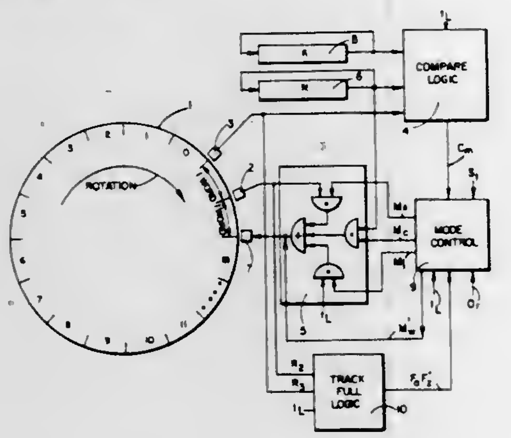
3,427,596
SYSTEM FOR PROCESSING DATA INTO AN ORGANIZED SEQUENCE OF COMPUTER WORDS

Theodore M. Hertz, Whittier, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Mar. 7, 1967, Ser. No. 621,234

U.S. Cl. 340—172.5 **13 Claims**

Int. Cl. G11b *13/00*



A system for processing data into an organized array by comparing data being processed with data comprising a stored array and inserting the processed data at a proper location with respect to the stored data comprising the array, whereby a desired array is achieved. The system comprises a serial storage medium having a storage track, or channel, and spaced transducers for forming a processing and reducible gap, or space, between adjacent words of the stored array. The gap has maximum spacing equivalent to the number of words being processed and may be reduced after each word has been inserted.

In certain systems, a single word may be involved, while in other embodiments a plurality of words may be involved. A particular system may require one additional rotation of the recording medium before the word can be inserted, while in other embodiments, the word is inserted during the same rotational cycle.

3,427,597
MAGNETIC AND ELECTROSTATIC RECORDING TECHNIQUE

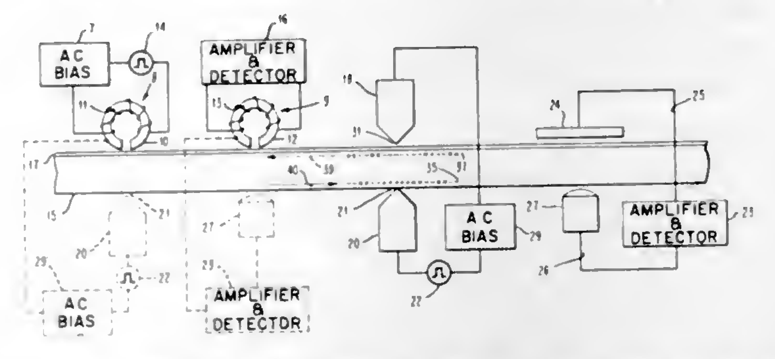
Tung C. Chen, Villanova, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 19, 1964, Ser. No. 353,095

U.S. Cl. 340—173 **13 Claims**

Int. Cl. G11b *5/00, 9/08*

This invention relates to an arrangement for increasing the storage capacity on a homogeneous recording medium by magnetically recording information on one side of the medium and electrostatically recording information on the other side of the medium. In one form of the system, the magnetic and electrostatic write heads are located on opposite sides of the medium so that the carcass of the magnetic write and read heads serve respectively as the return electrode for the electrostatic write and read head.



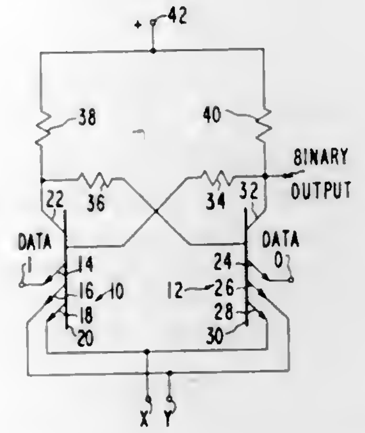
3,427,598
EMITTER GATED MEMORY CELL

James J. Kubinec, San Jose, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed Dec. 9, 1965, Ser. No. 512,628

U.S. Cl. 340—173 **5 Claims**

Int. Cl. G11b *9/00*



1. A signal storage and processing apparatus comprising:

first and second MET's each having at least first, second and third emitter and base and collector electrodes;

a first source of matrix drive signal having two stable states, one active and one inactive state(coupled to the first emitters of both said MET's;

a second source of matrix drive signal having two stable states, one active and one inactive state, coupled to second emitters of both said MET's;

a pair of data input signal sources coupled respectively to each of the third emitters of both said MET's;

means coupling the base of each MET to the collector of the other MET; and

a sense output circuit whose inputs are coupled to both said first and second matrix drive signals and to the collector of one said MET's, whereby said sense output circuit is enabled to receive data from one of said first and second MET's when both said first and second matrix drive signals are in the active state.

3,427,599
FAULT TOLERANT ADDRESSING CIRCUIT

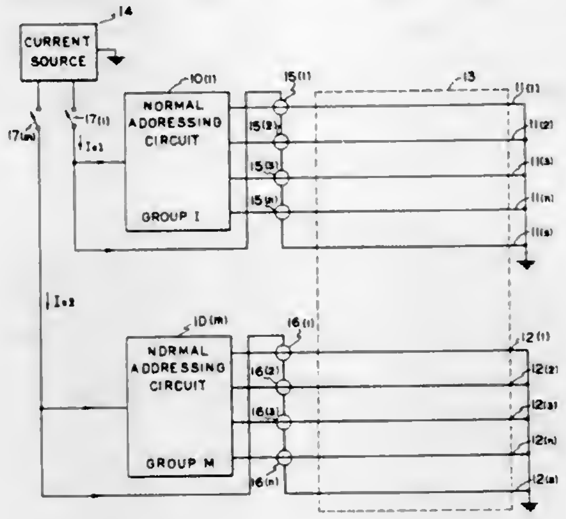
Bruce T. McKeever, Sunnyvale, Calif., assignor to General Electric Company, a corporation of New York

Filed Dec. 23, 1965, Ser. No. 515,845

U.S. Cl. 340—173.1 **6 Claims**

Int. Cl. G11b *9/00;* **H03k** *17/00*

4. In a memory system having a plurality of drive lines for addressing memory locations, the combination of: a plurality of normal drive lines for addressing a plurality of normal memory locations; a selection circuit normally operable to direct a drive current through a selected one of said normal drive lines; a spare drive line for addressing spare memory locations; and means operable in response to the failure of said selection circuit to address a normal drive line for directing a drive current through said spare drive line.



3,427,600
MAGNETIC FILM MEMORY CELL WITH ANGULARLY DISPLACED EASY AXES

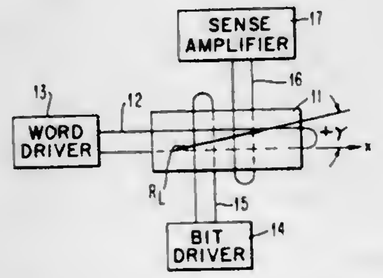
Simon Middelhoek, Kilchberg, Zurich, Switzerland, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 13, 1964, Ser. No. 410,929

Claims priority, application Switzerland, Nov. 27, 1963, 14,544/63

U.S. Cl. 340—174 **12 Claims**

Int. Cl. G11b *5/00*



A magnetic film memory cell wherein the detrimental effects of skew and dispersion are rendered negligible is provided by arranging two mutually coupled anisotropic magnetic films so that their respective easy axes are displaced from each other by an acute angle α not exceeding 50°, the magnitude of this angle α being such that $(\alpha-2\beta)$ exceeds γ, where β is the angular dispersion of the films and γ is the effective skew angle between the resultant easy axis of the two films and a standard or nominal direction thereof (as defined, for example, by a word drive line). The two magnetic films are separated from each other by a layer of non-magnetic material thick enough to prevent any substantial exchange coupling between these films.

3,427,601
DETECTOR SYSTEM AND DEVICE

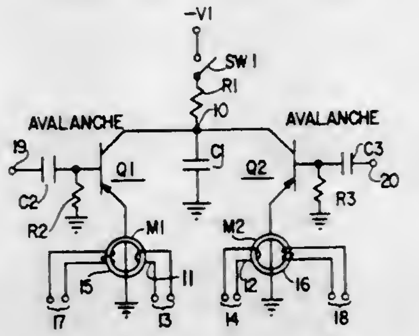
Vincent J. Korkowski, Minneapolis, Francis J. Belcourt, Shakopee, and Raymond H. James, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 24, 1964, Ser. No. 384,885

U.S. Cl. 340—174 **16 Claims**

Int. Cl. G11b *5/00*

A search memory employing a semiconductor detecting circuit. The detecting circuit comprises two semiconductors having first electrodes connected in common and second electrodes connected to a current return path. A capacitor is connected between said first electrodes and the return path and a switch and voltage source are provided for selectively charging the capacitor. Control signals may be selectively applied to third electrodes of the semiconductors. Upon receipt of a control signal a semiconductor fires and the capacitor discharges. Further control signals to either semiconductor have no effect unless the capacitor is first recharged. Magnetic cores inductively coupled to the return paths from the second electrodes develop the output signals.



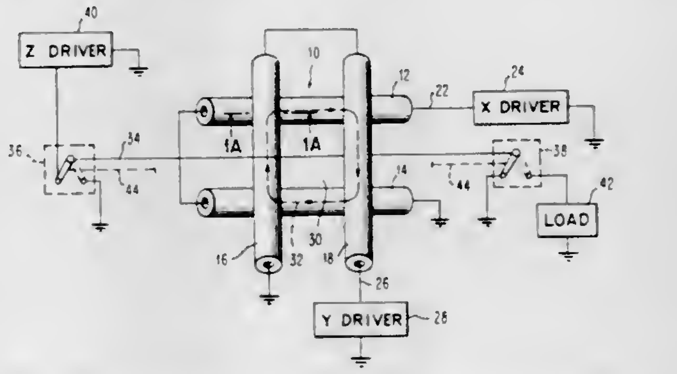
3,427,602
MAGNETIC SYSTEMS WITH MEMORY ELEMENTS CONSISTING OF TUBULAR MAGNETIC MEMBERS ARRANGED IN APERTURE FORM

Wilbert L. Shevel, Jr., Peekskill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 26, 1964, Ser. No. 406,420

U.S. Cl. 340—174 **18 Claims**

Int. Cl. G11b *5/00*



The memory includes memory elements each of which is formed of four tubular magnetic members arranged to form an aperture. One winding is threaded through the aperture and the other windings are threaded through the tubular members. These windings are energized to store information by orienting the flux around the aperture in different directions and to read out the information stored; the windings may also be energized in different combinations to write information by orienting the flux around one or more of the tubular members. The magnetic switching for both write and read in either case is by rotation of magnetic moments so that high speed operation is obtained.

3,427,603
MAGNETIC THIN FILM SHIFT REGISTER

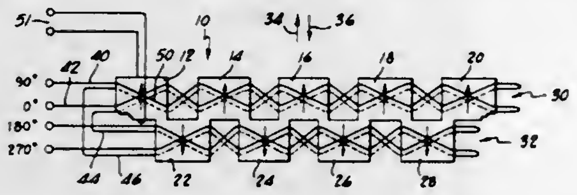
Irving William Wolf and Andre A. Jaecklin, Palo Alto, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 4, 1964, Ser. No. 387,426

U.S. Cl. 340—174 **6 Claims**

Int. Cl. G11b *5/20;* **G11c** *11/02*

A thin magnetic film memory having a multi-level array of magnetic bit sites magnetically coupled to each other, and including novel means for applying a magnetic field comprising shifting or propagating coils of an im-arranged in a zig-zag arrangement to enable domain wall proved configuration. The shifting coils on each level are

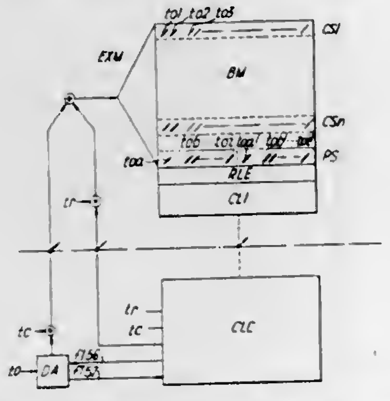


movement to take place bi-directionally depending on how the coils are energized.

3,427,604
SELECTION SYSTEM FOR ELECTRICAL CIRCUITS OR EQUIPMENT

Pierre Rene Louis Marty and Stanislas Kobus, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 20, 1964, Ser. No. 413,400
Claims priority, application France, Nov. 21, 1963, 954,539
U.S. Cl. 340—174 **11 Claims**
Int. Cl. G11b *5/00;* **H04m** *3/00*

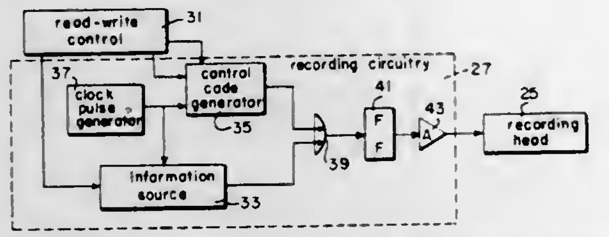


1. An electronic system comprising a plurality of control circuits for controlling various functions occurring during the operation of other circuits, means comprising memory cells in a memory matrix of magnetic core members for controlling said control circuits, means for recording in a pre-selector addresses of some free memory cells, means for putting a control circuit into service to control a particular one of said other circuits, and means for pre-selecting at least one free cell in said memory matrix to serve the control circuit that is put into service by using one of said recorded addresses of free memory cells.

3,427,605
APPARATUS AND METHOD FOR RECORDING CONTROL CODE BETWEEN DATA BLOCKS

Andrew Gabor, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Oct. 8, 1965, Ser. No. 494,084
U.S. Cl. 340—174.1 **17 Claims**
Int. Cl. G11b *5/00;* **G01d** *15/12*

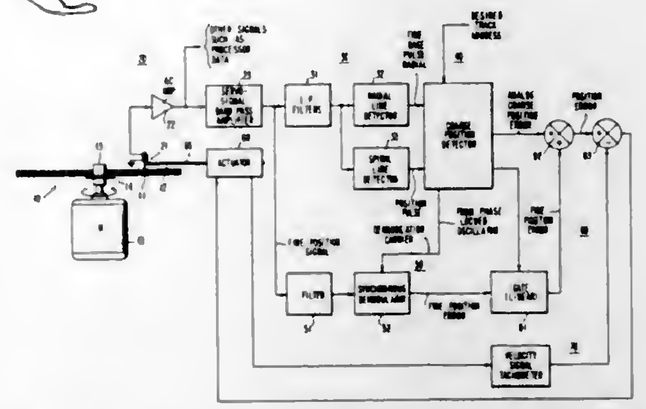


This specification discloses a magnetic storage system for storing information along magnetic tracks in a self-clocking non-return to zero mode. Means are provided to record a control code in the magnetic track between adjacent blocks of recorded information. The control code contains a pattern of flux transitions in which the number of adjacent short intervals which occur in a row is odd, which pattern cannot occur in the information recorded in the information blocks. Means are provided to read out the self-clocking, non-return-to-zero information and to separate the recorded clock pulses from the recorded information pulses. Means are also provided to recognize the control code recorded between the blocks of information.

3,427,606
MEMORY SYSTEM

Robert J. Black, Los Gatos, and Frank J. Sordello, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 2, 1966, Ser. No. 531,135
U.S. Cl. 340—174.1 **7 Claims**
Int. Cl. G11b *21/10*

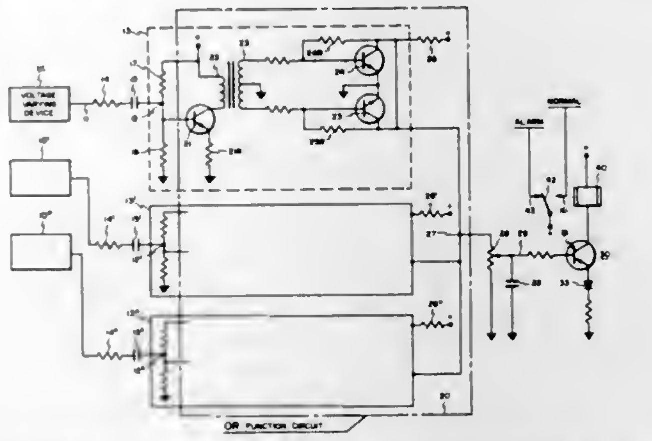


A servo system for the head of a magnetic disk to position the head over a desired data track. The data tracks are alternately interleaved with servo tracks. The servo tracks are all the same frequency but adjacent servo tracks are in phase opposition. Each servo track, in addition, utilizes for a coarse adjustment, phase reversals that define predetermined distances that identify, for coarse adjustment, the desired data track. Thus, the initial servoing of the head with respect to the data track is done when the desired coarse time length is read through the head. The fine adjustment is accomplished by the servo head reading the two sine waves in phase opposition. Thus, when complete cancellation occurs between the two servos, the head is over the data track. The fine adjustment continues to maintain the servo over the head and consequently, the read head over the desired data track.

3,427,607
VOLTAGE DEVIATION ALARM SYSTEM

Adolph G. Oesterle, Wyckoff, N.J., assignor to General Precision Systems Inc., a corporation of Delaware

Filed Apr. 7, 1966, Ser. No. 540,982
U.S. Cl. 340—248 **4 Claims**
Int. Cl. H03k *5/20*



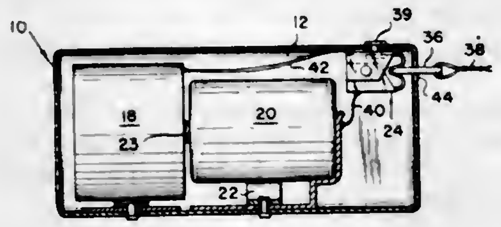
1. Apparatus for monitoring the performance of and for warning of failure of at least one of at least two servo amplifiers, each of which normally drive to a common null output including;

means individual to each servo amplifier for adjusting the output of the respective servo amplifier to a predetermined value when the output is at said common null value,
an OR gate having at least two inputs and an output said OR gate including,
at least two rectifier circuits, each respective rectifier circuit coupled to a respective input of said at least two inputs and each rectifier circuit coupled to said output,
means for coupling the output of each respective said adjusting means to a respective input of said at least two inputs for holding the respective rectifier circuit nonconductive when the output of the respective adjusting means is at said predetermined value and for driving said rectifier circuit when the output of the respective adjusting means is at a value other than said predetermined value,
a potential divider circuit including first and second resistors connected in series between a circuit supply and a return,
said output of said OR gate connected to a junction between said first and second resistors so that when any one of said rectifier circuits are conducting the potential at said junction is the value of said return and when all of said at least two rectifier circuits are nonconducting the potential at said junction is substantially above the value of said return,
means coupled to said potential divider between said junction and said return for developing a driving potential when the potential at said junction is above said return, and
means responsive to said driving potential for indicating the output of each of said at least two servo amplifiers is at said common null.

3,427,608
PORTABLE BURGLAR ALARM

Robert W. Green, 10346 Wood St., Chicago, Ill. 60643

Filed Aug. 6, 1965, Ser. No. 477,835
U.S. Cl. 340—274 **1 Claim**
Int. Cl. G08b *13/00, 13/08;* **H01h** *27/04*



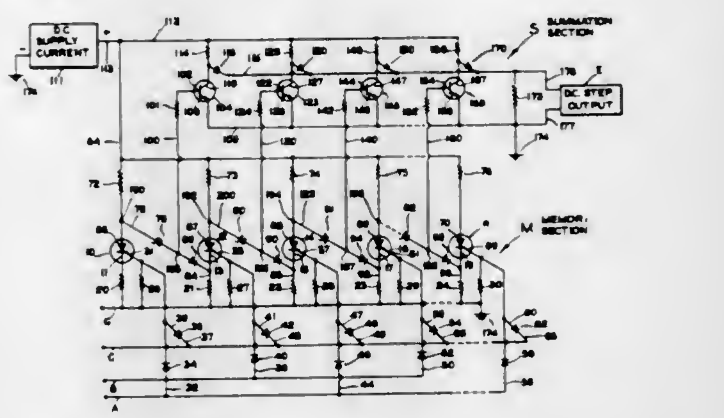
A self-contained portable alarm having power means, alarm means, and switch means within a portable housing, the switch means actuated to close the circuit to the alarm means by an external force on said switch.

3,427,609
ELECTRONIC STEP INTEGRATOR

Robert J. Molnar, New York, and Walter Parfomak, Brooklyn, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,803
U.S. Cl. 340—347 **11 Claims**
Int. Cl. H04l *3/00;* **H03k** *13/02*

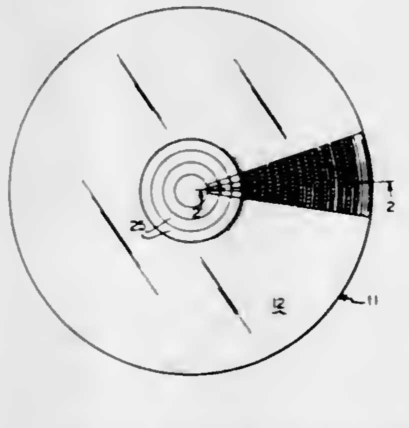
Means for providing a direct current step voltage output in response to alternately received pulsating input driving pulses. A silicon rectifier, responsive to an input pulse, causes a saturated transistor to be turned off resulting in a direct current voltage appearing on a collector of the transistor. The voltage is applied across a summing resistor as a direct current step voltage. A second input pulse causes a second silicon controlled rectifier to turn off a second transistor causing a second voltage to appear at the emitter of said second transistor increasing the direct current step voltage. In this manner subsequent stages can cause increases in the direct current step voltage in relation to the quantity of pulses being received. The silicon controlled rectifiers are so interconnected with diodes, Zener diodes and resistors that a subsequent silicon controlled rectifier cannot be fired unless the preceding silicon controlled rectifier has already been fired.



3,427,610
VEHICULAR SIGNAL LENS HAVING CONCENTRIC ANNULAR RINGS

Robert E. Dawson, Huntingdon Valley, Pa., assignor to R. E. Dietz Company, a corporation of New York

Filed June 16, 1967, Ser. No. 646,583
U.S. Cl. 340—383 **6 Claims**
Int. Cl. B60q *1/34*



A vehicular signal lens for a turn signal or stop light having a smooth, easily cleaned outer surface and a generally parallel inner base surface having thereon a plurality of concentric annular catadioptric rings. Each ring projects from the inner base surface and is generally cross-sectionally triangular, each having a light receiving and a light reflecting surface. One surface of each catadioptric ring is fluted, having a plurality of convex, like, contiguous curvatures of predetermined radius for spreading the apparent source of light from the lens along the catadioptric rings. The lens also has a bulls-eye of similarly fluted refraction type rings at the center.

3,427,611
LASER SYSTEM

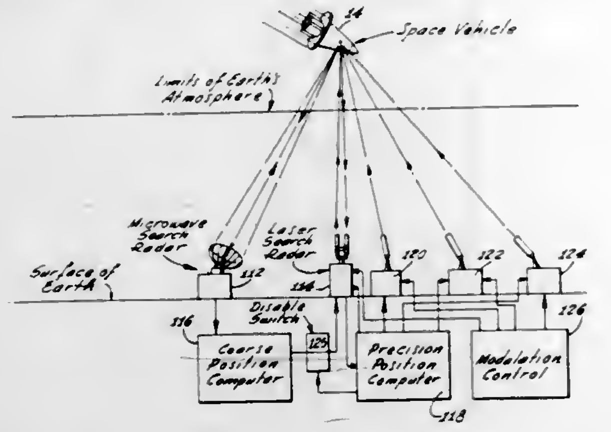
Norman H. Enenstein, Tarzana, Calif., assignor to Litton Industries, Inc., Beverly Hills, Calif.

Filed Aug. 15, 1962, Ser. No. 217,161
U.S. Cl. 343—6 **7 Claims**
Int. Cl. G01s *9/62*

4. In a directive radiant energy emissive system:
a coarse microwave radar object-location apparatus;
a fine laser-radar object-location apparatus;
an array of lasers;

means for directing said laser object locator from said microwave radar;

means for disabling said microwave radar upon accurate orientation and locking of said laser object locator;



means for directing a plurality of the lasers of said array from said laser-radar; and

means for triggering said lasers to direct energy to reach said tracked objects at the same time.

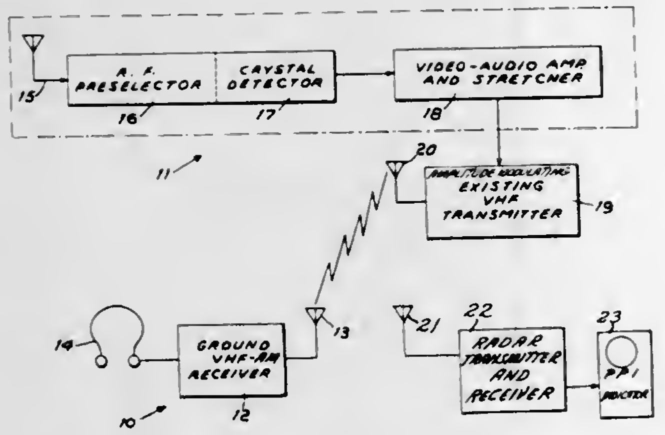
3,427,612
AIR TO GROUND RADAR TARGET IDENTIFICATION SYSTEM

John Vander Horn, Wyckoff, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Apr. 28, 1966, Ser. No. 545,970

U.S. Cl. 343—6.5 **3 Claims**

Int. Cl. G01s *9/56*



A radar target identification system wherein a transponder located within a target vehicle generates a tone in response to a radar burst from a radar control station. The tone is "patched" into the VHF voice channel in the target vehicle and transmitted to the radar control station wherein it is heard on the radar controller's headphones as a "beep" coincident with the indication of the target on the radar indicator at the control station.

3,427,613
OBJECT IDENTIFICATION SYSTEM

Masao Kawahara, Kawasaki-shi, Yoshitsugu Ono, Yokohama-shi, and Johji Sakuragi, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

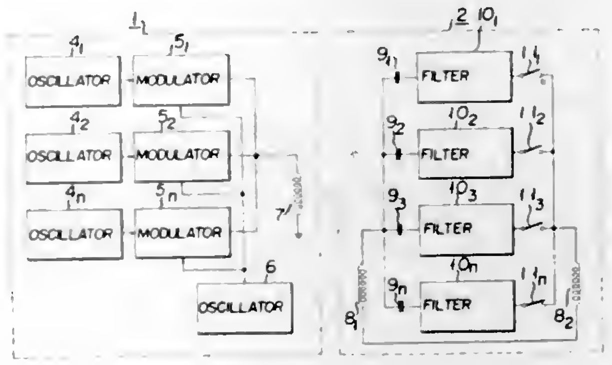
Filed Feb. 27, 1967, Ser. No. 618,957

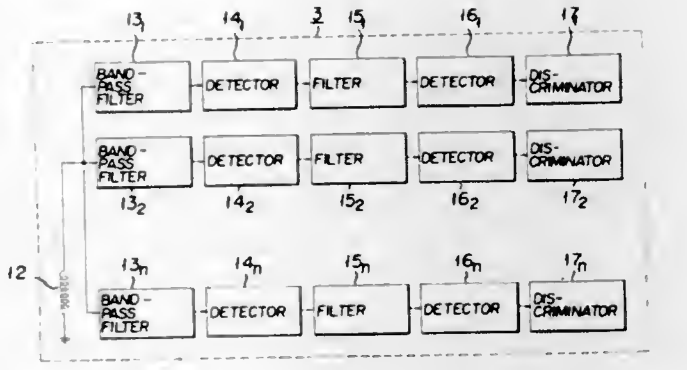
Claims priority, application Japan, Mar. 2, 1966, 41/12,215; Mar. 25, 1966, 41/18,478

U.S. Cl. 343—6.5 **16 Claims**

Int. Cl. G01s *9/56*

Signals of different frequencies are angle-modulated and transmitted to the object to be identified. The object is provided with tuning circuits which select the several signals indicating a specific object through a combination code among the received signals. The signal having passed through the tuning circuits is reflected out to the receiver. The receiver then detects only a distortion component that has been produced as the angle-modulated i.e., phase-angle modulated signals passed through the tuning circuits, then interprets the code consisting of a combination of frequencies of the said distortion so as to identify the object correctly, and identify the object whose *S/N* ratio is very large.





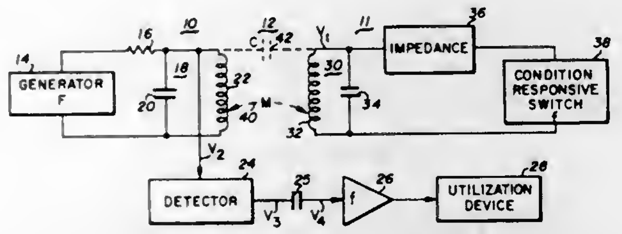
3,427,614
WIRELESS AND RADIOLESS (NONRADIANT) TELEMETRY SYSTEM FOR MONITORING CONDITIONS

Jorgen P. Vinding, 18780 Withey Road, Monte Sereno, Calif.

Continuation-in-part of application Ser. No. 497,181, Oct. 18, 1965, which is a continuation-in-part of application Ser. No. 453,939, May 7, 1965. This application Apr. 26, 1967, Ser. No. 633,798

U.S. Cl. 343—6.5 **14 Claims**

Int. Cl. G01s *9/56*



A telemetry system which includes a transmitter having a transducer for converting the condition being monitored into an alternating current condition signal whose frequency is a measure of the condition monitored, and a tuned coupling circuit which is detuned or loaded at the frequency of the condition signal. The telemetry system further includes a receiver having an excited tuned coupling circuit which is inductively or capacitively, or partially inductive and capacitively, coupled to the transmitter coupling circuit and therefore reacts to the detuning or loading of the transmitter coupling circuit. This reaction is a modulation at the frequency of the condition signal and is detected by the receiver to provide a measure of the condition being monitored.

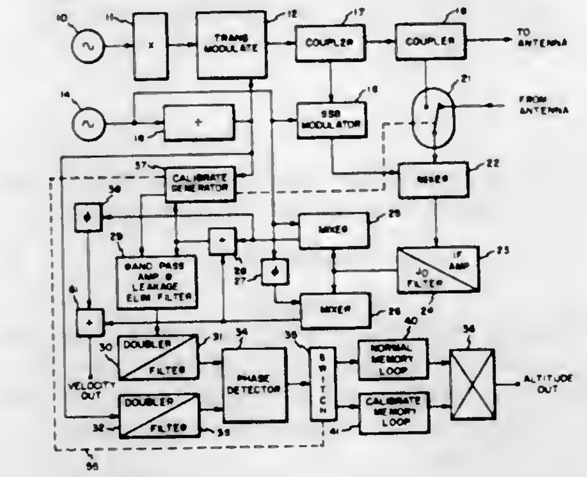
3,427,615
DOPPLER RADAR ALTIMETRY APPARATUS

Theodore Hubka, Briarcliff Manor, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware

Filed Dec. 6, 1966, Ser. No. 599,459

U.S. Cl. 343—14 **12 Claims**

Int. Cl. G01s *9/24*



An apparatus for automatically calibrating the altimetry signal derived from a Doppler echo by removing therefrom the internal phase delay error products generated during system processing. The processed echo signal comprising both altitude phase delay and internal phase delay components is sampled and stored in a memory loop during a finite time interval. At the termination of this interval the antenna is short-circuited for an equivalent period of time and the transmitted signal is channeled directly through the system for the purpose of accumulating the same internal delay errors the actual echo signal would. At an appropriate point a simulated Doppler return signal is inserted and mixed with this signal thus producing an accurate replica of the processed echo signal. Since this simulated echo signal or calibrate signal as it will be referred to below is directly routed through the system from the transmitter it does not have any external phase delay component corresponding to measured altitude. On the contrary, the calibrate signal contains only a single phase shift component representing the internal phase delay error generated by the system itself. The processed calibrate signal is then stored in a second memory loop during its sampling interval. The instantaneous condition of each loop is subsequently compared in a differential comparator unit wherein the internal delay component in the received signal is cancelled or washed out by the internal delay component in the calibrate signal. As a result, the differential output comprises only the relatively pure external delay component which is, of course, proportional to measured altitude.

3,427,616
MONOPULSE RADAR SYSTEM OF HIGH RESOLUTION AND ACCURACY

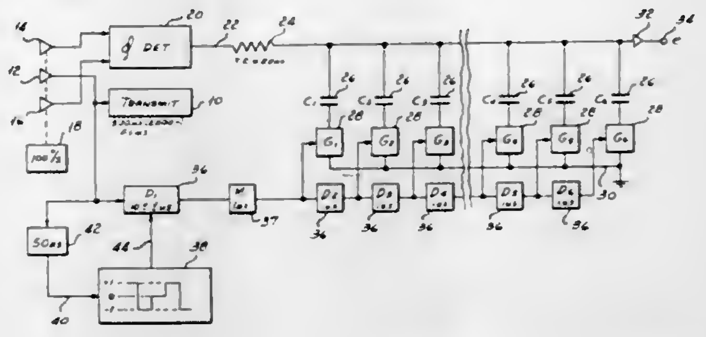
Donald J. Amoruso, North Elmsford, and Leo Botwin, Port Chester, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,800

U.S. Cl. 343—16 **10 Claims**

Int. Cl. G01s *9/02*

A monopulse radar system in which received radiation corresponding to respective transmitted pulses is applied to storage devices in a predetermined time-varying relationship so that each device carries a representation of the average range over a range interval centered at the range to which the particular device corresponds.



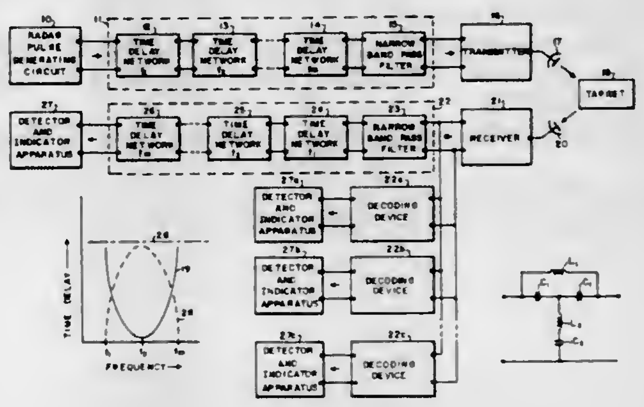
3,427,617
SIGNAL TRANSMITTING AND RECEIVING SYSTEM

Donald Richman, Fresh Meadows, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois

Filed Apr. 21, 1959, Ser. No. 807,952

U.S. Cl. 343—17.2 **12 Claims**

Int. Cl. G01s *7/28, 9/42, 9/44*



4. A radar system having a system response characterized by a single lobe having monotonically decreasing sides, improved resolution in range and velocity, and immunity to interference signals comprising: means for transmitting a pulse of radio-frequency energy coded with a cubic phase characteristic; and means for receiving and decoding a plurality of signals including said coded pulse, thereby to provide a single high peak amplitude output pulse from only those of said received signals having frequency and phase characteristics substantially the same as said coded pulse.

3,427,618
SYSTEM FOR SIMULATING RADAR TERRAIN RETURNS WITH COHERENCY COMPENSATION

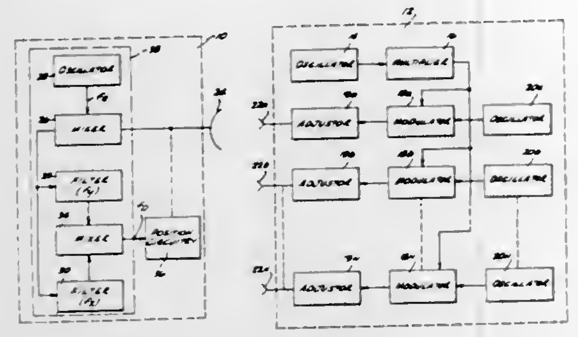
Ethan Aronoff, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Continuation of application Ser. No. 566,059, July 18, 1966. This application Dec. 11, 1967, Ser. No. 689,466

U.S. Cl. 343—17.7 **12 Claims**

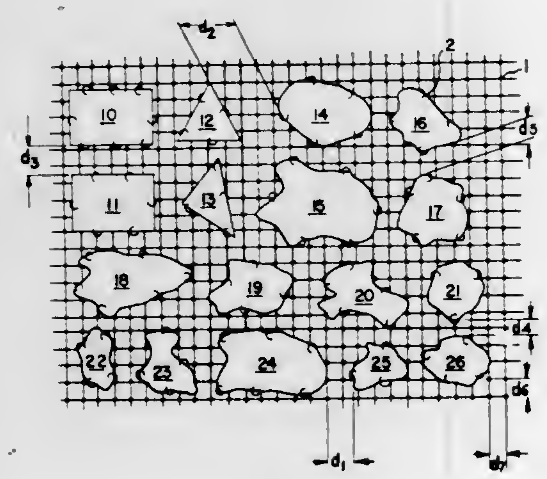
Int. Cl. G01s *7/40*

A radar terrain characteristic simulator including a carrier signal frequency drift compensator useful in ground testing of an airborne radar tracking loop or the like. The drift compensator compensates for the drifts of the RF reference carrier signal. Terrain characteristics are simulated by providing a plurality of signal generators which produce a plurality of output signals of differing frequencies to simulate terrain Doppler returns. These signals are modulated with the common carrier and transmitted to a site remote from the test site where a radar is located. A pair of bandpass filters and a mixer is employed to remove the frequency drift to insure that error due to carrier signal frequency drift is not introduced into the test.



3,427,619
RADAR CAMOUFLAGING NET

Ludwig Wesch, Heidelberg, and Gerhard Beck, Frorup, Flensburg, Germany, assignors to Eltro G.m.b.H., Heidelberg, Germany
Continuation-in-part of application Ser. No. 575,274, Aug. 26, 1966. This application May 24, 1967, Ser. No. 648,521
Claims priority, application Germany, Sept. 2, 1965, E 30,031
U.S. Cl. 343—18 **10 Claims**
Int. Cl. G01s *7/36, 7/42;* **H01q** *17/00*

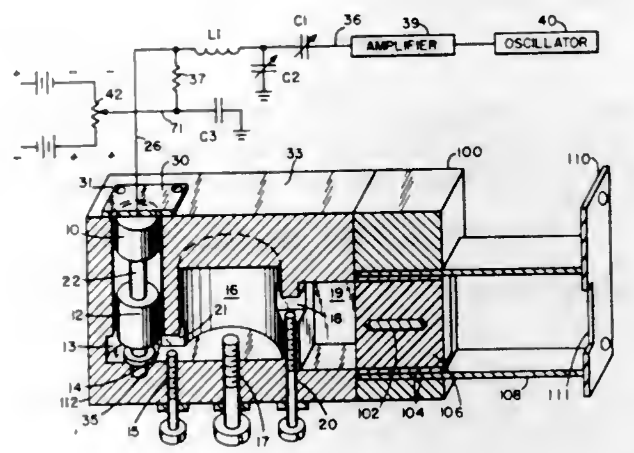


A radar camouflaging net with a plurality of absorbers, the dimension of, and the spacing between, the wave absorbing surfaces thereof being between ¹⁄₁₀th and ten times the average wavelength, and the surfaces being of different shape.

3,427,620
ELECTRONICALLY SCANNED INTEGRATED ANTENNA SYSTEM

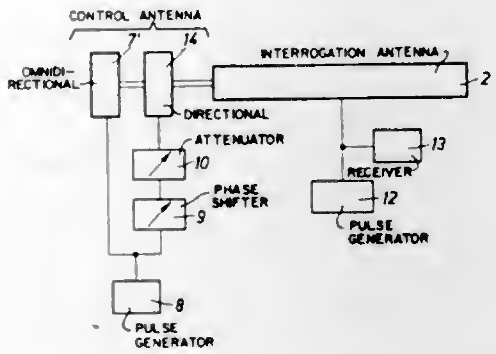
Jorgen Aasted, San Diego, and Peter H. Kafitz, La Jolla, Calif., assignors to Ryan Aeronautical Co., San Diego, Calif.
Filed Oct. 31, 1966, Ser. No. 590,619
U.S. Cl. 343—100 **12 Claims**
Int. Cl. H04b *7/04*

This invention concerns an electronically scanned integrated antenna system that utilizes individual modules having a step recovery diode multiplier that provides electromagnetic radio frequency energy whose phase may be shifted by a simple bias control, and which modules are grouped together to form the antenna system.



3,427,621
ANTENNA SYSTEM FOR A SECONDARY RADAR INSTALLATION

Heinz Brunner, Gunzburg, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Apr. 24, 1967, Ser. No. 633,042
Claims priority, application Germany, May 28, 1966, T 31,264
U.S. Cl. 343—100 **5 Claims**
Int. Cl. H04b *7/10;* **H01q** *21/00*

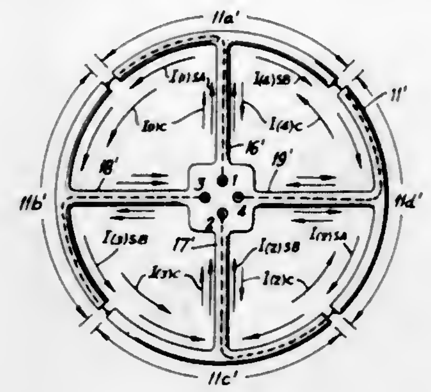


Antenna system for a secondary radar installation, consisting of an interrogation antenna ad a control antenna, in which the interrogation antenna is a directional antenna whereas the control antenna, the polar diagram of which having an indentation in the main radiation direction of the directional antenna, is mounted to one side of the directional antenna and approximately in the same height as the directional antenna. The control antenna itself consists of an omnidirectional antenna together with a further directional antenna which has the main radiation direction as the interrogation antenna. Said further directional antenna is connected in anti-phase with the omnidirectional antenna via a phase shifter and an adjustable attenuator, in order to produce an indentation in the polar diagram of the omnidirectional antenna.

3,427,622
VOR ANTENNA

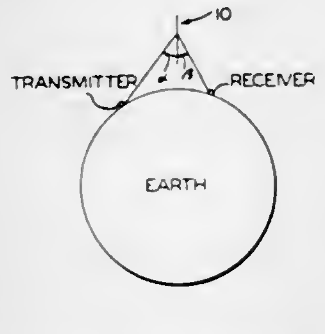
Armig G. Kandoian, Ridgewood, N.J., and Nathan Marchand, Greenwich, Conn., assignors to Communication Systems, Incorporated, Paramus, N.J.
Filed Feb. 14, 1967, Ser. No. 616,091
U.S. Cl. 343—106 **14 Claims**
Int. Cl. G01s *1/44*

An ominidirectional and direction loop antenna is provided having one or more stacked loops. Each loop comprises an outer loop and radially connecting spokes and a central feed defining subloops. Gaps are provided in loop between the spokes. The feed comprises wires passing internally through the spokes and the adjacent loop section and are fastened externally to the loop section adjacent the gap.



3,427,623
COMMUNICATION SATELLITE

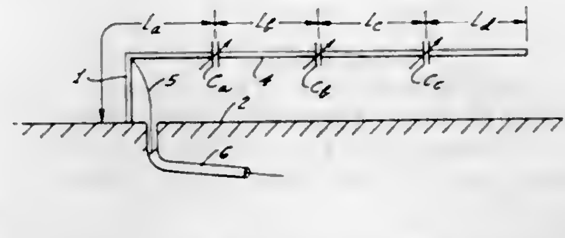
Joseph C. Yater, 1706 St. Marks Place, Fairfax, Va. 22030
Filed Apr. 22, 1965, Ser. No. 449,934
U.S. Cl. 343—705 **7 Claims**
Int. Cl. H01q *1/28, 15/20*



A passive communication satellite is defined by thin filaments of insulating material having spaced reflecting elements along the length of each filament. Radio signals from a transmitter are varied in frequency to thereby vary the zone of reception of signals reflected from the satellite. Each filament is rather long and unwound from a coil. Each is held in orbit, normal to the earth's surface, by the gravity gradient.

3,427,624
LOW PROFILE ANTENNA HAVING HORIZONTAL TUNABLE TOP LOADING MEMBER

Robert D. Wanselow, Calabasas, and Dale W. Milligan, Chatsworth, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed July 13, 1966, Ser. No. 564,959
U.S. Cl. 343—750 **4 Claims**
Int. Cl. H01q *9/26*



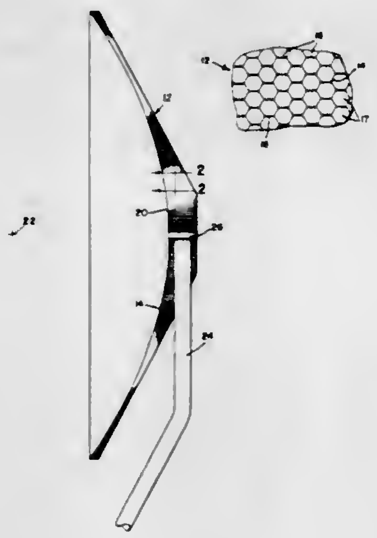
A vertically polarized low profile antenna having a vertical radiator and a horizontal top loading member connected to the top of the radiator is provided with novel wide-band tuning means comprising a plurality of variable capacitors connected in series with the top loading member of optimum spacings. A preferred embodiment using a multiple-turn spiral top load with three ganged series tuning capacitors is described.

ERRATUM

For Class 343—792.5 see:
Patent No. 3,427,659

3,427,625
FOCUSSING REFLECTOR WITH DIMPLED SURFACE TO SCATTER INFRA-RED RADIATION

Mahmoud I. Kazimi, Berkeley, Calif., assignor to Hexcel Corporation, Berkeley, Calif., a corporation of California
Filed Dec. 14, 1962, Ser. No. 244,728
U.S. Cl. 343—840 **3 Claims**
Int. Cl. H01q *19/14*

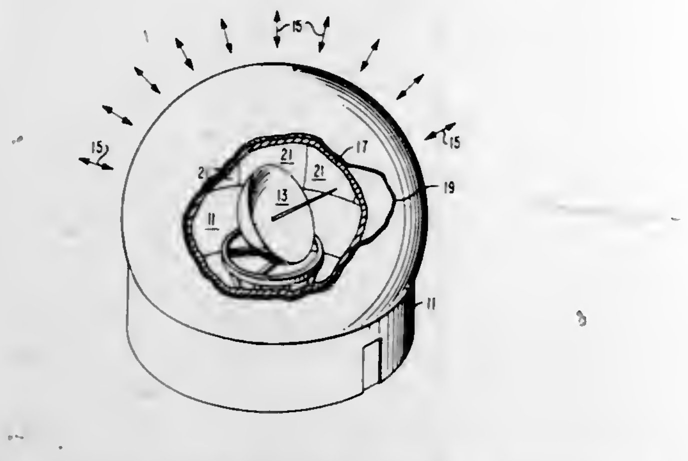


1. A reflector for radio waves of the type having a concave surface for reflectively focusing electromagnetic radiation to or from an antenna spaced from the surface comprising a body formed of cellular honeycomb material, said cellular material being formed by a plurality of ribbons bonded to one another at recurrent intervals to define plural cells, said body being arranged with edges of said ribbons shaped to define the contour of the concave surface, the maximum cross-sectional dimension of each cell bein no greater than approximately one-quarter wavelength of the radiation being reflected, and a face skin of conductive material affixed to ribbon edges of the honeycomb body forming the concave surface, said skin being dimpled to form a plurality of smaller concave surfaces in the first named surface, said smaller concave surfaces having a maximum dimension generally along the first named surface no greater than approximately one-quarter wavelength of the radiation being reflected.

3,427,626
RIGID SECTIONAL RADOME AND METHOD FOR ERECTING

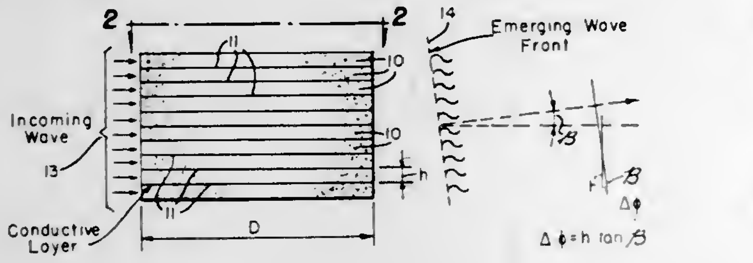
Dudley O. Losee, San Diego, Calif., assignor to Whittaker Corporation, a corporation of California
Filed Nov. 12, 1965, Ser. No. 507,350
U.S. Cl. 343—872 **15 Claims**
Int. Cl. H01q *1/42*

A spherically shaped outer elastic cover layer is inflated to permit assembly of an inner shell structure composed of abutting spherical segments to form a spherical inner shell structure larger than the uninflated outer cover. The outer cover is then deflated to place the outer surface of the inner shell structure under contracting tension to hold the abutting segments of the inner shell structure in place against one another.



3,427,627
STACKED DIELECTRIC DISC LENS HAVING DIFFERING RADIAL DIELECTRIC GRADATIONS

Robert L. Horst, Manheim, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 13, 1966, Ser. No. 557,025
U.S. Cl. 343—911 **9 Claims**
Int. Cl. H01q *15/08*



A plurality of stacked dielectric discs are separated from one another by intervening conductive layers. The discs have differing radial dielectric gradations provding a progressive change in effective electrical length to energy passing through the discs between said conductive layers.

3,427,628
THERMOPLASTIC RECORDING

Kenneth Clunis, Manhattan Beach, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,219
U.S. Cl. 346—1 **15 Claims**
Int. Cl. G01d *15/00*

1. A method of recording and reproducing information on a medium having a thermoplastic layer on one surface of the medium and having an upwardly extending ridge on the thermoplastic layer to serve as a recording surface, including the steps of:

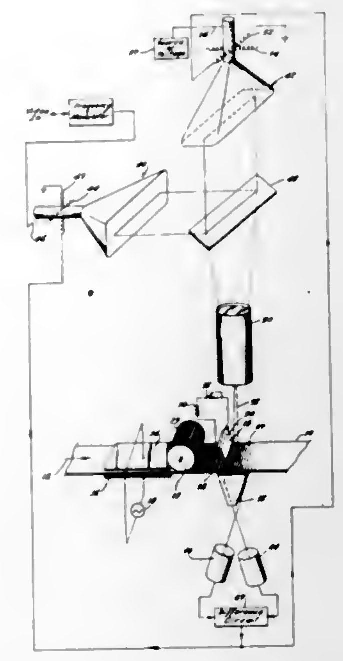
providing a movement of the medium in a particular direction,

providing a first beam of energy having characteristics in accordance with the characteristics of the information and with the first beam of energy providing a heating of the thermoplastic layer on the medium,

directing the first beam of energy toward the upwardly extending ridge on the medium during the movement of the medium in the particular direction to vary the surface characteristics along the upwardly extending ridge on the medium in accordance with the characteristics of the first beam of energy,

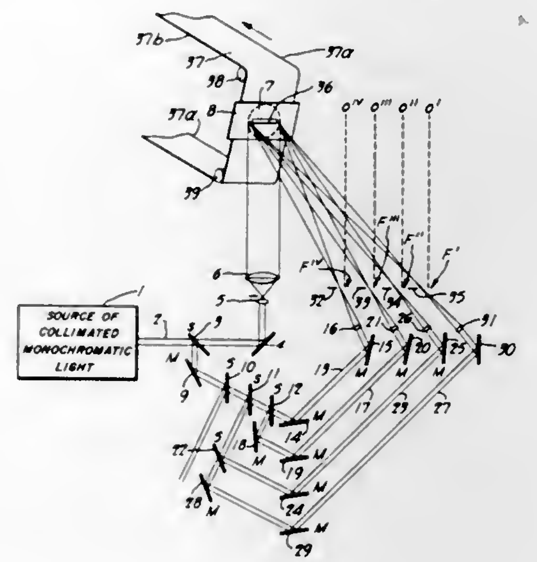
providing a second beam of energy, and

directing the second beam of energy toward the ridge on the medium to produce variations in the characteristics of the second beam of energy passing from the medium in accordance with the surface characteristics of the ridge.



3,427,629
INFORMATION RECORDING

John H. Jacobs, Altadena, and Charles F. Robinson, Pasadena, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 568,155, July 27, 1966. This application June 22, 1967, Ser. No. 652,390
U.S. Cl. 346—1 **11 Claims**
Int. Cl. G01d *9/42*

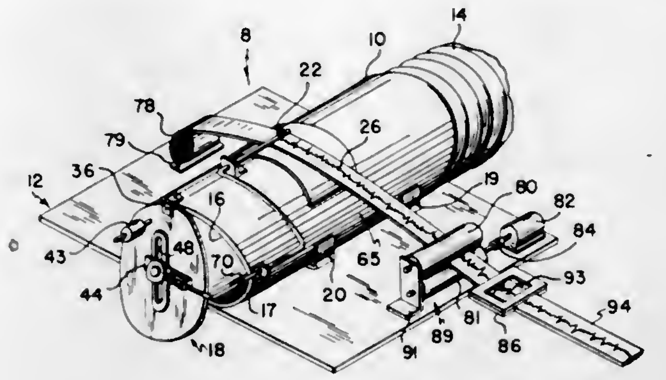


Method for photographic recording, and retrieval with collimated monochromatic light, in the form of overlapping non-linear, but patterned, lines of information.

3,427,630
FLUID PRESSURE RECORDER

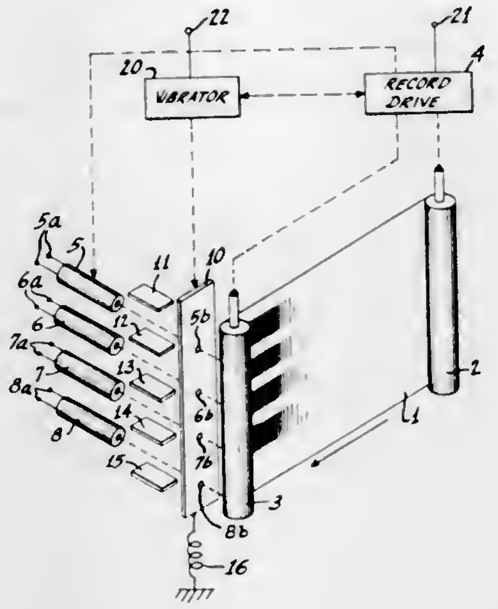
George C. Imes, 5370 Winchester Ave., Portsmouth, Ohio 45662
Filed Apr. 21, 1967, Ser. No. 632,659
U.S. Cl. 346—36 **14 Claims**
Int. Cl. G01d *9/12*

A device for determining the operating characteristics of an internal combustion engine which determines and/or records variations in pressure of a gaseous fluid stream including a housing adapted to receive a gaseous fluid stream at one end and having a pressure responsive member pivotally connected at the other end which is adapted to be actuated in response to variations in pressure of the gaseous fluid stream. A recording mechanism is operably connected with the pressure responsive member to visually indicate and/or record variations in the pressure of the gaseous fluid stream in response to actuation of the pressure responsive member.



3,427,631
LIGHT BEAM RECORDER USING VIBRATED LENS SYSTEM

Philip J. Donald, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 613,233
U.S. Cl. 346—49 **4 Claims**
Int. Cl. G01d *9/42*

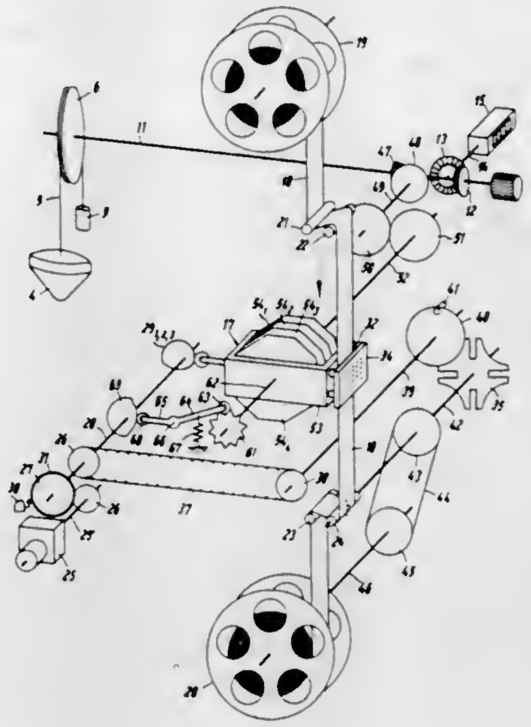


An optical recorder having an intensity modulated light source imaged on a moving recording surface by an independently vibrated lens system to produce a compressed longitudinal recording.

3,427,632
LEVEL RECORDER HAVING TAPE PUNCHING MEANS

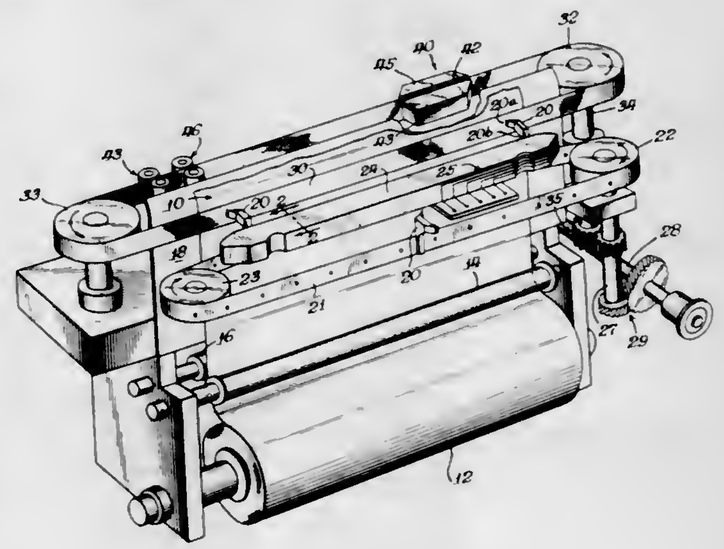
Wilhelm A. Vahs and Werner Noissinger, Kempten, Allgau, Germany, assignors to A. Ott G.m.b.H., Kempten, Allgau, Germany
Filed Nov. 1, 1966, Ser. No. 591,271
Claims priority, application Germany, Nov. 3, 1965, O 11,232
U.S. Cl. 346—72 **13 Claims**
Int. Cl. G01d *9/00, 15/04;* **G01f** *3/00*

A device for recording levels having an analogue level sensing means together with an analogue digital converter responsive to analogue values and means for punching a tape and timing means for operating the punching means.



3,427,633
PAGE PRINTING DEVICE WITH MARKING MATERIAL BEARING WEB BETWEEN SCANNING STYLI AND RECORD MEDIUM

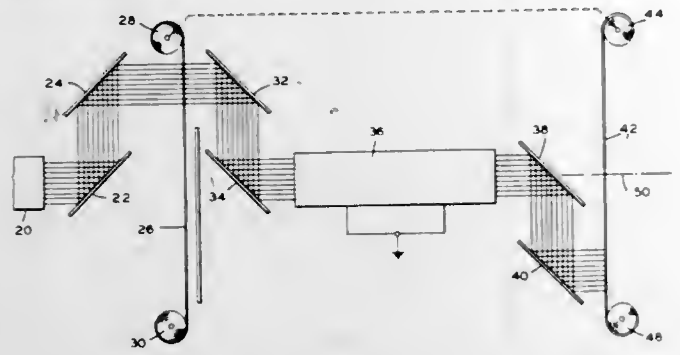
Herbert C. Waterman, North Palm Beach, Fla., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 4, 1964, Ser. No. 364,672
U.S. Cl. 346—74 **4 Claims**
Int. Cl. G01d *15/06*



An electronic printing system uses a plurality of electrically energized scanning styli which are moved across a recording sheet. A belt having a plurality of minute apertures therein and impregnated with an opaque conductive material is interposed between the styli and the recording sheet. Energization of the styli causes a current to flow through the marking material to cause the marking material in the belt to be impinged on the recording sheet in the form of a dot to thereby mark the recording sheet as desired.

3,427,634
SYNCHRONOUS OPTICAL INTERROGATION SYSTEM

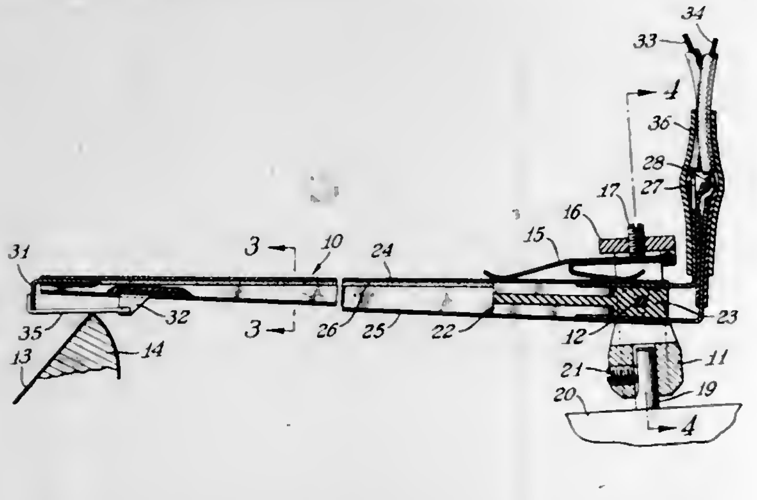
Lloyd O. Crabtree and Jan A. Van den Broek, Ann Arbor, Mich., assignors to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Mar. 3, 1965, Ser. No. 436,859
U.S. Cl. 346—108 **12 Claims**
Int. Cl. G01d *9/42*



An optical data processing apparatus for transferring or translating, or both, optical information between movable signal and recording films. A light source produces a beam of collimated light which passes from a finite area of the signal film to the input end of an optical processor. The altered optical output signal of the optical processor is recorded on a light sensitive film or media. Deflectors between the light source and the signal film, the signal film and the input of the optical processor, and the output of the optical processor and the recording media are synchronously moved to cause the light beam to be swept laterally across the signal media and then pass into the optical processor and the altered output signal to be swept laterally across the recording media. By simultaneously synchronously interrogating finite areas of the signal and recording media, the apparatus processes signal films which are much larger than the field of view of the optical processor of the apparatus.

3,427,635
RECORDING STYLUS ARM

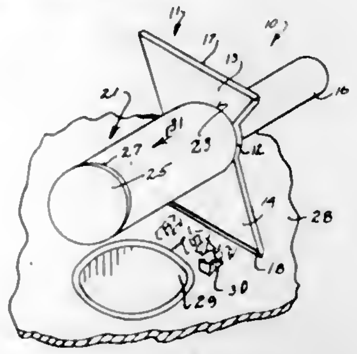
Abe Siegelman, Morton Grove, and Leslie E. Fowler, Arlington Heights, Ill., assignors to Beckman Instruments, Inc., a corporation of California
Filed May 29, 1967, Ser. No. 641,928
U.S. Cl. 346—139 **9 Claims**
Int. Cl. G01d *15/16, 15/10*



A tapered stylus arm for recording instruments having less inertia for motion about a pivot and increased rigidity, both in a plane parallel to a record medium and in a plane normal thereto, achieved by uniting a pair of elongated members having substantially U-shaped sections of decreasing dimensions further out from the pivot to the stylus. For heat recording, the stylus is an electrically heated wire suspended from and electrically connected to tabs, each connected to a different member, and the members are united by an electrically insulating material whereby the members may be used as electrical conductors from the pivot to the stylus.

3,427,636
KITCHEN HAND TOOL OR IMPLEMENT

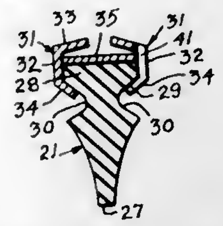
Robert F. Seifert, 2961 Exon Drive, Evandale, Cincinnati, Ohio 45241
Filed Sept. 6, 1966, Ser. No. 577,446
U.S. Cl. 15—105 **1 Claim**
Int. Cl. A47l *17/00;* **B25f** *1/00*



The kitchen hand tool or implement contemplates a plastic relatively cylinderical member of different diameters thereby providing a hand hold and a tamper with a radial face intermediate the said different diameters. A scraper body portion secured to the radial face to be outwardly of the tamper body portion and having a scraper edge at the outer edges of the body portion. The said implement being, preferably, formed of one of the synthetic plastic materials utilizable for this purpose.

3,427,637
WINDSHIELD WIPER ASSEMBLIES—METAL BACKING STRIP

William J. Quinlan and Lawrence L. Huver, Hastings, Mich., assignors to Hastings Manufacturing Company, Hastings, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 574,643
U.S. Cl. 15—250.42 **22 Claims**
Int. Cl. B60s *1/04;* **A47l** *1/02*

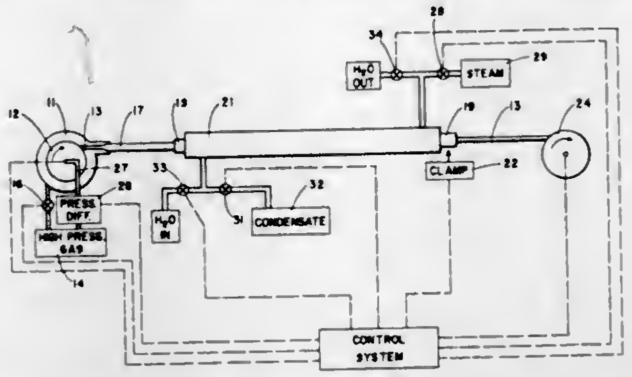


In a wiper blade assembly, the combination of an elongated blade body member of resiliently flexible material having a longitudinally extending supporting spine, a flexible elongated case supportably enclosing said spine, and means for attaching said case to a wiper arm, said case comprising separate opposite side portions each provided with series of longitudinally spaced slots perpendicular to the longitudinal plane of the case, whereby the case with the blade body member supported thereby may be flexed in the direction of said slots but is substantially rigid in the lateral direction.

3,427,638
AUTOMATIC DEVICE FOR PRODUCING EXPANDED TUBING

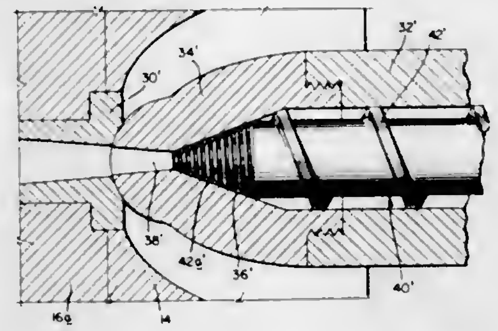
John R. Vukovich, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Apr. 18, 1967, Ser. No. 631,627
U.S. Cl. 18—19 **2 Claims**
Int. Cl. B29c *11/00*

Apparatus for producing expanded tubing, wherein air pressure is supplied to the tubing interior and the tubing is expanded into contact with the interior surface of a mold pipe. The tubing supply is held in a gas-tight chamber, expansion gases being fed into the end of the tubing on a supply reel. Pressure differential is maintained between the interior and exterior of the tubing in the supply chamber to prevent rupture of tubing within the chamber, and a gland is provided at the point of exit of the tubing from the chamber to provide a gas-tight seal.



3,427,639
INJECTION MOLDING APPARATUS

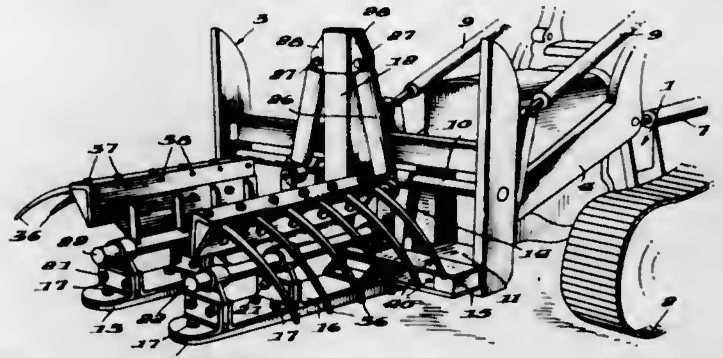
William Strauss, Huntingdon Valley, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 25, 1966, Ser. No. 567,661
U.S. Cl. 18—30 **16 Claims**
Int. Cl. B29f *1/06, 3/06*



A rotating and reciprocating screw injection molding apparatus having a reversibly rotatable screw with a scraper nose especially adapted for thermosetting plastics. Rotation of screw in one direction feeds material into injection chamber, and longitudinal forward motion of screw injects plasticized material through nozzle. After injection and with screw urged in forward direction, brief reverse rotation of screw causes scraper to bore out and slightly retract material buildup adjacent nozzle thereby preventing short shots and/or plugging of nozzle.

3,427,640
SCOOPING DEVICES

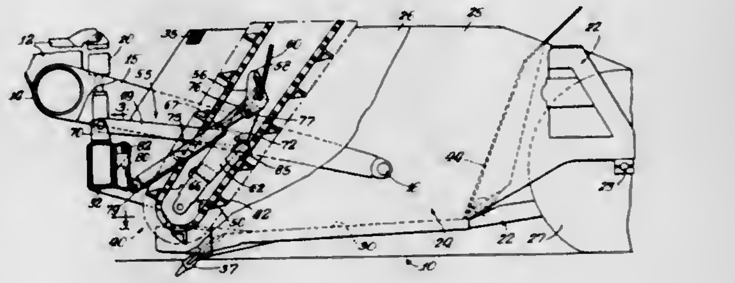
John C. Clatterbuck, R.F.D. 1, Purcellville, Va. 22132
Filed Apr. 4, 1966, Ser. No. 539,769
U.S. Cl. 37—2 **7 Claims**
Int. Cl. A01g *23/06;* **A01b** *13/06;* **B66c** *3/04*



A scooping device adapted to be mounted in the front of the tractor vehicle having a power lift assembly including fork members projecting outwardly therefrom, said device comprising shafts operatively mounted on the fork members and mounting digging tines that swing outwardly and below the fork members when the latter are lowered substantially to the ground to excavate the space between the fork members.

3,427,641
LINKAGE FOR SELF-LOADING ELEVATOR SCRAPER

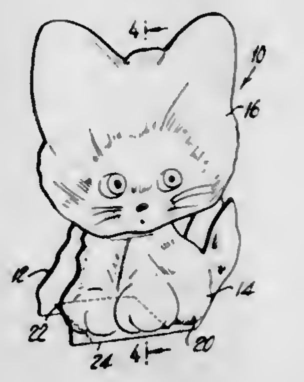
Edward D. Duke, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,731
U.S. Cl. 37—8 **5 Claims**
Int. Cl. E02f *3/62, 3/85;* **B60p** *1/36*



An elevating scraper having a bowl with a cross-member spanning the open end between the side walls and supported from a tractor-towed frame with an elevator mechanism suspended from the cross member by a pair of links, one of which is extensible. The elevator mechanism having a pair of stop means engageable with the nonextensible link to preclude rotation of the elevator mechanism relative thereto at predetermined extensions of the extensible link.

3,427,642
ANIMATED DISPLAY DEVICE

Anne Scheu Mohr, New Hyde Park, N.Y., assignor to Norcross, Inc., New York, N.Y., a corporation of New York
Filed July 22, 1966, Ser. No. 567,228
U.S. Cl. 40—124.1 **7 Claims**
Int. Cl. G09f *1/08;* **A63h** *13/00, 9/00*

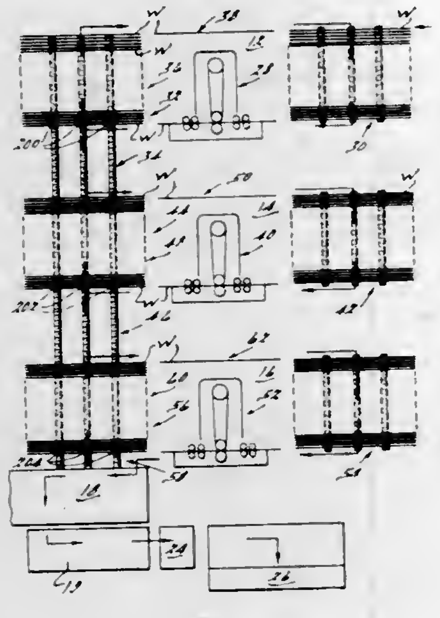


A greeting card having a freely oscillatable member coupled to the card via a coiled spring with one coil passing through the card and supported over a relatively large area of the rear surface to resist any tearing of the material during oscillation of the member.

3,427,643

METAL FINISHING APPARATUS

Ernest E. Murray, Birmingham, Mich., assignor, by mesne assignments, to Zech-Murray Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 14, 1966, Ser. No. 534,167
U.S. Cl. 51—5 **36 Claims**
Int. Cl. B24b *7/00, 21/00, 47/00*

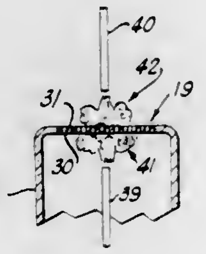


A metal finishing line for finishing flat sheet metal in which the sheet metal is supported on one edge and is conveyed in a direction normal to the plane of the sheet.

3,427,644

PROCESS OF FORMING A MATRIX STRUCTURE

Oscar A. Drake, Fort Wayne, Ind., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Original application Oct. 1, 1963, Ser. No. 312,903, now Patent No. 3,305,743, dated Feb. 21, 1967. Divided and this application Nov. 23, 1966, Ser. No. 596,569
U.S. Cl. 51—319 **7 Claims**
Int. Cl. B24c *1/04, 1/06, 3/32*



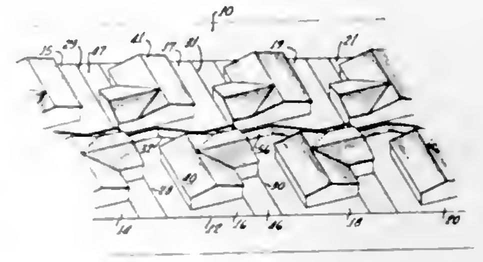
The process for treating the interior and exterior surfaces of the matrix of an electrostatic printing cathode ray tube wherein pressurized blasts of abrasive material are directed against the respective matrix surfaces at a substantially perpendicular relationship thereto. The blasts and matrix are moved relative to one another in a lateral manner at a controlled rate to clean and abrade the exposed portions of the conductive elements and the interstitial areas therebetween.

3,427,645

HOUSING DEVELOPMENT LAYOUT

Fred C. Sproul, Anaheim, Calif.
(Box 1038, Oceanside, Calif. 92054)
Filed Mar. 20, 1967, Ser. No. 624,397
U.S. Cl. 52—169 **10 Claims**
Int. Cl. E04h *1/02;* **E01c** *1/00*

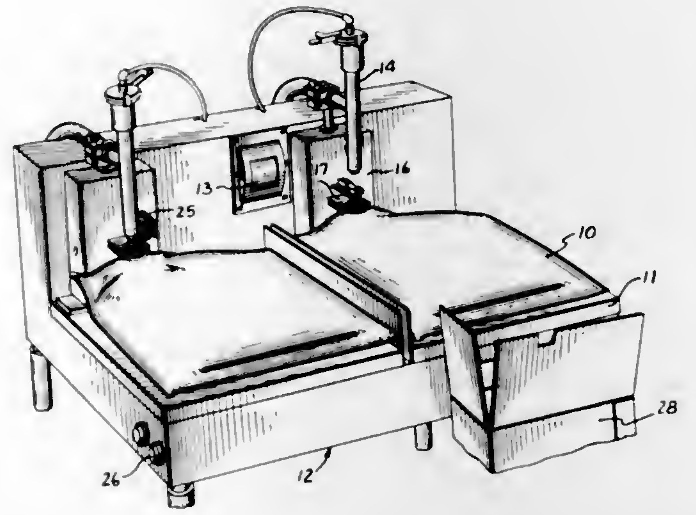
Small houses and lots are obliquely oriented with respect to streets in front of the houses. The rear lot boundary between two similar lots is arranged so that the house rear corner closest to the front street is spaced considerably from one end of the rear boundary while the other rear corner of the house is much closer to the other end of the rear boundary. Thus, each backyard has a shallow and a deep side.



3,427,646

CONTAINER OPENING, FILLING AND CLOSING APPARATUS

William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Northlake, Ill., a corporation of Illinois
Filed Feb. 5, 1965, Ser. No. 430,588
U.S. Cl. 53—281 **1 Claim**
Int. Cl. B65b *3/04;* **B65d** *5/74, 39/04*



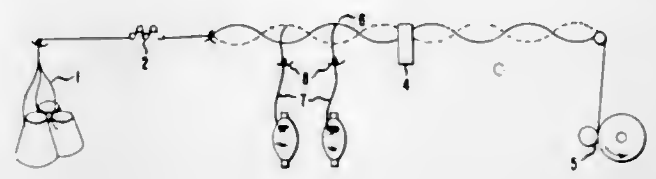
Relates to a dispensing spigot secured to a flexible container, the spigot comprising an outer sleeve component and an inner telescopically engaged tube having a lateral opening through which the contents may be dispensed when the inner tube is withdrawn to expose the lateral opening. The outer end of the tube is further provided with a frictionally engaged separable cap by means of which the container may be filled, the filling means further comprising means for holding the spigot in vertical position and means for sequentially separating the cap when filling the container and then replacing the cap.

3,427,647

WRAPPED YARN PRODUCT AND PROCESS FOR PREPARING WRAPPED YARNS

Frederick C. Field, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 19, 1968, Ser. No. 714,284
U.S. Cl. 57—144 **25 Claims**
Int. Cl. D02g *3/36, 3/02;* **D01h** *13/26*

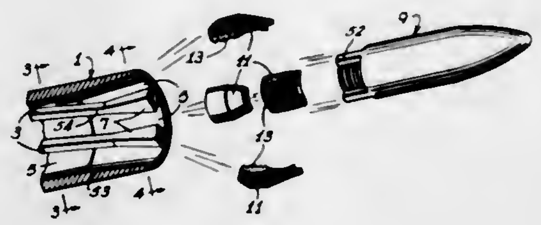
A continuously wrapped yarn comprising a continuous core element having a plurality of series of separate continuous wrapping elements with each series comprising wrapping units in a telescoped spatial relationship along the length of the yarn, each of said wrapping units comprising a continuous wrapping element having a varying wrapping frequency forming a first layer of helical-like wrappings having a predominantly unidirectional twist, a tight overwrapped segment formed of said continuous element backwrapped over a portion of said first layer with at least a part of said overwrapped segment having a wrapping direction of rotation opposite to that of said first layer. Also disclosed is a process for producing a continuously wrapped yarn which comprises forming a rotating standing wave pattern of multiple balloons in a core element with twisting means and wrapping separate continuous wrapping elements about separate balloons by freely feeding said wrapping elements to the balloons to form said wrapped yarn.



3,427,648

MISSILES AND GUN BARRELS FOR ELIMINATING SABOTS THEREFROM

Henry P. Manning, 877 W. Maple Drive, Southampton, Pa. 18966, and C Walton Musser, 66 McKay St., Beverly, Mass. 01915
Continuation-in-part of application Ser. No. 357,648, May 26, 1953. This application Nov. 3, 1958, Ser. No. 771,682
U.S. Cl. 102—93 **2 Claims**
Int. Cl. F42b *31/00, 13/16*

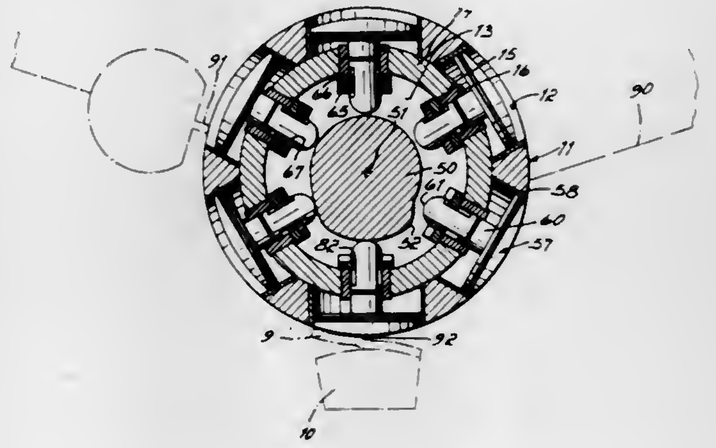


1. A combination of a weapon barrel and a projectile adapted to be fired through the weapon barrel, said projectile having a body portion and sabot segments, said sabot segments having a diameter greater than said body portion; means for retaining said sabot segments in contact with said projectile prior to and during insertion into the weapon barrel; helical lands and grooves in said barrel, with said grooves having a depth to receive the extension in radial length possessed by said segments beyond the radius of said body portion; said lands having a radial inner surface of constant diameter extending the full length of the barrel and supporting said body portion of the projectile; a projection and recess type connection between each segment and the projectile; the base of said grooves cooperating with said segments to restrain said segments against radial outward movement; about 5–15% of the length of said barrel adjacent its muzzle having said barrel grooves of greater depth than the remainder of said barrel grooves by an amount greater than the depth of said projection and recess type connection to allow for centrifugal separation of said segments away from the projectile without retarding the forward movement of the projectile; the projectile being in contact with said helical land's radial inner surface, said projectile thereby being guided and supported throughout the entire forward movement within said barrel, including that forward movement after separation of said segments from said projectile.

3,427,649

METHOD AND APPARATUS FOR PRODUCING SHAPED ARTICLES

Rudolph J. Fay, 6911 Wildflower Trail, Cincinnati, Ohio 45230
Filed Sept. 12, 1966, Ser. No. 578,668
U.S. Cl. 107—8 **8 Claims**
Int. Cl. A21d *8/00;* **A21c** *11/00;* **B29c** *7/00*

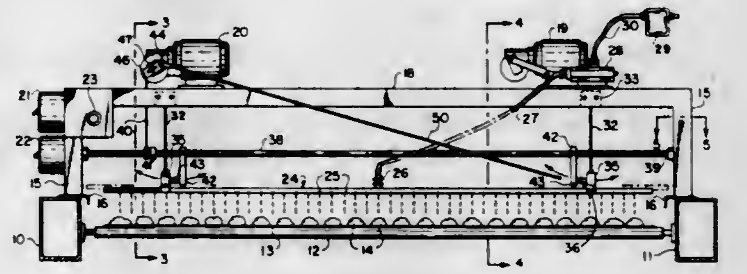


A method and machine for producing a configurated food product in die cavities of a rotary die roll, each of the die cavities being defined by a configurated side wall and a porous bottom wall. During each revolution of the roll, a batch of the product is forced into each cavity as the cavities pass beneath a hopper. Upon continued rotation of the roll, the bottom walls of the cavities are moved outwardly so as to force the configurated products from the die cavities. Air at a pressure above that of the atmosphere is directed through the porous bottom walls while the extended walls move past a wiper wire. The wire enters between the extended walls of the cavity and the configurated products so as to force the products off of the wall. To prevent the products from crawling over the wire and reengaging the bottom walls, air continues to be forced through the porous bottom walls until after the walls have passed the wiper element.

3,427,650

DECORATOR

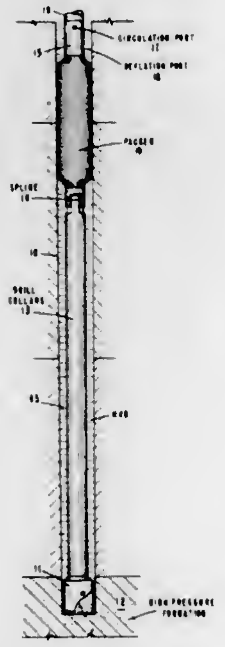
George D. Woody, 2431 E. Club Drive NE., Atlanta, Ga. 30319
Filed Jan. 5, 1966, Ser. No. 518,900
U.S. Cl. 107—27 **7 Claims**
Int. Cl. A21c *9/00;* **A23a** *1/20*



A decorator for imparting designs on the surfaces of candies, confections, and cookies, comprising a continuously moving conveyor for carrying the item to be decorated, an elongate tube extending across the conveyor and defining a plurality of orifices through its lower surface, a pump for urging a decorating liquid into the tube and through the orifices, and means for selectively moving the tube laterally of and/or longitudinally of the conveyor path at various speeds.

3,427,651
WELL CONTROL

Walter J. Bielstein and Otto R. Harrison, Houston, Tex., assignors to Esso Production Research Company
Filed Nov. 23, 1966, Ser. No. 596,490
U.S. Cl. 166—244 **15 Claims**
Int. Cl. E21b *43/00, 23/06, 21/00*



1. Apparatus for use in controlling wells during drilling operations in which drilling fluid is circulated down a drill string having a fully open bore therethrough and up the annulus between said drill string and the borehole wall comprising:

a tubular member having a fully open bore therethrough insertable in said drill string;

a fluid inflatable packer arranged on said tubular member adapted, when expanded, to close off the annulus between the drill string and the borehole wall; and

fluid control means connected to said tubular member for controlling introduction of fluid to said packer to inflate said packer and to permit removal of fluid from said packer to permit said packer to deflate;

said fully open bores through said tubular member and said drill string being maintained during all operations of said apparatus.

12. A method for controlling formation conditions in a borehole having a drill string with a fully open bore therethrough and with a drill bit on the lower end thereof positioned therein which comprises the steps of:

sealing off the annulus between said drill string and the borehole wall while maintaining said bore through said drill string fully open;

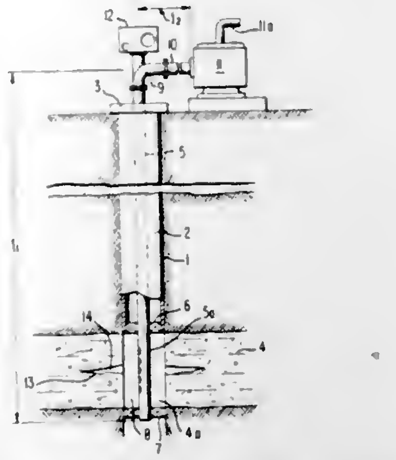
opening a circulation port in said drill string above said sealed-off annulus; and

circulating fluid down said drill string through said circulation port and up the annulus between said drill string and the borehole wall.

3,427,652
TECHNIQUES FOR DETERMINING CHARACTERISTICS OF SUBTERRANEAN FORMATIONS

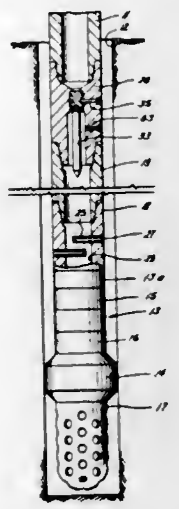
Orum E. Seay, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 429,044
U.S. Cl. 166—250 **7 Claims**
Int. Cl. E21b *47/00, 43/26*

A method of evaluating the characteristics of subterranean formations where the period of oscillation of resonating fluid in a well is measured and a well characteristic determined as a function of this measured period of oscillation.



3,427,653
METHODS FOR DRILL STEM TESTING

Lloyd I. Jensen, Calgary, Alberta, Canada, assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application, June 21, 1965, Ser. No. 465,432, now Patent No. 3,353,609. Divided and this application July 28, 1967, Ser. No. 671,515
Claims priority, application Canada, May 4, 1965, 929,841
U.S. Cl. 166—264 **6 Claims**
Int. Cl. E21b *49/00, 23/06*

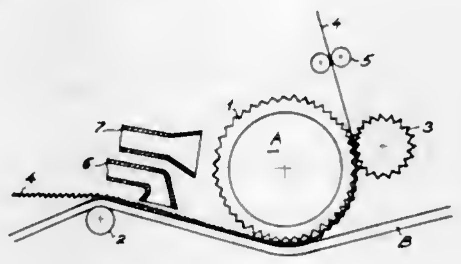


Methods for drill stem testing include the steps of lowering a packer, a tester, and a closed chamber into a well bore on a pipe string, setting the packer and opening the tester to permit formation fluids to flow into the chamber, closing the tester to trap the sample in the chamber and then unseating the packer, raising the closed chamber toward the surface and when its upper end of the chamber reaches the surface, connecting the upper end of the chamber to a receptacle, opening the lower end of the chamber to the well annulus, and then applying fluid pressure to the well annulus to circulate the sample out of the chamber and into the receptacle.

3,427,654
METHOD AND APPARATUS FOR PRODUCTION OF SPLIT FIBERS

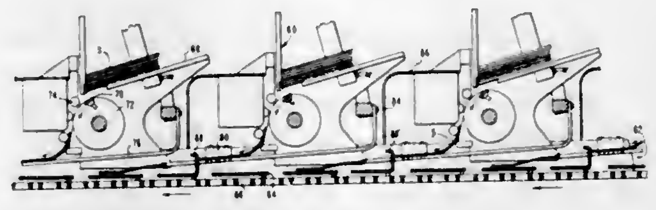
Ole-Bendt Rasmussen, 28 Rugmarken, Farum, Denmark
Filed Apr. 8, 1966, Ser. No. 541,206
U.S. Cl. 225—3 **8 Claims**
Int. Cl. B26f *3/00;* **B65h** *35/10;* **D02g** *3/00*

Split fibers are made by stacking film in a machine direction by a material reduction of the speed while traveling towards, and being passed through a device in which the stacked film is compressed and subjected to a rolling and rubbing treatment in a laterial direction in respect of the direction of orientation to effect final splitting and bulkage of the split material.



3,427,655
METHOD FOR PRODUCING COLLATED PRINTED BOOKS

John R. Woodside, Orient, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 15, 1966, Ser. No. 565,463
U.S. Cl. 270—18 **4 Claims**
Int. Cl. B41f *13/64;* **B65h** *39/00, 39/10*

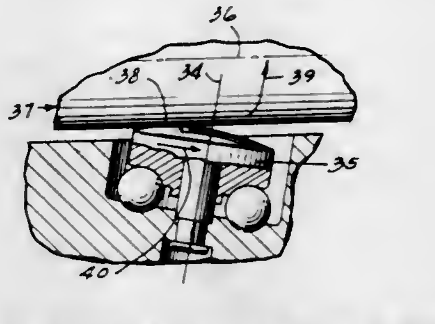


A method for manufacturing a book of a predetermined number of collated sheets constituting a definite number of contiguous sections which involves the steps of printing a plurality of non-sequential sheets constituting a set repetitiously on a web, the number of sets so produced being equal to the predetermined number of sheets divided by the definite number of contiguous sections and the number of sheets per set being equal to the definite number of contiguous sections. The sheets of each set have respectively an identical ordered relationship to the sheets of contiguous sections of the book being collated. The sheets are then cut apart and stacked while maintaining the predetermined arrangement thereof. The stacks of non-sequential sheets are then placed in an ordered line for collation wherein successive stacks have therein alternately from one end to the other the ordered sheets comprising the contiguous sections of the book being collated. A sheet is then removed from each stack and is deposited in a unique position to initiate an ordered sequence of collated sheets. The newly initiated ordered sequence of collated sheets are advanced along the stacks of non-sequential sheets in stack-by-stack progression and during such progression sheets are withdrawn from the stacks into alternate stacks of the sequential sheets of the contiguous sections of a book being collated. The sections so collated are then assembled and secured together.

3,427,656
BEARING

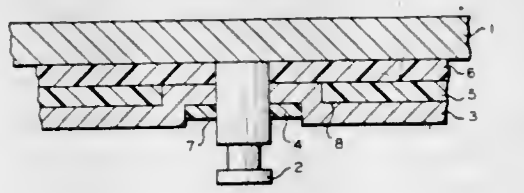
Donald E. Miller, 102 E. Hiawatha, Mount Prospect, Ill. 60056
Filed Jan. 19, 1966, Ser. No. 521,616
U.S. Cl. 308—6 **12 Claims**
Int. Cl. F16c *17/00, 19/00, 21/00*

This invention relates to a linear motion bearing assembly and more particularly relates to a bearing rotary disc element for making an off-center contact with a linearly moving shaft and for providing an increased bearing load capacity while accommodating both static and dynamic misalignment of the shaft.



3,427,657
TRACTOR-TRAILER FIFTH WHEEL BEARING

John V. Lewallen, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,696
U.S. Cl. 308—136 **5 Claims**
Int. Cl. F16c *17/00, 19/00, 21/00*



A bearing assembly for a fifth wheel-king pin coupling between a tractor and a trailer comprises a plurality of solid detachable lubricating disks on the king pin, these disks being held in place on the king pin by a metal back-up plate which contacts substantially the entire undersurface of the disks so that they will not droop when the trailer is uncoupled from the tractor. A retainer ring with a friction fit to the king pin holds the back-up plate in place. The retaining ring is forced onto the king pin by means of a tubular shank member having a detachable flange which flange contacts the retainer ring. After the retainer ring is substantially positioned the flange can be removed and portions of the retainer ring which have been deformed by being forced over the king pin can be pushed on into place by means of pressure exerted by the tubular shank member.

3,427,658
ELECTROPHOTOGRAPHIC APPARATUS AND METHOD

Webster C. Roberts, South Euclid, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,174
U.S. Cl. 355—4 **10 Claim**
Int. Cl. G03g *5/02, 13/00*

1. An electrophotographic apparatus for recording on a photoconductive surface of a web of sheet-like material a plurality of photographic images superimposed on one another on said surface comprising:

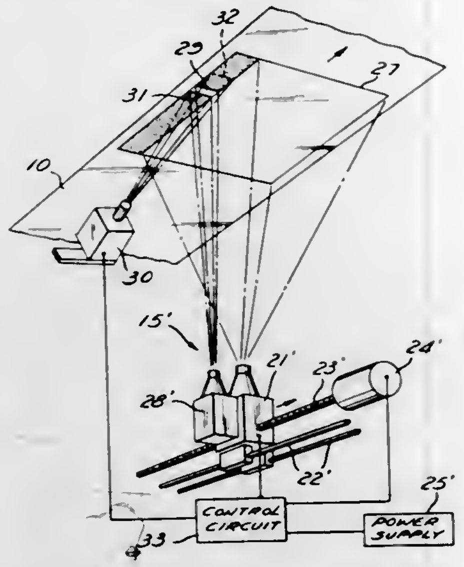
means for advancing the web along a predetermined path through a first charging station, a first exposing station and a first developing station positioned in succession along said path and thereafter through an additional series of charging, exposing and developing stations positioned in succession along said path for each additional photographic image to be recorded;

means at said first exposing station for projecting onto said surface of the moving web a first photographic image;

means for providing a registration mark on the web adjacent said recorded first image;

means operative during the projection of the image onto the moving web for limiting the speed of relative movement between the moving web and the projected first image thereon to a value which is substantially less than the speed of the web between said first charging, exposing and developing stations;

means at each additional exposing station for projecting the respective additional photographic image onto said surface of the moving web thereat;



sensing means at each additional exposing station for detecting said registration mark on the moving web and operative thereby to trigger the respective image projecting means thereat to project the respective photographic image onto the web;

and means operative during the projection of said last-mentioned image onto the moving web for limiting the speed of relative movement between the moving web and said last-mentioned projected image thereon to a value which is substantially less than the speed of the web between the respective charging, exposing and developing stations.

3,427,659

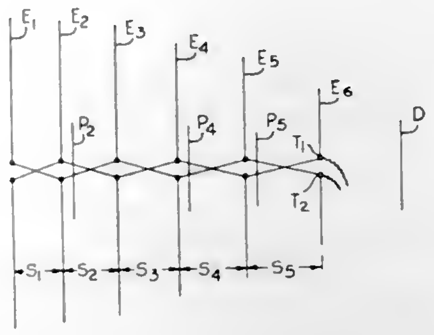
FISHBONE TYPE ARRAY WITH DIPOLE SPACING INCREASING TOWARDS THE SMALLER END

Lewis H. Finneburgh, Jr., Shaker Heights, and Robert C. Kranek, Twinsburg, Ohio; said Kranek assignor to Finney Manufacturing Company, Bedford, Ohio

Continuation-in-part of abandoned application Ser. No. 464,779, June 17, 1965. This application Apr. 12, 1968, Ser. No. 720,815

U.S. Cl. 343—792.5 **18 Claims**

Int. Cl. H01q *11/10, 21/12*



Broadband radio frequency antennas comprising an endfire array of dipoles which may be either simple dipoles for single mode operation, V-dipoles for dual mode operation, or simple dipoles together with parasitic elements giving the array dual mode operating characteristics. At least four dipoles of varying electrical lengths are spaced apart in file in a substantially coplanar array in order of dipole lengths, the dipole feed, lengths, and spacings being selected to provide endfire operation. The gain of the antennas over the bands to be covered is optimized by employing a dipole spacing that increases progressively from the long dipole end of the array to the short dipole end.

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 11TH DAY OF FEBRUARY, 1969

Note.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Addressograph-Multigraph Corp.: *See*—
  Wilde, Frederick G., and Booth. Re. 26,525.
American Can Co.: *See*—
  Ronci, Fernando M. Re. 26,524.
Anderson, Maurice J., to The Black Clawson Co. Paper machinery. Re. 26,528, 2-11-69, Cl. 242—58.3.
Black Clawson Co., The: *See*—
  Anderson, Maurice J. Re. 26,528.
Booth, Leslie G.: *See*—
  Wilde, Frederick G., and Booth. Re. 26,525.
Combustion Engineering, Inc.: *See*—
  Romanos, Nicholas D. Re. 26,526.
Fessenden, Peter J., to Springfield Wire, Inc. Cold terminal electric resistance heating cable. Re. 26,522, 2-11-69, Cl. 219—528.
Koehring Co.: *See*—
  Tennis, Francis H. Re. 26,523.
Libman, Max L.: *See*—
  Rabinow, Jacob. Re. 26,527.
Park, Donald M., by The Seeburg Corp. Automatic repetitive rhythm instrument timing circuitry. Re. 26,521, 2-11-69, Cl. 84—1.03.
Rabinow, Jacob, 10% to M. L. Libman. Machine tools. Re. 26,527, 2-11-69, Cl. 116—115.5.
Romanos, Nicholas D., to Combustion Engineering, Inc. Fluid operated steam generator having steam operated feedwater preheater. Re. 26,526, 2-11-69, Cl. 122—34.
Ronci, Fernando M., to American Can Co. Pull tab can opener. Re. 26,524, 2-11-69, Cl. 220—53.
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  Park, Donald M. Re. 26,521.
Springfield Wire, Inc.: *See*—
  Fessenden, Peter J. Re. 26,522.
Tennis, Francis H., to Koehring Co. Pilot operated control valve mechanism. Re. 26,523, 2-11-69, Cl. 91—454.
Wilde, Frederick G., and L. G. Booth, to Addressograph-Multigraph Corp. Diazo reproducing machine. Re. 26,525, 2-11-69, Cl. 95—94.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 11TH DAY OF FEBRUARY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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  Tornqvist, Nils E., and Stark. 3,427,425.
AGA Aktiebolag: *See*—
  Aversten, Karl J. 3,427,468.
AMP Inc.: *See*—
  Shannon, Suel G., and Graeff. 3,426,757.
AWB Mfg. Co., Inc.: *See*—
  Cole, Donald W., Mitchell, and Whitlock. 3,427,076.
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Aasted, Jorgen, and P. H. Kafitz, to Ryan Aeronautical Co. Electronically scanned integrated antenna system. 3,427,620, 2–11–69, Cl. 343—100.
Abatiell, James S., Jr. Structural system and components. 3,426,913, 2–11–69, Cl. 211—177.
Abbey, Anthony, R. B. Fortenbaugh, and I. Klothen, to American Cyanamid Co. Stabilization of animal and poultry feeds containing a tetracycline antibiotic. 3,427,166, 2–11–69, Cl. 99—2.
Abbott, Randle L., to Auto Transmissions Ltd. Change-speed epicyclic gearing and associated control means. 3,426,623, 2–11–69, Cl. 74—781.
Abex Corp.: *See*—
  Redelman, Paul E. 3,427,448.
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Abramson, Paul, to International Business Machines Corp. Oscillator apparatus for generating tone frequencies. 3,427,569, 2–11–69, Cl. 331—117.
Abrasive Developments Ltd.: *See*—
  Ashworth, Colin T. 3,426,378.
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  Rennie, Compton A., Lockett, and Acciarri. 3,427,220.
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Adams, Cecil E.: *See*—
  Roll, Jack A., and Adams. 3,426,856.
Adams, Robert R.: *See*—
  Abt. Ronald C., and Adams. 3 427,239.
Addressograph Multigraph Corp.: *See*—
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Aerojet-General Corp.: *See*—
  Braun, Edwin C., Jr. 3,426,701.
  Lapin Ellis E., Ernest, and Sollow. 3,427,200.
Aerospace Corp., The: *See*—
  Birnbaum, Milton. 3,427,565.
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  Lavenir, Jean C., and Agasse. 3,427,594.
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  Shindo, Akio, Fujii, and Souma. 3,427,120.
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  Wick. Richard, Biedermann, Winkler, Bestenreiner, Kiper, Pawlik, Von Sybel, and Von Wasielewski. 3,426,661.
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  Tezuka, Yoshitomo. 3,426,873.
Airflow Developments Ltd.: *See*—
  Bagley, Peter E. 3,426,598.
Akers, Dale M.: *See*—
  Howell, Samuel G., and Akers. 3,427,191.
Aktiebolaget Kamyr: *See*—
  Richter, Johan C. F. C. 3,427,218.
Aktiebolaget Svenska Flaktfabriken: *See*—
  Wilhelmsson, Gunnar. 3,426,509.
Akutsu, Hidezo: *See*—
  Mizuno, Hideo, Akutsu, Moriguchi, Yamashita, Kamiya, Iwata Tawara, and Iga. 3,427.491.
  Mizuno, Hideo, Akutsu, Moriguchi, Yamashita, Kamiya, Iwata, Tawara, and Iga. 3,427,492.
Alber, Hans: *See*—
  Klemm, William F., and Alber. 3,426,793.
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Aldridge, Clyde L.: *See*—
  Bearden, Clyde L., and Aldridge. 3,427,293.
Alexander, Richard L.: *See*—
  Anspon, Harry D., and Alexander. 3,427,296.
Alfa-Laval AB.: *See*—
  Skolglosa, Nils H. 3,426,731.
Allan, Donald R.: *See*—
  Foreman, Ralph S., Switzer, Spiller, and Allan. 3,427,433.
Allcock, Alastair W. R., to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland. Foreign body guards. 3,426,981, 2–11–69, Cl. 244—1.
Allegheny Ludlum Steel Corp.: *See*—
  Jajole, Peter A., and Harbaugh. 3,427,562.
  Rebhun, Charles F., and Roessing. 3,426,437.
  Richel, John C. 3,426,634.
Allen, Thomas C., and R. C. Koestler, to Pennsalt Chemical Corp. Perfluoroalkyl amide derivatives of polyoxyalkylene carbamates. 3,427,332, 2–11–69, Cl. 260—404.5.
Allied Chemical Corp.: *See*—
  Price, Alson K., and Sweeney. 3,427,349.
Allio, Robert J.: *See*—
  Biancheria, Amilcare, and Allio. 3,427,222.
Allis-Chalmers Mfg. Co.: *See*—
  Matkovich, Vlado I., and Colton. 3,427,131.
  Oakes, Lloyd, Wakeam, and Hartwell. 3,427,530.
  Thiele, Tom N. 3,427,506.
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Allison, Robert D., to United States Envelope Co. One-piece perforated enclosed coupon envelope. 3,426,961, 2–11–69, Cl. 229—70.
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  Marks, Ronald H. 3,426,891.
American Cyanamid Co.: *See*—
  Abbey, Anthony, Fortenbaugh, and Klothen. 3,427,166.
  Henderson, Norman L., and Elowe. 3,427,378.
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 11, 1969 Volume 859 Number 2

TRADEMARKS

NOTICES

Date for Response Due on Washington's Birthday

Since Washington's Birthday (February 22) falls this year on a Saturday, the preceding day, Friday, February 21, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day (5 U.S.C. 6103). Accordingly, any action due on February 21, or February 22, 1969, is to be considered timely if taken on February 24, 1969.

By direction of the Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 246,665 ("BRIGHT STAR" ETC. AND STAR AND OVAL DESIGN), Bright Star Battery Company, Electric batteries, viz, A and B batteries; **Reg No. 247,941** (REPRESENTATION OF STAR IN CIRCLE), Bright Star Industries Incorporated, Electric batteries, viz, flashlight batteries, radio and wireless batteries, dry cells, and multiple batteries made from dry cells, and flashlight cases; **Reg. No. 362,599** (BRIGHT STAR AND DESIGN), same, Dry cell batteries and flashlight casings; **Reg. No. 575,640**, same, Bright Star Battery Company, Photoflash battery and bulb tester; **Reg. No. 707,591**, same, Bright Star Industries, Photoflash batteries and bulb testers; **Reg. No. 714,670**, same, Dry cell batteries, radio batteries, ignition batteries, lantern batteries, flashlights, flashlight casings, and lanterns, **filed** Jan. 16, 1968, D.C., S.D.N.Y., Doc. 68–C–193, *Bright Star Industries Incorporated* v. *Marlin Enterprises, Inc.* Stipulation and order dismissing action, Oct. 14, 1968.

Reg. No. 247,941. (See Reg. No. 246,665.)

Reg. No. 297,827 (DEBUTANTE), Daggett and Ramsdell, Inc. Face powder, preparations for treating the skin, and toilet, cleansing, vanishing, and cold creams; **Reg. No. 506,568**, same, Daggett & Ramsdell International Corp., Face powder, preparations for treating the skin, toilet, cleansing, vanishing, and cold creams; beauty lotion; skin freshener; deodorant cologne; rouge, and lipstick; **Reg. No. 738,349** (DEBUTANTE DE VERSAILLES), same, Perfume and toilet water; **Reg. No. 848,336**, same, Perfume sprays, **filed** Oct. 14, 1968, D.C., S.D.N.Y., Doc. 68–C–4030, *Daggett & Ramsdell International Corp et ano.* v. *Henri Bendel, Inc.*

Reg. No. 362,599. (See Reg. No. 246,665.)

Reg. No. 399,446 (CHOCK FULL O'NUTS), Federal Nut Co., Inc., Individual portions of soup, hot meat, and fish dishes, saudwiches, cakes, pie and ice cream; **Reg. No. 564,547**, same, Shelled nuts; **Reg. No. 632,806** (CHOCK FULL O'NUTS—THE HEAVENLY COFFEE), same, Coffee; **Reg. No. 784,094** (CHOCK FULL O'NUTS), Chock Full O'Nuts

CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	15,322
Date of oldest new application	September 20, 1967
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-17-68	3-4 -65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-1 -68	3-26-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	4-4 -68	7-30-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-20-67	9-22-65
Renewals (All Classes)	11-25-68	....
Sec. 12(c) Publications (All Classes)	11-27-68	....

Applications filed during the month of December 1968— 2,314

Registrations Issued	52—No. 864,699 to No. 864,750
Renewals Issued	51

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Corporation, Cakes, pie and doughnuts; **Reg. No. 580,454** (THE HOUSE FULL O'NUTS), Federal Nut Co., Inc., Salted nuts, **filed** Apr. 16, 1968, D.C., S.D.N.Y., Doc. 68–C–1533, *Chock Full O'Nuts Corporation* v. *Genuine Food Corporation.* Consent judgment, enjoined, Aug. 2, 1968.

Reg. No. 506,568. (See Reg. No. 297,827.)

Reg. No. 564,547. (See Reg. No. 399,446.)

Reg. No. 575,640. (See Reg. No. 246,665.)

Reg. No. 580,454. (See Reg. No. 399,446.)

Reg. No. 632,806. (See Reg. No. 399,446.)

Reg. No. 635,545 (POPPIT), Richelieu Corporation, Beads, necklaces, bracelets, and ear clips, **filed** May 16, 1968, D.C., S.D.N.Y., Doc. 68–C–2001, *Richelieu Licensing Corp.* v. *F. A. C. Schwartz.* Voluntary dismissal, Oct. 30, 1968.

Reg. No. 636,593 (U AND DESIGN OF CIRCLE), Union of Orthodox Jewish Congregations of America, Foods, Detergents and household cleaners, **filed** June 6, 1966, D.C., S.D.N.Y., Doc. 66–C–1609, *Union of Orthodox Jewish Congregations of America* v. *Kashruth Supervisors Union.* Plaintiffs filed voluntary notice of dismissal, Nov. 15, 1968.

Reg. No. 644,085 (HUNZA), F. F. Hampson, doing business as Glacial Mineral Products Co., Vitamin-Mineral food supplement, including herbs and grasses, in powdered, tablet and tea forms, **filed** Nov. 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1869–IH, *H & J Foods, Inc.* v. *Gale Reeder, doing busines as Nutrifoods Co.*

Reg. No. 707,501. (See Reg. No. 246,665.)

Reg. No. 714,249. (See Reg. No. 782,990.)

Reg. No. 714,670. (See Reg. No. 246,665.)

Reg. No. 722,375. (See Reg. No. 782,990.)

Reg. No. 738,222 (SCM AND DESIGN), Smith-Corona Marchant Inc., Adding machines, photocopying machines, telecommunication equipment, data processing machines and calculating machines; **Reg. No. 774,333**, same, SCM Corporation, Offset duplicator supplies comprising etching solutions, fountain solutions, gum solutions, blanket washes, desensitizers and plate conditioners; and electrostatic printing process developing solutions comprising dispersants and replenishers (Class 6); printing materials comprising inks, ink ribbons, carbon ribbons, carbon papers, stencils and lacquers (Class 11); Offset duplicator supplies comprising direct image masters, xerographic masters, positive and negative duplication papers (Class 26); hectographic copy papers, electrostatic copy papers, adding machine tapes, and devices for copying pages in bound form (Class 37); and cotton pads, clean-up mats, offset blankets and zinc lithographic plates (Class 50), **filed** Apr. 26, 1968, D.C., S.D.N.Y., Doc. 68–C–1710, *SCM Corporation* v. *Repro Products Corporation of New York.* Final judgment, defendant enjoined, June 18, 1968.

Reg. No. 738,349. (See Reg. No. 297,827.)

Reg. No. 774,333. (See Reg. No. 738,222.)

Reg. No. 782,990 (HOME OF THE WHOPPER), Burger King of Florida, Inc., Drive-in restaurant services; **Reg. No. 722,375** (BURGER-KING), same; **Reg. No. 714,249** (DESIGN OF A KING ON A BUN), same, **filed** Oct. 22, 1968, D.C., S.D. Fla. (Miami), Doc. 68–1213–C–JE, *Burger King Corporation* v. *Burger Castle Systems Inc. et al.*

Reg. No. 784,094. (See Reg. No. 399,446.)

Reg. No. 798,788 (HUSTLER), B. J. McLoughlin, Golf clubs; **Reg. No. 837,511** (SOOPER-GOOPER), Mattel, Inc., Toy heating device for making edible figures, **filed** Aug. 19, 1968, D.C., S.D.N.Y., Doc. 68–C–3330, *Mattel, Inc.* v. *John H. Goettsch, etc.* Stipulation and order of dismissal, Oct. 24, 1968.

Reg. No. 831,747 (MATCHBOX), Lesney Products & Co., Ltd., Toys—namely, model vehicles, model machines, plastic fire stations, ambulance stations, service stations, and cardboard road layouts, **filed** Apr. 3, 1968, D.C., S.D.N.Y., Doc. 68–C–1338, *Lesney Products & Co., Ltd.* v. *Frankonia Products, Inc.* Stipulation of dismissal, Oct. 15, 1968.

Reg. No. 837,511. (See Reg. No. 798,788.)

Reg. No. 848,336. (See Reg. No. 297,827.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 283,629. Colonial Carbon Company, Skokie, Ill. Filed Oct. 30, 1967.

YOUR PARTNER FOR PROGRESS IN PURPLE

Class 11—Inks and Inking Materials

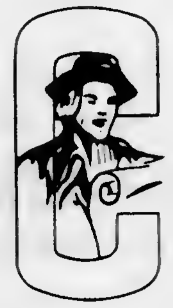
For Spirit Duplicating Carbon and Duplicating Fluid (Int. Cl. 16).

Class 37—Paper and Stationery

For Spirit Duplicating Masters (Int. Cl. 16).

First use May 1963.

SN 283,630. Colonial Carbon Company, Skokie, Ill. Filed Oct. 30, 1967.



Class 11—Inks and Inking Materials

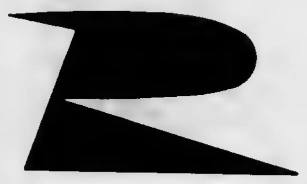
For Spirit Duplicating Carbon and Duplicating Fluid (Int. Cl. 16).

Class 37—Paper and Stationery

For Spirit Duplicating Masters (Int. Cl. 16).

First use May 1963.

SN 284,526. Racine Hydraulics, Inc., Racine, Wis. Filed Nov. 13, 1967.



Owner of Reg. Nos. 724,116 and 732,435.

Class 2—Receptacles

For Oil Reservoirs for Use in Hydraulic Circuits (Int. Cl. 6).
First use June 1961.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves for the Control of Fluids (Int. Cl. 6).
First use June 30, 1961.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hydraulic Pumps (Int. Cl. 7).
First use December 1961.

SN 287,778. Sekisui Kagaku Kogyo Kabushiki Kaisha, d.b.a. Sekisui Chemical Company, Ltd., Kitaku, Osaka, Japan. Filed Dec. 28, 1967.

SEKISUI

Class 5—Adhesives

For Solvent Cement for Pipes and Fittings Therefor Made of Rigid Polyvinyl Chloride and Transparent Adhesive Tapes (Int. Cl. 1).
First use at least as early as Sept. 1, 1957; in commerce at least as early as Sept. 1, 1957.

Class 12—Construction Materials

For Polyvinyl Chloride Plastic Products—Namely, Rigid Corrugated Panels, Formed Rigid Sheets for Construction and Industrial Uses, and Rain Gutters (Int. Cl. 19).
First use at least as early as May 18, 1961; in commerce at least as early as May 18, 1961.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Polyvinyl Chloride Plastic Pipes and Fittings Therefor (Int. Cl. 17).
First use at least as early as May 18, 1961; in commerce at least as early as May 18, 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Tapes—Namely, Friction Tape, Adhesive and Pressure Sensitive Tapes (Int. Cl. 17).
First use at least as early as Sept. 1, 1957; in commerce at least as early as Sept. 1, 1957.

Class 26—Measuring and Scientific Appliances

For Tape Measures (Int. Cl. 9).
First use at least as early as May 31, 1962; in commerce at least as early as May 31, 1962.

Class 50—Merchandise Not Otherwise Classified

For Polyvinyl Chloride Poultry Feeders (Int. Cl. 21).
First use at least as early as May 31, 1964; in commerce at least as early as May 31, 1964.

SN 297,334. Lander Co., Inc., New York, N.Y. Filed May 6, 1968.

LANDER

Owner of Reg. Nos. 329,527, 650,237, and others.

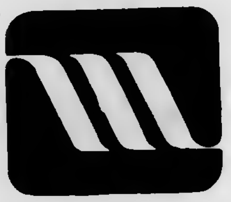
Class 51—Cosmetics and Toilet Preparations

For Stick Cologne, Hair Rinse, Bath Oil, Bubble Bath, Talcum Powder, and Baby Powder (Int. Cl. 3).
First use at least as early as December 1953.

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).
First use at least as early as August 1957.

SN 309,712. The Maytag Company, Newton, Iowa. Filed Oct. 16, 1968.



Owner of Reg. Nos. 703,694, 802,649, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Dishwashers and Food Waste Disposers (Int. Cl. 7).
First use July 25, 1966.

Class 24—Laundry Appliances and Machines

For Clothes Washers, Dryers, and Parts Therefor (Int. Cl. 7).
First use Apr. 28, 1965.

SN 309,713. The Maytag Company, Newton, Iowa. Filed Oct. 16, 1968.

MAYTAG

Owner of Reg. Nos. 703,694, 802,649, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Dishwashers and Food Waste Disposers (Int. Cl. 7).
First use July 25, 1966.

Class 24—Laundry Appliances and Machines

For Clothes Washers, Dryers, and Parts Therefor (Int. Cl. 7).
First use on or before May 8, 1907.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

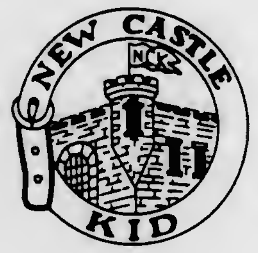
Class 1—Raw or Partly Prepared Materials

SN 273,894. ICI America Inc., New York, N.Y. Filed June 14, 1967.

KAYFAX

For Two-Part Mix-In-Place Resin and Catalyst for Use in Making Resin Foams (Int. Cl. 1).
First use as early as Apr. 13, 1967.

SN 281,535. Allied Kid Company, Boston, Mass. Filed Oct. 2, 1967.



Applicant disclaims the word "Kid" apart from the mark as shown. Owner of Reg. Nos. 86,439 and 139,464.
For Leather (Int. Cl. 18).
First use 1901.

SN 290,584. Corenco Corporation, Tewksbury, Mass. Filed Feb. 8, 1968.

corenco

Owner of Reg. Nos. 260,595 and 323,358.
For Wool Shorn From Sheep; Furs; Hides From Horses and Cattle; Calfskins; and Bone for Manufacturing Purposes (Int. Cls. 18, 20, and 22).
First use July 1, 1966.

SN 293,921. Georgia-Bonded Fibers, Inc., Newark, N.J. Filed Mar. 22, 1968.

LORICEL

For Shoe Insole Material in Sheet Form (Int. Cl. 17).
First use on or about Oct. 1, 1967.

SN 294,304. Nichols & Company, Inc., Boston, Mass. Filed Mar. 27, 1968.

WELL-FIBE

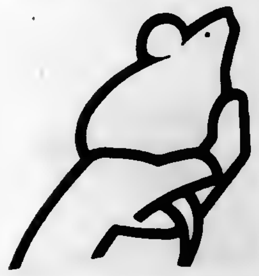
For Nylon Injection Molding Resins (Int. Cl. 1).
First use Jan. 23, 1968.

SN 294,306. Nichols & Company, Inc., Boston, Mass. Filed Mar. 27, 1968.

WELL-SPHERE

For Nylon Injection Molding Resins (Int. Cl. 1).
First use Jan. 23, 1968.

SN 294,469. The Charles River Breeding Laboratories, Inc., North Wilmington, Mass. Filed Mar. 29, 1968.



Owner of Reg. Nos. 680,956 and 718,756.
For Laboratory Animals (Int. Cl. 31).
First use September 1967.

SN 297,380. Cametco, Inc., Pittsburgh, Pa. Filed May 6, 1968.

MANGASPAR

For Molded Agglomerate Employed in the Manufacture of Ferrous Metals as a Fluxing Agent To Aid the Slag Formation on the Molten Metal.
First use July 7, 1967.

SN 305,881. Dow Badische Company, Williamsburg, Va. Filed Aug. 26, 1968.

ZEFTELLE

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Textile Fibers (Int. Cl. 22).
First use July 12, 1968.

SN 305,882. Dow Badische Company, Williamsburg, Va. Filed Aug. 26, 1968.

ZEFKRYL

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Textile Fibers (Int. Cl. 22).
First use July 12, 1968.

SN 305,883. Dow Badische Company, Williamsburg, Va. Filed Aug. 26, 1968.

ZEFREX

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Textile Fibers (Int. Cl. 22).
First use July 12, 1968.

SN 305,884. Dow Badische Company, Williamsburg, Va. Filed Aug. 26, 1968.

ZEFMER

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Textile Fibers (Int. Cl. 22).
First use July 12, 1968.

Class 2—Receptacles

SN 299,492. Rexall Drug and Chemical Company, d.b.a. Thompson Industries, Los Angeles, Calif. Filed May 31, 1968.

styrostyle

Owner of Reg. No. 768,563.
For Plastic Drinking Cups (Int. Cl. 21).
First use Apr. 1, 1968.

SN 301,240. Mytiscaf, Magny-en-Vexin, Val d'Oise, France. Filed June 24, 1968.

MYTISCAF

Owner of French Reg. No. 727,581, dated June 16, 1967.
For Containers of All Types for Use in Raising Marine Animals—Namely, Perforated Baskets or Pots of Plastic Material (Int. Cl. 20).

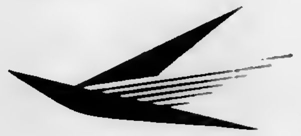
SN 302,985. Thermo-Disc, Inc., Boston, Mass. Filed July 17, 1968.

PIZZA DISC

Applicant disclaims the word "Pizza" apart from the mark as shown.
For Containers Made of Foam-Plastic Material and Having Heat-Insulating Qualities Used Primarily for Pizzas and Like Hot-Food Products (Int. Cl. 21).
First use at least as early as June 25, 1968.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 282,425. Air New Zealand Limited, Auckland, New Zeland. Filed Oct. 13, 1967.



For Wallets; Purses; Handbags; Portfolios; and Covers for Writing or Written Information—Namely, Passport Covers, Diary Covers, Jotter Pad Covers; All the Aforementioned Either in Leather or Plastic (Int. Cl. 18).
First use 1948; in commerce 1948.

SN 296,876. Sears, Roebuck and Co., Chicago, Ill. Filed Apr. 29, 1968.

WAYFARER

For Luggage—Namely, Gladstone Bags, Trunks, Weekend and Vanity Cases, Club Bags, Suitcases, Fitted Leather Traveling Cases, Cosmetic Train Cases (Not Containing Cosmetics), Brief Cases, and Ring Binder Cases (Int. Cl. 18).
First use on or about Feb. 13, 1962.

Class 4—Abrasives and Polishing Materials

SN 302,369. Abrasive Products, Inc., South Braintree, Mass. Filed July 10, 1968.

JEWEL

Owner of Reg. No. 688,520.
For Flexible Coated Abrasives in the Form of Sheets, Belts, Rolls, Discs, and Other Miscellaneous Shapes (Int. Cl. 3).
First use May 1929.

Class 6—Chemicals and Chemical Compositions

SN 268,411. Hot Shot Quality Products, Inc., Memphis, Tenn. Filed Apr. 5, 1967.

"THIS STUFF JUST KILLS ME!"

For Insecticide (Int. Cl. 5).
First use January 1964.

SN 277,949. Wilson Pharmaceutical & Chemical Corporation, Chicago, Ill. Filed Aug. 9, 1967.

WSP X1000

For Protein for Use as an Ingredient in Cosmetic Preparations (Int. Cl. 1).
First use Mar. 18, 1966.

SN 277,950. Wilson Pharmaceutical & Chemical Corporation, Chicago, Ill. Filed Aug. 9, 1967.

WSP X1000C

For Protein for Use as an Ingredient in Cosmetic Preparations (Int. Cl. 1).
First use July 11, 1967.

SN 277,952. Wilson Pharmaceutical & Chemical Corporation, Chicago, Ill. Filed Aug. 9, 1967.

WSP X250

For Protein for Use as an Ingredient in Cosmetic Preparations (Int. Cl. 1).
First use May 12, 1966.

SN 278,394. Marine Colloids, Inc., Springfield, N.J. Filed Aug. 16, 1967.

Gelloid

Carrageenan, in Particulate Form, Extracted From Marine Plants for General Industrial Uses, Including the Manufacture of Foods (Int. Cl. 1).
First use Aug. 7, 1967; August 1938 in a different form.

SN 279,336. Silaco Chemical Company, Chicago, Ill. Filed Aug. 29, 1967.

SILATOX

For Microbiocide, Effective Against Slime-Forming Microorganisms (Int. Cl. 5).
First use on or about July 14, 1967.

SN 280,470. Silaco Chemical Company, Chicago, Ill. Filed Sept. 15, 1967.

SILACIDE

For Microbiocide, Effective Against Slime-Forming Microorganisms (Int. Cl. 5).
First use on or about Feb. 10, 1960.

SN 281,251. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Sept. 11, 1967.

CM-TEST

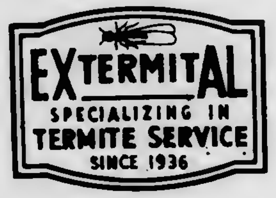
For Diagnostic Kit Containing Laboratory Reagents for Detecting Precipitin Antibodies Associated With Coccidioidomycosis (Int. Cl. 1).
First use Aug. 4, 1967.

SN 281,279. Extermital Chemicals, Inc., Dayton, Ohio. Filed Sept. 27, 1967.

EXTERMITAL

Owner of Reg. Nos. 361,237 and 524,253.
For Insecticides (Int. Cl. 5).
First use during 1937.

SN 281,280. Extermital Chemicals, Inc., Dayton, Ohio. Filed Sept. 27, 1967.



Without relinquishing any common law rights, the representation of a termite and the words "Specializing in Termite Service Since 1936" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 361,237 and 524,253.
For Insecticides (Int. Cl. 5).
First use during 1937.

SN 285,102. Airwick Industries, Inc., Carlstadt, N.J., by change of name from Airkem, Inc., Carlstadt, N.J. Filed Nov. 17, 1967.

FRESH GUARD

For Heavy Duty Liquid Odor Counteractant Composition for Diluted Application to Environmental Surfaces To Eliminate or Substantially Reduce Malodors of Decomposing Organic Matter (Int. Cl. 5).
First use Oct. 24, 1967.

SN 288,148. Wun Drop Company, Littleton, Colo. Filed Jan. 4, 1968.

WUN DROP

For Steam Iron-In Sachet Scent With Mildew Odor Inhibitor (Int. Cl. 3).
First use June 1967.

SN 291,214. Willy Krause, Bielefeld, Germany. Filed Feb. 15, 1968.

EIDESCO

For Processing Chemicals for Printing (Int. Cl. 1).
First use on or before Dec. 31, 1931; in commerce on or before Dec. 31, 1962.

SN 292,219. National Starch and Chemical Corporation, New York, N.Y. Filed Feb. 29, 1968.

LEATHER-LOK

For Leather Primer To Aid Subsequent Adhesion of Leather to Itself or Other Bodies (Int. Cl. 1).
First use Feb. 6, 1968.

SN 293,578. Relton Corporation, Arcadia, Calif. Filed Mar. 18, 1968.

P-12

For Liquid Rust Penetrant (Int. Cl. 1).
First use on or about Feb. 7, 1968.

SN 295,729. The Grant Company, Chicago, Ill. Filed Apr. 16, 1968.

Without waiving comomn law rights, applicant disclaims exclusive rights to the term "D-Odor," apart from the mark as shown.
For Room Deodorant (Int. Cl. 5).
First use Mar. 15, 1968.

SN 295,839. Morton International, Inc., Chicago, Ill. Filed Apr. 17, 1968.

SERVICE PACK

For Salt for Recharging Water Softeners (Int. Cl. 1).
First use on or about Jan. 4, 1965.

SN 297,306. Mooney Chemicals, Inc., Cleveland, Ohio. Filed May 3, 1968.

SPURSO

For Dispersing Agents (Int. Cl. 1).
First use Apr. 29, 1966.

SN 297,401. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed May 6, 1968.

COLORTRACE

Owner of Reg. No. 791,365.
For Photographic Chemicals for Processing Photographic Paper (Int. Cl. 1).
First use June 1965.

SN 297,402. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed May 6, 1968.

ANSCOSTAT

Owner of Reg. Nos. 378,951, 765,872, and 801,288.
For Photographic Chemicals for Processing Photographic Paper (Int. Cl. 1).
First use May 1967.

SN 297,403. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed May 6, 1968.

GAFTEX

For Textile Chemicals, Particularly Softeners, Lubricants, Binders, Penetrants and Finishing Agents; Anti-Foaming and Fire Retarding Agents and Chemicals Used in the Processing of Paper (Int. Cl. 1).
First use Feb. 2, 1968.

SN 297,404. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed May 6, 1968.

ANSCOTRACE

Owner of Reg. No. 765,872.
For Photographic Chemicals for Processing Photographic Paper (Int. Cl. 1).
First use June 1963.

SN 297,643. American Aniline Products, Inc., Paterson, N.J. Filed May 8, 1968.

AMALON

Owner of Reg. Nos. 334,940, 848,062, and others.
For Dyestuffs for Polyamides (Int. Cl. 2).
First use Apr. 18, 1968.

SN 297,914. Albert Verley & Company, South Plainfield, N.J. Filed May 13, 1968.

जादु

The feature presented is the Hindu representation for "Jadu."
For Perfume Concentrate for Use in the Manufacture of Toiletries and Cosmetics (Int. Cl. 1).
First use Feb. 23, 1968.

SN 299,387. Union Carbide Corporation, New York, N.Y. Filed May 29, 1968.

UCAR

For Leather Tanning Agents (Int. Cl. 1).
First use on or about Feb. 10, 1967.

SN 302,686. PPG Industries, Inc., Pittsburgh, Pa. Filed July 15, 1968.

PPG
INDUSTRIES

Owner of Reg. Nos. 443,642, 848,883, and others.
For Chemicals and Chemical Compositions for Agricultural, Commercial, Consumer, and Industrial Use, and for Linseed Oil (Int. Cls. 1 and 4).
First use at least as early as Dec. 2, 1966.

SN 303,864. The Ironees Company, Philadelphia, Pa. Filed July 30, 1968.

IRONEES

Owner of Reg. Nos. 554,252, 828,799, and others.
For Spray Starch, Chemical Water Softener for Use in Steam Iron Water, and Composition for Imparting Permanent Crease to Fabrics (Int. Cls. 1 and 3).
First use July 29, 1965, on spray starch.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 298,515. Sullivan Arms Corporation, Indianapolis, Ind. Filed May 20, 1968.

SACMAG

For Primers for Pistols and Rifles (Int. Cl. 13).
First use Apr. 28, 1967.

Class 10 — Fertilizers

SN 281,756. Allied Chemical Corporation, Morristown, N.J. Filed Oct. 4, 1967.

FARMSCO

For Plant Foods and Chemical Fertilizers (Int. Cl. 1).
First use June 20, 1967.

SN 297,222. Standard Oil Company, Flemington, N.J. Filed May 2, 1968.

ENGROSOL

For Chemical Fertilizers (Int. Cl. 1).
First use Nov. 1, 1967.

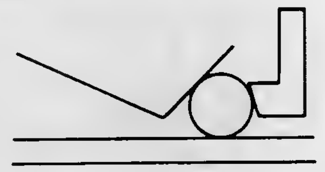
Class 12 — Construction Materials

SN 262,861. Textured Coatings of America, Inc., Los Angeles, Calif. Filed Jan. 9, 1967.

TEXCOTE

Owner of Reg. No. 815,291.
For Construction Materials Comprising Coatings To Provide a Stucco-Like Appearance on Buildings, and Having Insulating and Fire Protecting Properties (Int. Cl. 19).
First use on or about Oct. 26, 1961.

SN 290,757. Scales Manufacturing Corp., Orangeburg, N.Y. Filed Feb. 9, 1968.



For Resilient Seal Assembly for Concrete Pipe Joints (Int. Cl. 19).
First use Oct. 10, 1967.

SN 290,758. Scales Manufacturing Corp., Orangeburg, N.Y. Filed Feb. 9, 1968.

RES-SEAL

For Resilient Seal Assembly for Concrete Pipe Joints (Int. Cl. 19).
First use Oct. 10, 1967.

SN 296,182. The McGhee Corporation, Oklahoma City, Okla. Filed Apr. 22, 1968.

ROLLING DOOR

The drawing is lined for "red," but color is not claimed as a feature of the mark. No registration rights are claimed for the words "Rolling Door," apart from the mark shown in the drawing, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Doors for Aircraft Hangars and Doors for Large Industrial Buildings (Int. Cl. 19).
First use Mar. 30, 1966.

SN 304,295. Asphalt Sealer Products Company, Inc., Columbus, Ohio. Filed Aug. 5, 1968.

ASPCO ENGINEERED

No claim is made to the word "Engineered" apart from the mark as shown. Owner of Reg. No. 844,967.
For Compositions for Repairing, Patching, Resurfacing, and Sealing Asphaltic and Concrete Pavements (Int. Cl. 19).
First use Mar. 1, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 284,823. M.J.G. Corporation, d.b.a. Greenbrier Products Corp., Los Angeles, Calif. Filed Nov. 14, 1967.

FLATTER PLATTER

For Cooking Covers (Int. Cl. 21).
First use June 22, 1967.

SN 285,145. Plast-O-Matic Valves Incorporated, Clifton, N.J. Filed Nov. 17, 1967.

PLAST-O-MATIC

For Automatic Control Valves (Int. Cl. 7).
First use Sept. 7, 1967.

SN 294,906. Anchor Post Products, Inc., Baltimore, Md. Filed Apr. 4, 1968.

Anchor

Owner of Reg. Nos. 443,393 and 607,554.
For Metallic Fencing Including Vinyl-Coated Metallic Fencing, Residential Fencing, Fencing for Industrial Plants, Playgrounds, Athletic Fields, Stadiums, Swimming Pools, Right of Way Fencing Along Highways and Highway Guard Rails and Related Components, Metallic Board Fencing, Metallic Fencing With Basket Weave, Metallic Fence Sections, Picket Type Fencing; Fencing for Security and Decorative Purposes; Area Security Systems of Various Types and for Marking Boundary Lines, and Guard Rail Systems; Vertical Lift Gates, Fitting Clips for Fences, Universal Angle Couplings for Fencing, Terminal Fittings, Gate Latches, Anchor Shoes for Fencing Posts, Splint Anchor Shoes for Fencing, Gate Hinge Support Clamp Devices, Adjustable Terminal Attachments for Fencing, Barbed Wire Attachment Systems, and Self-Adjusting Swing Gates (Int. Cl. 6).
First use July 1, 1892.

Class 16 — Protective and Decorative Coatings

SN 285,960. Turco Paint & Varnish Co., Philadelphia, Pa. Filed Nov. 30, 1967.

Magna-GRIP

For Steel Base Coating for Making Most Surfaces a Magnetically Attractive Chalkboard for Visual Communication (Int. Cl. 2).
First use Mar. 15, 1966.

Class 19 — Vehides

SN 283,479. Mayne Engineering Corporation, Cedar Falls, Iowa. Filed Oct. 26, 1967.

MIGHTY PACK

For Refuse Bodies (Int. Cl. 12).
First use May 2, 1967.

SN 291,180. Pardonnet Manufacturing Company, Inc., Livonia, Mich. Filed Feb. 15, 1968.

PORTA-CABIN

For Camping Trailers (Int. Cl. 12).
First use on or about Feb. 20, 1964.

SN 291,181. Pardonnet Manufacturing Company, Inc., Livonia, Mich. Filed Feb. 15, 1968.

PAMCO

For Boat Trailers, Camping Trailers, and Travel Trailers (Int. Cl. 12).
First use at least as early as February 1960.

SN 298,163. The Troxel Manufacturing Co., Moscow, Tenn. Filed May 14, 1968.

BABY-SITTER

For Child's Seat for Use on Bicycles and Automobiles (Int. Cl. 12).
First use Mar. 25, 1968.

SN 299,081. Aero-Go, Inc., Seattle, Wash. Filed May 27, 1968.

AERO-GO

For Air Film Bearing Vehicles for a Variety of Uses and Components for Such Vehicles—Namely, Air Film Bearing Assemblies and Bases or Pallets Upon Which Such Assemblies Are Mounted, and Adaptations of Such Vehicles, Bases and Pallets for Specific Load Support and Transport Applications (Int. Cl. 12).
First use Feb. 12, 1968.

SN 310,359. Rockwell-Standard Company, Pittsburgh, Pa. Filed Oct. 23, 1968.

STOP MASTER

For Owner of Reg. Nos. 687,137 and 830,954.
For Brakes for Vehicles (Int. Cl. 12).
First use Sept. 26, 1968.

SN 310,684. J. J. Newberry Co., New York, N.Y. Filed Oct. 28, 1968.

BILTMORE

For Bicycles (Int. Cl. 12).
First use June 30, 1968.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 285,462. The Scam Instrument Corporation, Skokie, Ill. Filed Nov. 22, 1967.

PANAGRAPH

Owner of Reg. Nos. 577,378, 768,668, and others.
For Graphic Display Annunciators (Int. Cl. 9).
First use Jan. 31, 1967.

SN 296,209. Stromberg-Carlson Corporation, Rochester, N.Y. Filed Apr. 22, 1968.

SLENDERET

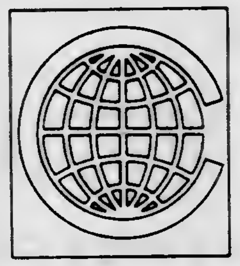
For Telephone Sets (Int. Cl. 9).
First use Mar. 21, 1968.

SN 296,726. Sprague Electric Company, North Adams, Mass. Filed Apr. 26, 1968.

POWERLYTIC

For Electrical Capacitors (Int. Cl. 9).
First use October 1959.

SN 296,812. Cummings & Co., Inc., Nashville, Tenn. Filed Apr. 29, 1968.



For Electric Signs (Int. Cl. 9).
First use Mar. 15, 1967.

SN 296,956. General Floorcraft, Inc., Bronx, N.Y. Filed Apr. 30, 1968.

"MINI-VAC"

For Vacuum Cleaners (Int. Cl. 9).
First use Apr. 17, 1968.

SN 297,109. United-Carr Incorporated, Boston, Mass. Filed May 1, 1968.

MINIPLAX

For Minature Coaxial Cable (Int. Cl. 9).
First use Apr. 19, 1968.

SN 297,203. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka Prefecture, Japan. Filed May 2, 1968.

National

Owner of Japanese Reg. No. 625,996, dated Oct. 7, 1963; and U.S. Reg. Nos. 295,890, 659,001, and others.
For Automatic Lamp Switches—Namely, Photoelectric Light Controls (Int. Cl. 9).

SN 297,224. Sunbeam Corporation, Chicago, Ill. Filed May 2, 1968.

2+2

For Electric Vacuum Cleaners and Parts Therefor (Int. Cl. 9).
First use June 5, 1967.

SN 298,054. Speco, Inc., Schiller Park, Ill. Filed May 13, 1968.

SMOKETRONIC

For Electronic Controllers for Smoke Generators (Int. Cl. 9).
First use Mar. 31, 1960.

SN 298,152. Ross Electronics Corporation, Chicago, Ill. Filed May 14, 1968.

WAVEMASTER

For Radios (Int. Cl. 9).
First use March 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 288,559. Universal Instruments Corporation, Binghamton, N.Y. Filed Jan. 10, 1968.

Universal

For Machines for the Manufacture, Preparation and Circuit Integration of Electronic Components—Namely, Diodes, Resistors, Capacitors, Transistors, Modules, and Jumper and Terminal Wires (Int. Cl. 7).
First use Jan. 5, 1956.

SN 289,077. Burroughs Corporation, Detroit, Mich. Filed Jan. 18, 1968.

Burroughs

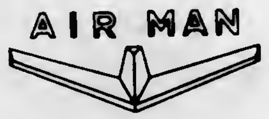
Owner of Reg. Nos. 343,467, 522,893, and others.
For Business Machines—Namely, Check Writers and Signers, Check Certifiers, Paper Tape Punching Machines, Card Punching Machines, Line Printers; and Document Handling Machines—Namely, Machines for Recognizing Characters and Sorting Documents Bearing Such Characters, Ledger Readers; Card Readers and Magnetic Ink Printing-Encoding Machines; and Parts for All of Said Machines (Int. Cls. 7, 9, and 16).
First use March 1910.

SN 292,933. The Heald Machine Company, Worcester, Mass. Filed Mar. 11, 1968.

HYDRO-DYNE

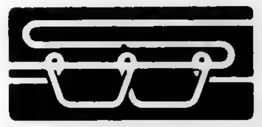
For Machine Tool Spindle (Int. Cl. 7).
First use on or about May 23, 1967.

SN 293,035. Hokuetsu Kogyo Kabushiki Kaisha, Nishi-Kambara-gun, Niigata-ken, Japan. Filed Mar. 12, 1968.



The term "Air" is disclaimed apart from the mark as shown.
For Air Compressors and Parts Thereof (Int. Cl. 7).
First use Nov. 30, 1966; in commerce Nov. 30, 1966.

SN 295,464. Scott & Williams, Inc., Laconia, N.H. Filed Apr. 11, 1968.



Owner of Reg. No. 136,926.
For Knitting Machines and Parts and Attachments Therefor (Int. Cl. 7).
First use at least as early as May 7, 1967.

SN 296,793. Harold George Bearston, d.b.a. Bearstone Cutlery and Hardware Co., Chiswick, London, England. Filed Apr. 29, 1968.

KITCHEN DEVILS

Owner of British Reg. No. 899,551, dated Sept. 19, 1966.
For Cutlery for Culinary Use (Int. Cl. 8).

SN 298,205. Cook Machinery Co., Inc., Dallas, Tex. Filed May 15, 1968.

GLASSMASTER

For Automatic Washing Machines for Washing Glasses, Tumblers, Test Tubes, Laboratory Glassware, Bottles, and the Like (Int. Cl. 7).
First use at least as early as Apr. 16, 1968.

SN 298,233. Litton Business Systems, Inc., New York, N.Y. Filed May 15, 1968.

SWINGER

For Portable Typewriter, the Case of Which Has a Radio Therein (Int. Cl. 16).
First use Apr. 2, 1968.

SN 298,310. Atlas Supply Company, Springfield, N.J. Filed May 16, 1968.

ATLAS

Owner of Reg. Nos. 729,390, 819,833, and 837,520.
For Air Hammer Tool Kit for Use on Motor Vehicles (Int. Cl. 7).
First use Apr. 15, 1968.

SN 298,488. John A. Wisner, d.b.a. Wis Wall Washer Machine Co., Baltimore, Md. Filed May 17, 1968.

WIS

For Wall Cleaning Machines (Int. Cl. 7).
First use April 1967.

SN 298,602. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed May 20, 1968.

SILVERMIST

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Apr. 17, 1968.

SN 298,603. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed May 20, 1968.

MONTROSE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Apr. 17, 1968.

SN 299,794. SCM Corporation, New York, N.Y. Filed June 5, 1968.

CORONET

Owner of Reg. Nos. 86,343 and 205,066.
For Typewriters (Int. Cl. 16).
First use at least as early as Apr. 9, 1962.

SN 306,326. Atlas Supply Company, Springfield, N.J. Filed Aug. 30, 1968.

ATLAS

Owner of Reg. Nos. 572,627, 837,520, and others.
For Pneumatic Tire Stud Gun (Int. Cl. 7).
First use Dec. 16, 1966.

SN 309,718. Fedtro, Inc., Rockville Centre, N.Y. Filed Oct. 16, 1968.

PUMP-O-MATIC

For Pumps for Draining and Siphoning Liquids (Int. Cl. 7).
First use Sept. 30, 1968.

SN 309,819. Wood Industries, Inc., d.b.a. Stanford Engineering Company, Plainfield, N.J. Filed Oct. 17, 1968.

DOCTOR MACHINE

Applicant makes no claim of exclusive right to use the word "Machine" separate and apart from the mark as shown.
For Machines for Guiding, Unwinding, Trimming, Slitting, Rewinding and Processing of Any Continuous Web Material (Int. Cl. 7).
First use at least as early as October 1953.

SN 309,820. Wood Industries, Inc., d.b.a. Stanford Engineering Company, Plainfield, N.J. Filed Oct. 17, 1968.

STANFORD

For Machines for Guiding, Unwinding, Trimming, Slitting, Rewinding and Processing of Any Continuous Web Material (Int. Cl. 7).
First use at least as early as July 1943.

SN 310,394. Imperial Skyliner Autowash, Inc., Buffalo, N.Y. Filed Oct. 24, 1968.

TALK OF THE TOWN

For Automatic Car Wash Installations (Int. Cl. 7).
First use Aug. 15, 1967.

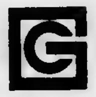
Class 26—Measuring and Scientific Appliances

SN 265,884. Asahi Kogaku Kogyo Kabushiki Kaisha, Itabashi-ku, Tokyo-to, Japan. Filed Mar. 3, 1967.

MEMORICA

Priority claimed under Sec. 44(d) on Japanese application filed Nov. 28, 1966; Reg. No. 786,631, dated July 17, 1968.
For Cameras, Motion Picture Cameras, Television Cameras, Enlargers, Projectors, Cineprojectors, Binoculars, Telescopes, Microscopes, Lenses for the Above Mentioned Goods, Anamorphic Lenses, Prisms, Reflecting Mirrors, Photometers, Exposure Meters, Filters and Self-Timers (Int. Cl. 9).

SN 267,420. Graphic Controls Corporation, Buffalo, N.Y. Filed Mar. 23, 1967.



Owner of Reg. No. 712,829.
For Recording Film; Data Processing Forms; Recording Charts; Recording Paper; All Sensitized for Use With Data Processing Machines, Computers, Seismographs, Electrocardiographs, Polygraphs, and Oscillographs; and Pressure Stylus Markers for Use With Said Instruments (Int. Cls. 1 and 9).
First use Sept. 8, 1959.

SN 271,194. Victor Comptometer Corporation, Chicago, Ill. Filed May 10, 1967.

VERB

For Remote Blackboard System Comprising Telautographic Audio-Visual Transmitting, Receiving and Projecting Apparatus (Int. Cl. 9).
First use Mar. 3, 1967.

SN 271,496. Litton Business Systems, Inc., Orange, N.J., by change of name from Monroe International, Inc., Orange, N.J. Filed May 15, 1967.

EBS

For Business Machines—Namely, Electronic Computers and Data Processors (Int. Cl. 9).
First use in or about August 1966.

SN 282,597. Miles Laboratories, Inc., Elkhart, Ind. Filed Oct. 16, 1967.

HEMA-TEK

For Clinical Laboratory Equipment—Namely, Slide Staining Equipment for Hematological Use, Accessories Therefor, and Equipment for Use in Mixing Laboratory Specimens (Int. Cl. 9).
First use at least as early as Jan. 11, 1965.

SN 283,997. Encyclopaedia Britannica Publications Limited, West Toronto, Ontario, Canada. Filed Nov. 2, 1967.

MATHEX

Priority claimed under Sec. 44(d) on Canadian application filed Sept. 7, 1967; Reg. No. 158,526, dated Oct. 4, 1968.
For Models of Geometric Solids Used in Connection With Teaching and Demonstrating Mathematic Principles (Int. Cl. 9).

SN 285,598. VEB Filmfabrik Wolfen, Wolfen, Germany. Filed Nov. 24, 1967.

OR WO

For Photographic Film (Int. Cl. 1).
First use April 1963; in commerce December 1964.

SN 285,599. VEB Filmfabrik Wolfen, Wolfen, Germany. Filed Nov. 24, 1967.

ORWO

For Photographic Film (Int. Cl. 1).
First use May 1959; in commerce December 1964.

SN 285,600. VEB Filmfabrik Wolfen, Wolfen, Germany. Filed Nov. 24, 1967.

ORWOCOLOR

For Photographic Film (Int. Cl. 1).
First use March 1961; in commerce December 1964.

Class 27 — Horological Instruments

SN 283,969. Amano Corporation, Kohoku-ku, Yokohama-shi, Kanagawa-ken, Japan. Filed Nov. 2, 1967.

Amano

For Office Machines and Equipment—Namely, Time Recorders, Job Cost and Payroll Recording Machines, and Time Stamping Machines (Int. Cl. 9).
First use May 30, 1966; in commerce May 30, 1966.

Class 28 — Jewelry and Precious-Metal Ware

SN 302,642. Rogers, Lunt & Bowlen Company, d.b.a. Lunt Silversmith, Greenfield, Mass. Filed July 12, 1968.

OLD DEERFIELD

For Silver-Plated Baby Ware, Knives, Forks, Spoons, Porringers, Cups, and Dishes (Int. Cls. 8 and 14).
First use June 20, 1968.

SN 302,987. Textron Inc., Providence, R.I. Filed July 17, 1968.

DIAMOND
Elegance

No claim is made to the word "Diamond" apart from the remainder of the mark. Owner of Reg. Nos. 439,972, 833,664, and others.
For Expansion Bracelets, Including Watch Bracelets (Int. Cl. 14).
First use June 28, 1968.

Class 30 — Crockery, Earthenware, and Porcelain

SN 304,190. Home Decorators, Inc., Newark, N.Y. Filed Aug. 2, 1968.

PETITE ROSE

For China Dinnerware (Int. Cl. 21).
First use on or about June 20, 1968.

Class 31 — Filters and Refrigerators

SN 276,425. Flanders Filters, Inc., Riverhead, N.Y. Filed July 20, 1967.

ECONO-CELL

For Air Filters (Int. Cl. 11).
First use Sept. 27, 1966.

SN 276,426. Flanders Filters, Inc., Riverhead, N.Y. Filed July 20, 1967.

DUAL-PAC

For Air Filters (Int. Cl. 11).
First use Sept. 27, 1966.

SN 281,407. Union Tank Car Company (Delaware corporation), Chicago, Ill., by assignment and change of name from Union Tank Car Company (New Jersey corporation), Chicago, Ill. Filed Sept. 28, 1967.

GRAVEX

For Industrial Ion-Exchange Equipment for Treating Water (Int. Cl. 11).
First use Sept. 12, 1967.

Class 32 — Furniture and Upholstery

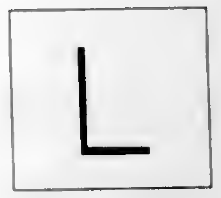
SN 309,517. Mattel, Inc., Hawthorne, Calif. Filed Oct. 14, 1968.

ROOM-MATES

For Picture Frames (Int. Cl. 20).
First use Jan. 13, 1968.

Class 33 — Glassware

SN 290,007. Obear-Nester Glass Company, East St. Louis, Ill. Filed Jan. 31, 1968.



For Glass Bottles for Containing Soft Drinks, Wine and Beer (Int. Cl. 21).
First use June 1, 1952.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 299,110. Cragmet Corporation, Rancocas, N.J. Filed May 27, 1968.

CRAGMET

For Vacuum Furnaces and Parts Therefor (Int. Cl. 11).
First use May 10, 1968.

SN 299,432. Combustion Equipment Company, Kansas City, Mo. Filed May 31, 1968.

CECO

Owner of Reg. No. 292,174.
For Combustion Equipment—Namely, Oil Burners, Gas Burners, Counterflow Exhaust Steam Fuel Feed Heaters, Recuperators or Air Preheaters, Hot Gas Fans, and Cold Air Fans (Not Essentially Electrical) (Int. Cl. 11).
First use January 1923.

SN 299,493. Rexarc, Incorporated, West Alexandria, Ohio. Filed May 31, 1968.

PETRYLOY

For Welding Wire and Rods (Int. Cl. 9).
First use on or before Dec. 31, 1958.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 271,637. O.K. Tire and Rubber Co., Inc., Littleton, Colo. Filed May 16, 1967.

WIDE STAR-TRAK

The word "Wide" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 747,302, 749,788, and others.
For Vehicle Tires (Int. Cl. 12).
First use Apr. 3, 1967.

SN 302,646. Sparks Manufacturing Corporation, Portland, Oreg. Filed July 12, 1968.

UHT

For Hose for Hydraulic Systems (Int. Cl. 17).
First use June 1965.

SN 302,774. TSC Industries, Inc., St. Cloud, Minn. Filed July 15, 1968.

NU-TRAC

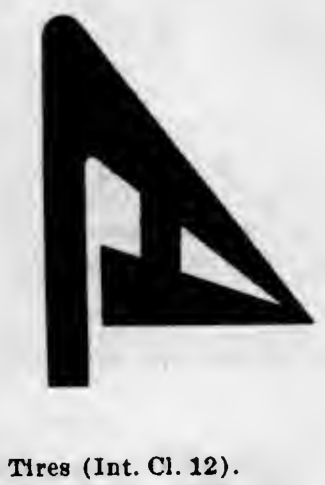
For Retreaded Vehicle Tires (Int. Cl. 12).
First use Feb. 23, 1968.

SN 303,539. Parrish Tire Company, Inc., Winston-Salem, N.C. Filed July 24, 1968.

PARKWAY

For Automobile Tires (Int. Cl. 12).
First use May 1, 1968.

SN 304,569. The Armstrong Rubber Company, West Haven, Conn. Filed Aug. 7, 1968.



For Pneumatic Tires (Int. Cl. 12).
First use on or about July 1, 1968.

SN 305,156. Pacific Car and Foundry Company, d.b.a. Dynacraft Company, Renton, Wash. Filed Aug. 14, 1968.

DYNACRAFT

For Industrial Hoses for Use as Hydraulic and Pneumatic Conduits (Int. Cl. 17).
First use Jan. 10, 1968.

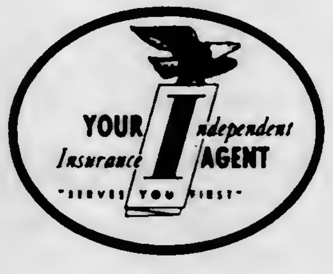
Class 36 — Musical Instruments and Supplies

SN 252,211. Request Records, Inc., New Rochelle, N.Y. Filed Aug. 11, 1966.

MUSIC OF MANY LANDS

For Phonograph Records (Int. Cl. 9).
First use December 1950.

SN 301,758. National Association of Insurance Agents, Inc., New York, N.Y. Filed July 1, 1968.



For Phonograph Records of Vocal Instructions for Playing a Game Such as Golf and the Like (Int. Cl. 9).
First use Apr. 19, 1968.

SN 302,084. Humes & Berg Mfg. Co., Inc., East Chicago, Ind. Filed July 5, 1968.

"TRIXIE"

For Mutes (Int. Cl. 15).
First use Nov. 9, 1965.

SN 303,431. Arthur T. Morgan, Jr., d.b.a. Chapel Time Records or Chapel Time Music Co., Bridge City, Tex. Filed July 23, 1968.

CHURCHMICE

For Phonograph Records (Int. Cl. 9).
First use June 25, 1968.

Class 37 — Paper and Stationery

SN 261,457. CPS Industries, Inc., Chicago, Ill. Filed Dec. 27, 1966.

IRRESISTIBLES

For Wrapping Paper (Int. Cl. 16).
First use July 19, 1966.

SN 291,212. Venus Esterbrook Corporation, d.b.a. American Pencil Co., New York, N.Y. Filed Feb. 15, 1968.

CAMPUS

For Lead Pencils and Crayon Pencils (Int. Cl. 16).
First use Dec. 1, 1967.

SN 298,397. Ashuelot Paper Company, Hinsdale, N.H. Filed May 17, 1968.

Coffee Break

For Paper Place Mats (Int. Cl. 27).
First use May 6, 1968.

SN 299,012. Fort Howard Paper Company, Green Bay, Wis. Filed May 24, 1968.

SOF-KNIT

Owner of Reg. No. 777,895.
For Toilet Tissue (Int. Cl. 16).
First use May 21, 1968.

SN 299,160. Regent Standard Forms, Inc., Philadelphia, Pa. Filed May 22, 1968.

RAPIDCARD

For Message and Mailing Forms (Int. Cl. 16).
First use May 9, 1968.

SN 299,162. Sanford Ink Company, Bellwood, Ill. Filed May 27, 1968.

PEN-O-PAKE

For Porous Tip Pens (Int. Cl. 16).
First use May 10, 1968.

SN 299,229. Gulfstream Press, Inc., Miami, Fla. Filed May 28, 1968.

DUO-FLEX

For Business Forms (Int. Cl. 16).
First use May 8, 1968.

Class 38 — Prints and Publications

SN 290,953. Editorial Primera Plana S.R.L., Buenos Aires, Argentina. Filed Feb. 13, 1968.

PRIMERA PLANA

The meaning of the words "Primera Plana" is "first page."
For Magazine (Int. Cl. 16).
First use Nov. 13, 1962; in commerce Oct. 4, 1966.

SN 310,025. The Hearst Corporation, New York, N.Y. Filed Oct. 21, 1968.

A WORD EDGEWISE

For Syndicated Newspaper Column or Feature (Int. Cl. 16).
First use Sept. 17, 1968.

SN 310,026. The Hearst Corporation, New York, N.Y. Filed Oct. 21, 1968.

WIFE PRESERVERS

For Newspaper Cartoons (Int. Cl. 16).
First use Mar. 3, 1930.

Class 39 — Clothing

SN 272,122. Volk Bros. Company, Dallas, Tex. Filed May 22, 1967.

VAN ALLYN

The name "Van Allyn" is fanciful and does not identify any living individual.
For Ladies' Coats and Suits (Int. Cl. 25).
First use Oct. 4, 1966.

SN 274,426. L. Goldstein (Mantles) Limited, London, England. Filed June 21, 1967.

ELGEE

For Women's and Children's Coats, Costumes, Dresses, and Skirts (Int. Cl. 25).
First use in 1940; in commerce in 1961.

SN 275,134. Joyce Galley Originals, Inc., New York, N.Y. Filed June 30, 1967.

JOYCE GALLEY

"Joyce Galley" is the name of the president of applicant corporation, whose consent is of record.
For Ladies', Misses', and Children's Garments and Accessories—Namely, Dresses, Coats, Blouses, Skirts, and Jackets (Int. Cl. 25).
First use on or about Jan. 1, 1967.

SN 276,444. Hayes Garment Company, Nashville, Tenn. Filed July 20, 1967.

SCAT BACK

For Men's and Boys' Clothing Consisting of Pants, Jeans, and Shirts (Int. Cl. 25).
First use January 1966.

SN 279,359. Bond Stores, Incorporated, New York, N.Y. Filed Aug. 30, 1967.

MISS BOND

Owner of Reg. Nos. 214,030 and 305,592.
For Suits and Coats (Int. Cl. 25).
First use July 15, 1966.

SN 280,227. Glengair Limited, Meadowbank, Edinburgh, Scotland. Filed Sept. 13, 1967.

Glengair

For Knitted Articles of Clothing Comprising Cardigans, Pullovers, Shirts, Wraps, Skirts, Dresses, Scarves, Stockings and Socks, and Skirts Made of Woven Material (Int. Cl. 25).
First use Jan. 26, 1925; in commerce Jan. 1, 1937.

SN 280,576. Fashions Four, Inc., New York, N.Y. Filed Sept. 18, 1967.

ff FASHIONS FOUR

No claim is made to the exclusive use of the word "Fashions" apart from the mark as a whole.
For Dresses, Tunics, Skirts, Capes, Vests, and Dress and Vest Kits With Applique Cut-Outs To Be Pressed Onto the Dresses or Vests (Int. Cl. 25).
First use July 28, 1967.

SN 292,210. Loll Ease, Inc., New York, N.Y. Filed Feb. 29, 1968.

Loll Ease

The word "Loll" is disclaimed apart from the mark as a whole.
For Ladies' Lounging Pajamas, Slacks, and Pants (Int. Cl. 25).
First use at least as early as Dec. 20, 1966.

SN 294,463. Eugene F. Buell, Gibsonia, Pa. Filed Mar. 29, 1968.

THE CHOSEN FEW

For Women's Dresses, Skirts, Sweaters; and Sportswear—Namely, Blouses, Shorts, and Slacks (Int. Cl. 25).
First use Feb. 8, 1968.

SN 301,016. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed June 21, 1968.

SAINT LAURENT
rive gauche

The English translation of "Rive Gauche" is "left bank." The "Saint Laurent" portion of the mark is the surname of a living individual, whose consent is of record. Owner of Reg. Nos. 767,211, 824,601, and 843,746.
For Scarves (Int. Cl. 25).
First use Apr. 26, 1968.

SN 301,450. A. Sagner's Son, Frederick, Md. Filed June 26, 1968.

MINIMAX

Owner of Reg. No. 367,398.
For Men's Suits, Pants, and Overcoats; Men's Wear—Namely, Dress Shirts, Negligee Shirts, and Work Shirts and Parts Thereof, Namely, Neckbands, Cuffs, and Shirt Fronts, Ties, Slacks, Jackets, Shoes, Vests, Raincoats, Sweaters, Topcoats, Overcoats, Undershirts, Undershorts, Bathrobes, and Handkerchiefs; Women's Wear—Namely, Suits, Blouses, Skirts, Dresses, Shirts, Slips, Underwear, Slacks, Jackets, Shoes, Raincoats, Sweaters, Housecoats and Handkerchiefs; Children's Wear—Namely, Girls' Suits, Coats, Skirts, Jackets, Dresses, Hats, Shirts, Blouses, Shoes, Slacks, Sweaters, Raincoats, Bathrobes, Slips, Underwear, and Handkerchiefs; Boys' Suits, Overcoats, Pants, Shirts, Shoes, Sweaters, Vests, Ties, Jackets, Slacks, Bathrobes, Raincoats, Undershirts, Undershorts, and Handkerchiefs (Int. Cl. 25).
First use March 1932 on men's suits, pants and overcoats.

SN 302,385. Boutik-Nit, New York, N.Y. Filed July 10, 1968.

BOUTIK-NIT

For Women's and Teens' Dresses, Dorm Shirts, Robes, Jackets, Shifts, Jumpers, and Shirts (Int. Cl. 25).
First use July 3, 1968.

SN 302,420. Kanter & Alpert, Inc., Chicago, Ill. Filed July 10, 1968.

WESTCOTT

Owner of Reg. No. 789,202.
For Wearing Apparel for Boys and Young Men—Namely, Suits and Sport Coats (Int. Cl. 25).
First use Mar. 29, 1963.

SN 302,647. Spartans Industries, Inc., New York, N.Y. Filed July 12, 1968.

GTL

For Ladies' Hosiery (Int. Cl. 25).
First use Sept. 22, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 276,460. American Hospital Supply Corporation, Evanston, Ill., assignee of V. Mueller & Company, Chicago, Ill. Filed July 20, 1967.

MICRO-LINE

For Surgical Instruments for Microsurgical Procedures—Namely, Forceps, Cardiovascular Clamps, and Hemostats (Int. Cl. 10).
First use on or before June 1, 1967.

SN 277,737. Unitek Corporation, Monrovia, Calif. Filed Aug. 7, 1967.

PACE

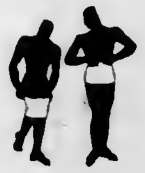
For Orthodontic Appliances and Accessories—Namely, Orthodontic Springs and Accessory Hardware for Mounting Such Springs (Int. Cl. 10).
First use at least as early as July 14, 1967.

SN 281,578. Hynson, Westcott & Dunning, Inc., Baltimore, Md. Filed Oct. 2, 1967.

DISPENSTIRS

For Combined Medicine Dropper and Spreader (Int. Cl. 10).
First use Sept. 8, 1967.

SN 293,295. Pichon Freres, Saint-Etienne, Loire, France. Filed Mar. 14, 1968.



For Bands for Supporting Varicose Veins, Medical Supports, Elastic Supports, Suspensories, Knee Bandages, Elbow Bandages, Wrist Bandages, Shoulder Bandages, and Ankle Bandages, All of Said Goods Being Nonmedicated (Int. Cl. 5).
First use 1937; in commerce July 1967.

SN 293,923. John F. Greer Company, Oakland, Calif. Filed Mar. 22, 1968.

DISPOS-O

For Kits Consisting of Equipment for Irrigation of the Colostomy (Int. Cl. 10).
First use Mar. 15, 1968.

SN 294,151. Air Reduction Company, Incorporated, New York, N.Y. Filed Mar. 26, 1968.

SERVO-CARE

For Incubators for Infants (Int. Cl. 10).
First use Sept. 16, 1966.

SN 294,282. International Playtex Corporation, Dover, Del. Filed Mar. 27, 1968.

THE NEW GENERATION TAMPON

Applicant disclaims the word "Tampon" apart from the mark as shown.

For Tampons (Int. Cl. 5).

First use Feb. 29, 1968.

SN 295,340. J. F. Jelenko & Co., Inc., New Rochelle, N.Y. Filed Apr. 10, 1968.

SAF-T-HEATER

For Portable Heaters for Heating Substances in Containers in the Art of Dentistry (Int. Cl. 10).

First use Mar. 6, 1968.

SN 295,899. Air Reduction Company, Incorporated, New York, N.Y. Filed Apr. 18, 1968.

HEID-A-SORB

For Carbon Dioxide Absorber Apparatus for Anesthetic Machines (Int. Cl. 10).

First use Mar. 26, 1968.

SN 296,152. Guardian Products Company, Inc., North Hollywood, Calif. Filed Apr. 22, 1968.

SAFE-T-WALKER

For Invalid Walkers (Int. Cl. 10).

First use Mar. 8, 1968.

SN 296,578. Pyramid International, Inc., Ravenna, Ohio. Filed Apr. 25, 1968.

COLORGRAD

For Nursers Comprising Nursing Bottles, Screw Caps, Seal Discs, and Nipples (Int. Cl. 10).

First use at least as early as Dec. 5, 1951.

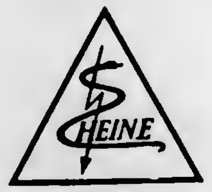
SN 302,697. Abbott Laboratories, North Chicago, Ill. Filed July 15, 1968.

ANALGIZER

For Inhaler for Supervised Self-Administration of Inhalation Anesthesia (Int. Cl. 10).

First use May 31, 1968.

SN 303,817. Optotechnik G.m.b.H., Herrsching, Upper Bavaria, Germany. Filed July 29, 1968.



For Otoscopes, Opthalmoscopes, and Components and Accessories Thereof (Int. Cl. 10).

First use 1947; in commerce 1952.

SN 304,198. C. R. Bard, Inc., Murray Hill, N.J. Filed Aug. 2, 1968.

CS-1

Owner of Reg. No. 843,290.

For Set of Items Required for Urinary Drainage, Comprising a Collection Bag, Drainage Tube, Hanger, Together With Accessory Tray Containing Underpad, Gloves, Drape, Forceps, Rayon Balls, Cleansing Solution, Lubricant, Syringe, Rubber Band, and Safety Pin (Int. Cl. 10).

First use June 15, 1967.

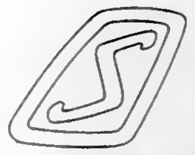
SN 304,837. Unitek Corporation, Monrovia, Calif. Filed Aug. 9, 1968.

DISPERSALLOY

For Dental Amalgam (Int. Cl. 5).

First use at least as early as July 8, 1968.

SN 305,071. Sarns, Inc., Ann Arbor, Mich. Filed Aug. 13, 1968.



For Pump Oxygenator Consoles, Pumping Heads for Heart Supplement, Arterial Bubble Traps, Venous Collection Reservoirs, Coronary Sinus Return Chambers, Coronary Perfusions, Pressure Monitors, Rotating Disc Oxygenators, Heat Exchangers for Heart Operation Equipment, Portable Pump Consoles for Coronary Perfusion, Arterial Perfusion, Sternal Saws, Femoral Perfusion Cannulae, Pressure Perfusion Cannulae, Intercardiac Suckers, and Valvuloplasty Instruments (Int. Cl. 10).

First use Nov. 7, 1960.

SN 305,420. Eagle Druggists Supply Co., Inc., New York, N.Y. Filed Aug. 19, 1968.

JELLI COOL

For Teether-Rattles, Teethers, and Teething Rings (Int. Cl. 10).

First use Feb. 26, 1963.

SN 306,516. Sickroom Service, Inc., Milwaukee, Wis. Filed Sept. 3, 1968.

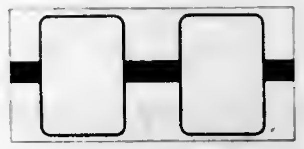
ORTHOTIQUE

For Orthopedic and Surgical Garments, Supports and Braces—Namely, Sacroiliac Supports; Lumbo Sacral Supports; Dorsolumbar Supports; Abdominal Supports; Hernia Trusses and Supports; Hospital Binders; Rib Belts; Cervical Collars and Braces; Clavical Splints; Shoulder Braces; Spinal Braces; Knee Braces; Traction Belts, Anklets and Leggings; Head Halters; Ptosis Supports; Elastic Hosiery; and Bandages (Int. Cls. 5 and 10).

First use July 5, 1968.

Class 46 — Foods and Ingredients of Foods

SN 174,696. Riviana Foods Inc., Houston, Tex., assignee of Mark Morris Associates, Inc., Topeka, Kans. Filed Aug. 8, 1963.



For Dietary Animal Foods—Namely, Canned Foods for Dogs, Cats and Other Domesticated Animals, Sold to Veterinarians and Animal Hospitals (Int. Cl. 31).

First use at least as early as 1961.

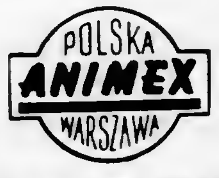
SN 273,650. Vernon M. Kuhns, d.b.a. Kev Enterprises, Honolulu, Hawaii. Filed June 12, 1967.

FO-TI TIENG

For Herbal Compound for Making a Hot Food Beverage (Int. Cl. 30).

First use June 6, 1958.

SN 281,950. Animex Centrala Importowo-Eksportowa Artykulow i Przetworow Pochodzenia Zwierzecego, d.b.a. Animex, Warsaw, Poland. Filed Oct. 6, 1967.



The words "Polska" and "Warszawa" are translated into the English language as "Poland" and "Warsaw." Applicant disclaims the words "Polska" and "Warszawa" apart from the mark as shown. Owner of Polish Reg. No. 46,217, dated Jan. 27, 1967.

For Fresh, Chilled and Frozen Pork, Beef, Veal, Mutton, Horseflesh, Sausages and Bacon, Canned Meat, Canned Meat With Vegetables, Prepared Meat Dishes, Quick Frozen Packs of Meat With Vegetables, Meat Extracts, Soup Concentrates, Meat and Vegetable Sauce Concentrates of Both a Meat and Vegetable Nature, Frozen Poultry, Canned Poultry, Frozen Poultry Fillets, Powdered Milk, Melted Cheese, Hard Cheese, Butter, Casein, and Condensed and Evaporated Milk, Shell Eggs, Liquid Frozen Whole Eggs, Egg Powder, Albumen, Edible Fats of an Animal Nature, Canned Fish in Natural Sauce, Canned Fish in Oil, Canned Fish in Tomato Sauce, Quick Frozen Fish, Fish Paste, Fresh Dressed Venison and Frozen Prepared Game Products (Int. Cl. 29).

SN 288,181. Aulabaugh Bros., Inc., Hancock, W. Va. Filed Jan. 5, 1968.

TOP O'BEST

For Canned Fruits, Canned Tomato Juice, and Canned Tomatoes (Int. Cls. 29 and 32).

First use Aug. 25, 1936.

SN 291,655. Weight Watchers International, Inc., Forest Hills, N.Y. Filed Feb. 21, 1968.

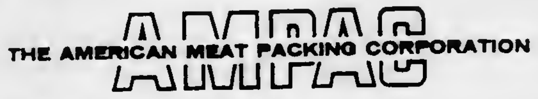
WEIGHT WATCHERS PROGRAM DINNER

The words "Program Dinner" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 715,515, 855,654, and others.

For Frozen Prepared Meals Consisting of Fish, Meat or Poultry and Vegetables, Sauces, Seasonings and Spices (Int. Cl. 29).

First use Feb. 19, 1968.

SN 300,886. The American Meat Packing Corporation, Chicago, Ill. Filed June 20, 1968.


AMPAC
THE AMERICAN MEAT PACKING CORPORATION

For Fresh Meat (Int. Cl. 29).

First use on or about Dec. 15, 1959.

SN 307,166. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed Sept. 12, 1968.

YOUNG AT HEART

For Canned Fruit (Int. Cl. 29).

First use Aug. 20, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 297,593. Renfield Importers, Ltd., Union, N.J. Filed May 7, 1968.

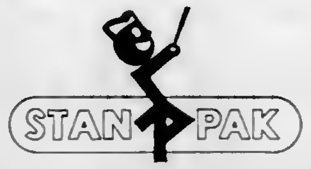
SUNDANCE

For Tequila (Int. Cl. 33).

First use Apr. 26, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 276,960. Standard Packaging Corporation, Stamford, Conn. Filed July 27, 1967.



Owner of Reg. Nos. 595,308, 604,047, and others.

For Laminated Paper and Foil Container Closures, Masquerade Masks, Plastic Coated Paper Liners for Receptacle Closures, Stoppers and Caps, Shoe Trees, and Fly Swatters (Int. Cls. 20, 21, and 28).

First use December 1958; Sept. 17, 1953, as to "Stanpak."

Class 51 — Cosmetics and Toilet Preparations

SN 276,313. Comptoir de la Parfumerie S.A., Ancienne Maison Tschanz, Geneva, Switzerland. Filed July 19, 1967.

SOLFEGE

The mark "Solfege" is translated "solfeggio," which means the application of the sol-fa syllables to the tone of the musical scale or to melodies or other voice parts. Priority claimed under Sec. 44(d) on Swiss Reg. No. 223,203, dated Feb. 1, 1967.

For Perfumery and Cosmetic Products—Namely, Perfumes, Toilet Waters, Lipsticks, Cologne Water, Hair Tonic, Mascara, Nail Varnish, Face Creams, Nail Creams, Dusting or Body Powders, Face Powder, Eye Lotion, Face Lotion, Eyebrow Pencils, and Eyeshadows (Int. Cl. 3).

SN 276,529. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. Filed July 21, 1967.

GAMBIT

For Perfume (Int. Cl. 3).

First use Apr. 20, 1967.

SN 277,509. Bishop Industries Inc., Union, N.J. Filed Aug. 4, 1967.

ADRIFT

Owner of Reg. No. 769,289.

For Spray Cologne, Bath Crystals, Bath Oil, After Bath Talc, After Bath Spray, and After Bath Splash (Int. Cl. 3).

First use July 19, 1967.

SN 286,620. Alberto-Culver Company, Melrose Park, Ill. Filed Dec. 11, 1967.

FANCY FACE

Applicant disclaims the word "Face" apart from the mark as shown.

For Cosmetic Skin Lotion (Int. Cl. 3).

First use Sept. 28, 1967.

SN 286,655. The Emko Company, St. Louis, Mo. Filed Dec. 11, 1967.

MY OWN

For Personal Deodorant Spray (Int. Cl. 5).
First use Nov. 15, 1967.

SN 286,895. Avon Products, Inc., New York, N.Y. Filed Dec. 14, 1967.

BIRD OF PARADISE

For After Bath Freshener (Int. Cl. 3).
First use Dec. 7, 1967.

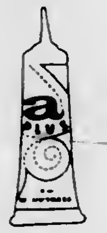
SN 287,948. Antonio Puig, S.A., Barcelona, Spain. Filed Jan. 2, 1968.

AGUA BRAVA

The English translation of the words "Aqua Brava" is "brave water." Owner of Spanish Reg. No. 520,350, dated May 20, 1967.

For Perfumery, Dentifrices, Hair Permanent Wave Lotions, Hair Setting and Dyeing Lotions, Brilliantines, Rouges, Eye Liner and Eyebrow Pencils; and Shaving Soaps (Int. Cl. 3).

SN 289,416. Nu Tress Laboratories, Inc., North Hollywood, Calif. Filed Jan. 23, 1967.



Applicant disclaims the outline of the container and the element "¾ oz." apart from the mark as used. Owner of Reg. No. 822,546.

For Hair Conditioner-Setting Lotion (Int. Cl. 3).
First use Aug. 28, 1961.

SN 289,540. Tecla, Societe Anonyme, Paris, France. Filed Jan. 24, 1968.

BIWA

Priority claimed under Sec. 44(d) on French Reg. No. 741,932, dated Oct. 31, 1967.

For Perfumes, Toilet Water, Cologne, Face and Body Lotions, Bath Oil, Face, Hand, and Body Beauty Creams and Make-Up, Talcum Powder, Hairspray, and Nail Polish (Int. Cl. 3).

SN 292,185. Clairol Incorporated, New York, N.Y. Filed Feb. 29, 1968.

FUNLIGHTS

For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Feb. 20, 1968.

SN 296,193. Picot Limited, London, England. Filed Apr. 22, 1968.

PICOT

Owner of British Reg. No. 728,073, dated Mar. 16, 1954.
For Perfumes (Int. Cl. 3).

SN 296,412. Faberge, Inc., New York, N.Y. Filed Apr. 24, 1968.

EROTICA

For Cologne (Int. Cl. 3).
First use Mar. 28, 1968.

SN 297,523. Bristol-Myers Company, New York, N.Y. Filed May 7, 1968.

MOUNTAIN SPRING

For Cosmetic-Bath Oil (Int. Cl. 3).
First use Apr. 1, 1968.

SN 298,399. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

TRANQUIL

For Bath Oil and Talcum Powder (Int. Cl. 3).
First use May 6, 1968.

SN 298,401. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

KAHRALIA

For After Shave Lotion and Talcum Powder and Bath Oil (Int. Cl. 3).
First use May 6, 1968.

SN 298,432. Cosmetco, Long Beach, Calif. Filed May 17, 1968.

The Queen of Long Beach

For Eau de Cologne (Int. Cl. 3).
First use Apr. 10, 1968.

SN 299,305. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

TAI WINDS

For Talcum Powder and After Shave Lotion (Int. Cl. 3).
First use May 10, 1968.

SN 302,275. Alberto-Culver Company, Melrose Park, Ill. Filed July 9, 1968.

MELO

Owner of Reg. No. 679,011.
For Facial Pack (Int. Cl. 3).
First use Feb. 19, 1968.

Class 52 — Detergents and Soaps

SN 276,326. Masury-Columbia Co., Melrose Park, Ill. Filed July 19, 1967.

HetraRED

For Surgical Soap (Int. Cl. 3).
First use Dec. 1, 1966.

SN 286,758. Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. Filed Dec. 12, 1967.

EBERHARD FABER

For Type Cleaner (Int. Cl. 3).
First use Aug. 24, 1925.

SN 287,086. Nutrilite Products, Inc., Buena Park, Calif. Filed Dec. 18, 1967.

NPI

Owner of Reg. No. 793,081.
For Rug and Upholstery Cleaner, Dishwasher Concentrate, Cold Water Washing Detergent, and General Purpose Cleaner (Int. Cl. 3).
First use Apr. 24, 1967.

SN 287,565. Liquid Container Corporation, West Chicago, Ill. Filed Dec. 26, 1967.

SUNAIRE

For Liquid Detergents for Fine Fabrics and for Dishes (Int. Cl. 3).
First use Feb. 2, 1967.

SN 287,818. Theodore Herman, d.b.a. The Ejex Company, Jersey City, N.J. Filed Dec. 29, 1967.

EJEX

For Deodorant-Cleaner Solvent and Emulsifier (Int. Cl. 3).
First use Jan. 2, 1954.

SN 288,051. Claire Burke, Inc., Charlottsville, Va. Filed Jan. 4, 1968.

Lavana

For Liquid Detergent for Use on Fabrics (Int. Cl. 3).
First use at least as early as Sept. 1, 1967.

SN 288,602. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Jan. 11, 1968.

CLEVE-TEK B-19

For Cleaner for Vitreous Surfaces (Int. Cl. 3).
First use Oct. 22, 1965.

SN 288,603. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Jan. 11, 1968.

B-19

For Cleaner for Vitreous Surfaces (Int. Cl. 3).
First use Oct. 22, 1965.

SN 288,604. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Jan. 11, 1968.

CLEVE-TEK

For Cleaner for Vitreous Surfaces (Int. Cl. 3).
First use Oct. 22, 1965.

SN 291,456. Valley Home Decorators, Inc., d.b.a. Futuramic Research, Canoga Park, Calif. Filed Feb. 19, 1968.

GrooVee

For All Purpose Liquid Cleaner (Int. Cl. 3).
First use Nov. 13, 1967.

SN 293,055. Servicemaster Industries Inc., Downers Grove, Ill. Filed Mar. 12, 1968.

SERVICEMASTER

Owner of Reg. Nos. 579,205, 782,584, and others.
For Cleaning and Renovating Preparations in Solid and Liquid Form for Use in Cleaning and Renovating Textile Furnishings, Walls, Ceilings, Windows, Woodwork, and Furniture for Household, Office and Institutional Maintenance (Int. Cl. 3).
First use Feb. 18, 1952.

SN 293,734. New-Mar, Inc., Chicago, Ill. Filed Mar. 20, 1968.

NEW-MARVEL

For Laundry Detergent (Int. Cl. 3).
First use Dec. 2, 1967.

SN 293,943. National Milling and Chemical Company, Philadelphia, Pa. Filed Mar. 22, 1968.

Nami LO

Owner of Reg. Nos. 302,130 and 644,303.
For Laundry Detergent (Int. Cl. 3).
First use August 1960.

SN 295,110. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Apr. 8, 1968.

CAROLINA ORIGINALS

Without waiving any of its common law rights, applicant disclaims exclusive rights to the word "Originals" apart from the mark as shown.
For Toilet Soap (Int. Cl. 3).
First use June 21, 1966.

SN 295,728. The Grant Company, Chicago, Ill. Filed Apr. 16, 1968.

RETURN

For Combined Detergent and Deodorant Preparation for Use on Carpets, Upholstery, and Fabrics (Int. Cl. 3).
First use Mar. 15, 1968.

SN 295,762. Philadelphia Quartz Company, d.b.a. Philadelphia Quartz Company of California, Philadelphia, Pa. Filed Apr. 16, 1968.

KALOW

For Liquid Laundry Detergent (Int. Cl. 3).
First use on or about Mar. 4, 1968.

SN 298,400. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

TRANQUIL

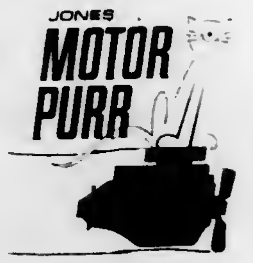
For Toilet Soap (Int. Cl. 3).
First use May 6, 1968.

SN 298,402. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

KAHRALIA

For Toilet Soap (Int. Cl. 3).
First use May 6, 1968.

SN 305,705. Otho Jones, d.b.a. Jones Motor Purr Co., Manhattan Beach, Calif. Filed Aug. 22, 1968.



No claim is made to the word "Motor" or the representation of a motor apart from the mark as shown.
For Petroleum Based Carburetor Cleaner for Spray Application or for Use as a Gasoline Additive (Int. Cl. 3).
First use Aug. 7, 1968.

SN 308,572. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 1, 1968.

DUNKIN DEMONS

For Toilet Soap (Int. Cl. 3).
First use Aug. 28, 1968.

SN 308,574. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 1, 1968.

DUNKIN SNAKES

For Toilet Soap (Int. Cl. 3).
First use Aug. 28, 1968.

SN 308,575. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 1, 1968.

DUNKIN MONSTERS

For Toilet Soap (Int. Cl. 3).
First use Aug. 28, 1968.

SN 310,277. Fairchild Chemical Corporation, Farmingdale, N.Y. Filed Oct. 23, 1968.

SWISSBOY

For Machine Cleaner (Int. Cl. 3).
First use January 1967.

SN 310,979. The Procter & Gamble Company, Cincinnati, Ohio. Filed Oct. 31, 1968.

BOWL QUICK

For Toilet Bowl Cleaner (Int. Cl. 3).
First use Dec. 29, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 256,980. Shane and Associates Inc., Clayton, Mo. Filed Oct. 21, 1966.

SHANE

For Security Services Rendered to Industry—Namely, Providing Uniformed Guards and Conducting Investigations of Clients' Personnel With Regard to Unexplained Inventory Shortages (Int. Cl. 42).
First use Feb. 24, 1961.

SN 263,203. The Savings and Loan Foundation, Inc., Washington, D.C. Filed Jan. 24, 1967.

PAY YOURSELF FIRST

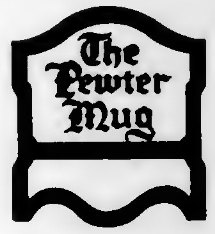
For Association Services—Namely, Promotion of the Business of Savings and Loan Associations (Int. Cl. 42).
First use Dec. 28, 1966.
Subj. to Intf. with SN 264,437.

SN 286,709. Austin E. Myers, Denver, Colo. Filed Dec. 11, 1967.

DRUMSTICK

For Restaurant Services (Int. Cl. 42).
First use September 1955.
Subj. to Intf. with SN 277,420, SN 277,421, and SN 278,861.

SN 288,980. The Pewter Mug, Inc., Cleveland, Ohio. Filed Jan. 16, 1968.



For Restaurant Services (Int. Cl. 42).
First use in or about 1962.
Pub. Subj. to Intf. with SN 293,493.

SN 293,493. Famous Foods, Incorporated, Malden, Mass. Filed Mar. 18, 1968.

PEWTER POT

Owner of Reg. No. 793,462.
For Restaurant Services (Int. Cl. 42).
First use Oct. 20, 1964.
Subj. to Intf. with SN 288,980.

Class 101 — Advertising and Business

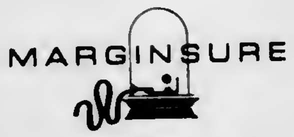
SN 271,656. Stop and Save Trading Stamp Corporation, South Hackensack, N.J. Filed May 16, 1967.

AN AMERICAN TRADITION

For Promoting the Sale of the Services or Goods of Others Through the Medium of Trading Stamps Redeemable by Their Customers in Merchandise or Travel Prizes, and Promoting the Productivity of Their Employees Through the Reward Medium of Trading Stamps Redeemable in Merchandise or Travel Prizes (Int. Cl. 35).
First use on or about Mar. 31, 1967.

Class 102 — Insurance and Financial

SN 283,876. Continental Assurance Co., Chicago, Ill. Filed Nov. 1, 1967.



For Insurance Underwriting Services (Int. Cl. 36).
First use June 16, 1967.

SN 283,877. Continental Assurance Co., Chicago, Ill. Filed Nov. 1, 1967.

MARGINSURE

For Insurance Underwriting Services (Int. Cl. 36).
First use June 16, 1967.

SN 286,261. General Fire and Casualty Company, New York, N.Y. Filed Dec. 5, 1967.

For Underwriting of Travel Accident Insurance (Int. Cl. 36).
First use Mar. 1, 1967.

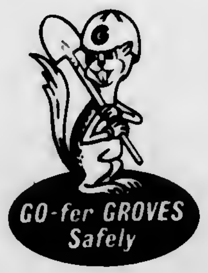
Class 103 — Construction and Repair

SN 262,121. Bird Space Technology, Inc., Palm Springs, Calif. Filed Jan. 9, 1967.

BIRD

Owner of Reg. Nos. 706,808 and 809,960.
For Aircraft Repair, Aircraft Modification and Design of Aircraft Modification, and Radio Installation Services on Aircraft (Int. Cl. 37).
First use on or about Oct. 10, 1945.

SN 272,723. S. J. Groves & Sons Company, Minneapolis, Minn. Filed May 31, 1967.



For Construction of Highways, Dams, Airfields, and Other Like Construction Activities (Int. Cl. 37).
First use January 1965.

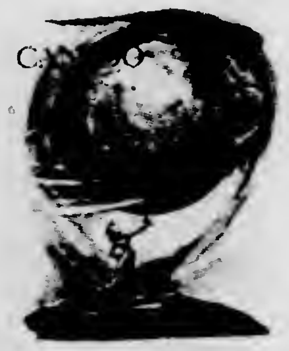
SN 309,422. GAF Corporation, New York, N.Y. Filed Oct. 11, 1968.

GAF

Owner of Reg. Nos. 509,124, 837,005, and others.
For Repair of Photographic and Reproduction Apparatus and Equipment (Int. Cl. 37).
First use January 1965.

Class 105 — Transportation and Storage

SN 290,666. Traveler's City, Ltd., New York, N.Y. Filed Feb. 8, 1968.



For Travel Agency Services (Int. Cl. 39).
First use November 1967.

SN 293,320. Swinging Singles Travel Club, Fort Lee, N.J. Filed Mar. 14, 1968.

SWINGING SINGLES

For Booking Group Travel Tours and Arranging for Travel, Hotel, Dining and Entertainment Reservations in Connection Therewith (Int. Cl. 39).
First use Dec. 15, 1967.

Class 106 — Material Treatment

SN 290,151. Altra Mold Corporation, Elk Grove Village, Ill. Filed Feb. 2, 1968.

Owner of Reg. No. 852,075.
For Custom Fabrication of Dies and Molds for Others (Int. Cl. 40).
First use Dec. 9, 1966.

Class 107 — Education and Entertainment

SN 229,158. Weather Phone Corporation of America, Grand Rapids, Mich. Filed Oct. 1, 1965.

WEATHER DIAL

Applicant disclaims any rights of ownership to the term "Weather" when used alone.
For Supplying Weather Information (Int. Cl. 41).
First use in or about August 1959.

SN 229,159. Weather Phone Corporation of America, Grand Rapids, Mich. Filed Oct. 1, 1965.

WEATHER PHONE

Applicant disclaims any rights of ownership to the term "Weather" when used alone.

For Supplying Weather Information (Int. Cl. 41).

First use in or about May 1963.

SN 295,014. Burroughs Corporation, Detroit, Mich. Filed Apr. 5, 1968.

Burroughs

For Educational Services—Namely, Conducting Schools and Training Courses, and Furnishing Instructional Material to Others (Int. Cl. 41).

First use about April 1911.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

864,699. VULTATHANE. General Latex and Chemical Corporation. SN 270,126. Pub. 5-21-68. Filed 4-27-67.

Class 2 — Receptacles

864,700. AR AND DESIGN. Reifenhauser, K.G. MULTIPLE CLASS (Classes 2, 12, 13, 23, 26, 34, and 35). SN 237,382. Pub. 6-20-67. Filed 1-26-66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

864,701. NORTHWEST. Northwest Airlines, Inc. MULTIPLE CLASS (Classes 3 and 105). SN 253,583. Pub. 10-15-68. Filed 9-1-66.

Class 12 — Construction Materials

864,700. (See Class 2 for this trademark.)

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

864,700. (See Class 2 for this trademark.)

864,702. DEM. Dema Engineering Co. MULTIPLE CLASS (Classes 13, 21, 23, 26, and 31). SN 244,087. Pub. 10-29-68. Filed 4-21-66.

Class 21 — Electrical Apparatus, Machines, and Supplies

864,702. (See Class 13 for this trademark.)

Class 22 — Games, Toys, and Sporting Goods

864,703. TEENIE BOPPER. Spectacular Products, Inc. SN 274,779. Pub. 4-23-68. Filed 6-26-67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

864,700. (See Class 2 for this trademark.)

864,702. (See Class 13 for this trademark.)

Class 26 — Measuring and Scientific Appliances

864,700. (See Class 2 for this trademark.)

864,702. (See Class 13 for this trademark.)

Class 31 — Filters and Refrigerators

864,702. (See Class 13 for this trademark.)

Class 32 — Furniture and Upholstery

864,704. SLUMBERITE DURALITE. Duralite Company, Inc. SN 264,779. Pub. 8-29-67. Filed 2-16-67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

864,700. (See Class 2 for this trademark.)

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

864,700. (See Class 2 for this trademark.)

Class 36 — Musical Instruments and Supplies

864,705. CROWN. International Radio and Electronics Corporation. SN 195,415. Pub. 1-12-65. Filed 6-11-64.

Class 39 — Clothing

864,706. LIMELIGHT. Lansdale Clothes, Incorporated. SN 177,062. Pub. 4-28-64. Filed 9-16-63.

Class 44 — Dental, Medical, and Surgical Appliances

864,707. MEDI-PAK. General Medical Corporation. SN 278,148. Pub. 7-30-68. Filed 7-26-67.

Class 46 — Foods and Ingredients of Foods

864,708. GOLDEN SKILLET ETC. AND DESIGN. Golden Skillet Corporation. SN 215,070. Pub. 7-4-67. Filed 3-26-65.

864,709. PUSHCART FRANKS ETC. AND DESIGN. Liberty Provisions Inc. SN 225,577. Pub. 2-14-67. Filed 8-12-65.

864,710. SPRINKLE SWEET. The Pillsbury Company, assignee of Betty T. Pinckney, d.b.a. De Sales Industries. SN 294,077. Pub. 11-19-68. Filed 3-25-68.

864,711. SPRINKLE SWEET ETC. AND DESIGN. The Pillsbury Company. SN 298,149. Pub. 11-12-68. Filed 5-14-68.

Class 51 — Cosmetics and Toilet Preparations

864,712. INNOCENT. Clairol Incorporated. SN 254,503. Pub. 10-17-67. Filed 9-15-66.

864,713. INNOCENT BLONDE. Clairol Incorporated. SN 261,143. Pub. 11-21-67. Filed 12-20-66.

864,714. INNOCENCE. Clairol Incorporated. SN 261,633. Pub. 11-7-67. Filed 12-29-66.

Class 52 — Detergents and Soaps

864,715. ERACE. Wyandotte Chemicals Corporation. SN 279,766. Pub. 5-14-68. Filed 9-6-67.

Class 100 — Miscellaneous

864,716. THE NEVER ON FRIDAY CLUB. The Never on Friday Club. MULTIPLE CLASS (Classes 100 and 107). SN 286,299. Pub. 6-4-68. Filed 12-6-67.

Class 103 — Construction and Repair

864,717. REGAL. Signal Oil and Gas Company. SN 229,457. Pub. 1-2-68. Filed 10-6-65.

Class 105 — Transportation and Storage

864,701. (See Class 3 for this trademark.)

864,718. AVL AND DESIGN. Atlas Van-Lines, Inc. SN 275,608. Pub. 4-9-68. Filed 7-10-67.

Class 107 — Education and Entertainment

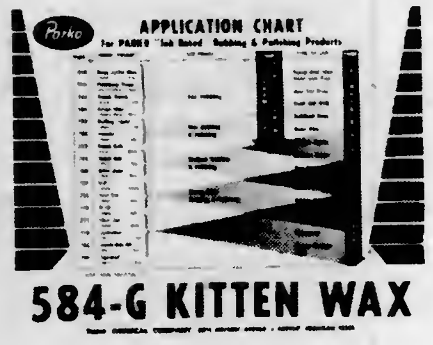
864,716. (See Class 100 for this trademark.)

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

864,719. Park Chemical Company, Detroit, Mich. SN 281,916. Filed 10-5-67.



For Rubbing and Polishing Compounds and Preparations (Int. Cl. 3).
First use June 1966.

864,720. Wilbert Products Co., Inc., Bronx, N.Y. SN 296,602. Filed P.R. 4-25-68; Am. S.R. 11-20-68.

LEMON OIL PLUS

For Furniture Polish (Int. Cl. 3).
First use Sept. 15, 1967.

864,721. Winters S. Williams, d.b.a. Golden Liquid Beeswax Co., Princeton, W. Va. SN 298,297. Filed P.R. 5-16-68; Am. S.R. 11-18-68.

GOLDEN LIQUID BEESWAX

For Wax for Waxing, Cleaning and Polishing Wood Surfaces (Int. Cl. 3).
First use 1938.

Class 6 — Chemicals and Chemical Compositions

864,722. American Cyanamid Company, Wayne, N.J. SN 280,920. Filed P.R. 9-22-67; Am. S.R. 11-5-68.

SUPER-BRITE

For Laundry Whitener (Int. Cl. 3).
First use Sept. 12, 1967.

Class 12 — Construction Materials

864,723. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. SN 256,392. Filed P.R. 10-12-66; Am. S.R. 10-24-68.

VERDE

For Lumber and Wood Products, i.e., Plywood (Int. Cl. 19).
First use Sept. 23, 1966.

864,724. Didier-Werke A.G., Weisbaden, Germany. SN 276,419. Filed P.R. 7-20-67; Am. S.R. 10-1-68.

DIDIER

Owner of German Reg. No. 784,675, dated Aug. 16, 1962.
For Bricks of Refractory and Acid Resisting Ceramic or Mineral Materials; and Plaster, Cement and Water Type Bonding, Surface Finishing and Patching Materials (Int. Cl. 19).

Class 26 — Measuring and Scientific Appliances

864,725. Konel Corporation, South San Francisco, Calif., by merger from Enac/Triton Corp., Cockeysville, Md. SN 281,181. Filed P.R. 9-26-67; Am. S.R. 7-8-68.

D-X NAVIGATOR

For Marine Loran Signal Receiver and Loran Signal Simulator (Int. Cl. 9).
First use June 28, 1960.

Class 31 — Filters and Refrigerators

864,726. Glenn G. Havens, d.b.a. Havens Industries, San Diego, Calif. SN 267,040. Filed P.R. 3-17-67; Am. S.R. 10-16-68.

OSMOTIK

For Reverse Osmosis Solvent Separation or Ultrafiltration Units Used, for Example, in Separating Water From a Salt Solution (Int. Cl. 11).
First use Feb. 10, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

864,727. Edmond Bordeaux Szekely, d.b.a. Hydrodynamics Research and Development Co., San Diego, Calif. SN 266,467. Filed P.R. 3-10-67; Am. S.R. 9-6-68.

AERODYNAMIC THERMO-SAUNA

For Combination Electric Heater and Electric Motor for Heating and Conducting Heated Air Into a Tube (Int. Cl. 11).
First use Feb. 16, 1967.

864,728. Bow Solder Products Co. Inc., Newark, N.J. SN 269,056. Filed P.R. 4-13-67; Am. S.R. 11-5-68.

COPPER SWEAT

For Solder (Int. Cl. 1).
First use Mar. 28, 1967.

864,729. Didier-Werke A.G., Wiesbaden, Germany. SN 276,421. Filed P.R. 7-20-67; Am. S.R. 10-1-68.

DIDIER

Owner of German Reg. No. 789,586, dated June 10, 1964.
For Industrial Ovens, Furnaces, Steam Boilers and Parts Thereof (Int. Cl. 11).

Class 37 — Paper and Stationery

864,730. Brittains Limited, Leek, England. SN 274,177. Filed P.R. 6-19-67; Am. S.R. 10-21-68.

ULTRAFLAT

Owner of U.S. Reg. No. 763,523.
For Decalcomania Paper (Int. Cl. 16).
First use Feb. 23, 1967.

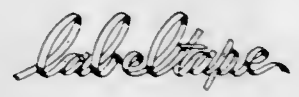
864,731. Exeter Paper Co., Inc., Chicago, Ill. SN 290,163. Filed P.R. 2-2-68; Am. S.R. 11-14-68.

HARDWOOD

For Decorative Papers for Use as Covers and Liners (Int. Cl. 16).
First use Aug. 9, 1967.

Class 38 — Prints and Publications

864,732. Forbes Labeltape Company, Grand Rapids, Mich. SN 254,440. Filed P.R. 9-14-66; Am. S.R. 8-29-68.



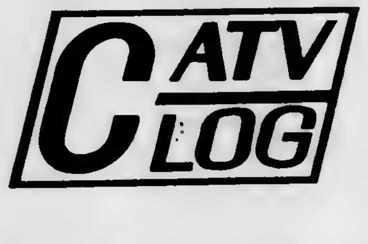
For Printed Pressure-Sensitive Labels (Int. Cl. 16).
First use Apr. 1, 1960.

864,733. The Conde Nast Publications, Inc., New York, N.Y. SN 276,314. Filed P.R. 7-19-67; Am. S.R. 11-25-68.

THE YOUNG INDIVIDUALISTS

For Magazine Section Devoted to the Subject of Home Furnishings and Home Decoration (Int. Cl. 16).
First use July 5, 1967.

864,734. Television Digest, Inc., Washington, D.C. SN 276,999. Filed P.R. 7-28-67; Am. S.R. 11-20-68.



For Directory, Published From Time to Time, of Community Antenna Television Systems, CATV Equipment Manufacturers, National, Regional and State CATV Associations, and Government Officials with CATV Regulation Responsibilities (Int. Cl. 16).
First use January 1967.

864,735. Monitor Publishing Company, Inc., Houston, Tex. SN 283,686. Filed P.R. 10-30-67; Am. S.R. 10-8-68.

GREATER HOUSTON FOOTBALL

For Sports Magazine Relating Primarily to Football (Int. Cl. 16).
First use Aug. 2, 1967.

864,736. The Webb Publishing Company, St. Paul, Minn. SN 285,366. Filed P.R. 11-21-67; Am. S.R. 11-25-68.

FARM
industry
NEWS

For Trade Magazine (Int. Cl. 16).
First use Nov. 9, 1967.

864,737. McGraw-Hill, Inc., New York, N.Y. SN 286,439. Filed P.R. 12-7-67; Am. S.R. 12-13-68.

FIRST STEP BOOK

For Series of Children's Books (Int. Cl. 16).
First use Nov. 27, 1967.

864,738. The American Automobile Association (Incorporated), Washington, D.C. SN 287,118. Filed P.R. 12-18-67; Am. S.R. 11-20-68.

CitiBook

For Series of Booklets Each Containing Information of Interest to the Tourist in a Particular City or Other Geographical Area (Int. Cl. 16).
First use Nov. 1, 1967.

864,739. McGraw-Hill, Inc., New York, N.Y. SN 288,961. Filed P.R. 1-16-68; Am. S.R. 12-6-68.

SERVING MAN'S NEED FOR KNOWLEDGE

For Books and Magazines (Int. Cl. 16).
First use Nov. 27, 1967.

864,740. Hitchcock Publishing Company, Wheaton, Ill. SN 290,607. Filed P.R. 2-8-68; Am. S.R. 11-20-68.

QUALITY ASSURANCE REGISTER

For Trade Catalog (Int. Cl. 16).
First use Jan. 16, 1967.

864,741. The Bureau of National Affairs, Inc., Washington, D.C. SN 302,586. Filed 7-12-68.

THE CRIMINAL LAW REPORTER

For Periodically Published News Reports (Int. Cl. 16).
First use Apr. 19, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

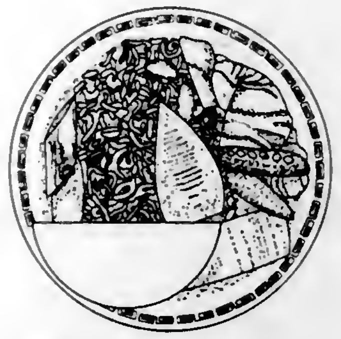
864,742. Theodore Bradley, Monterey, Calif. SN 288,079. Filed 1-4-68.

DISPOS-A-MASK

For Disposable Masks To Be Used in Hospitals and in Operating Rooms by Surgeons and Nurses (Int. Cl. 10).
First use June 14, 1966.

Class 46 — Foods and Ingredients of Foods

864,743. Sanyo Shokuhin Kabushiki Kaisha, Maebashi City, Japan. SN 264,249. Filed P.R. 2-8-67; Am. S.R. 10-11-68.



長崎タンメン

The English translation of the Japanese characters is "Nagasaki Tanmen."
For Noodles and a Soup Base Sold as a Single Unit (Int. Cl. 30).
First use August 1964; in commerce May 25, 1965.

Class 51 — Cosmetics and Toilet Preparations

864,744. Bonne Bell, Inc., Lakewood, Ohio. SN 250,238. Filed P.R. 7-14-66; Am. S.R. 11-7-68.

AFTER SUN BEAUTY

For Moisture Lotion (Int. Cl. 3).
First use Mar. 7, 1966.

864,745. Samuel Bonat & Bro., Inc., West Paterson, N.J. SN 267,910. Filed P.R. 3-30-67; Am. S.R. 8-23-68.

SUPPORT SET

For Neutralizer for Permanent Waves (Int. Cl. 3).
First use Jan. 5, 1967.

864,746. A. R. Williams & Co., Carteret, N.J. SN 275,889. Filed P.R. 7-12-67; Am. S.R. 10-22-68.

SKIN TONE

For Hand and Body Lotion (Int. Cl. 3).
First use June 20, 1967.

864,747. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,469. Filed P.R. 8-3-67; Am. S.R. 9-5-68.

SNOW JOB

For Nail Enamel (Int. Cl. 3).
First use July 19, 1965.

864,748. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,698. Filed P.R. 8-7-67; Am. S.R. 9-5-68.

LITTLE TEASE

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

864,749. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,699. Filed P.R. 8-7-67; Am. S.R. 9-5-68.

PEPPERMINT FOG

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

Service Mark

Class 101 — Advertising and Business

864,750. Volume Builders, Inc., Philadelphia, Pa. SN 271,215. Filed P.R. 5-11-67; Am. S.R. 4-22-68.

MATCH FOR MONEY

For Promoting the Sale of Goods or Services of Others Through Providing Materials and Advertising Matter Designed for a Promotional Contest (Int. Cl. 35).
First use Apr. 17, 1967.

TRADEMARK REGISTRATIONS RENEWED

249,314. CLIMAX. Cl. 29 (Int. Cl. 7). 11-13-28.
249,545. DR. PARKER'S VITALIZING TABLETS. Cl. 8. (Int. Cl. 3). 11-20-28.
250,526. FOSALSIL. Cl. 12 (Int. Cl. 19). 12-11-28.
250,914. VANBEENOL. Cl. 46 (Int. Cls. 3, 29, and 30). 12-18-28.
251,253. PYRIDIUM. Cl. 18 (Int. Cl. 5). 1-1-29.
252,120. QUARTRBOARD. Cl. 12 (Int. Cl. 19). 1-22-29.
252,292. SUN SOX. Cl. 39 (Int. Cl. 25). 1-29-29.
255,435. "PINE CRAFT" ETC. AND DESIGN. Cl. 12 (Int. Cl. 19). 4-23-29.
255,480. PEARL. Cl. 17 (Int. Cl. 34). 4-23-29.
255,482. JONNY. Cl. 17 (Int. Cl. 34). 4-23-29.
255,483. BLUE BIRD. Cl. 17 (Int. Cl. 34). 4-23-29.
255,743. KLOMINE. Cl. 6 (Int. Cl. 5). 4-30-29.
256,538. ONEIDA JUMP. Cl. 50 (Int. Cl. 6). 5-21-29.
256,779. VESTA. Cl. 34 (Int. Cl. 11). 5-21-29.
434,970. LESTREFLEX ETC. AND DESIGN. Cl. 44 (Int. Cl. 5). 12-9-47.
441,269. GENTRIE. Cl. 52 (Int. Cl. 3). 11-9-48.
441,608. SHERWIN-WILLIAMS. Cl. 46 (Int. Cl. 31). 12-14-48.
441,805. SHERWIN-WILLIAMS. Cl. 4 (Int. Cl. 3). 1-4-49.
441,933. AMERICAN BEAUTY. Cl. 51 (Int. Cl. 3). 1-25-49.
442,235. CULLSAN. Cl. 1 (Int. Cl. 19). 3-15-49.
442,297. FAITHFULLY YOURS. Cl. 51 (Int. Cl. 3). 3-22-49.
442,552. PASCO AND DESIGN. Cl. 30 (Int. Cl. 21). 4-26-49.
442,553. PASCO AND DESIGN. Cl. 33 (Int. Cl. 21). 4-26-49.
501,655. INNER SANCTUM. Cl. 3 (Int. Cl. 18). 8-17-48.
503,053. GUILFORD. Cl. 46 (Int. Cl. 29). 10-19-48.
505,451. WAKEFIELD. Cl. 17 (Int. Cl. 34). 1-4-49.
505,546. TUFWELT. Cl. 39 (Int. Cl. 25). 1-4-49.
505,785. JAEGER. Cl. 27 (Int. Cl. 14). 1-18-49.
506,225. SUPER-KNIT. Cl. 39 (Int. Cl. 25). 2-1-49.
506,303. HARDING. Cl. 42 (Int. Cl. 24). 2-1-49.
506,226. LE ROI. Cl. 39 (Int. Cl. 25). 2-1-49.
506,536. JABEL. Cl. 28 (Int. Cl. 14). 2-8-49.
507,858. COOL WAVE AND DESIGN. Cl. 39 (Int. Cl. 25). 3-22-49.
507,941. THE SERVIS RECORDER. Cl. 26 (Int. Cl. 9). 3-22-49.
508,009. MILKI-RICH ENRICHER. Cl. 46 (Int. Cl. 30). 3-22-49.
508,160. HARLEY-DAVIDSON. Cl. 21 (Int. Cls. 7, 9, and 12). 4-5-49.
508,243. BEAVER STATE. Cl. 42 (Int. Cl. 24). 4-5-49.
508,699. GOO GOO. Cl. 46 (Int. Cl. 30). 4-19-49.
508,775. WINCO. Cl. 46 (Int. Cl. 29). 4-19-49.
508,776. COLOPHON. Cl. 37 (Int. Cl. 16). 4-19-49.
508,777. STONERIDGE. Cl. 37 (Int. Cl. 16). 4-19-49.
508,888. CABOT-REED. Cl. 39 (Int. Cl. 25). 4-26-49.
508,942. HARLEY-DAVIDSON. Cl. 4 (Int. Cl. 3). 4-26-49.
508,691. TUFIDE. Cl. 3 (Int. Cl. 18). 4-19-49.
508,995. PENDLETON. Cl. 39 (Int. Cl. 25). 4-26-49.
509,088. TRIPOLEY. Cl. 22 (Int. Cl. 28). 4-26-49.
509,969. THE PILGRIM LAUNDRY. Cl. 55 (Int. Cl. 37). 5-17-49.
509,798. THE PILGRIM LAUNDRY AND PILGRIM DESIGN. Cl. 55 (Int. Cl. 37). 5-10-49.
509,799. PILGRIM (DESIGN). Cl. 55 (Int. Cl. 37). 5-10-49.
509,803. RCA AND DESIGN. Cl. 55 (Int. Cl. 38). 5-10-49.
509,880. HEADLINE. Cl. 17 (Int. Cl. 34). 5-17-49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Dec. 25, 1962

742,506. CHEETERS. Cl. 1.
742,507. MICRONIZED. Cl. 1.
742,509. CELO-PAD. Cl. 1.
742,512. OSCO SELECT SIXTY BRAND. Cl. 1.
742,513. OSCO BLACK HILLS BRAND. Cl. 1.
742,520. NUMAX. Cl. 2.
742,521. FRONTIER AND DESIGN. Cl. 2.
742,522. SANI-LINER. Cl. 2.
742,524. QUEEN O'SCOTS AND DESIGN. Cl. 2.
742,527. "TWO-BAGGER." Cl. 3.
742,529. TWISTEEN. Cl. 3.
742,532. CLEOPATRA. Cl. 3.
742,538. BAND-STIK. Cl. 5.
742,550. RO-PEL. Cl. 6.
742,551. F-502. Cl. 6.
742,552. FREON-502. Cl. 6.
742,554. FREON-116. Cl. 6.
742,555. ASHVAC. Cl. 8.
742,559. PLUSH. Cl. 10.
742,564. K.F.P. ETC. AND DESIGN. Cl. 12.
742,567. FRONTIER AND DESIGN. Cl. 12.
742,568. ULTRA*FOAM. Cl. 12.
742,574. ANCHOR WALL. Cl. 12.
742,576. PACESETTER. Cl. 12.
742,580. E-Z CLOSE. Cl. 13.
742,583. SPEED-FLEX. Cl. 13.
742,588. PLAZE-NA-OIL. Cl. 15.
742,592. WHITE-COAT. Cl. 16.
742,598. EPATONE AND DESIGN. Cl. 16.
742,603. DON PABLO. Cl. 17.
742,604. PYRIZOLE. Cl. 18.
742,607. RAOVIN. Cl. 18.
742,613. SUPLIVAC. Cl. 18.
742,626. HALLETT MESSAGE MASTER. Cl. 21.
742,627. FRAZIER SERVING YOU SINCE 1932. Cl. 21.
742,629. SUPER HOT ROD. Cl. 21.
742,631. ISODRIVE. Cl. 21.
742,632. WINGLINE. Cl. 21.
742,633. SAF-N-SURE. Cl. 21.
742,637. VIDEO PRINCE. Cl. 21.
742,638. SKI DEK. Cl. 22.
742,641. TROPHEE. Cl. 22.
742,644. ORVISCO. Cl. 22.
742,645. STRIKE-STRIPE. Cl. 22.
742,648. PLAN-O-MATIC. Cl. 23.

742,649. TITECOTE. Cl. 23.
742,651. DENVER AND DESIGN. Cl. 23.
742,655. TAP-R-DRILL. Cl. 23.
742,659. AGRITRAC. Cl. 23.
742,670. DENVER & DESIGN. Cl. 26.
742,671. GEOMETRIC DESIGN. Cl. 27.
742,678. GAC AND DESIGN. Cl. 28.
742,681. CAL-FLEX. Cl. 34.
742,682. HOLIDAY. Cl. 34.
742,685. TUBANO. Cl. 35.
742,686. LECTRO-TEACHER. Cl. 36.
742,687. NORWOOD AND DESIGN. Cl. 36.
742,688. IGM SIMPLIMATION AND DESIGN. Cl. 36.
742,689. ATOMICORD. Cl. 36.
742,691. JERNAT OF ITALY. Cl. 39.
742,695. MASSADA. Cl. 39.
742,699. CLAUDIA HUNT JUNIORS. Cl. 39.
742,704. FRIENDSHIP 7. Cl. 39.
742,709. PRINCETON. Cl. 42.
742,713. MIRAGLEEM. Cl. 42.
742,718. HERNANDO'S HIDEAWAY. Cl. 46.
742,722. EXCEL AND DESIGN. Cl. 46.
742,723. LE FROIS. Cl. 46.
742,725. SHIKAINAMI HANAYOME. Cl. 46.
742,726. HANAYOME. Cl. 46.
742,727. BAR-B-STEW. Cl. 46.
742,728. BAR-B-CHEW. Cl. 46.
742,733. ATGEL GF AND DESIGN. Cl. 46.
742,737. GOOD SEASONS AND DESIGN. Cl. 46.
742,746. NEVER ON SUNDAY. Cl. 51.
742,747. BR-85. Cl. 51.
742,748. UPPER DECK. Cl. 51.
742,757. DUO-ETTE. Cl. 52.
742,764. TRANSCONTINENTAL ETC. AND DESIGN. Cl. 102.
742,765. TRACKSIDE. Cl. 103.
742,769. AMERICAN MODES AND DESIGN. Cl. 3.
742,772. BEND-N-TWIST. Cl. 22.
742,777. TUCCI. Cl. 39.
742,779. ACHESON ETC. AND DESIGN. Cl. 45.
742,780. OLD COUNTRY BOHEMIAN. Cl. 46.

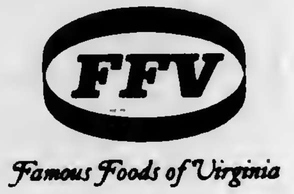
Section 18

751,321. CUPID. Cl. 39. 6-18-63.
802,303. FUN LINERS FOR SUN LOVERS AND DESIGN. Cl. 39. 1-18-66.

TRADEMARK REGISTRATIONS RENEWED DISCLAIMED, CORRECTED, ETC.

570,610. DOMETIC. Cl. 31. 2-17-53. Aktiebolaget Elektrolux, Stockholm, Sweden. Corrected: In the statement, column 2, line 2, "October 27" should be deleted and *September 29* should be inserted.

652,152. FFV FAMOUS FOODS OF VIRGINIA AND DESIGN. Cl. 46. 9-24-57. Weston Biscuit Company Inc., doing business as Southern Biscuit Company, Richmond, Va. Amended to appear:



654,047. ELIXOPHYLLIN. Cl. 18. 11-5-57. Sherman Laboratories, Detroit, Mich. Corrected: In the statement, column 2, line 3 should be deleted and *First use September 1954; in commerce Mar. 1, 1955* should be inserted.

729,944. CPGE. Cl. 12. 4-17-62. Cariboo-P.G.E. Lumber Manufacturers' Association, assignee of Cariboo-P.G.E. Lumber Manufacturers' Association, Vancouver, British Columbia, Canada. Amended: In the statement, column 1, after line 2, *, now by change of name Cariboo Lumber Manufacturers' Association* is inserted.

758,611. ANGORA CALF. Cl. 1. 10-22-63. Barrett & Company, Inc., Newark, N.J. Corrected: In the statement, column 1, line 1, after "Barrett" *&* should be inserted.

830,365. HEN HOUSE AND DESIGN. Cl. 101. 6-13-67. Roger M. Levin, doing business as Chief Levin's, Easton, Pa. Amended: In the statement, column 1, line 1, ", doing business as Chief Levin's" is deleted.

830,647. HEN HOUSE AND DESIGN. Cl. 39. 6-20-67. Roger M. Levin, doing business as Chief Levin's, Easton, Pa. Amended: In the statement, column 1, line 1, ", doing business as Chief Levin's" is deleted.

INDEX OF REGISTRANTS

FEBRUARY 11, 1969

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Abbott Laboratories, North Chicago, Ill. 742,607, canc. Cl. 18.
Abby-Kent Co., Inc., New York, N.Y. 742,699, canc. Cl. 39.
Acheson Bottling Co., Inc., Bethlehem, Pa. 742,779, canc. Cl. 45.
Acme Chemical Co., Milwaukee, Wis. 255,743, ren. 2-11-69. Cl. 6.
Aktiebolaget Elektrolux, Stockholm, Sweden. 570,610, cor. Cl. 31.
Al-Jay Undergarment Mfg. Co.: *See*—
  Hazan, Albert.
American Automobile Association (Inc.), The, Washington, D.C. 864,738. Cl. 38.
American Cyanamid Co., Wayne, N.J. 864,722. Cl. 6.
American Handbags, Inc., New York, N.Y. 742,769, canc. Cl. 3.
American Thermos Products Co., The: *See*—
  King-Seeley Thermos Co.
Animal Trap Co. of America, to Woodstream Corp., Lititz, Pa. 256,538, ren. 2-11-69. Cl. 50.
Aristocrat Leather Products, Inc., New York, N.Y., to Evans-Aristocrat Industries, Inc., Elizabeth, N.J. 501,655, ren. 2-11-69. Cl. 3.
Armco Steel Corp., Middletown, Ohio. 742,574, canc. Cl. 12.
Athens Stove Works, Inc., The: *See*—
  Vesta Gas Range & Mfg. Co.
Atlas Van-Lines, Inc., Evansville, Ind. 864,718, pub. 4-9-68. Cl. 105.
Atomium Corp., Waltham, Mass. 742,689, canc. Cl. 36.
Austria Tabakwerke Aktiengesellschaft vorm. Oesterreichische Tabakregie: *See*—
  General-Direktion der Osterr. Tabakregie.
Avon Watch Case Co., Inc., Brooklyn, N.Y. 742,671, canc. Cl. 27.
Barbizon Corp., The, New York, N.Y. 742,713, canc. Cl. 42.
Barrett & Co., Inc., Newark, N.J. 758,611, cor. Cl. 1.
Batchelor, William, d.b.a. William Batchelor Sons, Chicago, Ill. 742,588, canc. Cl. 15.
Batchelor, William, Sons: *See*—
  Batchelor, William.
Bear Brand Hosiery Co., Chicago, Ill. 252,292, ren. 2-11-69. Cl. 39.
Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 864,745. Cl. 51.
Bonne Bell, Inc., Lakewood, Ohio. 864,744. Cl. 51.
Bow Solder Products Co. Inc., Newark, N.J. 864,728. Cl. 34.
Bradley, Theodore, Monterey, Calif. 864,742. Cl. 44.
Brand, Joe, Laredo, Tex. 508,888, ren. 2-11-69. Cl. 39.
Brede, Inc., Detroit, Mich. 742,780, canc. Cl. 46.
Brenmac, Inc.: *See*—
  White Pine Sash Co.
Brittains Ltd., Staffordshire, England. 864,730. Cl. 37.
Bureau of National Affairs, Inc., The, Washington, D.C. 864,741. Cl. 38.
Burlington Industries, Inc., New York, N.Y. 742,709, canc. Cl. 42.
Bush Boake Allen Ltd.: *See*—
  Bush, W. J., & Co., Ltd.
Bush, W. J., & Co., Ltd., to Bush Boake Allen Ltd., London, England. 250,914, ren. 2-11-69. Cl. 46.
Cadaco-Ellis, to Cadaco, Inc., Chicago, Ill. 509,088, ren. 2-11-69. Cl. 22.
Capital City Products Co., The, to Stokely-Van Camp, Inc., Columbus, Ohio. 508,775, ren. 2-11-69. Cl. 46.
Cariboo-P.G.E. Lumber Manufacturers' Association, assignee of Cariboo-P.G.E. Lumber Manufacturers' Association, Vancouver, British Columbia, Canada. 729,944. Am. 7(d). Cl. 12.
Celotex Corp., The, Chicago, Ill. 742,509, canc. Cl. 1.
Chan, Bernard, Co., Inc., New York, N.Y. 742,529, canc. Cl. 3.
Channel Master Corp., Ellenville, N.Y. 742,637, canc. Cl. 21.
Chelnco, Inc., Burlington, N.J. 742,524, canc. Cl. 2.
Clairol Inc., New York, N.Y. 864,712-4, pub. 10-17-67. Cl. 51.
Cohen, Joseph H., & Sons, Inc., New York, N.Y. 742,704, canc. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 742,747, canc. Cl. 51.
Conde Nast Publications, Inc., The, New York, N.Y. 864,733. Cl. 38.
Connecticut Hard Rubber Co., The, New Haven, Conn. 742,681, canc. Cl. 34.
Consolidated Cigar Corp.: *See*—
  Lorillard, P., Co.
Crown Imports Co. Inc., San Francisco, Calif. 742,725-6, canc. Cl. 46.
Culligan, Inc.: *See*—
  Culligan Zeolite Co.
Culligan Zeolite Co., to Culligan, Inc., Northbrook, Ill. 442,235, ren. 2-11-69. Cl. 1.
Curtis Paper Co., Newark, Del. 508,776-7, ren. 2-11-69. Cl. 37.
Dema Engineering Co., St. Louis, Mo. 864,702, pub. 10-29-68. Multiple Class (Classes 13, 21, 23, 26, and 31).
Denver Equipment Co., Denver, Colo. 742,651, canc. Cl. 23.
Denver Equipment Co., Denver, Colo. 742,670, canc. Cl. 26.
De St. Dalmas, A., & Co., Ltd., Leicester, to Seton Products Ltd., Oldham, England. 434,970, ren. 2-11-69. Cl. 44.
De Sales Industries: *See*—
  Pillsbury Co., The.
Didier-Werke A.G., Wiesbaden, Germany. 864,724. Cl. 12.
Didier-Werke A.G., Wiesbaden, Germany. 864,729. Cl. 34.
Dr. Parker Medicine Co.: *See*—
  Parker, Edgar W.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 742,551-2, canc. Cl. 6.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 742,554, canc. Cl. 6.
Duralite Co., Inc., New York, N.Y. 864,704, pub. 8-29-67. Cl. 32.
Eastman Products Corp.: *See*—
  Texas Research & Electronic Corp.
Electronic Memories, Inc., Los Angeles, Calif. 742,631, canc. Cl. 21.
Elite Sales, Inc., Staples, Minn. 742,538, canc. Cl. 5.
Eltee Co., The: *See*—
  Timms, Leon M.
Enac/Triton Corp.: *See*—
  Konel Corp.
Etablissements Ed. Jaeger: *See*—
  Jaeger Watch Co., Inc.
Evans-Aristocrat Industries, Inc.: *See*—
  Aristocrat Leather Products, Inc.
Excel Packing Co., Inc., Wichita, Kans. 742,722, canc. Cl. 46.
Exeter Paper Co., Inc., Chicago, Ill. 864,731. Cl. 37.
Fad, Inc., New York, N.Y. 742,522, canc. Cl. 2.
Farny, Cyril: *See*—
  Ski-Dek Corp.
Forbes Labeltape Co., Grand Rapids, Mich. 864,732. Cl. 38.
Frazier Distributing Co.: *See*—
  Frazier, William G.
Frazier, William G., d.b.a. Frazier Distributing Co., Albany, Ind. 742,627, canc. Cl. 21.
Frontier Mfg. Co., Dallas, Tex. 742,521, canc. Cl. 2.
Frontier Mfg. Co., Dallas, Tex. 742,567, canc. Cl. 12.
Funel, Societe Anonyme, Le Cannet, Alpes-Maritimes, France. 742,746, canc. Cl. 51.
Furnival & Co. Ltd., Stockport, England. 742,648, canc. Cl. 23.
General Foods Corp., White Plains, N.Y. 742,733, canc. Cl. 46.
General Foods Corp., White Plains, N.Y. 742,737, canc. Cl. 46.
General-Direktion der Osterr. Tabakregie, to Austria Tabakwerke Aktiengesellschaft vorm. Oesterreichische Tabakregie, Vienna, Austria. 255,480, ren. 2-11-69. Cl. 17.
General-Direktion der Osterr. Tabakregie, to Austria Tabakwerke Aktiengesellschaft vorm. Osterreichische Tabakregie, Vienna, Austria. 255,482-3, ren. 2-11-69. Cl. 17.
General Latex & Chemical Corp., Cambridge, Mass. 864,699, pub. 5-21-68. Cl. 1.
General Medical Corp., Richmond, Va. 864,707, pub. 7-30-68. Cl. 44.
Globe Illumination Co., Los Angeles, Calif. 742,632, canc. Cl. 21.
Gold-Art Creations, Inc., New York, N.Y. 742,678, canc. Cl. 28.
Golden Liquid Beeswax Co.: *See*—
  Williams, Winters S.
Golden Skillet Corp., Richmond, Va. 864,708, pub. 7-4-67. Cl. 46.
Goodyear, James W., Redruth, Cornwall, England. 742,555, canc. Cl. 8.
Gustin-Bacon Mfg. Co., Kansas City, Mo. 742,568, canc. Cl. 12.
Hallett Mfg. Co., Los Angeles, Calif. 742,626, canc. Cl. 21.
Harley-Davidson Motor Co., Milwaukee, Wis. 508,160, ren. 2-11-69. Cl. 21.
Harley-Davidson Motor Co., to Harley-Davidson Motor Co., Milwaukee, Wis. 508,942, ren. 2-11-69. Cl. 4.
Hatheway Patterson Corp., Jersey City, N.J. 742,633, canc. Cl. 21.
Havens, Glenn G., d.b.a. Havens Industries, San Diego, Calif. 864,726. Cl. 31.
Havens Industries: *See*—
  Havens, Glenn G.
Hazan, Albert, d.b.a. Al-Jay Undergarment Mfg. Co., New York, N.Y. 751,321, canc. Cl. 39.
Hitchcock Publishing Co., Wheaton, Ill. 864,740. Cl. 38.
House for Men, Inc., The, d.b.a. Treasure Island Sales Co., Chicago, Ill. 742,748, canc. Cl. 51.
Hudnut, Richard, New York, N.Y. 441,933, ren. 2-11-69. Cl. 51.
Hydraulic Closer & Lock Co., Inc., Freeport, N.Y. 742,580, canc. Cl. 13.
Hydrodynamics Research & Development Co.: *See*—
  Szekely, Edmond B.
International Good Music, Inc., Bellingham, Wash. 742,688, canc. Cl. 36.
International Minerals & Chemical Corp., Skokie, Ill. 742,559, canc. Cl. 10.

International Radio & Electronics Corp., Elkhart, Ind. 864,705, pub. 1-12-65. Cl. 36.

Itoh, C., & Co. (America) Inc., New York, N.Y. 802,303, canc. Cl. 39.

J. & O. Industries, Berkeley, Calif. 742,659, canc. Cl. 23.

Jabel Inc.: *See*—
Jabel Ring Mfg. Co.

Jabel Ring Mfg. Co., Newark, to Jabel Inc., Irvington, N.J. 506,536, ren. 2-11-69. Cl. 28.

Jaeger Watch Co., Inc., New York, N.Y., to Etablissements Ed. Jaeger, Levallois-Perret, Seine, France. 505,785, ren. 2-11-69. Cl. 27.

Jernat of Italy, Inc., New York, N.Y. 742,691, canc. Cl. 39.

Joseph & Feiss Co., The, to The Joseph & Feiss Co., Cleveland, Ohio. 507,858, ren. 2-11-69. Cl. 39.

Junior Hall, Inc., from Young Juniors, Inc., d.b.a. Seaton Hall, Boston, Mass. 742,777, canc. Cl. 39.

Kellogg Co., Battle Creek, Mich. 742,727-8, canc. Cl. 46.

King-Seeley Thermos Co., from The American Thermos Products Co., Norwich, Conn. 742,682, canc. Cl. 34.

Konel Corp., South San Francisco, Calif., from Enac/Triton Corp., Cockeysville, Md. 864,725. Cl. 26.

Kootenay Forest Products Ltd., Nelson, British Columbia, Canada. 742,564, canc. Cl. 12.

Lansdale Clothes, Inc., New York, N.Y. 864,706, pub. 4-28-64. Cl. 39.

Le Frois Food Corp., Webster, N.Y. 742,723, canc. Cl. 46.

Lenel Co.: *See*—
Rothchild, Lionel G.

Lenel Perfumes, Inc.: *See*—
Rothchild, Lionel G.

Le Roi Hosiery Co. Inc., to Le Roi Hosiery Co., Inc., New York, N.Y. 506,225-6, ren. 2-11-69. Cl. 39.

Levin, Roger M., d.b.a. Chief Levin's, Easton, Pa. 830,365. Am. 7(d). Cl. 101.

Levin, Roger M., d.b.a. Chief Levin's, Easton, Pa. 830,647. Am. 7(d). Cl. 39.

Liberty Provisions Inc., Roseland, N.J. 864,709, pub. 2-14-67. Cl. 46.

Lilly, Eli, & Co., Indianapolis, Ind. 742,613, canc. Cl. 18.

Lorillard, P., Co., to Consolidated Cigar Corp., New York, N.Y. 509,880, ren. 2-11-69. Cl. 17.

Luzier's, Inc., Kansas City, Mo. 442,297, ren. 2-11-69. Cl. 51.

Macmillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 742,507, canc. Cl. 1.

Manufactures Reunies de Cigares "Marec," Sint Amandsberg, Belgium. 742,603, canc. Cl. 17.

Margrace Corp.: *See*—
Parker, Edgar W.

Marx, Louis, & Co., Inc., New York, N.Y. 742,772, canc. Cl. 22.

Masonite Corp., Chicago, Ill. 252,120, ren. 2-11-69. Cl. 12.

Massada Mfg. Corp., New York, N.Y. 742,695, canc. Cl. 39.

McGraw-Hill, Inc., New York, N.Y. 864,737. Cl. 38.

McGraw-Hill, Inc., New York, N.Y. 864,739. Cl. 38.

Moler Products Ltd., Colchester, Essex, England. 250,526, ren. 2-11-69. Cl. 12.

Monitor Publishing Co., Inc., Houston, Tex. 864,735. Cl. 38.

Morris, Philip, & Co. Ltd. Inc., to Philip Morris Inc., New York, N.Y. 505,451, ren. 2-11-69. Cl. 17.

Morris, Philip, Inc.: *See*—
Morris, Philip, & Co. Ltd. Inc.

Never on Friday Club, The, Long Beach, Calif. 864,716, pub. 6-4-68. Multiple Class (Classes 100 and 107).

Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 864,747-9. Cl. 51.

Northwest Airlines, Inc., St. Paul, Minn. 864,701, pub. 10-15-68. Multiple Class (Classes 3 and 105).

Norton Co., Worcester, Mass. 742,629, canc. Cl. 21.

Norwood Music Corp., Washington, D.C. 742,687, canc. Cl. 36.

Orth, Ph., Co., Milwaukee, Wis. 508,009, ren. 2-11-69. Cl. 46.

Orvis, Chas. F., Co., Inc., Manchester, Vt. 742,644, canc. Cl. 22.

Ouren Seed Co., Council Bluffs, Iowa. 742,512-13, canc. Cl. 1.

Park Chemical Co., Detroit, Mich. 864,719. Cl. 4.

Parker, Edgar W., d.b.a. Dr. Parker Medicine Co., Tampa, Fla., to Margrace Corp., New York, N.Y. 249,545, ren. 2-11-69. Cl. 8.

Pendl, Charles R., d.b.a. Trophee Mfg. Co., Suring, Wis. 742,641, canc. Cl. 22.

Pendleton Woolen Mills, Portland, Oreg. 506,303, ren. 2-11-69. Cl. 42.

Pendleton Woolen Mills, Portland, Oreg. 508,243, ren. 2-11-69. Cl. 42.

Pendleton Woolen Mills, Portland, Oreg. 508,995, ren. 2-11-69. Cl. 39.

Pilgrim Laundry, Inc., The, Brooklyn, N.Y. 509,798-9, ren. 2-11-69. Cl. 55.

Pilgrim Laundry, Inc., The, Brooklyn, N.Y. 509,969, ren. 2-11-69. Cl. 55.

Pillsbury Co., The, Minneapolis, Minn., from Betty T. Pinckney, d.b.a. De Sales Industries, Savannah, Ga. 864,710-11, pub. 11-19-68. Cl. 46.

Pinckney, Betty T.: *See*—
Pillsbury Co., The.

Precision Specialties, Inc., Pitman, N.J. 742,655, canc. Cl. 23.

Pyridium Corp., The, Nepera Park, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 251,253, ren. 2-11-69. Cl. 18.

Radio Corp. of America, New York, N.Y. 509,803, ren. 2-11-69. Cl. 55.

Reifenhauser, K.G., Troisdorf, Germany. 864,700, pub. 6-20-67. Multiple Class (Classes 2, 12, 13, 23, 26, 34, and 35).

Rosenberg, Eli, Originals, Inc., Miami, Fla. 742,527, canc. Cl. 3.

Rothchild, Lionel G., d.b.a. Lenel Co., to Lenel Perfumes, Inc., Dallas, Tex. 441,269, ren. 2-11-69. Cl. 52.

Salant & Salant, Inc., New York, N.Y. 505,546, ren. 2-11-69. Cl. 39.

Sanyo Shokuhin Kabushiki Kaisha, Maebishi City, Japan. 864,743. Cl. 46.

Seaton Hall: *See*—
Junior Hall, Inc.

Service Recorder Co., The, Cleveland, Ohio. 507,941, ren. 2-11-69. Cl. 26.

Seton Products Ltd.: *See*—
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Sherman Laboratories, Detroit, Mich. 654,047, cor. Cl. 18.

Sherwin-Williams Co., The, Cleveland, Ohio. 441,608, ren. 2-11-69. Cl. 46.

Sherwin-Williams Co., The, Cleveland, Ohio. 441,805, ren. 2-11-69. Cl. 4.

Signal Oil & Gas Co., Los Angeles, Calif. 864,717, pub. 1-2-68. Cl. 103.

Siris, A. J., Products Corp., New York, N.Y. 742,532, canc. Cl. 3.

Ski-Dek Corp., Caldwell, from Cyril Farny, Morris Plains, N.J. 742,638, canc. Cl. 22.

Societe Anonyme Lynx Jaune, Reims (Marne), France. 742,685, canc. Cl. 35.

Spectacular Products, Inc., Cannon Falls, Minn. 864,703, pub. 4-23-68. Cl. 22.

Standard Beef Co., The, New Haven, Conn. 503,053, ren. 2-11-69. Cl. 46.

Standard Candy Co., Nashville, Tenn. 508,699, ren. 2-11-69. Cl. 46.

Stebco Products Corp.: *See*—
Stein Bros. Mfg. Co.

Stowe-Woodward, Inc., Newton Upper Falls, Mass. 742,645, Products Corp., Chicago, Ill. 508,691, ren. 2-11-69. Cl. 3.

Stokely-Van Camp, Inc.: *See*—
Capital City Products Co., The.

Stowe-Woodward, Inc., Uewton Upper Falls, Mass. 742,645, canc. Cl. 22.

Straub, Paul A., & Co., Inc., New York, N.Y. 442,552-3, ren. 2-11-69. Cl. 30.

Survival Equipment Corp., San Francisco, Calif. 742,520, canc. Cl. 2.

Syracuse Pharmacal Co., Syracuse, N.Y. 742,604, canc. Cl. 18.

Szekely, Edmond B., d.b.a. Hydrodynamics Research & Development Co., San Diego, Calif. 864,727. Cl. 34.

Television Digest, Inc., Washington, D.C. 864,734. Cl. 38.

Texas Research & Electronic Corp., d.b.a. Eastman Products Corp., Dallas, Tex. 742,583, canc. Cl. 13.

Timms, Leon M., d.b.a. The Eltee Co., Burbank, Calif. 742,598, canc. Cl. 16.

Trackside Gasoline Stations: *See*—
Trackside Gasoline Stations, Inc.

Trackside Gasoline Stations, Inc., from Trackside Gasoline Stations, Gulfport, Miss. 742,765, canc. Cl. 103.

Transcontinental Securities Corp., Dubuque, Iowa. 742,764, canc. Cl. 102.

Treasure Island Sales Co.: *See*—
House for Men, Inc., The.

Trophee Mfg. Co.: *See*—
Pendl, Charles R.

Tuthill Foods, Inc., Rockingham, N.C. 742,718, canc. Cl. 46.

USM Corp.: *See*—
United Shoe Machinery Corp.

United Shoe Machinery Corp., to USM Corp., Boston, Mass. 249,314, ren. 2-11-69. Cl. 29.

U.S. Ceramic Tile Co., Canton, Ohio. 742,576, canc. Cl. 12.

United States Plywood Corp.: *See*—
U.S. Plywood-Champion Papers Inc.

U.S. Plywood-Champion Papers Inc., from United States Plywood Corp., New York, N.Y. 864,723. Cl. 12.

Universal Electronics Laboratories Corp., Hackensack, N.J. 742,686, canc. Cl. 36.

Upjohn Co., The, Kalamazoo, Mich. 742,550, canc. Cl. 6.

Van Wyck Products Co., Inc., Pasadena, Calif. 742,757, canc. Cl. 52.

Vesta Gas Range & Mfg. Co., Chattanooga, to The Athens Stove Works, Inc., Athens, Tenn. 256,779, ren. 2-11-69. Cl. 34.

Volume Builders, Inc., Philadelphia, Pa. 864,750. Cl. 101.

Warner-Lambert Pharmaceutical Co.: *See*—
Pyridium Corp., The.

Wean Engineering Co., Inc., The, Warren, Ohio. 742,649, canc. Cl. 23.

Webb Publishing Co., The, St. Paul, Minn. 864,736. Cl. 38.

Weston Biscuit Co. Inc., d.b.a. Southern Biscuit Co., Richmond, Va. 652,152. Am. 7(d). Cl. 46.

Wheeler, G. E., Co., The, New Haven, Conn. 742,506, canc. Cl. 1.

White Pine Sash Co., Spokane, Wash., to Brenmac, Inc., Minneapolis, Minn. 255,435, ren. 2-11-69. Cl. 12.

White Roofing & Supply Co., Inc., Chicago, Ill. 742,592, canc. Cl. 16.

Wilbert Products Co. Inc., Bronx, N.Y. 864,720. Cl. 4.

Williams, A. R., & Co., Carteret, N.J. 864,746. Cl. 51.

Williams, Winters S., d.b.a. Golden Liquid Beeswax Co., Princeton, W. Va. 864,721. Cl. 4.

Woodstream Corp.: *See*—
Animal Trap Co. of America.

Wyandotte Chemicals Corp., Wyandotte, Mich. 864,715, pub. 5-14-68. Cl. 52.

Young Juniors, Inc.: *See*—
Junior Hall, Inc.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of December 1968

Examiner affirmed	82
Examiner affirmed in part	14
Examiner reversed	36
Total	132

Office Action—First Page Form

The printed form POL–326 formerly used as the first page of the first Office action, 845 O.G. 1205, has been revised.

The new form is now being attached to all Office actions up to and including final rejections.

RICHARD A. WAHL,
Assistant Commissioner.

Jan. 22, 1969.

Rules of Practice in Patent Cases

[37 CFR Part 1]

Interference Practice

The Patent Office is considering changes in its rules of practice (Title 37, Code of Federal Regulations) relating to patent interferences.

All persons who desire to present their views, objections, recommendations or suggestions in connection with the proposed changes are invited to do so on or before April 1, 1969, on which date a hearing will be held at 10 a.m., in Room 34–3D48, Building 34, 2011 Jefferson Davis Highway, Arlington, Va. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

The proposed changes for the most part are minor and have been found to be desirable based on experience with the amended rules which were adopted, effective July 1, 1965 (30 F.R. 6645–9, May 14, 1965). In addition under a proposed amendment relating to testimony, a party to an interference would be permitted to present his testimony-in-chief in affidavit form subject to production of any affiant for cross-examination upon demand by an opposing party, but at the expense of such opposing party. The use of affidavits in lieu of testimony is now permitted only by agreement of the parties.

Notice is hereby given, therefore, that under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6), the Patent Office proposed to amend Part 1 of Title 37 of the Code of Federal Regulations as follows:

1. By amending paragraph (b) of § 1.55 to delete from the third sentence the words "when specified in §§ 1.216 and 1.224" and to insert in lieu thereof "(§ 1.224)." As thus amended, paragraph (b) would read as follows:

§ 1.55 *Serial number and filing date of application.*

* * * * *

(b) An applicant may claim the benefit of the filing date of a prior foreign application under the conditions specified in 35 U.S.C. 119. The claim to priority need be in no special form and may be made by the attorney or agent if the foreign application is referred to in the oath as required by § 1.65. The claim for priority and the certified copy of the foreign application specified in the second paragraph of 35 U.S.C. 119 must be filed in the case of interference (§ 1.224); when necessary to overcome the date of a reference relied upon by the examiner; or when specifically required by the examiner; and in all other cases they must be filed not later than the date the final fee is paid. If the papers filed are not in the English language, a translation need not be filed except in the three particular instances specified in the preceding sentence, in which event a sworn translation or a translation certified as accurate by a sworn official translator must be filed.

2. By revising paragraph (c) of § 1.204 to read as follows:

§ 1.204 *Interference with a patent; affidavit by junior applicant.*

* * * * *

(c) When the effective filing date of an applicant is more than three months subsequent to the effective filing date of the patentee, the applicant, before the interference will be declared, shall file two copies of affidavits by himself and by one or more corroborating witnesses, supported by documentary evidence if available, each setting out a factual description of acts and circumstances which demonstrate a substantial basis for an asserted claim to priority with respect to the effective filing date of the patentee. This showing must be accompanied by an explanation of the basis on which he believes that the facts set forth would overcome the filing date of the patentee. Failure to satisfy the provisions of this section may result in summary judgment against the applicant under § 1.228. Upon a showing of sufficient cause, an affidavit on information and belief as to the expected testimony of a witness whose testimony is necessary to overcome the filing date of the patentee may be accepted in lieu of an affidavit by such witness. If the examiner finds the case to be otherwise in condition for the declaration of an interference he will consider this material only to the extent of determining whether a date prior to the effective filing date of the patentee is alleged, and if so, the interference will be declared.

3. By amending paragraph (b) of § 1.215 so as to delete the word "including" after "preliminary statement," second occurrence, and to insert in lieu thereof the word "and." As thus amended, paragraph (b) would read as follows:

§ 1.215 *Preliminary statement required.*

* * * * *

(b) A party who files a preliminary statement shall at the same time notify all opposing parties of that fact and by the time set for that purpose he shall serve a copy of his preliminary statement and any attached documents on every opposing party from whom he has received notification of the filing of a statement.

* * * * *

New Applications Received During November 1968

Patents	7821
Designs	468
Plant Patents	3
Reissues	8
Total	8300

Issue—February 18, 1969

Patents	1300	No. 3,427,660 to No. 3,428,959, incl.
Designs	48	No. 213,303 to No. 213,350, incl.
Plant Patents	4	No. 2,861 to No. 2,864, incl.
Total	1352	

4. By amending paragraph (a) of § 1.216 so as to delete from the second sentence "including a brief statement as to the specific nature of each of the respective acts alleged"; and by amending paragraph (b) of § 1.216 so as to add at the end thereof the reference "(See § 1.223(c).)" As thus amended, the introductory text of paragraph (a) and paragraph (b) would read as follows:

§ 1.216 *Contents of the preliminary statement.*

(a) The preliminary statement must state that the party made the invention set forth by each count of the interference, and whether the invention was made in the United States or abroad. When the invention was made in the United States the preliminary statement must set forth as to the invention defined by each count the following facts:

* * * * *

(b) When an allegation as to the first drawing (paragraph (a)(1) of this section) and/or as to the first written description (paragraph (a)(2) of this section) is made, a copy of such drawing and/or written description must be attached to the statement. (See § 1.223(c).)

* * * * *

5. By amending paragraph (a)(1) of § 1.217 so as to strike the period at the end thereof, and to add "including documentary attachments if the allegations relate to a drawing or written description.". As thus amended, paragraph (a)(1) would read as follows:

§ 1.217 *Contents of the preliminary statement; invention made abroad.*

(a) * * *

(1) When the invention was introduced into this country by or on behalf of the party, giving the circumstances with the dates connected therewith which are relied upon to establish the fact and, when appropriate, including allegations of activity in this country of the nature of that represented by § 1.216(a)(1) to (6) including documentary attachments if the allegations relate to a drawing or written description.

* * * * *

6. By revising § 1.222 to read as follows:

§ 1.222 *Correction of statement on motion.*

In case of material error arising through inadvertence or mistake, the statement or attachments may be corrected or omitted attachments may be supplied on motion (see § 1.243), upon a satisfactory showing that such action is essential to the ends of justice. The motion must be made, if possible, before the taking of any testimony, and as soon as practicable after the discovery of the error.

7. By revising paragraphs (a) and (c) of § 1.223 to read as follows:

§ 1.223 *Effect of statement.*

(a) The preliminary statement should be carefully prepared, as a party will not be allowed to amend his statement in any way except by motion under § 1.222, and any doubts as to definiteness or sufficiency of any allegation or compliance with formal requirements will be resolved against the party concerned by restriction to his effective filing date or to the latest date of a period alleged as may be appropriate. Prior to final hearing a party will not be notified of any defect in his statement except that a junior party, subject to restriction resulting from such a defect and by virtue of that restriction being subject to judgment under § 1.225, will be notified of that defect and also notified that judgment on the record will be entered against him at the expiration of a time set, not less than 30 days, unless cause be shown why judgment should not be entered. Each of the parties by whom or on whose behalf a preliminary statement is made will be strictly held in his proofs to the dates set forth therein. This includes joint applicants or patentees; a new preliminary statement will not be received in the event the application is amended or the patent is corrected to remove the names of those not inventors, nor will a preliminary statement alleging different dates be received if an application is amended or a patent is corrected to include a joint inventor, except by motion under § 1.222.

* * * * *

(c) If a party to an interference fails to file a statement, testimony will not be received subsequently from him to prove that he made the invention at a date prior to his effective filing date. If a party alleges in his statement a date of first drawing or first written description but does not attach a copy of such drawing or written description as required by § 1.216(b), he will be restricted to his effective filing date as to that allegation unless such copy is admitted by motion under § 1.222.

* * * * *

8. By revising § 1.224 to read as follows:

§ 1.224 *Reliance on prior application.*

A party will not be permitted to rely on any prior application to obtain the benefit of its filing date unless the prior application is specified in the notice of interference (see § 1.226) or its benefit is sought by a motion filed in accordance with § 1.231. In the latter case, complete copies of the contents of the application file the benefit of which is sought, except affidavits under §§ 1.131, 1.202, and 1.204, must be served on all opposing parties with the motion, and in the case of a foreign application the necessary papers to prove a date of priority under 35 U.S.C. 119 including a translation where required (§ 1.55), must be filed and copies served on all opposing parties with the motion except for such papers as were of record in the involved application when the interference was declared. In either case proof of service required by § 1.247 must include reference to the prior application as well as the motion or, in the case of the stated exception, note that the papers in question were of record when the interference was declared.

9. By revising § 1.228 to read as follows:

§ 1.228 *Summary judgment.*

When an interference is declared on the basis of a showing under § 1.204(c), such showing will be examined by an Examiner of Interferences. If the Examiner considers that the facts set out in the showing provide sufficient basis for the interference to proceed, the interference will proceed in the normal manner as provided by the rules in this part; otherwise an order shall be entered concurrently with the notice of interference pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than 30 days, unless cause be shown why such action should not be taken. In the absence of a showing of good and sufficient cause, judgment shall be so rendered. Any response made during the specified period will be considered by a Board of Patent Interferences without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing in excuse of their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one copy of the showing under § 1.204(c) and will be allowed not less than 30 days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter. The Board will determine, on the basis of the original showing and the response made, whether the interference should be allowed to proceed or summary judgment should be entered against the junior applicant.

10. By revising paragraphs (a) and (d) of § 1.231 to read as follows:

§ 1.231 *Motions before the primary examiner.*

(a) Within the period set in the notice of interference for filing motions any party to an intereference may file a motion seeking:

(1) To dissolve as to one or more counts, except that such motion based on facts sought to be established by affidavits or evidence outside of official records and printed publications will not normally be considered, and when one of the parties to the interference is a patentee, no motion to dissolve on the ground that the subject matter of the count is unpatentable to all parties or is unpatentable to the patentee will be considered, except that a motion to dissolve as to the patentee may be brought which is limited to such matters as may be considered at final hearings (§ 1.258). Where a motion to dissolve is based on prior art, service on opposing parties must include copies of such prior art. A motion to dissolve on the ground that there is no interference in fact will not be considered unless the interference involves a design or plant patent or application or unless it relates to a count which differs from the corresponding claim of an involved patent or of one or more of the involved applications as provided in §§ 1.203(a) and 1.205(a).

(2) To amend the issue by addition or substitution of new counts. Each such motion must contain an explanation as to why a count proposed to be added is necessary or why a count proposed to be substituted is preferable to the original count, must demonstrate patentability of the count to all parties and must apply the proposed count to all involved applications except an application in which the proposed count originated.

(3) To substitute any other application owned by him as to the existing issue, or to declare an additional interference to include any other application owned by him as to any subject matter other than the existing issue but disclosed in his application or patent involved in the interference and in an opposing party's application or patent in the interference which should be made the basis of intereference with such other party. Complete copies of the contents of such other application, except affidavits under §§ 1.131, 1.202, and 1.204, must be served on all other parties and the motion must be accompanied by proof of such service.

(4) To be accorded the benefit of an earlier application or to attack the benefit of an earlier application which has been accorded to an opposing party in the notice of declaration.

(5) To amend an involved application by adding or removing the names of one or more inventors as provided in § 1.45.

* * * * *

(d) All proper motions as specified in paragraph (a) of this section, or of a similar character, will be transmitted to and considered by the primary examiner without oral argument, except that consideration of a motion to dissolve will be deferred to final hearing before a Board of Patent Interferences where the motion urges unpatentability of a count to one or more parties which would be reviewable at final hearing under § 1.258(a) and such unpatentability is urged against a patentee or has been ruled upon by the Board of Appeals or by a court in ex parte proceedings. Requests for reconsideration will not be entertained.

* * * * *

11. By revising § 1.238 to read as follows:

§ 1.238 *Addition of new party by examiner.*

If during the pendency of an interference, another case appears, claiming substantially the subject matter in issue, the primary examiner should notify the Board of Patent Interferences and request addition of such case to the interference. Such addition will be done as a matter of course by a patent interference examiner, if no testimony has been taken. If, however, any testimony may have been taken, the patent interference examiner shall prepare and mail a notice for the proposed new party, disclosing the issue in interference and the names and addresses of the interferants and of their attorneys or agents, and notices for the interferants disclosing the name and address of the said party and his attorney or agent, to each of the parties, setting a time for stating any objections and at his discretion a time of hearing on the question of the admission of the new party. If the patent interference examiner be of the opinion that the new party should be added, he shall prescribe the conditions imposed upon the proceedings, including a suspension if appropriate.

12. By amending § 1.252 so as to add a new sentence at the end of the section. As thus amended, § 1.252 would read as follows:

§ 1.252 *Failure of junior party to take testimony.*

Upon the filing of a motion for judgment by any senior party to an interference stating that the time for taking testimony on behalf of any junior party has expired and that no testimony has been taken and no other evidence offered by said junior party, an order shall be entered that the junior party show cause within a time set therein, not less than 10 days, why judgment should not be rendered against him, and in the absence of a showing of good and sufficient cause, judgment shall be so rendered. In the absence of such a motion, if any junior party fails to file an evidentiary record by the date set as provided in § 1.253(d), a patent interference examiner shall enter the order to show cause.

13. By amending paragraph (a) of § 1.253 so as to insert after "(§§ 1.275 to 1.278)" the words "or executed copies of affidavits or stipulated testimony or facts (§ 1.272)," and by revising the last sentence of paragraph (c). As thus amended, paragraphs (a) and (c) would read as follows:

§ 1.253 *Copies of the testimony.*

(a) In addition to the certified transcript of the testimony (§§ 1.275 to 1.278) or executed copies of affidavits or stipulated testimony or facts (§ 1.272), three true copies of the record of each party must be filed for the use of the Patent Office (a total of four copies), and one true copy of the record must be served upon each of the opposing parties.

* * * * *

(c) These records, whether printed or typewritten, must include the testimony presented by the party filing the same. A copy of the counts of the interference and the preliminary statement required by §§ 1.215 to 1.227 must be included. Each record must contain an index of the names of the witnesses, giving the pages where their examination and cross-examination begin, and an index of the exhibits, briefly describing their nature and giving the pages at which they are introduced and offered in evidence, and also the pages where copies of exhibits are shown when such exhibits are copied in the record. The pages must be serially numbered throughout the entire record and the names of the witnesses must appear at the top of the pages over their testimony.

* * * * *

14. By amending § 1.254 so as to insert between the third and fourth sentences the following: "Every brief of more than 15 pages shall contain a subject index with page references, supplemented by a list of all authorities referred to, together with references to pages thereof. Each party should make a statement in his brief identifying those parts of his record upon which he relies."; and to add a new sentence at the end of the section reading: "The brief for the junior party shall present a full and fair statement of the questions involved and a clear statement of the points of law or fact upon which he relies for his case." As thus amended, § 1.254 would read as follows:

§ 1.254 *Briefs at final hearing.*

Briefs at final hearing before the Board of Patent Interferences shall be submitted in printed form, except that when not in excess of 50 legal-size double-spaced typewritten pages, or the equivalent thereof, and in any other case where satisfactory reason therefor is shown, they may be submitted in typewritten form. If submitted in printed form, they shall be the same in size and the same as to page and print as is specified for printed copies of testimony. Typewritten briefs shall conform to the requirements for typewritten copies of testimony, except that the legal-size paper may be used and the binding and covers specified are not required. Every brief of more than 15 pages shall contain a subject index with page references, supplemented by a list of all authorities referred to, together with references to pages thereof. Each party should make a statement in his brief identifying those parts of his record upon which he relies. Three copies of each brief must be filed. The times for filing briefs will ordinarily be set in the order setting times for taking testimony. The brief for the junior party shall present a full and fair statement of the questions involved and a clear statement of the points of law or fact upon which he relies for his case.

15. By amending paragraph (a) of § 1.256 so as to add a new sentence between the fifth and sixth sentences reading: "A junior party may reserve a portion of his time for rebuttal purposes, but a full and fair opening of his case must be made.". As thus amended, paragraph (a) would read as follows:

§ 1.256 *Final hearing.*

(a) Final hearings will be held by the Board of Patent Interferences on the day appointed at the designated time. If either party appear at the proper time, he will be heard. After the day of hearing, the case will not be taken up for oral argument except by consent of all parties. If the Board of Patent Interferences be prevented from hearing the case at the time specified, a new assignment will be made, or the case will be continued from day to day until heard. Unless it shall be otherwise ordered before the hearing begins, oral arguments will be limited to not more than 1 hour for each party. A junior party may reserve a portion of his time for rebuttal purposes, but a full and fair opening of his case must be made. After a contested case has been argued, nothing further relating thereto will be heard unless upon request of the Board of Patent Interferences.

* * * * *

16. By revising paragraphs (a) and (b) of § 1.258 to read as follows:

§ 1.258 *Matters considered in determining priority.*

(a) In determining priority of invention, the Board of Patent Interferences will consider only priority of invention on the evidence submitted. Questions of patentability of a claim generally will not be considered in the decision on priority; and neither will the patentability of a claim to an opponent be considered, unless the nonpatentability of the claim to the opponent will necessarily result in the conclusion that the party raising the question is in fact the prior inventor on the evidence before the Office, or relates to matters which have been determined to be ancillary to priority and must be considered. A party shall not be entitled to raise such nonpatentability unless he has duly presented a motion for dissolution under § 1.231 upon such ground or shows good reason why such a motion was not presented; however, the Board of Patent Interferences may in its discretion consider a matter of this character even though it was not raised by motion under § 1.231.

(b) At final hearing a party shall not be entitled to urge consideration of a matter relating to the benefit of an earlier application of his own or of another party unless he has presented such matter in connection with a motion under § 1.231(a)(4), or shows good reason why it was not so presented.

* * * * *

17. By revising § 1.272 to read as follows:

§ 1.272 *Manner of taking testimony of witnesses.*

(a) Except as provided in paragraphs (c) and (d) of this section, testimony of witnesses shall be taken by depositions on oral examination in accordance with these rules.

(b) If the parties so stipulate in writing, deposition may be taken before any person authorized to administer oaths, at any place, upon any notice, and in any manner, and when so taken may be used like other depositions. By agreement of the parties, provided the Commissioner consents, testimony may be taken before an officer or officers of the Patent Office under such terms and conditions as the Commissioner may prescribe.

(c) A party may present all or part of his testimony-in-chief in the form of affidavits subject to the following conditions:

(1) The affidavits must be filed and served on opposing parties no later than 20 days before the expiration of the period for testimony-in-chief of the party concerned, or for testimony in the case of the senior party, as set or as extended.

(2) Upon demand and a commitment to bear expenses by any party any affiant must be produced for cross-examination so as to permit completion of cross-examination within the time set or extension granted. Such demand must be filed and served within 10 days from the date of service (see § 1.248) of the affidavits. (Notice of a demand may be given by telephone if written confirmation is promptly filed and served.)

(3) By adopting this form of presentation a party undertakes to produce any of the affiants upon short notice within the time specified in subparagraph (2) of this paragraph, and upon demonstration by an opposing party of his failure to so produce the affiant, the affidavit will not be considered.

(d) By agreement of the parties, the testimony of any witness or witnesses of any party, may be submitted in the form of an affidavit by such witness or witnesses. The parties may stipulate what a particular witness would testify to if called, or the facts in the case of any party may be stipulated.

(e) When evidence is submitted in stipulated or affidavit form, four copies of such affidavits or stipulated testimony or facts (§ 1.253(a), (f)) are required. Where a bona fide issue of derivation of the invention is raised, the Board of Patent Interferences may refuse to consider testimony not taken by depositions on oral examination.

18. By revising § 1.281 to read as follows:

§ 1.281 *Additional time for taking testimony.*

If either party has proceeded with the taking of testimony on his behalf but is unable to complete his case because of inability to procure the testimony of a witness or witnesses within the time limited and said time has expired, and he desires additional time for such purpose, he must file a motion, accompanied by a statement under oath setting forth specifically the cause of such inability, the name or names of the witness or witnesses, the facts expected to be proved by such witness or witnesses, the steps which have been taken to procure such testimony, and the dates on which efforts have been made to procure it. (See § 1.245 for extensions of time in other situations.)

19. By revising § 1.283 to read as follows:

§ 1.283 *Testimony taken in another interference or action.*

Upon motion, supported by a showing demonstrating its relevance and materiality to the issue, duly made and granted, testimony taken in another interference proceeding or action, between the same parties or those in interest, may be used in an interference proceeding, subject however, to the right of any contesting party to recall or demand the recall of witnesses whose testimony has been taken and who are physically and mentally able to testify, and to take other testimony in rebuttal of the testimony.

20. By amending paragraph (b) of § 1.284 so as to strike at the beginning of the section the words "It must appear" and to insert in lieu thereof "It must be demonstrated." As thus amended, paragraph (b) would read as follows:

§ 1.284 *Testimony taken in foreign countries.*

* * * * *

(b) It must be demonstrated that the testimony desired is material and competent, and that it cannot be taken in this country at all, or cannot be taken here without hardship and injury to the moving party greatly exceeding that to which the opposite party will be exposed by the taking of such testimony abroad.

* * * * *

Dated: Dec. 20, 1968.

EDWIN L. REYNOLDS,
Acting Commissioner of Patents.

Approved:
JOHN F. KINCAID,
Assistant Secretary for
Science and Technology.

[F.R. Doc. 68-15487; Filed, Dec. 27, 1968; 8:47 a.m.]

Published in 33 F.R. 19949; Dec. 28, 1968

Certificates of Correction for the Week of Feb. 18, 1969

D. 203,776
D. 209,842
Re. 26,333
3,197,419
3,282,746
3,282,982
3,296,144
3,307,095
3,325,252
3,335,123
3,337,568
3,340,008
3,344,113
3,345,166
3,348,670
3,349,625
3,353,076
3,353,928
3,353,986
3,354,153
3,354,161
3,354,345
3,354,349
3,354,778
3,356,153
3,356,274
3,356,631
3,356,642
3,356,702
3,356,765
3,356,807
3,356,826
3,357,045
3,357,179
3,357,246
3,357,898
3,357,981
3,358,175
3,359,163
3,359,185
3,359,254
3,359,256
3,359,284
3,359,992
3,360,093
3,360,318
3,360,387
3,360,778
3,360,877
3,360,913
3,361,213
3,361,428
3,361,623
3,361,663
3,361,683
3,361,834
3,361,896
3,362,219
3,362,473
3,362,515
3,362,661
3,362,799
3,362,839
3,363,238

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 27, 1969

*Denotes oldest new application.

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-31-66
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*4-29-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-20-66
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-30-67
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	11-06-67
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*3-04-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-20-66
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-06-67
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	4-25-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-22-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*4-03-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-20-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-15-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	4-28-67

Total number of pending applications (excluding Designs)	157, 418
Total number of Design applications pending	3, 107

Expiration of patents: The patents within the range of numbers indicated below expire during February 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,584,102 to 2,587,575, inclusive
Plant Patents	Numbers 1,071 to 1,076, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ARNO CAHN, MARK D. KONORT, AND JEROME RUDY

No. 7985. Decided July 3, 1968

[55 CCPA —; 399 F.2d 237; 158 USPQ 334]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"SOAP COMPOSITIONS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Soap Compositions" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 103,737.

AFFIRMED.

Brumbaugh, Free, Graves & Donohue, John A. Finken (*Eben M. Graves, John F. Neary, Jr., William F. Eberle,* of counsel) for appellants.

Joseph Schimmel (*Jack E. Armore,* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge,* and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

WORLEY, *Chief Judge,* delivered the opinion of the court.

The sole issue here is whether the Board of Appeals committed reversible error in sustaining the Examiner's rejection of claims 1, 4–7, 12, 17 and 18 [2] as unpatentable in view of certain prior art under 35 U.S.C. 103.

The invention relates to soap compositions for use in hard water. Appellants' specification provides the following background:

> One of the major disadvantages attending the use of soap as a detergent is the water-insoluble precipitates which the soap forms with hardness ions present in hard water. The water-insoluble soap "curd" thus formed detracts from the detergent action of the soap and forms an unsightly scum on the surface of the washing solution. On rinsing, the scum forms a deposit upon the skin and upon the containers employed for the washing operation, such as bathtubs, sinks, washing machines and the like. The presence of this material is objectionable and in effect results in incomplete cleaning.
>
> The problem of preventing lime soap formation is a fairly complex one. When a water-soluble soap is added to hard water, the soap combines with calcium and magnesium ions and precipitates as a water-insoluble calcium and magnesium soap. *As long as the concentration of soap in the solution remains above the foaming level, or if non-soap detergents are present at a concentration sufficient to provide a foaming action, the water-insoluble lime soaps remain fairly well dispersed.* However, when the solution is diluted as by rinsing to the extent that the foaming and dispersing power of the water-soluble soap and/or detergent disappears, the lime soaps precipitate to form a sticky and unsightly surface scum. In the usual washing process, the dilution is carried out with water containing additional hardness ions so that additional lime soaps may be formed. * * *
>
> *It is known that alkylbenzenesulfonates, the alkyl chain of which is of the normal straight chain type, will disperse lime soaps and improve the lathering of soap in hard water.* Alkyl aryl sulfonate mixtures produced by sulfonating various petroleum fractions have been suggested for this purpose. [Emphasis supplied.]

According to appellants, those straight chain, *normal* alkylbenzenesulfonates are effective dispersants only when employed at concentrations of 50–65%. At that high concentration, however, the mixtures are said to be "too sticky or tacky to process economically" in the usual milling and plodding (extruding) machines used in the manufacture of soap bars. While starch has been used to reduce the stickiness problem, "the difficulties have not been entirely overcome."

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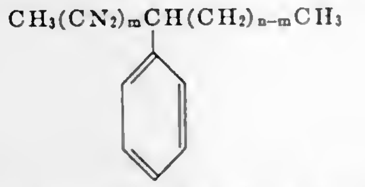
[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Appearing in application Serial No. 103,737, filed April 18, 1961, and entitled "Soap Compositions."

As their solution to the problem, appellants combine a conventional water-soluble soap, viz, an alkali metal salt of certain higher fatty acids, with 10–30% based on the weight of soap of alkali metal and alkaline earth metal salts of certain alkylbenzenesulfonic acids. The sulfonates are prepared by alkylating benzene with a mixture of alpha-olefins of the formula $CH_3(CH_2)_nCH{=}CH_2$, where $n=9$–15. The alkylbenzenes are sulfonated to produce alkylbenzenesulfonic acids which in turn are neutralized to produce the desired salt. In addition to producing alkylbenzenes of varying alkyl chain length, the alkylation reaction yields a mixture of isomers in which the benzene ring is attached to various *internal* carbon atoms of any given alkyl chain, as illustrated by the formula in claim 1 reproduced below. At the concentrations employed, the alkylbenzenesulfonates utilized by appellants are said to avoid the processing problems and to impart lime-soap dispersing properties "considerably superior" to like properties imparted by straight chain, *normal* alkylbenzenesulfonates of the formula $CH_3—(CH_2)_n—C_6H_4—SO_3M$, where the alkyl group is attached *terminally*, not *internally*, to the benzene ring. The compositions may also contain various conventional adjuvants, such as free fatty acids, perfume and the like.

Claim 1 is illustrative:

> A composition consisting essentially of a water-soluble soap and a salt of a mixture of sulfonated aryl-substituted alkanes of the formula
>
> 
>
> $CH_3(CN_2)_mCH(CH_2)_{n-m}CH_3$
>
> wherein n is a whole number from 9 to 15, m is zero to
>
> $$\frac{n-1}{2}$$
>
> where n is an odd number and m is zero to
>
> $$\frac{n}{2}$$
>
> where n is an even number, the salt being selected from the group consisting of alkali metal, alkaline earth metal and ammonium salts and said mixture of sulfonated aryl-substituted alkanes being present in an amount sufficient to effect a substantial dispersion of soap curd in aqueous solution.

The references are:

Flett, 2,390,295, Dec. 4, 1945.
Hoyt, 2,438,169, Mar. 23, 1948.
Baumgartner, 2,723,240, Nov. 8, 1955.
Hewitt, 2,972,583, Feb. 21, 1961.

Flett discloses compositions "materially superior to an ordinary soap for cleansing in hard water" which contain water-soluble soaps and mixtures of alkyl aromatic sulfonates the latter having:

> * * * the advantageous properties of preventing "lime soap" curds and related insoluble fatty acids and salts from depositing from aqueous suspensions thereof, while being themselves effective detergents and washing agents in hard water, sea-water and acid aqueous solutions. * * *

The alkylbenzenesulfonates of Flett, or what he terms a "keryl benzene sulfonate," are prepared by chlorinating certain kerosene fractions of petroleum distillates—straight and/or branched chain alkanes containing 12 to 16 carbon atoms, "a large portion of which are probably relatively long carbon chains rather than more condensed molecules"—to form mixed alkyl chlorides; condensing the alkyl chloride mixture with benzene; and sulfonating. For water of somewhat limited hardness, Flett employs 5–10 parts of the alkylbenzenesulfonate per 100 parts of soap, although "(f)or general use, compositions are preferred containing from 25 to 54 parts" per 100 parts of soap. In an example, a soap composition in bar form was prepared "without difficulty" by "milling, plodding and pressing" a mixture consisting essentially of 80 parts sulfonate and 160 parts soap stock. The resultant bars "lathered and washed excellently" in water of "extreme hardness." When the relative amounts of the components were varied so that more than 66 parts of sulfonate were employed per 100 parts soap stock, it was noted that the compositions were "difficult to handle in the usual soap-working equipment because of stickiness."

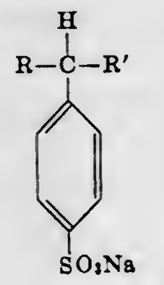
Hoyt discloses bar soap compositions containing a water-soluble soap, an alkylbenzenesulfonate detergent (which he terms "petryl sulfonate"), and starch. In contrast to Flett, Hoyt observes:

> * * * Preparation of a milled soap product by mixing a hard soap in a form usually employed for milling (e.g. in the form of ribbons, beads, particles, flakes, grains, or the like, containing 5% to 15% of moisture) with a higher petryl sulfonate in a substantial amount (e.g. 15% of the weight of the soap) presents difficulties; the mixture becomes sticky and tough so that it opposes milling and plodding in the usual commercial soap-making equipment. * * *

The addition of starch, says Hoyt, overcomes "the stickiness and toughness of the composition" and allows the mixtures to flow readily through the plodder or extruder.

Baumgartner discloses that two specific alkyl aryl sulfonates, which are within the class employed by appellants, exhibit "unusually high detergency at low concentrations in hard water."

Hewitt discloses that, notwithstanding the fact that synthetic detergents often wash and foam better than fatty acid soaps and are not precipitated by alkaline earth ions in the wash water, soaps still account for a great amount of the toilet bar detergent sold. One reason given is that soaps are easy to process into bars, whereas such synthetic detergents as alkylbenzenesulfonates, whose alkyl groups are highly branched polyalkylene, are "not desirable constituents of detergent bars," since they tend to be "tough and rubbery" and "resist normal processing more than solid detergents characterized by a crystalline structure." The "keryl [3] benzene sulfonates are not as resistant to milling and plodding as the polyalkylene derivatives mentioned but they too are difficult to process." Hewitt discovered that a detergent bar containing the compounds:



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[3] Hewitt states: "The word 'keryl' identifies the type of mixture of alkyl groups obtained in an alkyl aryl sulfonate made by chlorination of kerosene followed by reaction with benzene (usually in presence of aluminum chloride) and sulfonation. *Keryl radicals contain relatively large amounts of straight chain hydrocarbon medially joined to the aryl radical.*" [Emphasis supplied.]

where R′ is methyl and R is a mixture of straight chain alkyl radicals 6 to 16 carbon atoms in length, "possesses the detergency attributable" to the alkylbenzenesulfonates "but can be milled and plodded almost as easily as a soap bar." Such a bar "foams well, has excellent detersive properties and is hard but soap-like to the touch." Hewitt also adds a plasticizer to his composition which possesses "both hydrophilic and lipophilic groups," such as saturated fatty acids. Such a plasticizer acts to cohere the synthetic detergent particles in the bar and to stabilize the detergent foam in use.

The Board affirmed the Examiner's rejection of all claims as unpatentable over Flett and Hoyt in view of Baumgartner and Hewitt under 35 U.S.C. 103. Both felt that it would be obvious to one of ordinary skill to substitute the specifically disclosed detergents of Baumgartner and Hewitt for those of Flett and Hoyt, particularly in view of the known advantages disclosed by the secondary references for those particular alkylbenzenesulfonate detergents.

Appellants' arguments are, in the main, two-fold. They first contend that neither Baumgartner nor Hewitt suggests that the particular alkylbenzenesulfonates employed by appellants and disclosed by those references would be an effective lime-soap dispersant. The mere fact that those sulfonates are said to be superior detergents, appellants state, does not mean they necessarily would be considered suitable lime-soap dispersants. Nor, they say, does Flett teach that any and all detergents are useful lime-soap dispersants, but teaches only that the class of alkylbenzenesulfonates disclosed by him are so useful. Secondly, appellants contend that none of the references suggests that the "stickiness" problem encountered by the prior art with the use of certain alkylbenzenesulfonates in the manufacture of soap bars could be overcome, without the use of starch, by utilizing the instant class of alkylbenzenesulfonates.

Insofar as appellants' first point is concerned, they have argued as if the class of sulfonates they employ is a class entirely distinct from those employed by Flett. They seem to equate Flett's "keryl" sulfonates only with the straight chain *normal* alkylbenzenesulfonates described as known detergents and lime-soap dispersants in their specification. That does not appear to be entirely the case.[4] It is apparent that Flett discloses among other things the use of straight chain "keryl" benzene sulfonates which, following the definition of Hewitt, include relatively large amounts of compounds having a straight chain hydrocarbon containing 12–16 carbon atoms medially or more centrally attached to the benzene radical. Those materials do not appear to differ substantially from appellants' and are included within those disclosed by Flett to be lime-soap dispersants at concentration levels comparable to those employed by appellants. We cannot agree that one of ordinary skill in the art would be unaware that the rather large class of alkylbenzenesulfonates recited in appellants' claims would possess lime-soap dispersant properties. The fact that Hewitt discloses that the instant alkylbenzenesulfonates possess good foaming properties would, following the criterion established in appellants' specification, provide some further suggestion of the lime-soap dispersing properties of those materials.

With regard to appellants' second point, there does appear to be some unresolved inconsistency between the earlier disclosure of Flett that "stickiness" is no problem at "keryl" benzene sulfonate concentrations less than 66% of the weight of fatty acid soap in the bar and the later disclosure of Hoyt that "stickiness" becomes a problem at "keryl" benzene sulfonate concentrations greater than 15% of the weight of soap, thus necessitating the use of starch.

Granted the problem exists, it seems to have been quite universal, whether attempts were made to employ the highly branched or keryl benzene sulfonates of the prior art in compositions with water-soluble soaps (Hoyt), or in compositions without them (as reported by Hewitt). It appears to us, as it did to the Examiner, that Hewitt's discovery that certain alkylbenzenesulfonates, corresponding in large measure to those appearing in appellants' claims, would solve certain "milling" and "plodding" difficulties if employed in synthetic detergent bars would suggest to one of ordinary skill that a similar problem in Flett's or Hoyt's compositions might be solved if those compounds were employed in the course of manufacturing bars containing both fatty acid soaps and alkylbenzenesulfonates. Appellants provide no answer to the Examiner's line of reasoning in arguing that the technology of making bars from synthetic detergent is somehow "quite distinct" from the technology of making bars based largely on soap. Nor does the Examiner's reasoning appear to involve any elements of "obvious to try" as asserted by appellants. Cf. *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496 (1963); *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415 (1965).

Both appellants and the Solicitor rely on this court's decision in *In re Wilson*,[5] 54 CCPA 934, 368 F.2d 269, 151 USPQ 573 (1966), as controlling of the respective positions espoused by them. It should not be necessary to reiterate that each case is decided on its own facts. Suffice to say that we find the evidence of record here sufficient to provide reason for doing what appellants have done and to support the conclusion below that the claimed compositions would have been obvious to one of ordinary skill in the art at the time the invention was made.

[1] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

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[4] Neither appellants nor the Examiner has pointed out in any detail just how the mixture of alkylbenzenesulfonates appellants employ and define in their claims differs from the "keryl" benzene sulfonate mixtures disclosed by Flett and further defined by Hewitt. One difference may be that appellants' mixture includes no compound in which the end or terminal carbon of the straight alkyl chain is attached to the benzene ring while seemingly Flett's mixture (and the "keryl" sulfonates described by Hewitt) would contain some amount of such material due to the random substitution of chlorine in the kerosene molecules during the initial chlorination reaction step. Another difference may be that appellants' mixture includes little, if any, *branched* alkyl substituents while the "keryl" mixtures of the reference do because of the nature of the kerosene starting material, although that difference is tempered by the disclosure in appellants' specification regarding their alpha-olefin starting materials:

> It is also recognized that petroleum-derived alpha olefins may contain small amounts, i.e., 10–15% of impurities *such as alpha olefins having some degree of branching* and/or olefins having an internal double bond and/or olefins having more than one double bond. [Emphasis supplied.]

[5] There this court stated, in dealing with the same Flett patent as is involved here:

> Although the Board apparently believed the substitution of any known detergent for the alkyl aromatic sulfonate detergents in the Flett soap compositions would be obvious, we do not agree with this broad proposition, *absent any given reason for making the substitution of detergents.* [Emphasis supplied.]

U.S. Court of Customs and Patent Appeals

IN RE AVEDIS ZILDJIAN CO.

No. 7834. Decided May 16, 1968

[55 CCPA—; 394 F.2d 860; 157 USPQ 517]

1. TRADEMARK—CONFUSING SIMILARITY—CONSENT.

"We think, however, that the following is an accurate summary of this

> court's views as expressed in former opinions. However, the interests of the public may not be ignored; and when it appears that the goods are so nearly related that their sale under identical trade marks would be likely to confuse the public or to deceive purchasers, registration must be denied notwithstanding the owner's consent. See also *In re Wilson Jones Company*, 52 CCPA 805, 337 F.2d 670, 143 USPQ 238, in which this court pointed out the difference in the effect of a consent to *register* and a consent to *use*."

APPEAL from the Patent Office. Serial No. 150,142.

AFFIRMED.

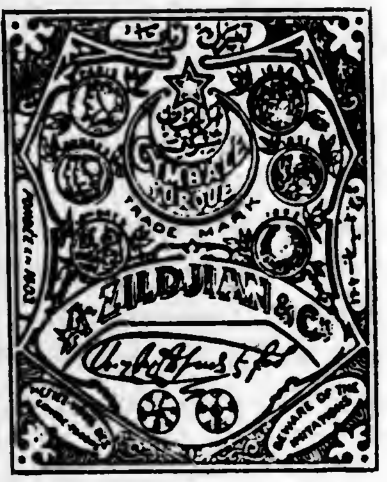
Harold E. Cole for appellant.

Joseph Schimmel (*George C. Roeming*, *Joseph Nakamura*, of counsel) for the Commissioner of Patents.

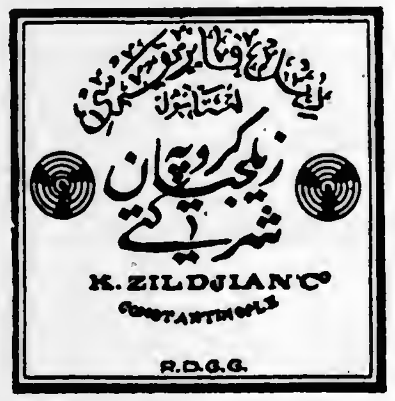
Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal by Avedis Zildjian Co. from the decision of the Trademark Trial and Appeal Board [2] affirming the Examiner's decision, refusing registration of the trademark A. Zildjian & Cie. with designs and lettering as appears below:



The mark sought is for cymbals and was refused registration by the Examiner and the Board on the ground of likelihood of confusion with two registrations held by the Fred Gretsch Manufacturing Co. for the same goods: Zildjian (No. 245,846) and K. Zildjian Co. with designs and lettering as appear below:



Appellant and the Fred Gretsch Manufacturing Co., hereafter designated Gretsch, have sold domestic made cymbals and foreign made cymbals respectively since about 1928.

On September 19, 1929, in an action between appellant and Gretsch a consent decree [3] was entered which provided, inter alia, that (1) Gretsch was the owner of all three marks noted above, (2) the appellant could use the surname Zildjian on cymbals provided it was always preceded by the full first name of any Zildjian associated with the appellant and the words "made in U.S.A." were prominently stamped on the cymbals, (3) the appellant would not use the name "A. Zildjian & Co." or "K. Zildjian & Co.," and (4) in the event any of the three registrations were cancelled, then the appellant could use any of the names or designs so registered. This consent decree is still in force.

Appellant has hitherto sought to cancel registrations of all three of those marks owned by Gretsch but has succeeded only in having cancelled (due to abandonment) the registration of the mark which, with a minor modification, is sought to be registered here. 97 USPQ 41 (Patent Office Examiner-in-Chief 1953), 112 USPQ 424 (E.D.N.Y. 1956), 116 USPQ 216 (2d Cir. 1958).

An application by appellant to register the cancelled mark was similarly rejected by the Trademark Trial and Appeal Board in 1959 on the ground of likelihood of confusion. *In re Avedis Zildjian Co.*, 120 USPQ 493 (TT & AB 1959). Appellant contends, however, that the law has changed since that rejection, citing *In re National Distillers and Chemical Corp.* (MERITO) 49 CCPA 854, 297 F.2d 941, 132 USPQ 271 (1962), and *In re Electro-Vox, Inc.*, 134 USPQ 463 (TT & AB 1962). It is appellant's contention that these cases stand for the proposition that consent of a registrant arising from a consent decree demonstrates that there is no likelihood of confusion.

[1] We think, however, that the following [4] is an accurate summary of this court's views as expressed in former opinions.

> However, the interests of the public may not be ignored; and when it appears that the goods are so nearly related that their sale under identical trade marks would be likely to confuse the public or to deceive purchasers, registration must be denied notwithstanding the owner's consent.

See also *In re Wilson Jones Company*, 52 CCPA 805, 337 F.2d 670, 143 USPQ 238, in which this court pointed out the difference in the effect of a consent to *register* and a consent to *use*.

We agree with the above statement and also with the finding of the Board that there is no reasonable doubt that the mark sought to be registered is likely to cause confusion. It follows that the decision of the Board will be affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

The issue here turns on the legal effect, if any, to be accorded appellant's alleged right to use the trademark in issue by reason of a "Final Decree by Consent" dated September 19, 1929 in an action [5] in the U.S. District Court for the District of Massachusetts entitled: The Fred Gretsch Mfg. Co., Plaintiff *v.* Aram Zildjian, Armand Zildjian and P. Zildjian, co-partners, doing business under the name of A. Zildjian & Co., Defendants.

Where a right to use a trademark arises from a court decree, that right must be recognized. *Alfred Dunhill of London, Inc.* v. *Dunhill*

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] *In re Avedis Zildjian Co.*, 147 USPQ 82 (TT & AB 1965).

[3] *The Fred Gretsch Manufacturing Co.* v. *Aram Zildjian et al.*, Equity No. 3089 (D.C. Mass. 1929).

[4] Assistant Commissioner Frazer in *George A. Breon & Co., Inc.* v. *Abraham Aronovic*, 33 USPQ 390 (1939).

[5] The present appeal appears to be but another skirmish in the protracted litigation involving the name "Zildjian" in connection with trademarks on cymbals. The background and some of the history which underlies the present appeal will be found in the following reported decisions: *Avedis Zildjian Co.* v. *Fred Gretsch Mfg. Co.*, 251 F.2d 530, 116 USPQ 216 (2d Cir. 1958), affirming *Avedis Zildjian Co.* v. *Fred Gretsch Mfg. Co.*, 147 F. Supp. 614, 12 USPQ 424 (E.D.N.Y. 1956; *In re Avedis Zildjian Co.*, 120 USPQ 493 (TT & AB 1959); *Ex parte Avedis Zildjian Co.*, 117 USPQ 301 (Comm. Pat. 1958); *Ex parte Avedis Zildjian Co.*, 115 USPQ 98 (Comm. Pat. 1957); *Avedis Zildjian Co.* v. *Fred. Gretsch Mfg. Co.*, 97 USPQ 41 (P.O. Exr. in Ch. 1953).

Tailored Clothes, Inc., 49 CCPA 730, 293 F.2d 685, 130 USPQ 412 (1961). However, before a right to use can be predicated on a court decree, it is necessary to show identity of the parties or to establish privity such that the party asserting the right is clearly entitled to exercise the rights granted therein. Appellant's case fails at this point. I am unwilling to *assume* that the present record establishes identity of appellant and the defendants named in the decree of September 19, 1929 or any showing of privity between them.

The consent decree to which the majority opinion and Judge Rich's dissent refer was entered in an action in which the parties defendant were *three individuals*, "Aram Zildjian, Armand Zildjian and P. Zildjian" designated as "co-partners, doing business under the name of A. Zildjian & Co." The appellant here is designated in the application as "Avedis Zildjian & Co., a corporation duly organized under the laws of the Commonwealth of Massachusetts." The declaration accompanying the application is signed by one "Avedis Zildjian" as president of that corporation.

The present factual situation underscores the necessity for requiring proof of identity or privity of the parties when such a "right" is asserted. If we pass this issue, as the majority opinion and the dissent of Judge Rich do, further questions are presented, i.e., what is the extent of the rights granted? And are those rights assignable? It is a novel and unsupportable proposition that such questions affecting "rights" arising from a decree in inter-partes litigation between apparent strangers to this record are determinable on a record made in an ex parte proceeding such as the present in which *none of the parties to that decree* is present or represented.

I would, therefore, refuse registration of the mark for the reasons here stated.

RICH, *J.*, dissenting.

I disagree with the majority's suggestion that the public interest demands denial of this registration. It is, I think, a self-evident proposition that confusion, mistake, or deception will not follow the registration of a trademark by its owner. *In re National Distillers*, 49 CCPA 854, 862, 297 F.2d 941, 948, 132 USPQ 271, 277 (1962) (concurring). In this case appellant appears to have an undisputed, judicially sanctioned, right to use "A. Zildjian & Cie" as a trademark. It has become clear to me that in cases of this particular kind, at least, registration should not be denied. Cf. *Alfred Dunhill, Inc.* v. *Dunhill Tailored Clothes, Inc.*, 49 CCPA 730, 293 F.2d 685, 130 USPQ 412 (1961).

Nor is it a forceful rebuttal, in my opinion, to point with uncritical reverence to the literal wording of section 2(d). "A restrictive meaning for what appear to be plain words may be indicated by the Act as a whole, [or] by the persuasive gloss of legislative history * * *." *United States* v. *Witkovich*, 353 U.S. 194, 199 (1957) (Frankfurter, *J.*). In my concurring opinion in *National Distillers*, I tried to show that neither a consideration of the Lanham Act as a whole nor an analysis of its legislative history could justify a literal reading of section 2(d). I can only add that the weight of subsequent scholarly comment has been overwhelmingly in favor of conforming the register with the marketplace. See R. Callmann, Trademarks: The Right To Use *v.* The Right to Register: The Dunhill Case, 51 T.M.R. 1209 (1961); J. Lunsford, The Right To Use and The Right To Register—The Trade-Mark Anomaly, 43 T.M.R. 1 (1953); D. Robert, Commentary on the Lanham Trademark Act, 15 U.S.C.A. at 265, 271–72 (1948); D. Robert, The New Trademark Manual 53, 201 (1947); E. Vandenburgh, Concurrent Registration of Trade-Marks, 29 JPOS 720 (1947); M. Jenney, A Plea for Realism in Trade-Mark Oppositions, 29 JPOS 668 (1947). Where the right to use a trademark is undisputed, I think it should be registered.

I would reverse.

U.S. Court of Customs and Patent Appeals

IN RE JAMES L. JEZL, HABET M. KHELGHATIAN, AND LOUISE D. HAGUE

No. 7943. Decided June 20, 1968

[55 CCPA —; 396 F.2d 1109; 158 USPQ 98]

1. PATENTABILITY—OBVIOUSNESS—"SCOPE AND CONTENT" OF PRIOR ART CONSIDERED.

"We think * * * that the Board did err in not treating those references [relied on by appellants] as part of the 'scope and content' of the prior art. See *Graham* v. *John Deere*, 383 U.S. 1, 17."

2. SAME—PARTICULAR SUBJECT MATTER—"NOVEL CATALYST AND OLEFIN POLYMERIZATION THEREWITH."

The refusal of certain claims in an application entitled "Novel Catalyst and Olefin Polymerization Therewith" as unpatentable over the prior art, is reversed.

REVERSED.

Dos T. Hatfield, *Donald R. Johnson*, *Roger V. N. Powelson* for appellants.

Joseph Schimmel, (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and Judges SMITH, ALMOND, and KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 1–3, 6–9, 11 and 12 [2] as "unpatentable over the combination of Hague et al.[3] and Badische [4] under 35 U.S.C. 103," as well as "for double patenting over Hague et al."

The invention relates to a three-component "Ziegler" catalyst composition consisting essentially of (1) amorphous titanium trichloride ($TiCl_3$), (2) an alkyl aluminum dihalide ($AlRX_2$), and (3) methyl tetrahydrofuran (MTHF), as well as to a process of polymerizing certain 1-alkenes, such as propylene with that catalyst. Appellant's specification provides the following background information:

> It is known that 1-alkenes may be polymerized in the presence of catalysts comprising a transition metal halide such as titanium chloride in combination with an aluminum alkyl or dialkyl aluminum halide such as triethyl aluminum or diethyl aluminum monochloride to form solid crystalline polymers having utility in the fabrication of molded articles, films, and fibers. However, it has not been found possible heretofore to use an alkyl aluminum dihalide as an active component of this type of catalyst system even though these dihalides are much less expensive than the alkyl aluminum compounds used thus far. Thus, Stuart and Khelghatian show in U.S. Patent 2,967,206 that alkyl aluminum dihalides in conjunction with titanium halides effect polymerization of propylene

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Appearing in application Serial No. 106,487, filed May 1, 1961, and entitled "Novel Catalyst and Olefin Polymerization Therewith."

[3] U.S. Patent No. 3,129,209, issued April 14, 1964 on an application filed November 14, 1960. Two of the three inventors named in the instant application were named as inventors in the patent. Both are assigned to Sun Oil Co.

[4] British patent specification 809,717, published March 4, 1959.

> and higher 1-alkenes to *oily* polymers, but no *solid* polymers are disclosed therein as resulting from the use of this catalyst system.
>
> It is an object of this invention to provide a coordination catalyst system utilizing an alkyl aluminum dihalide as the organometallic component of the catalyst which will polymerize propylene and higher 1-alkenes to *solid crystalline* polymers in commercially attractive yields. [Emphasis supplied.]

It appears from the examples set forth in the specification that the addition of MTHF to an amorphous $TiCl_3$-ethyl aluminum dichloride catalyst composition results in an increased yield and rate of production of solid crystalline polypropylene when compared to the yields and rates upon employment of amorphous $TiCl_3$-ethyl aluminum dichloride alone.[5]

Hague discloses a catalyst composition consisting of (1) amorphous $TiCl_3$, (2) an aluminum alkyl *sesquihalide*,[6] and (3) MTHF for use in polymerizing propylene. According to Hague, it was known in the art that "the combination of aluminum sesquihalides and transition metal chlorides will not polymerize propylene and higher alpha olefins to solid crystalline polymers." Hague discloses that $Al_2R_3X_3$ in combination with *amorphous*, not crystalline, $TiCl_3$ will produce *solid* polypropylene, but at such a *slow* rate as to be "commercially impracticable." It was further found that the amorphous $TiCl_3$ and $Al_2R_3X_3$ system may be complexed with tetrahydrofuran or MTHF to yield catalyst systems having commercially acceptable activities approaching those of systems employing the more expensive aluminum dialkyl monohalides.

Recognizing that Hague does not employ an alkyl aluminum dihalide *per se* as a part of her disclosed catalyst system, the Examiner turned to Badische who also discloses three component "Ziegler" catalyst compositions for use in polymerizing various olefins. A halide of the metals of groups 4A, 5A and 6A of the periodic system, which may be $TiCl_3$ among many other things, is set forth as one component. The second is selected from a great many hydrocarbon compounds of metals of group 2B or 3B of the periodic system, particularly:

> * * * There may be mentioned especially *aluminium alkyl sesquihalides, thus a mixture of monohalogen aluminium dialkyl and dihalogen aluminium monoalkyl*, the halogen preferably being chlorine, but also possibly being bromine or another halogen, *or also the individual compounds*, and also aluminium trialkyls, such as aluminium triethyl or aluminium tripropyl. *It is especially advantageous to use halogen-free alkyls in the polymerisation of propylene.* * * * [Emphasis supplied.]

Other than the above disclosure Badische does not suggest by way of example or otherwise that alkyl aluminum dihalide in and of itself may be a useful part of its contemplated "Ziegler" catalyst systems. The third component is a compound containing ether, nitrile or hydroxyl groups. While cyclic ethers are disclosed as "suitable" third components, no explicit mention is made of tetrahydrofuran or MTHF. Badische notes that the addition of the disclosed ethers results, "in many cases," in increased speed of polymerization, increased yields of polymer and higher molecular weights with a reduction in the amount of oily, low molecular weight polymer that is formed.

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[5] The specification states: "Unlike the crystalline titanium trichloride from which it is derived, the predominantly amorphous titanium trichloride will catalyze the preparation of solid polymers of propylene and higher 1-alkenes when it is used in combination with an alkyl aluminum dihalide. However, the amount of solid polymer so prepared is exceedingly small, and such solid polymers can be obtained with such a system only when large, uneconomical amounts of the catalyst composition are used. It has been found, according to the present invention, that commercial polymerization rates may be obtained with the catalyst system containing an alkyl aluminum dihalide and predominantly amorphous titanium trichloride by complexing this system with methyl tetrahydrofuran."

[6] The record shows that aluminum alkyl sesquihalide ($Al_2R_3X_3$) is composed of equimolar proportions of dialkyl aluminum monohalide (AlR_2X) and alkyl aluminum dihalide ($AlRX_2$).

Said the Examiner:

> * * * Hague discloses all the essential limitations of claim 1, a typical claim, except for the $AlRX_2$ organometal * * *. Since Badische suggests that $AlRX_2$ [alkyl aluminum dihalide] and $Al_2R_3X_3$ [aluminum sesquihalide] are equivalent organometallics in Ziegler-type catalysts, it would be obvious to substitute the $AlRX_2$ of Badische for the $Al_2R_3X_3$ of Hague. * * *

The Board, observing that "alkyl aluminum dihalide is one of the components (along with monohalogen aluminum dialkyl) of alkyl aluminum sesquihalide," agreed.

The thrust of appellants' argument here is that the Board erred in failing to consider the prior art *as a whole*, including several references cited by them in their specification and by the Examiner during prosecution. Those references, in appellants' view establish beyond peradventure that $Al_2R_3X_3$ and $AlRX_2$ are *not* equivalent because they do not behave in the same manner or give the same results in comparable circumstances.

Initially, we would observe that mere inclusion of several compounds in a list of compounds, as Badische does here, does not necessarily establish that each of those compounds is "equivalent" to the others for all purposes, even assuming, as appellants here appear to do, that "equivalency" is a proper criterion for establishing obviousness under 35 U.S.C. 103. Cf. *In re Scott*, 51 CCPA 747, 323 F.2d 1016, 139 USPQ 297 (1963). Indeed, the references[7] relied on by appellants tend to bear out that conclusion and lend force to their arguments here. In view of those references, appellants conclude:

> If the whole prior art be considered, one skilled in the art would be led to believe that the improvement in rate of polymerization by the addition of methyl tetrahydrofuran to the *Hague et al.* titanium trichloride-ethyl aluminum sesquichloride catalyst system is due *solely to the activation of the diethyl aluminum chloride component* of the sesquichloride by the methyl tetrahydrofuran, since such activation of a titanium trichloride-diethyl aluminum chloride catalyst by various ethers is shown in Belgian Patent 564,722 * * *.[8] The man skilled in the art would not be led to believe that addition of methyl tetrahydrofuran to the inactive titanium trichloride-ethyl aluminum dichloride system would be of any value whatever, since even if the rate of polymerization of propylene to solid polymers were to be multiplied many fold, it would still be zero. [Emphasis supplied.]

[1] We think that is a fair summary of the situation reflected in the references before us, and that the board did err in not treating those references as part of the "scope and content" of the prior art.

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[7] German Auslegeschrift 1,058,734 discloses that "only a low rate of polymerization is obtained" with the use of a combination of $Al_2R_3X_3$ and $TiCl_3$ in polymerizing propylene. The low rate is said to be "due to the presence of monoethyl aluminum dichloride that inhibits the progress of polymerization."

In a disclosure somewhat similar to Badische, Belgian Patent 564,772 describes three-component catalyst systems for polymerizing olefins, such as propylene. The catalyst consists of $TiCl_3$, diethyl aluminum *mono*chloride and an ether such as tetrahydrofuran. The function of the ether in that specific catalyst is to *increase* the rate of polymerization and, in the case of propylene, to *increase* the degree of polymerization. In initially manufacturing the $TiCl_3$ portion of the catalyst systems, Belgian reduces $TiCl_4$ with aluminum ethyl sesquichloride, taking great care to wash the resultant $TiCl_3$ entirely free of any ethyl aluminum *di*chloride prior to its use with diethyl aluminum monochloride and the ether in polymerizing propylene. Appellants view the pointed efforts of Belgian to exclude the dichloride from its catalyst system even in the presence of such ethers as tetrahydrofuran as teaching "directly away" from their invention.

Appellants also rely on U.S. Patent 2,967,206 to Stuart, mentioned in their specification, and U.S. Patent 2,969,345 to Coover, both of which disclose that attempts to polymerize propylene with $TiCl_3$ and ethyl aluminum dichloride as a catalyst yielded only low molecular weight, liquid polymers. Appellants state:

> * * * Since the combination of titanium trichloride and ethyl aluminum sesquichloride acts as a catalyst to polymerize propylene to a solid polymer, albeit a poor one * * *, it is submitted that by no stretch of the imagination can it be said that the prior art demonstrates that ethyl aluminum dichloride is the equivalent of ethyl aluminum sesquichloride. * * *

[8] The Solicitor's position is that "the clear implication to the art from the Hague et al. disclosure is that the methyl tetrahydrofuran activates the monoalkyl aluminum dihalide component of the sesquihalide rather than the dialkyl aluminum monohalide thereof." We cannot agree in face of Belgian's disclosure that ethers (including tetrahydrofuran) will further "activate" an already active $TiCl_3$-AlR_2X catalyst to produce increased yields of high molecular weight polypropylene at increased rates.

See *Graham* v. *John Deere*, 383 U.S. 1, 17. We must agree with appellants that the totality of the prior art in the record demonstrates that one of ordinary skill in the art would regard alkyl aluminum dihalide to be a less than desirable component of the catalyst system when solid, crystalline polypropylene is the product sought to be produced. In our view, Hague and Badische considered alone or in combination would not fairly suggest to one of ordinary skill that MTHF would transform $AlRX_2$-$TiCl_3$ into a catalyst valuable for producing crystalline polypropylene when $AlRX_2$-$TiCl_3$ *per se* was otherwise valueless for that purpose. Appellants' discovery is, we think, non-obvious and comports with the conditions for patentability set forth in 35 U.S.C. 103. Compare *In re Naylor*, 54 CCPA 902, 369 F.2d 765, 152 USPQ 106 (1967).

The view we take renders it unnecessary to consider at length the double patenting rejection advanced by the Board. That rejection—one of "double patenting of the obvious type"—presents the same basic question as the § 103 rejection, but in narrower aspect. See *In re Land*, 54 CCPA 806, 368 F.2d 866, 151 USPQ 621 (1966); *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570 (1966).

For reasons similar to those advanced above, we find the subject matter of appellants' claims to be unobvious in view of the subject matter of the Hague claims.

[2] The decision of the Board is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,402,783, D. M. Smith, PISTON PACKINGS, **filed** Dec. 13, 1967, D.C., E.D. Mo. (St. Louis), Doc. 67C429(1), *McQuay-Norris Mfg. Co.* v. *Ramsey Corp.* Stipulation of settlement agreement presented, cause dismissed with prejudice, Oct. 23, 1968.

2,450,152, H. B. Miller, FRUIT PICKER'S CRANE, **filed** Oct. 28, 1965, D.C., N.D. Ohio (Toledo), Doc. C65–226, *Mae C. Miller, executrix of Howard B. Miller, deceased* v. *Daybrook-Ottawa Corp.* Defendant to pay plaintiff's damages arising from its infringement of patent with interest at 6% from 8–24–68, Nov. 12, 1968.

2,450,462, H. W. Washburn, MASS SPECTROMETRY; **2,569,032**, same, CONSTANT PRESSURE INLET FOR MASS SPECTROMETERS; **2,587,575**, same, MASS SPECTROMETRY; **2,587,647**, G. W. Pallette, ION SOURCE; **Re. 23,466**, McElhinney and Podhajsky, LOADER MACHINE; **2,784,313**, J. W. Smith, OSCILLATOR POWER SUPPLIES; **2,775,707**, J. R. Benapfl, HEAT COMPENSATING DEVICE; **2,806,956**, Hall and Robinson, MASS SPECTROMETRY, **filed** Sept. 13, 1966, D.C.N.J. (Trenton), Doc. C–924–66, *Picker X-Ray Corp.; Associated Electrical Industries, Ltd.* v. *Consolidated Electrodynamics Corp.* Consent judgment and dismissal with prejudice, Nov. 12, 1968.

2,539,168, Smith and Stearn, CONTAINER SHIP, **filed** Nov. 13, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50297, *International Research and Development Corporation* v. *Matson Navigation.*

2,569,032. (See 2,450,462.)

2,587,575. (See 2,450,462.)

2,587,647. (See 2,450,462.)

2,604,313, F. W. Grantham, DRYERS; **2,643,463**, same, LAUNDRY APPARATUS, **filed** May 16, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c897, *Paulette Grantham et al.* v. *Challenge-Cook Bros., Inc. et al.* Complaint dismissed for improper venue, Nov. 14, 1968.

2,610,167, T. A. TeGrotenhuis, PIGMENTED SILICONE ELASTOMERS, **filed** July 22, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–502, *Westwood Chemical, Inc.* v. *The General Electric Co.* Judgment, defendant permanently enjoined, Nov. 6, 1968.

2,643,463. (See 2,604,313.)

2,674,644, A. M. Goodloe, SHIELDING AND SEALING GASKET FOR ELECTRONIC EQUIPMENT, **filed** Nov. 8, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1866–CC, *Metex Corporation* v. *Primec Corporation.*

2,694,692, Amos, McCurdy and McIntire, METHOD OF MAKING LINEAR INTERPOLYMERS OF MONOVINYL AROMATIC COMPOUNDS AND A NATURAL OR SYNTHETIC RUBBER, **filed** Mar. 31, 1967, D.C. Del. (Wilmington), Doc. 3333, *The Dow Chemical Company* v. *Foster Grant Company, Inc.* Plaintiff's notice of dismissal, filed Apr. 7, 1967.

2,699,113, K. S. Hoover, METHOD OF MANUFACTURING STENCILS, **filed** Nov. 7, 1968, D.C., S.D.N.Y., Doc. 68–C–4414, *Risco Kagaku Corporation* v. *A. B. Dick Co.*

2,728,779, A. Pohland, ESTERS OF SUBSTITUTED AMINOBUTANES, **filed** Sept. 30, 1968, D.C., N.D. W. Va. (Fairmont), Doc. C–68–13–F, *Eli Lilly and Company, Inc.* v. *Milan Pharmaceuticals, Inc.*

2,775,707. (See 2,450,462.)

2,784,313. (See 2,450,462.)

2,795,258, Berry and Wells, BAG, **filed** Oct. 25, 1968, D.C., S.D.N.Y., Doc. 68–C–4227, *Morris J. Berry and Louis Wells* v. *I. B. Kleinert Rubber Co.*

2,806,956. (See 2,450,562.)

2,854,839, C. L. Eads, LOCK MECHANISM FOR NARROW STILE DOORS, **filed** Nov. 12, 1968, D.C., S.D. Fla. (Miami), Doc. 68–1294–C–TC, *Adams Rite Mfg. Co.* v. *Lumidor Mfg. Corp.*

2,896,857, G. R. Tompkins, WASHING APPARATUS, **filed** Sept. 30, 1968, D.C., S.D. Ind. (Indianapolis), Doc. IP68–C–

392, *Malsbary Mfg. Company et al.* v. *Auto-Teria, Inc.* **Same, filed** Sept. 30, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1804, *Malsbary Mfg. Co. et al.* v. *Ald, Inc.* **Same, filed** Sept. 30, 1968, D.C., N.D. Ohio (Cleveland), Doc. C–68–737, *Malsbary Mfg. Co. et al.* v. *Custom Power Washer, Inc.*

2,900,096, Dempster and Herpich, FRONT END LOADERS, **filed** Dec. 4, 1959, D.C., W.D.N.Y. (Buffalo), Doc. C–8528, *Dempster Bros. Inc. and George R. Dempster* v. *Buffalo Metal Container Corp. and Arthur E. Bausenbach.* Judgment entered for the defendants, Dec. 23, 1964; stipulation and order that action be dismissed without prejudice and subject to the right of the defendants to recover their costs for the patent infringement portion of this action which has been concluded, Nov. 12, 1968.

2,919,061, B. D. Power, VAPOUR VACUUM PUMPS, **filed** Nov. 4, 1968, D.C., W.D.N.Y. (Buffalo), Doc. C–1968–361, *Norton Company and Edwards High Vacuum International, Ltd.* v. *The Bendix Corporation.*

2,954,092, W. E. Thornton-Trump, MOBILE BOOM-SUPPORTED PLATFORM, **filed** Oct. 27, 1968, D.C., E.D. Wash. (Yakima), Doc. C–2467, *Highway Trailer Industries, Inc.* v. *A. Delt Clark and F. Delt Clark, doing business as Windy Point Ranch et al.*

2,973,567, Brow and Franks, FOUNDATION FORM CLIP, **filed** Nov. 12, 1968, D.C., W.D. Wash. (Seattle), Doc. 8004, *Arthur J. Brow* v. *K's Construction Company, Gene Killhoeffer et al.*

2,988,259, J. N. Callinicos, ADJUSTABLE FLORAL PACKAGE, **filed** Sept. 16, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–932, *Boas Box Company* v. *Proper Folding Box Corp.*

3,138,875, F. L. Christensen, DIAMOND SCRIBER, **filed** Sept. 18, 1968, D.C., S.D.N.Y., Doc. 68–C–3748, *Tempress Research Co.* v. *Clipper Diamond Tool Co., Inc.*

3,143,301, Trautner and Armacost, LAMP ASSEMBLY WITH RESILIENT MOUNTING FOR WEDGE BASE BULBS, **filed** Oct. 18, 1968, D.C., S.D. Ind. (New Albany), Doc. NA 68–C–43, *Peterson Manufacturing Company* v. *The Grote Manufacturing Company.*

3,191,921, P. R. Johnson, STEEL-MAKING CONVERTER WITH EXPANSION-ACCOMMODATING VESSEL MOUNTING, **filed** Jan. 17, 1968, D.C., N.D. W. Va. (Wheeling), Doc. C–68–3–W, *Chicago Bridge & Iron Company* v. *National Steel Corp. et al.* Notice of dismissal filed on Nov. 6, 1968.

Re. 23,464. (See 2,450,462.)

Re. 25,545, J. L. White, CASKET INTERIOR STRUCTURE, **filed** Feb. 19, 1967, D.C., W.D. Mich. (Grand Rapids), Doc. C–5551, *John L. White and Wilma White, doing business as Jacwil Mfrs., and Bruce Elder* v. *Royal Casket Company.* Dismissed on stipulation without prejudice, Oct. 25, 1968.

Re. 26,019, W. D. Watt, Jr., DRAWER PULL, **filed** Aug. 2, 1968, D.C., W.D. Mich. (Grand Rapids), Doc. 5917, *Keeler Brass Co.* v. *Bliss and Laughlin Industries, Inc.* Consent decree in favor of the plaintiff, Oct. 28, 1968.

PLANT PATENTS

GRANTED FEBRUARY 18, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,861

THUJA OCCIDENTALIS

Peter Arne Rafael Jensen, Planteskolen, Orting, Denmark

Filed Sept. 20, 1966, Ser. No. 580,841

Claims priority, application Denmark, Sept. 23, 1965, 73

U.S. Cl. Plt.—50 **1 Claim**

Int. Cl. A01h *7/00*

1. A new and distinct variety of the *Thuja occidentalis* substantially as herein shown and described, characterised particularly as to novelty by its very regularly globular and compact form, its slow and regular dwarf growth and during the growing period the distinctive pale green colour of its very fine-needled foliage, in addition to the very little difference in colour between the upper and underside of its branches.

2,862

ROSE PLANT

Marie-Louise Meilland, Cap d'Antibes, France

Filed Aug. 25, 1967, Ser. No. 663,456

U.S. Cl. Plt.—11 **1 Claim**

Int. Cl. A01h *5/02*

A variety of rose plant originated by crossing Suspense (Plant Patent No. 1,944) with Confidence (Plant Patent No. 1,192).

2,863

ST. AUGUSTINE GRASS

John A. Long, Marysville, Ohio, assignor to The O. M. Scott & Sons Company, Marysville, Ohio, a corporation of Ohio

Filed May 8, 1967, Ser. No. 637,014

U.S. Cl. Plt.—88 **1 Claim**

Int. Cl. A01h *5/12*

A variety of perennial St. Augustine grass having outstanding resistance to chinch bugs, a pleasing, moderate olive green color, and a fine leaf texture. The variety is highly competitive with weeds, easily propagated, vigorous, rugged, tolerant to commercial pesticides, and has a high rate of horizontal growth.

2,864

ST. AUGUSTINE GRASS

John A. Long, Marysville, Ohio, assignor to The O. M. Scott & Sons Company, Marysville, Ohio, a corporation of Ohio

Filed May 15, 1967, Ser. No. 638,673

U.S. Cl. Plt.—88 **1 Claim**

Int. Cl. A01h *5/12*

A variety of perennial St. Augustine grass having outstanding resistance to chinch bugs, pleasing, moderate yellow green color and a stocky leaf blade. The variety is highly competitive with weeds, easily propagated, resistant to nematodes, vigorous, rugged, tolerant to commercial pesticides, and has a high rate of horizontal growth.

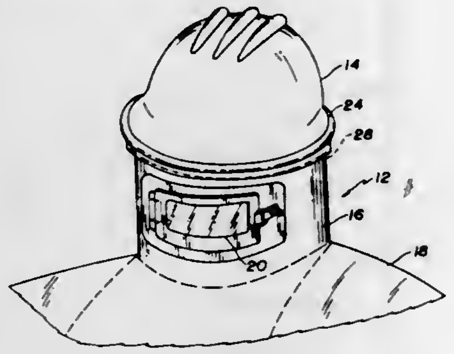
PATENTS

GRANTED FEBRUARY 18, 1969

GENERAL AND MECHANICAL

3,427,660
CLAMP-ON PROTECTIVE HOOD

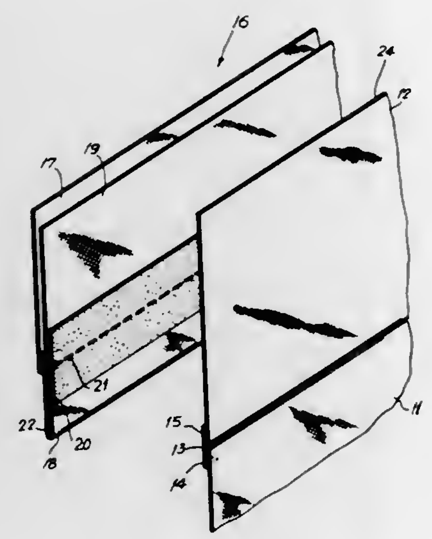
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Nov. 3, 1966, Ser. No. 591,791
U.S. Cl. 2—10 **8 Claims**
Int. Cl. A61f *9/00;* **A42b; A62b** *7/00*



A hood attachable to the periphery of the periphery of the rim of a hard safety hat, which hood extends down over the face, neck and shoulders of the wearer to form a protective atmosphere around the wearer's head. A structure for quickly attaching and detaching the hood to the safety hat which structure assures an air tight seal between the hood and the hat to exclude deleterious airborne substances from interior of the hood. An improved system for conveying and distributing air to the interior of the hood.

3,427,661
WAISTBAND CONSTRUCTION AND CURTAIN THEREFOR

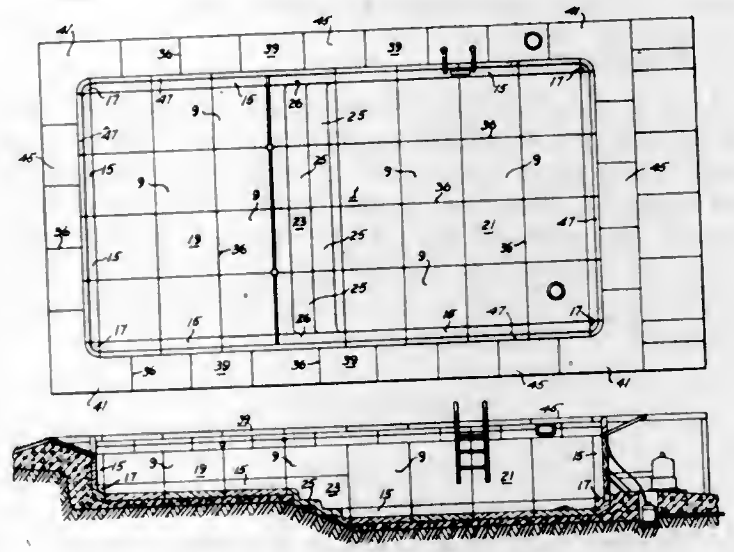
Bernard Navasky, 19 S. Water St., Philipsburg, Pa. 16866
Filed June 28, 1966, Ser. No. 561,106
U.S. Cl. 2—236 **4 Claims**
Int. Cl. A41d *27/00*



An improved waistband construction and curtain for forming the same including liner material, stiffener and attachment strip or band surface coated on the garment adjacent surface with a heat activated adhesive composition.

3,427,662
SWIMMING POOL CONSTRUCTION

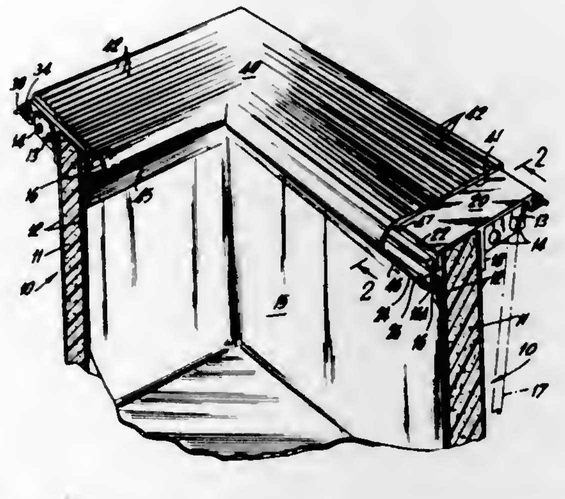
Candido Jacuzzi, Lafayette, Calif., and Floyd M. Nash and Anas J. Baroody, Little Rock, Ark., assignors to Jacuzzi Bros., Incorporated, a corporation of California
Filed Mar. 16, 1966, Ser. No. 534,785
U.S. Cl. 4—172 **8 Claims**
Int. Cl. E04h *3/16;* **B65b** *7/28*



A pool construction involving fiber glass brick components of different sizes and shapes to enable construction of a pool to meet various requirements of design and enable subsequent changes.

3,427,663
COPING FOR WALL OF LINED SWIMMING POOL

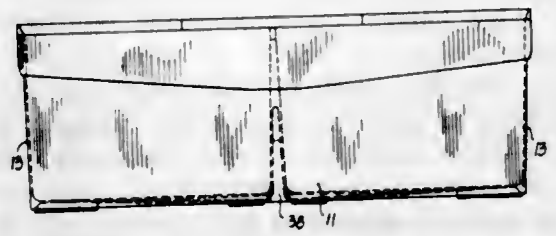
John Daniel O'Connell, 276 5th Ave., Troy, N.Y. 12182, and Robert Q. Stockholm, Box 238, R.D. 1, Troy, N.Y. 12180
Filed Feb. 3, 1967, Ser. No. 613,831
U.S. Cl. 4—172 **12 Claims**
Int. Cl. E04h *3/16;* **B65b** *19/18, 43/40*



A wall coping for a liner type swimming pool including a metal member having a channel embracing the wall upper edge, a tread and depending portions at its inner and outer edge. A plastic covering overlies the metal member and has inner and outer edges which have snap-in engagement in grooves in said depending portions. Other grooves in the latter to releasably anchor the periphery of the liner and the periphery of a pool cover.

3,427,664
MOLDED LAUNDRY TUB

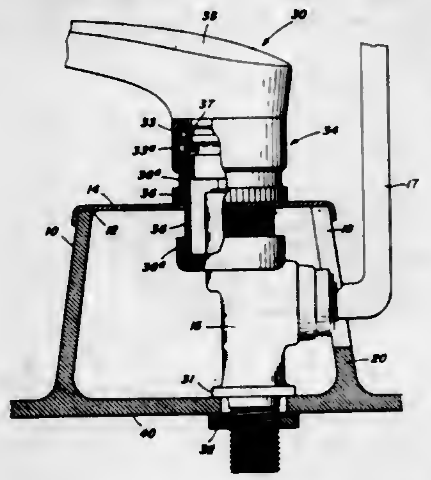
Bernard E. Mustee, Cleveland, Ohio, assignor to E. L. Mustee & Sons, Inc.
Filed Apr. 20, 1967, Ser. No. 632,324
U.S. Cl. 4—183 **12 Claims**
Int. Cl. A47k *3/14*



A laundry tub having two tub compartments and a construction such that the tub can be molded as a strong, one-piece unit adaptable either to be hung on a wall or supported on legs.

3,427,665
PLUMBING FIXTURE AND FITTING

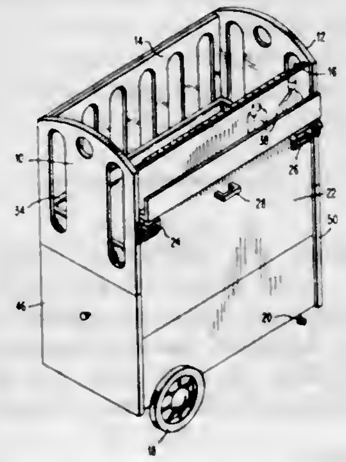
Jack N. Kaiser, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,759
U.S. Cl. 4—187 **9 Claims**
Int. Cl. E03c *1/18*



A plumbing fixture, in particular a kitchen sink is provided with a raised section which houses a variable number of accessories. The raised section has an open top and an internal support member for supporting at least one of the accessories.

3,427,666
COMBINATION CRIB BED AND DRESSING TABLE FOR INFANTS

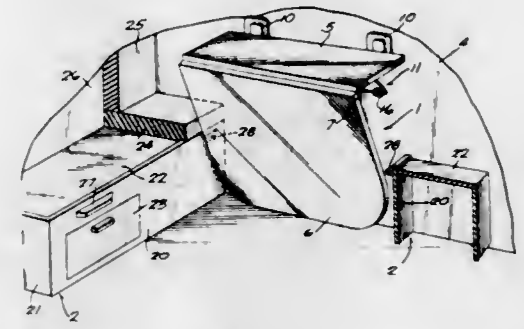
Herbert K. Saxe, 304 E. 38th St., New York, N.Y. 10016
Filed May 23, 1967, Ser. No. 640,672
U.S. Cl. 5—2 **14 Claims**
Int. Cl. A47d *11/00;* **A47b** *83/00*



Crib (FIG. 2) has a hinged side **16** which lowers onto support **22** to form a dressing table. Door **46** opens into a cabinet beneath the crib mattress **32**.

3,427,667
CONVERTIBLE TABLE

Rudy J. Ratcliff, Marengo, Ill., assignor to Ratcliff Industries, Inc., Juneau, Wis., a corporation of Wisconsin
Filed Feb. 13, 1968, Ser. No. 705,200
U.S. Cl. 5—3 **10 Claims**
Int. Cl. A47c *19/00;* **A47b** *83/00;* **A47d** *11/00*

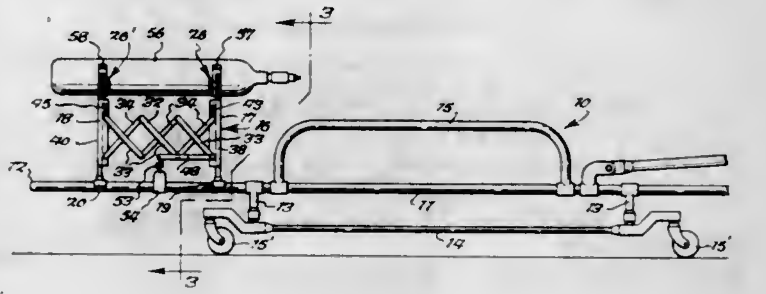


The invention relates to a convertible table for use in a dwelling having limited floor space which can be utilized either as a dining table, an end table or, in combination with bench seats, as a bed. The table comprises an inner table section which is supported from a wall of the dwelling by a dual-position link member, and an outer table section is hinged to the inner section. When the link member is in the upper position, the table sections are at table height and form a dining table, with the outer table section being supported by a folding leg. By pivoting the leg upwardly to a position beneath the outer table section, the outer table section can be swung downwardly to a beyond vertical position, in which position the inner table section functions as an end table and the floor area between the bench seats is exposed.

By moving the link member to the lower position, the table sections are supported substantially flush with the bench seats so that the table can be utilized with the bench seats to provide a bed.

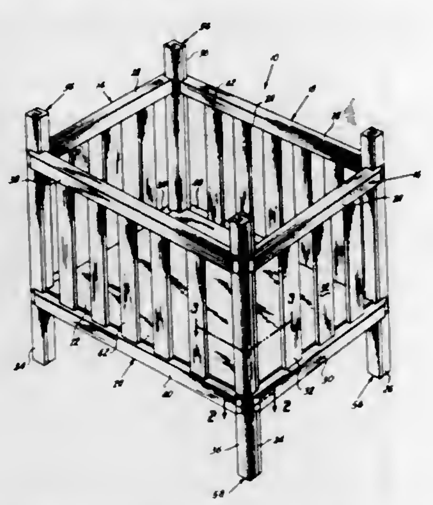
3,427,668
CONTAINER CARRYING FRAME FOR BED

William H. McManus, Jr., 35 Olcott Place, Cheektowaga, N.Y. 14225
Filed Oct. 3, 1966, Ser. No. 583,865
U.S. Cl. 5—92 **13 Claims**
Int. Cl. A61g *1/00, 7/00*



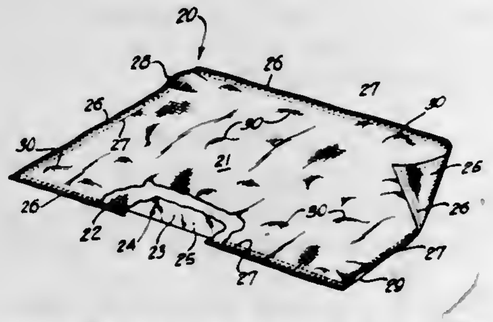
A frame for mounting an oxygen bottle on the spaced side rails of a stretcher including spaced leg portions having feet of a configuration to fit on said spaced side rails, a scissors linkage connecting pairs of spaced legs on each side of the frame, hook means connected to the scissors linkage for anchoring the legs to the spaced side rails, and spaced plates mounted on opposed pairs of legs and extending transversely of the stretcher and including spring clips for holding spaced portions of an oxygen bottle.

3,427,669
KNOCKDOWN FURNITURE
Lester A. Swenson, Roland, Iowa 50236
Filed May 16, 1967, Ser. No. 638,981
U.S. Cl. 5—93 **6 Claims**
Int. Cl. A47d *7/00, 13/06*



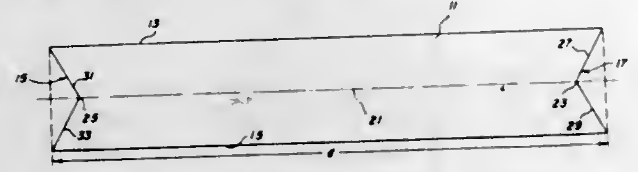
An article of furniture susceptible of assembly and disassembly by utilizing grooved legs or supports that are interlocked by longitudinal sliding engagement. Includes brace or rail components which overlie grooved sections to prevent lateral displacement of the interlocked components. Rigidity of assembled unit is accomplished without auxiliary or applied fastening elements.

3,427,670
UNDERPAD
Melvin Nimoy, East Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 22, 1967, Ser. No. 648,140
U.S. Cl. 5—354 **1 Claim**
Int. Cl. A47c *31/00;* **A47g** *9/00*



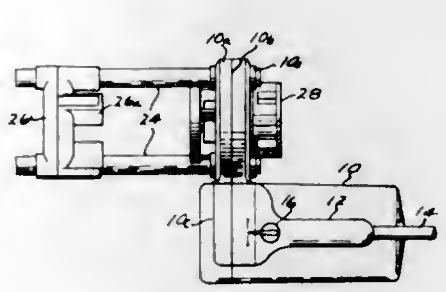
This invention is with respect to a launderable underpad having a water repellent layer where fabric bunching due to differential in shrinkage between fabric layers and the entrapment of internal pilling in such pad have been obviated.

3,427,671
METHOD FOR FORMING PONTOONS, BOATS AND THE LIKE
Loyd J. Livandais, 1325 North Parkway, Memphis, Tenn. 38104
Filed Aug. 15, 1966, Ser. No. 572,255
U.S. Cl. 9—6 **3 Claims**
Int. Cl. B63b *3/00, 1/18;* **B23q** *17/00*



1. A method of manufacturing a pontoon and the like comprising the steps of providing a single elongated first piece of metal having opposite and substantially parallel equal side edges, having opposite end edges interconnecting said side edges, and having an imaginary center line parallel to and halfway between said side edges extending from one of said end edges to the other to divide each of said end edges into an adjacent pair of end edge halves; measuring one of said side edges to determine the length thereof; folding said piece of metal at said end edges where said center line intersects said end edges; bringing the adjacent end edge halves of each of said pair of end edge halves into contiguous relationship; while said end edge halves are in said contiguous relationship securing together each of said adjacent pairs of end edge halves to establish a partially finished hull having a pair of upper edges provided by said side edges of said first piece; providing a substantially rigid symmetrical piece of material pointed at the opposite ends thereof and having side edges extending from the point at one end of said material to the point at the other end with each of said side edges of said material as measured therealong being equal to the length of each of said side edges of said first piece of metal; securing said material in place on said hull with said side edges of said material being in engagement with said upper edges of said hull to force said hull into a smoothly contoured shape.

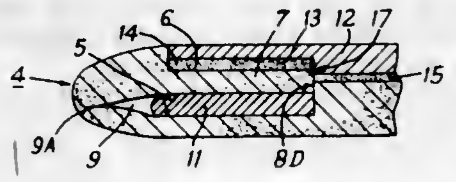
3,427,672
DRIVE RELEASE POWER TOOL
Heinrich H. Frank, Amherst, Ohio, assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Apr. 25, 1966, Ser. No. 544,796
U.S. Cl. 10—89 **14 Claims**
Int. Cl. B23g *1/24, 11/00;* **B21k** *1/56*



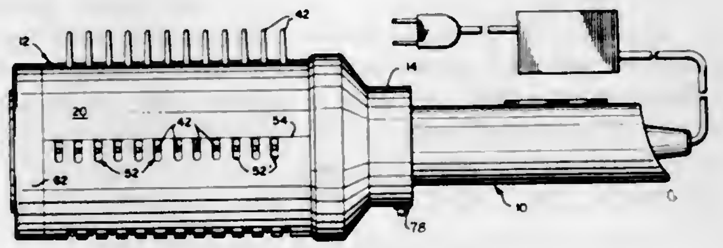
A ring gear is disposed in a housing driven by a motor. A die head is rotatably mounted in the ring gear and is driven by a spring pressed pawl carried in a channel in the ring gear. The housing also supports a workholder which holds the work in alignment with the die head. As the die head is revolved the threads are cut on the work and this causes the workholder to move toward the die head. When the workholder approaches the die head it engages with a release ring reciprocably carried by the ring gear on posts that extend through openings in the ring gear. One of the posts has cam surfaces thereon which control the operation of the pawl to cam it out of driving engagement with the die head. The pawl also holds the die head and the release ring and its posts in position and can be moved to release the die head and the release ring whereby they may be assembled from the other side of the ring gear with it when desired.

3,427,673
METHOD OF JOINING THE EDGES OF A SHOE OUTER
Arthur Wilfred Freer, Street, Somerset, England, assignor to Clarks Limited, Street, Somerset, England
Filed Jan. 16, 1967, Ser. No. 609,493
Claims priority, application Great Britain, Jan. 14, 1966, 1,967/66
U.S. Cl. 12—146 **13 Claims**
Int. Cl. A43d *11/00;* **A43b** *23/00*

A method of joining the edges of uppers during manufacturing of a shoe. The method comprises forming at least some of the seaming of the shoe outer by applying to the edge portions an adhesive which does not require heat for activation. The edge portions of the components of the shoe outer are then directly secured together.

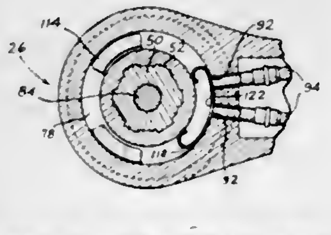


3,427,674
ELECTRIC HAIR BRUSH
John W. Tone, Wilmington, Del., Albert E. Simon, Jr., Fort Washington, Pa., and William D. Taylor, Coventry, Del., assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed June 30, 1966, Ser. No. 561,895
U.S. Cl. 15—23 **8 Claims**
Int. Cl. A46b *13/02*



A power operated hair brush having a drive housing with manual grasping means, and a brushing head rotatably mounted on the drive housing, the brushing head including brush bristles positioned therein for extension and retraction through aligned openings in the head as the latter rotates.

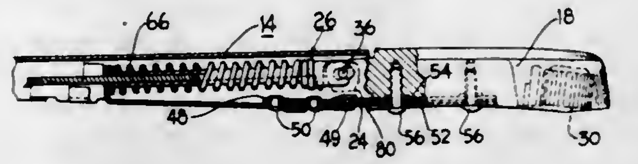
3,427,675
WINDSHIELD WIPER AND WASHER ASSEMBLY
James W. Tibbet, Rte. 1, Box 94, Gold Hill, Oreg. 97525
Filed July 3, 1967, Ser. No. 650,780
U.S. Cl. 15—250.04 **8 Claims**
Int. Cl. B60s *1/04;* **A47l** *1/02*



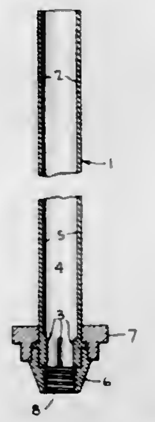
A windshield wiper and washer assembly comprises a base, a shaft mounted for oscillation in the base, and a wiper arm and blade attached to the shaft. The base contains a pressurized water chamber which communicates with a conduit extending the length of the arm. The conduit has spaced discharge ports along its length arranged to squirt water ahead of the wiper blade. Valve means in the head automatically control the flow of water so that it discharges first on one side of the blade and then on the other as required to apply it continuously ahead of the blade in the reversing motion of the latter.

3,427,676
WINDSHIELD WIPER ARM
William C. Riester, Williamsville, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Jan. 12, 1968, Ser. No. 697,489
U.S. Cl. 15—250.35 **8 Claims**
Int. Cl. B60s *1/34*

A windshield wiper arm spring retaining frame is hingedly secured by a flat strip of flexible material to the mounting head. A stabilizer plate spanning the hinge area for providing torsional rigidity is fastened to the mounting head at one end and its rounded edge is clamped to the spring retainer at its other end, but rotatable therein. A compression spring assembly for applying pressure to a wiper blade acts between an upstanding spring seat at one end and a transverse pin carried by the mounting head at its other end. The ends of the transverse pin ride in arcuate slots formed in upstanding ears on the spring retainer acting as stop means to prevent excessive pivotal movement at the hinge point.

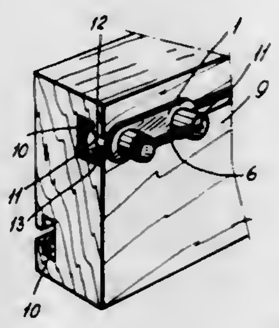


3,427,677
ERASER CONTROL APPARATUS
Nancy Lucille Stokes and William F. Stokes, both of Rowesville, S.C. 29133
Filed Aug. 30, 1966, Ser. No. 576,514
U.S. Cl. 15—434 **2 Claims**
Int. Cl. B43l *19/00*



An eraser control element for use on pencils, electric erasing machines, and the like, comprising a tubular shaft adapted to receive an elongated eraser element, and an internally threaded sleeve rotatable with respect to the shaft to provide longitudinal adjustment of the eraser element therewithin. The shaft is provided with blades protruding into the path of the eraser element so as to prevent rotation of the eraser element while in use.

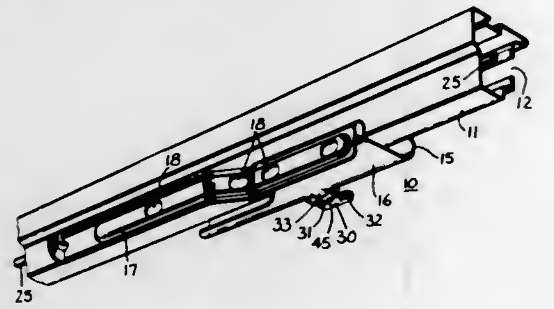
3,427,678
CURTAIN CLASP FOR DRAPING AND HANGING CURTAINS
Göran J. Fr. Hård Af Segerstad, Borgmastargatan 4, Sigtuna, Sweden
Filed Aug. 19, 1966, Ser. No. 573,579
U.S. Cl. 16—87.4 **3 Claims**
Int. Cl. A47h *1/06, 15/00, 13/00*



A curtain clasp for draping and hanging curtains in which an oblong plate has on one of its longitudinal surfaces at least one mushroom-like projection having a neck portion and a head and being adapted to slide into the undercut channel and guideway of a correspondingly shaped curtain bar. On the oblong plate's opposite surface are two spaced studs extending at right angles to said surface, one of which carries the headed end of a curtain suspending and pleating pin in an open slot arranged at right angles to the longitudinal surface of said oblong plate and extending in the direction of the second stud. The second stud contains a slot which opens upward and is parallel to the longitudinal surface of said oblong plate. This slot is adapted to receive the pointed end of the pin and hold it in locking engagement therewith by a curtain suspended from the pin.

3,427,679
SLIDE FOR DRAPERY HARDWARE INSTALLATION

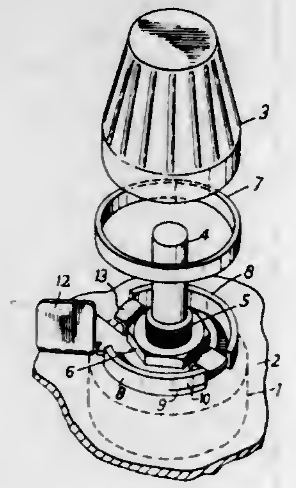
Henry Znamirowski, Ellicott City, Md., assignor to Eastern Products Corporation, a corporation of Maryland
Filed Jan. 8, 1968, Ser. No. 696,341
U.S. Cl. 16—93 **4 Claims**
Int. Cl. F05d *13/02;* **A47h** *15/00, 5/00*



A slide for a drapery hardware installation which includes a cord locking lug which is integrally formed from the wall of the slide, preferably the back wall, and which is bent so as to project backwardly substantially in the plane of the bottom wall of the slide to facilitate adjustment.

3,427,680
KNOB LOCKING DEVICE

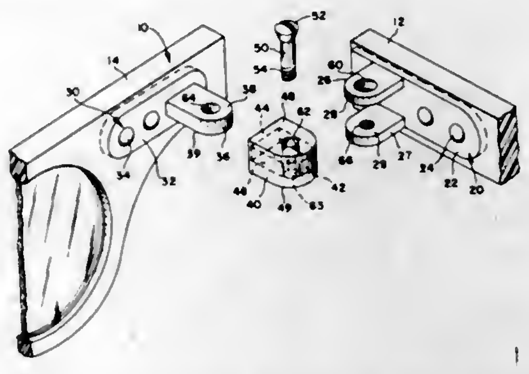
Frank Peter Gilbert, Harlow, England, assignor to A. C. Cossor Limited, Elizabeth Way, Harlow, Essex, England
Filed Apr. 21, 1967, Ser. No. 632,725
Claims priority, application Great Britain, May 6, 1966, 20,191/66
U.S. Cl. 16—121 **6 Claims**
Int. Cl. H01e *5/02;* **A47b** *95/02;* **B65d** *25/28*



A knob in which rotation of a locking member expands a ring to lock the knob in any position.

3,427,681
HINGES FOR OPHTHALMIC MOUNTINGS AND THE LIKE

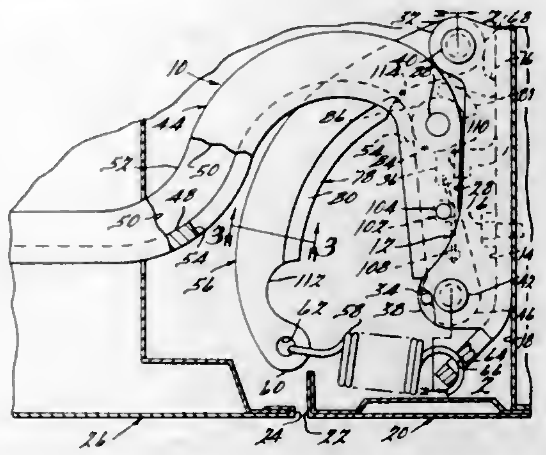
Morris G. Smith, Jr., Berkeley Heights, N.J., assignor, by mesne assignments, to Amerace Esna Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1967, Ser. No. 623,121
U.S. Cl. 16—128 **12 Claims**
Int. Cl. G02c *5/22, 5/16;* **E05d** *11/00*



A hinge for connecting a temple to the front frame of an ophthalmic mounting wherein the interleaved barrels of the hinge have spaced apart confronting faces movable relative to one another and a unitary boot of nylon is placed over at least one interleaved barrel of the hinge to establish nylon walls lying between the relatively movable spaced confronting faces of the interleaved barrels.

3,427,682
INFINITE STOP DOOR HINGE

William V. Bachmann, St. Clair Shores, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,827
U.S. Cl. 16—146 **10 Claims**
Int. Cl. E05d *11/10*

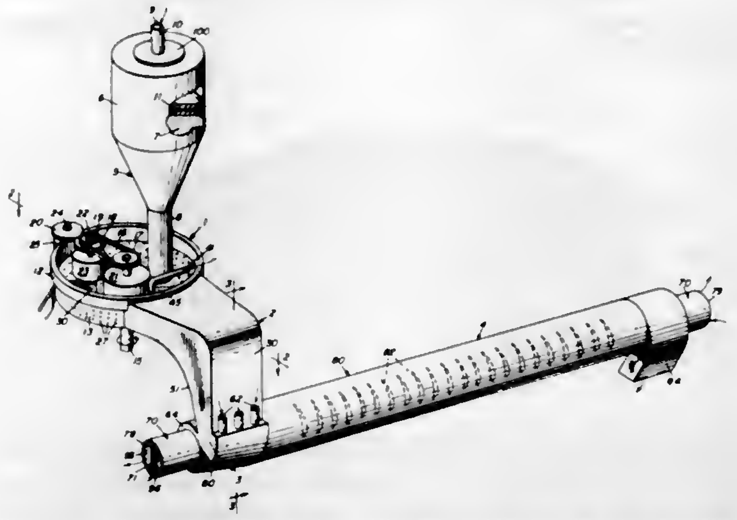


A hinge assembly with a door-supporting hinge arm is provided with a resiliently constrained control arm. A friction dog or wedge member carried by the hinge arm frictionally engages cooperating surfaces on the control arm as the door is moved towards either its opened or closed position in order to maintain the door in any selected position.

3,427,683
APPARATUS FOR FORMING SPHERICAL PELLETS

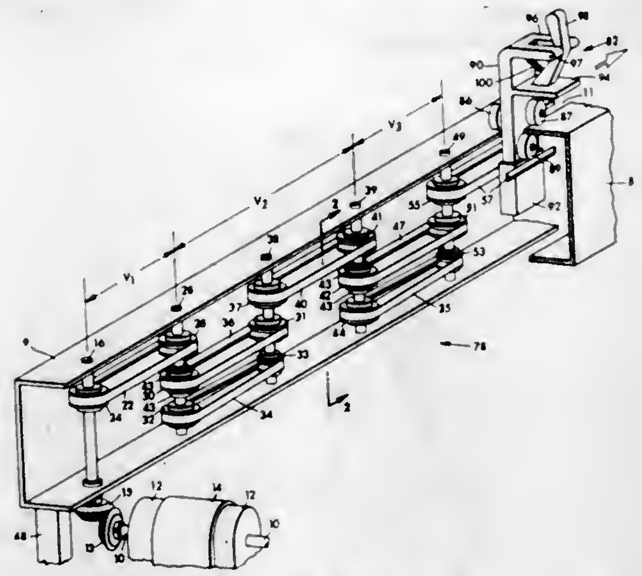
Stanley Nazaruk, Clairton, and Carl Rosa and Alvin F. Headrick, Bethel Park, Pa., assignors to the United States of America as represented by the Secretary of the Interior
Filed Jan. 18, 1967, Ser. No. 610,726
U.S. Cl. 18—1 **4 Claims**
Int. Cl. B29c *24/00;* **B28b** *1/20*

The present invention relates to a device for preparing dense uniformly sized spherical pellets of good structural integrity from pastes. In this device, paste is compressed from both sides into presized holes in a die plate. The resulting cylindrical pellets are ejected from the die by air pressure and then passed through a cyclone unit into a cylindrical balling chamber fitted with turning tabs wherein the pellets are shaped into uniform spheres, by contact with the wall portion of the balling chamber and the tabs, as they are passed in a helical path through the chamber with the aid of a fluid medium.



3,427,684
BIAXIAL STRETCHING MACHINE

Hsue C. Tsien, Livingston, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,949
U.S. Cl. 18—1 **9 Claims**
Int. Cl. B29c *23/00;* **D06c** *3/02;* **B65h** *17/34*

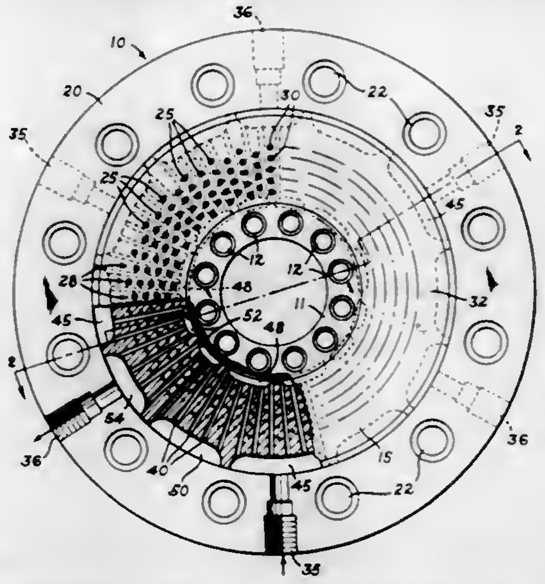


A biaxial stretching machine for plastic webs and other like materials having a web-clamp guiding means with a diverging portion. The web-clamp driving mechanism within said diverging portion comprising a series of belts and pulleys so arranged such that successive belts are driven at a faster rate of speed than previous belts whereby the web clamps are transported along said diverging portion at an increasing rate of speed, whereby the web material is stretched longitudinally and transversely.

3,427,685
PLASTIC PELLETIZER DIE PLATES

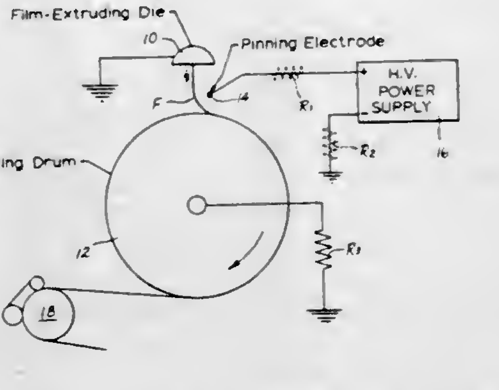
Harvey H. Gove and John C. Anderson, Hamilton, Ohio, assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 3, 1967, Ser. No. 620,515
U.S. Cl. 18—12 **7 Claims**
Int. Cl. B29f *3/08*

A pelletizer die plate is disclosed with an annular array of extrusion nozzles and fluid heating passages formed between adjacent radially aligned rows of nozzles, in which parallel-connected groups of heating passages are connected in a serpentine or reversing-flow manner between heating fluid inlets and outlets.



3,427,686
METHOD AND APPARATUS FOR QUENCHING POLYMERIC FILMS

Joseph B. Busby, Greenville, S.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,773
U.S. Cl. 18—15 **9 Claims**
Int. Cl. B29c *17/00;* **B29b** *3/00, 5/04*



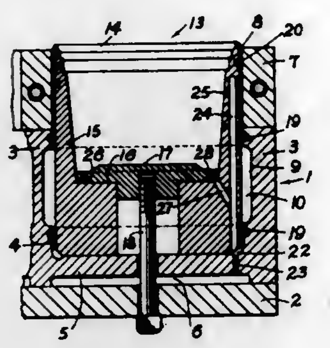
5. Apparatus for casting plastic films, including a die for extruding a soft plastic film and a casting drum spaced from said die, said apparatus further including a pinning electrode adjacent to the path of the film emerging from said die and approaching said casting drum, and means for causing said electrode to ionize the air adjacent to the film for electrostatically charging the film and for causing the film to be attracted and thus pinned to the casting drum, said last-named means including means for establishing a first voltage difference between said pinning electrode and an adjacent part of the apparatus for inducing ionization at said pinning electrode, and means for establishing a lesser voltage difference between said pinning electrode and said casting drum for at least largely eliminating arcing at said casting drum.

3,427,687
MOLD CONSTRUCTION

Frederick O. Miller, Saginaw, Mich., assignor to Miller Mold Co., Saginaw, Mich., a corporation of Michigan
Filed Nov. 7, 1966, Ser. No. 592,626
U.S. Cl. 18—35 **10 Claims**
Int. Cl. B29c *1/00;* **B29d** *7/00*

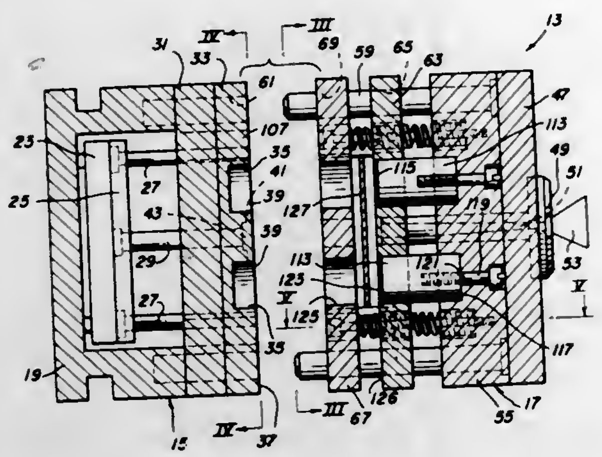
1. A mold construction comprising a base member having side walls defining a recess; an annular mold mem-

ber removably received in said recess and having side walls in confronting relation with said side walls of said base member, the side walls of at least one of said members being grooved to provide a chamber extending about said mold member; sealing means interposed between said members on opposite sides of said chamber; passage means in said base in communication with said chamber for circulating coolant through said chamber; and means removably securing said mold member in said recess.



3,427,688
MEANS FOR PRODUCING AN ILLUSTRATED MOLDED PRODUCT

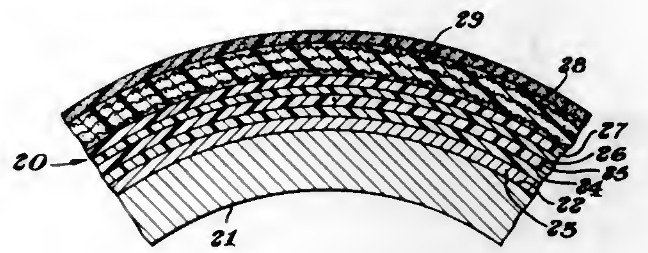
Harry W. Wilson, Rte. 2, Magazine, Ark. 72943
Filed Nov. 25, 1966, Ser. No. 597,007
U.S. Cl. 18—36 **5 Claims**
Int. Cl. B32b *31/30;* **B29d** *31/00;* **B29c** *1/02*



1. Means for producing an illustrated plastic molded item comprising a sheet of material having an illustration thereon; mold means movable between an open position and a closed position, said mold means including cavity means providing at least one cavity for the reception of molten plastic, said cavity having a mouth, die plate means providing a die opening in alignment with said cavity, said sheet of material being disposed adjacent said die means on the remote side thereof from said cavity, punch means having an end for cooperation with said die plate means during movement of said mold means from said open position to said closed position to cut an illustrated piece from said sheet of material and for moving said piece into a position adjacent the mouth of said cavity when said mold is moved into said closed position, said end of said punch establishing a closure for said cavity when said mold is in said closed position, means for introducing molten plastic into said cavity when said mold means is in said closed position for forming the body of said item out of said plastic with said illustrated piece being embedded in said body.

3,427,689
MOLD AND METHOD FOR THE PREPARATION THEREOF

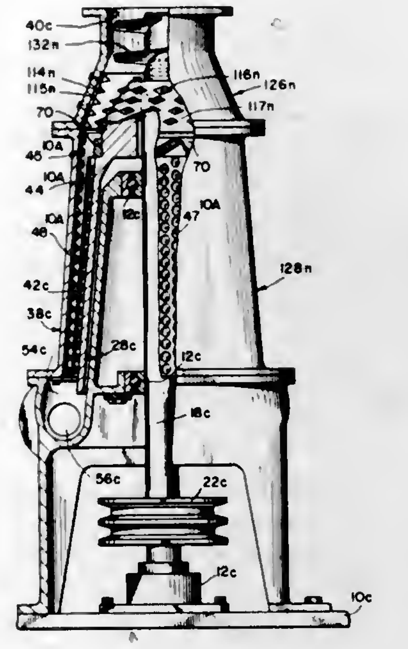
Leo J. Windecker, Midland, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,821
U.S. Cl. 18—47 **16 Claims**
Int. Cl. B27c *1/2*



A mold particularly suited for the preparation of articles having a bright finish and prepared from reinforced epoxy resin is prepared from a pattern by applying and curing in sequence polyester gel coats, a coating of mixed polyester and epoxy containing 2-hydroxyalkyl acrylates or 2-hydroxyalkyl methacrylates and filled epoxy resin coat, glass reinforced epoxy resin coat and if desired a stiffening layer.

3,427,690
APPARATUS FOR WORKING FIBROUS MATERIALS

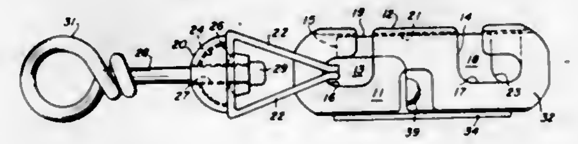
Anton J. Haug, Nashua, N.H., assignor, by mesne assignments, to Marie J. Doyle, executrix for the estate of Anton J. Haug, deceased
Continuation of application Ser. No. 248,018, Dec. 28, 1962. This application Oct. 17, 1966, Ser. No. 569,537
U.S. Cl. 19—66 **24 Claims**
Int. Cl. D01b *3/04;* **B02c** *15/10, 7/06*



Apparatus and method for processing a fluid mass of fibrous material comprising a pair of fiber working members concentrically arranged in spaced-apart relation to define a fiber passageway, means for producing relative rotative movement between the fiber working members, first smooth, rounded fiber compressing means or working face on one of the fiber working members and second smooth, rounded fiber compressing means or working face on the other fiber working member, the first and second fiber compressing means being operable to alternately compress and then release the fibrous material at a rate greater than two cycles per second. Also is disclosed shredding means disposed along the fiber passageway to break-up large slivers and chips in the fibrous material. Further along the passageway refining means are provided for refining the shredded fibrous material. Additionally, means are provided for cutting and filtering the fibrous material.

3,427,691
COUPLING DEVICE

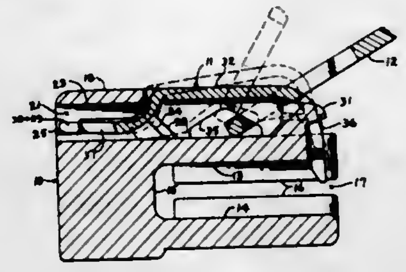
James R. Johnston, 4021 La Salle, San Diego, Calif. 92110
Filed Sept. 8, 1965, Ser. No. 485,736
U.S. Cl. 24—73 **4 Claims**
Int. Cl. A44b *21/00*



A coupling device having an integral metal member folded over on itself forming two parallel sides which slideably receives another integral metal member folded over on itself, the first member having openings in the top thereof for receiving coupling loops and the second member having complementary openings in the top thereof for the reception and release of coupling loops depending upon its slideable relationship with said first member.

3,427,692
THREE-PIECE AUTOMATIC LOCK SLIDER

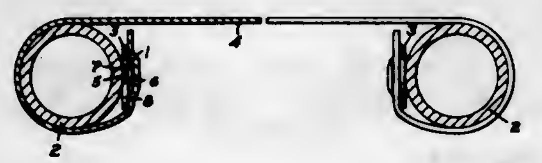
David H. Rowlands, Penrith, Australia, assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 19, 1968, Ser. No. 706,319
U.S. Cl. 24—205.14 **4 Claims**
Int. Cl. A44b *19/24*



A three-piece automatic lock slider for zipper fasteners employs a cap-like locking member which has a pivotal connection with a hollow boss on the slider front wing and a springy tail which snaps into engagement with the boss while a projection on the slider body enters a hole in the front end of the locking member to limit the pivotal movement of the locking member.

3,427,693
WEBBING FASTENER

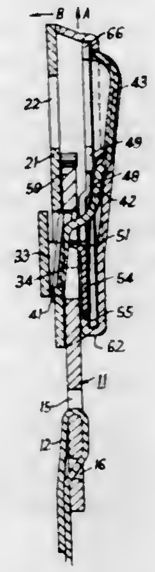
James R. Adams, Boston, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,499
U.S. Cl. 24—222 **1 Claim**
Int. Cl. A44b *17/00*



A fastening system which secures a webbing strip to a sheet metal structure comprises a plurality of small headed studs which are welded to the structure and a plurality of slotted sockets secured to the webbing strip adjacent its ends. The stud heads are passed through the slots in the sockets and are seated in pockets formed between the sockets and the strip and do not pass through the strip per se.

3,427,694
FASTENING FOR A VEHICLE SAFETY HARNESS

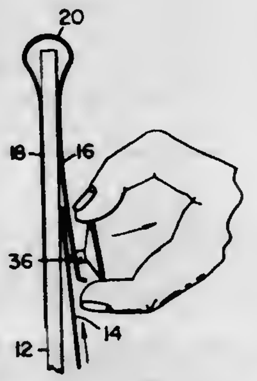
Barney Bullock, % William Deacons Bank, Limited, Old Brompton Road, London, SW. 7, England
Filed Jan. 26, 1967, Ser. No. 611,970
Claims priority, application Great Britain, Feb. 1, 1966, 4,347/66; Apr. 20, 1966, 17,209/66; Apr. 29, 1966, 18,979/66
U.S. Cl. 24—230 **9 Claims**
Int. Cl. A44b *11/00;* **A62b** *35/00*



A safety-belt buckle having a tongue adapted to be inserted endwise into a socket for engagement with an upwardly projecting spring-loaded flat latching plate which is pivoted in the base of the socket near the mouth thereof. The plate is rigidly connected by an arm to a finger piece that is exposed through an opening in the top of the socket so that it can be depressed to release the latching plate from the tongue. The tongue has a longitudinal slot through which the arm extends upwardly and is freely movable. The latching plate has latching edges facing away from the socket mouth and arranged to cooperate with locking edges on the tongue.

3,427,695
EASEL CLIP

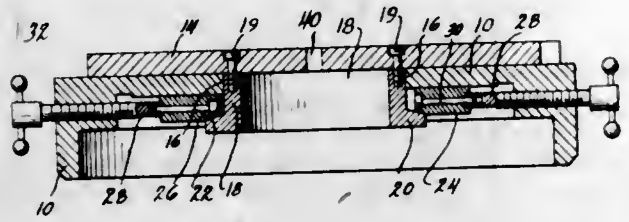
Charles V. Cowan, 1218 Teneighth Way, Sacramento, Calif. 95818
Filed July 19, 1967, Ser. No. 654,498
U.S. Cl. 24—259 **2 Claims**
Int. Cl. A44b *21/00*



The disclosure relates to a spring loaded for holding sheet material to one edge of a flat mounting board or easel. The clip comprises a pair of elongated gripping arms connected together at one end by a web portion that urges the arms together and a handle member fixed near the free end of one gripping arm.

3,427,696
MACHINE TOOL TABLE LOCKING MECHANISM

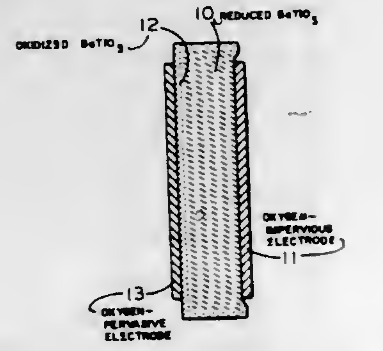
Robert L. Shallenberg, Wheaton, Ill., assignor to K-Line Corporation, Geneva, Ill., a corporation of Illinois
Filed Nov. 21, 1966, Ser. No. 595,686
U.S. Cl. 29—1 **3 Claims**
Int. Cl. B23d *7/08*



Locking mechanism for a machine tool table wherein a base for supporting a machine tool or a vise or the like has a lower surface rotatable on the upper surface of the tool table. A cylinder projects downwardly from the base, is rotatable in an opening of the table and has an outwardly projecting flange between which, and the lower surface of the table a locking wedge is operable to both lock the flange and cylinder and thereby the base against rotation relative to the table and draw the bottom surface of the base into contact with the top surface of the table. To insure contact between the two surfaces, two or more of the locking wedges may be provided.

3,427,697
METHOD OF MAKING A CAPACITOR WITH AN OXYGEN PERVASIVE AND AN OXYGEN IMPERVIOUS ELECTRODE

William A. Tatem, Avon, N.Y., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Original application June 1, 1965, Ser. No. 465,823, now Patent No. 3,321,683, dated May 23, 1967. Divided and this application Oct. 23, 1965, Ser. No. 510,118
U.S. Cl. 29—25.42 **15 Claims**
Int. Cl. H01g *13/00*

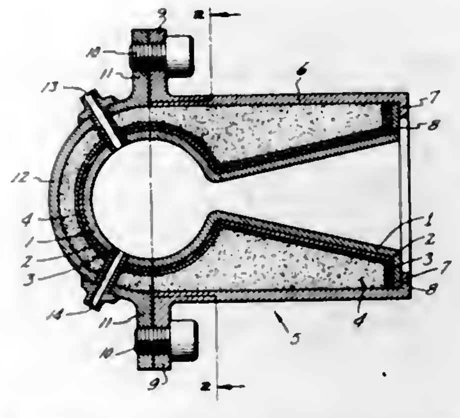


An electrical component is produced by applying an oxygen-pervasive counterelectrode to a reduced ceramic body which has an oxygen-impervious electrode applied thereon. Thereafter heating the unit in an oxidizing atmosphere so as to produce a thin dielectric zone beneath the oxygen-pervasive counterelectrode.

3,427,698
ROCKET NOZZLE

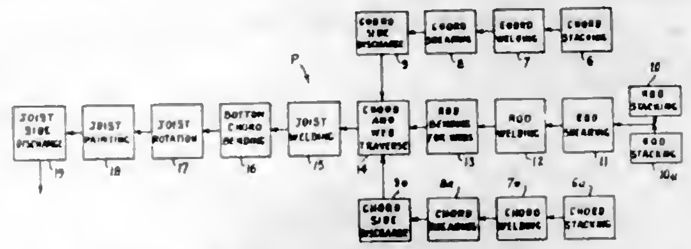
Edmund A. Guzewicz, Wallingford, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 183,537, Mar. 29, 1962. This application Nov. 26, 1965, Ser. No. 513,651
U.S. Cl. 29—157 **7 Claims**
Int. Cl. B21d *53/92;* **B64d** *33/04*

The method of manufacturing a monolithic rocket chamber, throat and nozzle assembly comprising the successive steps of forming by plasma arc spraying on a rotating mandrel of selected shape first a layer of pure tungsten, and then successive layers of a mixture of tungsten and zirconia to form a seamless monolithic structure, grinding the outer surface of the monolithic structure to conform to the inner surface of a steel shell, dissolving the mandrel without dissolving the tungsten to thereby form the chamber, throat and nozzle, and then clamping the monolithic structure in an encapsulating steel shell to lock all of the components of said monolithic structure in place.



3,427,699
OPEN WEB STEEL JOIST PRODUCTION LINE

Richard Allan Gordon Cape, Lachine, Quebec, Canada, assignor to Dominion Bridge Company Limited, Montreal, Quebec, Canada
Filed Sept. 29, 1966, Ser. No. 582,884
U.S. Cl. 29—155 **12 Claims**
Int. Cl. B23k *9/12, 31/02;* **E04c** *3/02*

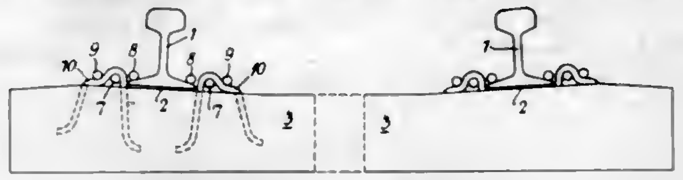


1. A method for the continuous fabrication of individual metal joists comprising successively feeding web members of predetermined length to an assembly station, where the web member for each joist is brought into contact assembly with top and bottom chord members of predetermined length greater than the length of the web member and in such manner that the ends of the chord members extend beyond the ends of the web member, passing the contacting assembled web and chord members of each joist to a welding station and there joining said members by welding at the contacting surfaces thereof, passing the welded web and chord members of each joist to a chord bending and welding station where the extended ends of one chord member are bent into contact with and welded to the extended ends of the other chord member.

3,427,700
METHOD OF MAKING A CONCRETE RAILWAY SLEEPER AND RAIL AND FASTENING ARRANGEMENT EMPLOYING A SLEEPER MADE BY THE METHOD

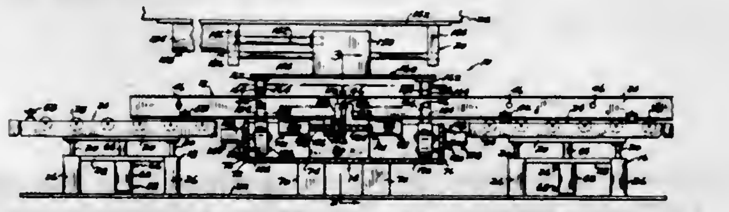
Harold Trevor Astley, Petts Wood, Kent, and Alfred Illtyd Webber Jones, Woking, Surrey, England, assignors to Lockspike Limited, London, England, a British company
Filed May 25, 1966, Ser. No. 552,800
Claims priority, application Great Britain, Nov. 4, 1965, 46,866/65
U.S. Cl. 29—155 **6 Claims**
Int. Cl. E01b *9/00, 21/04, 29/24*

Many similar flat blanks which nest with one another are separated from a long strip of sheet metal substantially without waste and are then bent and some of them are incorporated in a concrete railway sleeper before setting of the concrete and form four arches above the concrete and extending across the sleeper. One rail is positioned between two arches and another between the other two arches and the rails are held down by clips which have portions extending parallel to the rails and driven under the arches.



3,427,701
APPARATUS FOR ASSEMBLING GRATINGS

Marion F. McDonnell, 6480 Walnut Lake Road, Rte. 2, Walled Lake, Mich. 48088
Filed May 12, 1966, Ser. No. 549,507
U.S. Cl. 29—200 **9 Claims**
Int. Cl. B23p *15/12*



This apparatus for assembling gratings with flanged longitudinal load-bearing bars includes a machine which has dies to forcibly deform and clinch the grating cross bars adjacent opposite ends of the holes through which they traverse the webs of the flanged longitudinal load bearing bars, enlarging each cross bar vertically while thinning it horizontally on opposite sides of each bearing bar it traverses; also which has means for separating the grating from the jaws of the cross bar deforming dies; which has cross bar deforming jaws, one set of which is actuated by the piston of a hydraulic cylinder, preferably actuated by two pistons of two hydraulic coaxial cylinders on opposite sides of the die; which also has torque bars disposed on opposite sides of the dies to absorb the side thrust, maintain alignment of the dies, and take the side thrust off of the piston rod; which has cross bar deforming jaws projecting laterally under the flanges of flanged load-bearing bars, such as I-beams, T-beams, J-beams or L-beams, to deform the cross bars adjacent the opposite ends of the holes in the webs through which the cross bars pass; which provides rising and falling supports for lowering the grating into the spaces between the dies or jaws before deformation and for lifting the grating out of the spaces between the dies or jaws after deformation; and which provides a grating transfer device for shifting the grating bodily from cross bar to cross bar between successive deformations thereof.

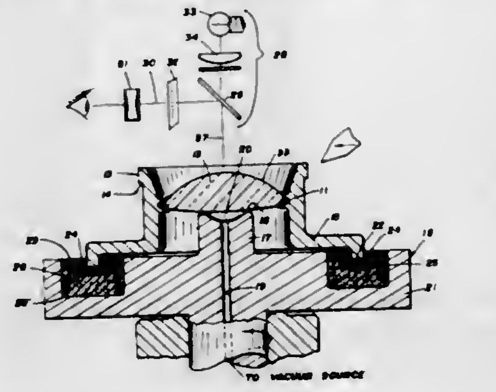
3,427,702
PROCESS FOR THE MANUFACTURING OF FUEL ELEMENTS

Carlo Mustacchi, Ranco, Othmar Gautsch, Angera, and Hartmut Wahl, Ranco, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
No Drawing. Filed Nov. 1, 1965, Ser. No. 506,007
Claims priority, application Great Britain, Feb. 9, 1965, 5,629/65
U.S. Cl. 29—400 **4 Claims**
Int. Cl. B22f *3/24*

A process for the manufacture of fuel elements for nuclear reactors, the fuel consisting of a nuclear fuel carbide such as uranium carbide and cladding, in which the carbide is contacted with an oxidizing agent, in either a gaseous or liquid state, after insertion into the cladding to thereby control expansion of the carbide.

3,427,703
LENS CENTRATION MOUNTING PROCESS AND APPARATUS

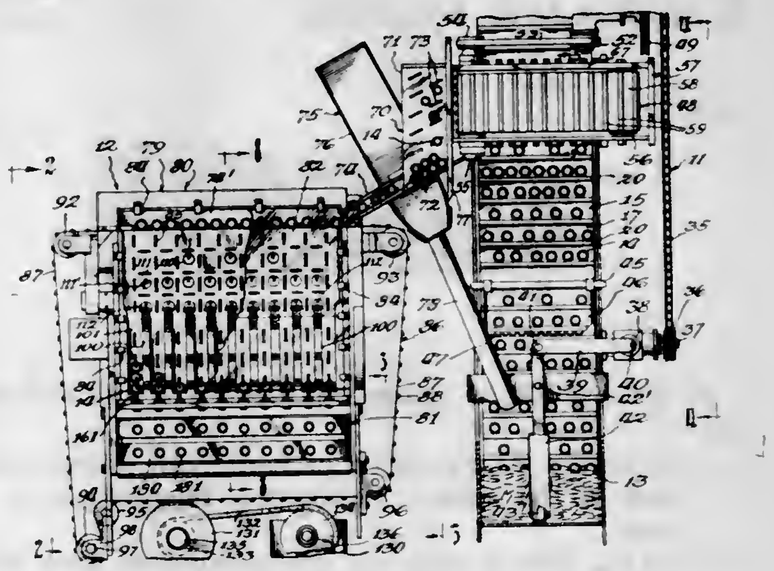
Richard K. Baade, North Chili, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 1, 1965, Ser. No. 484,378
U.S. Cl. 29—406 **6 Claims**
Int. Cl. B23q *17/00;* **B23p** *19/02;* **B29d** *11/00*



Method and apparatus for mounting a lens permanently in a lens mounting cell so that the optical axis thereof is truly aligned and is concentric with the exterior mounting surfaces of said cell, those surfaces being machined with the cell in its aligned position during one of the steps of the method.

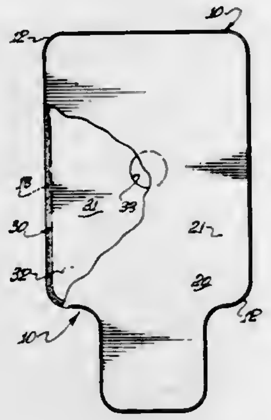
3,427,704
METHOD OF ASSEMBLING TWO-PIECE OVERCAPS

Henry S. Banke, Chicago, Ill., assignor to Helene Curtis Industries, Inc., a corporation of Illinois
Original application July 10, 1964, Ser. No. 381,791, now Patent No. 3,292,249, dated Dec. 20, 1966. Divided and this application Sept. 22, 1966, Ser. No. 618,569
U.S. Cl. 29—429 **3 Claims**
Int. Cl. B23p *19/04;* **B23j** *7/10*



1. A method of assembling overcaps that comprises the steps of arranging a plurality of disks in predetermined position in a row in predetermined laterally spaced arrangement, moving a plurality of open-ended tubular shells into alignment with said disks in the row in a horizontal plane below the row of disks and spaced laterally to align with the disks, dropping the disks into one each of said tubular shells, turning said disks to a plane substantially normal to the axes of the respective shells, supporting the disks in such plane, and pressing each disk into interengagement with its tubular shell.

3,427,705
NONCURLING FLOOR PROTECTOR
**Robert L. Campbell, 16751 Irby Lane,
Huntington Beach, Calif. 92647
Filed Aug. 8, 1967, Ser. No. 663,190
U.S. Cl. 29—449 1 Claim
Int. Cl. B23p** *11/02;* **A47b** *97/00*



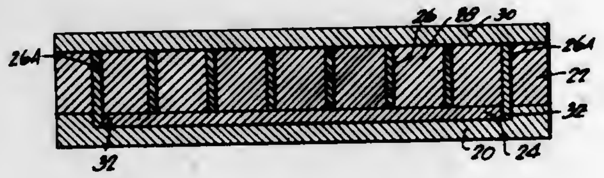
This invention involves floor protectors of the type used with rolling chairs and particularly at, and in conjunction with, the use of such chairs by desks.

The particular protector comprises a sandwich arrangement of two such protectors, one being slightly smaller in size than the other; the two having been joined together so that the one which is slightly larger has the same edge profile and thus becomes bowed in the center, and is under tension in a generally dome shape.

By this arrangement, the edges lay flat upon the floor.

A unique method, utilizing pegs and/or a coil of rope for tensioning by bowing the larger piece during, and prior to, the sealing of the edges of the two is disclosed.

3,427,706
SANDWICH STRUCTURES AND METHOD
**Robert I. Jaffee, Columbus, Ohio, assignor, by mesne assignments, to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,971
U.S. Cl. 29—471.1 8 Claims
Int. Cl. B23k** *31/02;* **B23p** *17/00*



1. The method of autogenous welding comprising the steps of:

assembling a configuration of parts with surface portions to be joined in abutting relationship in a yoke;

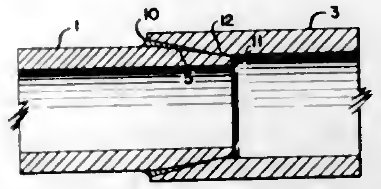
filling the yoke around said configuration of parts with a spacer material of chemically leachable characteristics;

covering said yoke to seal said parts therein;

heating and rolling the resulting assembly by application of a force in a direction other than normal to the plane of at least one pair of said abutting surface portions to effect an autogenous weld between said abutting surface portions of said parts and the thickness of said yoke has been reduced to a selected thickness; and

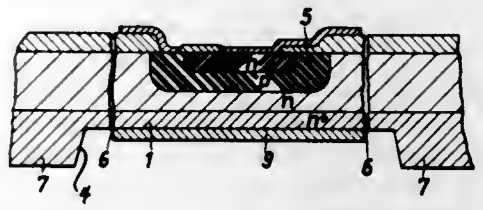
chemically leaching said spacer material from around said parts.

3,427,707
METHOD OF JOINING A PIPE AND FITTING
**Raymond F. Nowosadko, Norwich, Conn., assignor to The Connecticut Research & Manufacturing Corporation, Norwich, Conn., a corporation of Connecticut
Filed Dec. 16, 1965, Ser. No. 514,244
U.S. Cl. 29—482 7 Claims
Int. Cl. B23k** *31/02, 1/20;* **F16l** *13/08*



A method of joining a pipe and fitting wherein the external surface of a pipe end is tapered and the internal surface of a fitting end is tapered to a greater angle with respect to the longitudinal axis of the pipe end fitting. The tapered pipe and fitting ends are assembled with a pre-formed tapered sleeve of solder material positioned between the respective tapered surfaces. Upon heating the assembled joint an axial force is applied to the pipe and fitting so that the tapered end of the pipe comes into line contact with the tapered fitting end and the solder forms a bond therebetween.

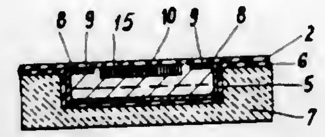
3,427,708
SEMICONDUCTOR
**Hans-Jürgen Schütze and Klaus Hennings, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Apr. 21, 1965, Ser. No. 449,707
Claims priority, application Germany, Apr. 25, 1964, T 26,075
U.S. Cl. 29—580 2 Claims
Int. Cl. H01l** *5/00, 7/02*



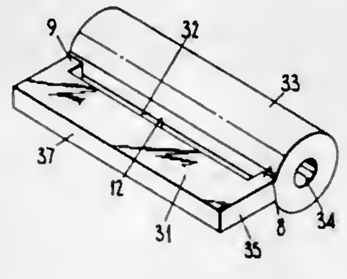
A method for contacting, without forming a depletion layer, a semiconductor body in one side of which one or more circuit elements, such as transistors or diodes, have been formed, the body initially having a certain minimum thickness to provide sufficient structural strength for forming the circuit elements, the process being carried out by etching one recess in the other side of the body opposite each circuit element, each recess extending to a point close to its respective circuit element, applying a metallic layer having a flat outer surface over substantially the entire base of each recess, and dividing the body into separated circuit elements each having a flat surface on the side opposite that in which the circuit element is disposed. A circuit element produced according to the above process and having its associated recess completely filled with a solder mass.

3,427,709
PRODUCTION OF CIRCUIT DEVICE
**Hans-Jürgen Schütze and Klaus Hennings, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Oct. 24, 1965, Ser. No. 504,568
Claims priority, application Germany, Oct. 30, 1964, T 27,325; Dec. 19, 1964, T 27,657
U.S. Cl. 29—580 9 Claims
Int. Cl. H01l** *5/00, 7/36*

A method for permitting all of the regions of a semiconductor device to be contacted at one surface thereof by forming a plurality of isolated monocrystalline regions from a semiconductor body, each of which regions is to define one semiconductor device, and partially enclosing each region with a low-resistance layer for establishing a conductive connection between the two opposed surfaces of the region.

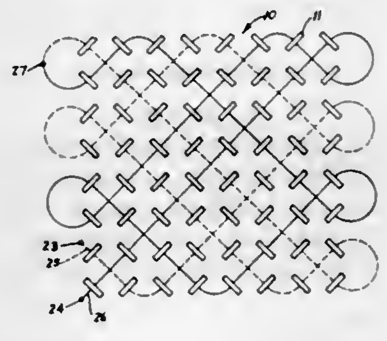


3,427,710
METHOD OF MAKING SUPERCONDUCTING MAGNETS
**Michael Williams, Watford, England, assignor to The General Electric Company Limited, London, England, a British company
Filed Dec. 12, 1966, Ser. No. 600,972
Claims priority, application Great Britain, Dec. 10, 1965, 52,565/65
U.S. Cl. 29—599 15 Claims
Int. Cl. B22f** *3/24*



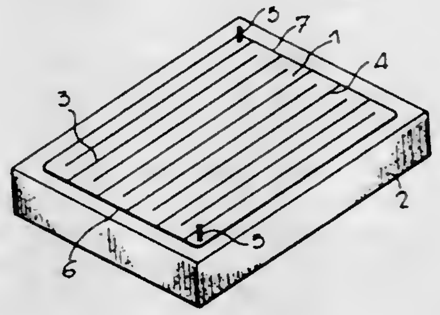
1. A method of making a body of superconductive material suitable for magnetisation to form a superconducting magnet, said method comprising the step of forming from powder a pressed sintered superconductive material body in the shape of a cylinder bridged along its length by at least one loop and cutting a thread in the cylinder so as to form it into a solenoid whose turns are bridged by each said loop.

3,427,711
METHOD OF STRINGING MAGNETIC CORE APPARATUS
**Marlin P. Baillargeon, Deronda, Wis., assignor to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin
Filed Sept. 9, 1965, Ser. No. 486,005
U.S. Cl. 29—604 3 Claims
Int. Cl. H01f** *7/06;* **H03k** *15/04*



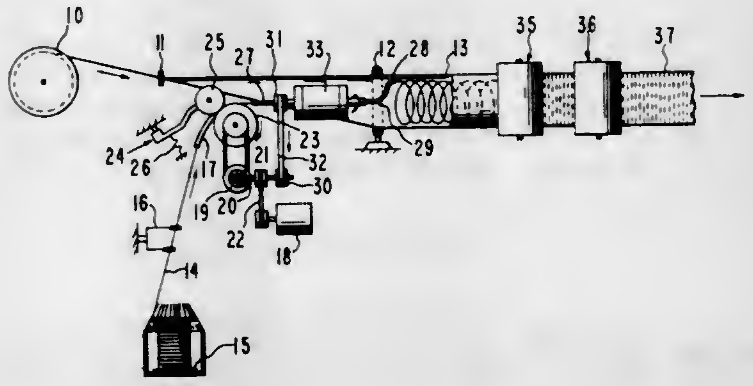
The improved method of stringing a sense winding through a magnetic core matrix including stringing two separate wires diagonally through one-half of the cores, each in the inverted mirror image of the other, and joining the wire to form a single sense winding within a single matrix to thus reduce the number sense winding cross-over points.

3,427,712
METHOD OF MAKING AN ELECTRICAL RESISTOR
**Albert Norbert Robert Witdoeckt, 9a Witte Nonnenstraat, Oostende, Belgium
Filed June 25, 1964, Ser. No. 377,809
Claims priority, application Belgium, July 9, 1963, 634,716; May 6, 1964, 647,596
U.S. Cl. 29—611 3 Claims
Int. Cl. H01c** *7/04, 3/00*



Electrical resistors are made by applying to an insulating backing a thin aluminum sheet having a thickness less than 0.010 mm., and then cutting the aluminum sheet but not its insulating backing by means of knives that rotate about axes perpendicular to the line of cut, thereby to form in the aluminum sheet a multiplicity of cuts that extend in from alternately opposite edges of the sheet and that provide a greatly elongated zigzag path of electrical resistance.

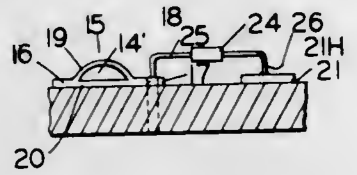
3,427,713
METHOD AND APPARATUS FOR WINDING RESISTORS
**Lawrence LaBarre, Mountain View, Calif., assignor to Louis Prahm, Palo Alto, Calif.
Filed Mar. 22, 1967, Ser. No. 625,179
U.S. Cl. 29—618 8 Claims
Int. Cl. H01c** *3/02, 17/00*



A resistor winding machine for automatically winding a resistor inside of a cylindrically-formed sticky tape. A method and apparatus for winding a wire around the inside of a circularly-formed tape and subsequently compressing the tape and wire to form a substantially flat resistor with a helically-wound wire making up the resistive element.

3,427,714
DUCTED PANEL FABRICATION

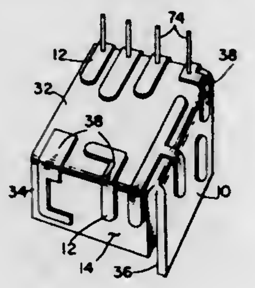
Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840
Continuation-in-part of applications Ser. No. 589,300, June 4, 1956, and Ser. No. 589,848, May 28, 1956. This application Aug. 23, 1963, Ser. No. 304,165
U.S. Cl. 29—626 **6 Claims**
Int. Cl. H05k *3/30, 1/02*



A method is provided for fabricating a circuit board having both electrical conducting elements and a heat transfer fluid conduit secured to said circuit board. In one form of the invention, the conduit and electrical circuit elements may be formed of the same sheet of metal bonded to a surfaec of the circuit board. The fluid conducting conduit may be also expanded in-situ on the surface of the circuit board substrate after the sheet of which is fabricated is bonded thereto. The metal conduit may also serve as a circuit element and conducts heat transfer fluid across the surface of the board for predeterminately controlling the temperature of the circuit board and electrical devices mounted thereon.

3,427,715
PRINTED CIRCUIT FABRICATION

Abraham Mika, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin, Park, Ill., a corporation of Illinois
Filed June 13, 1966, Ser. No. 556,957
U.S. Cl. 29—626 **8 Claims**
Int. Cl. H05k *3/30, 1/16;* **H02b** *1/04*

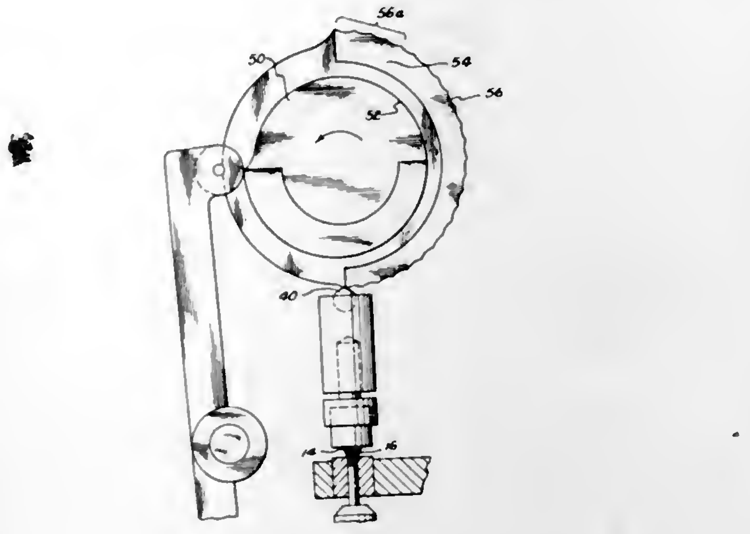


A printed circuit board having layered conductors thereon on one side with electrical components mounted on the opposite side has at least one groove scribed therein along the line. The assembly is partially immersed in a solder bath which heats the thermoplastic material of the printed circuit board along the groove to a high degree of pliancy. The board is removed and then bent along the groove to form a nonplanar compact assembly. Upon cooling, the thermoplastic material returns to its normal rigidity. An epoxy adhesive may be included along the bend for added rigidity.

3,427,716
METHOD OF MAKING CONTACTS

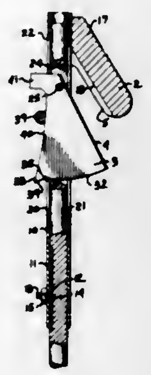
Wilhelm Renz, Pforzheim, Germany, assignor to Firma Renz, Wacker & Co. Ohg., Kettens und Machinenfabrik, Calmbach (Enz), Germany
Filed Jan. 6, 1964, Ser. No. 335,886
Claims priority, application Germany, Jan. 9, 1963, R 34,217
U.S. Cl. 29—630 **1 Claim**
Int. Cl. H01r *9/04;* **B21g** *3/12*

A hot welded bimetallic electrical contact without folds is formed on a rotatable rivet upsetting machine by substantially continuously and uninterruptedly feeding the workpiece upwardly in the machine while simultaneously rapidly striking and upsetting the workpiece with hammer blows to avoid the formation of folds in the upset head of the workpiece.



3,427,717
TREE TRIMMER

Dory J. Neale, Sr., 3710 Shore Acres Blvd., St. Petersburg, Fla. 33703
Filed May 1, 1967, Ser. No. 635,076
U.S. Cl. 30—180 **10 Claims**
Int. Cl. B26b *17/04*

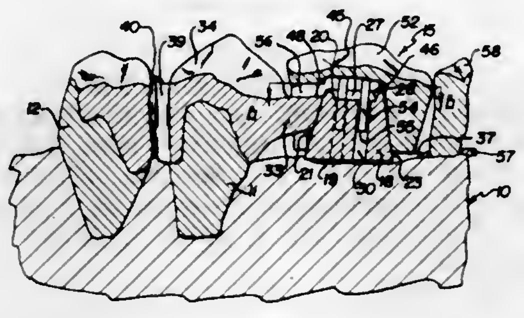


A cutting apparatus having longitudinally relatively movably elongate members with blades adjacent one end thereof and operating mechanism adjacent the opposite end for trimming trees and the like whereby the cut may be made at a distance from the operator, one of the blades being fixed on one member and extending outwardly therefrom, the other blade being pivotally mounted on the other member with said one member and said other blade having cooperative cam surfaces for effecting swinging action of said other blade and cooperative cutting movement thereof relative to the first named blade in response to relative longitudinal movement of said elongate members.

3,427,718
DENTAL PROSTHETIC APPLIANCE CONNECTING APPARATUS

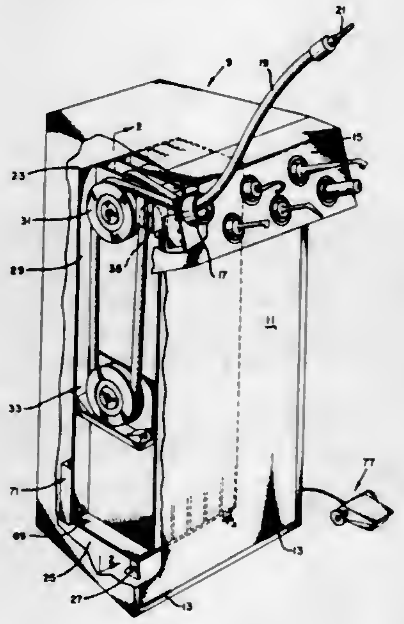
William R. Scott, 1114 Hillside Road, West Vancouver, British Columbia, Canada
Filed Feb. 21, 1966, Ser. No. 529,017
U.S. Cl. 32—6 **18 Claims**
Int. Cl. A61c *11/00, 13/22*

This invention relates to a connecting apparatus for dental prosthetic appliances comprising the combination of a body having an inclined peripheral side wall, and a plurality of substantially parallel passages extending through the body from end to end thereof; and a cap having a socket therein and opening outwardly therefrom. The mating socket has an internal wall corresponding in shape to the body side wall and inclined at an angle of incline less than that of the body side wall so as to tightly grip the latter when the cap is placed on the body. A plurality of substantially parallel pins are secured in the socket, one for and positioned to fit in each of the passages.



3,427,719
DENTAL UNIT

Fred G. Gordon, Berkeley, and Norman H. Hermstad, Novato, Calif., assignors to Time & Motion Dentistry Corporation of America, a corporation of California
Filed Jan. 4, 1967, Ser. No. 607,286
U.S. Cl. 32—22 **4 Claims**
Int. Cl. A61c *19/02;* **F16j** *1/10*

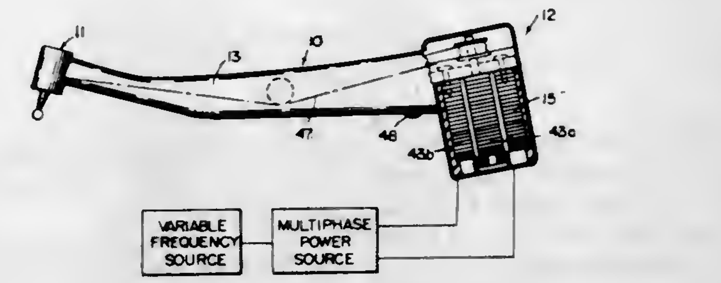


A vacuum actuated retractable dental unit having utility lines wherein an automatic switch turns the utility lines on when extended. The utility lines supplying electricity, vacuum, pressure and the like. Upon retraction of the utility lines there is a system employed having a permanent magnet therein which serves to actuate a magnetic switch for turning the utility lines off and on again when the utility lines are extended.

3,427,720
HAND DRILLING APPARATUS

Herbert Berman, Newton Highlands, Mass. (1018 Beacon St., Brookline, Mass. 02146), and Harvey L. Pastan, Brookline, Mass.; said Pastan assignor to said Berman
Filed Oct. 25, 1963, Ser. No. 318,864
U.S. Cl. 32—27 **9 Claims**
Int. Cl. A61c *1/06*

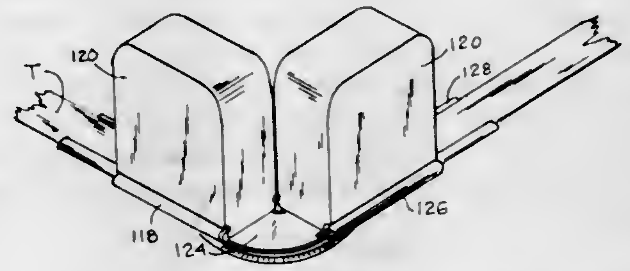
1. Hand drilling apparatus comprising:
means defining a casing that can be held in one hand,
means secured to said casing for supporting a bit for high speed rotary motion,
an electric brushless motor having a rotor inductively coupled to a stator and supported by said casing for imparting rotary motion through means including the bit supporting means to a bit when supported by the latter,



a source of multi-phase electrical power of controllable frequency,
leads coupling said electrical power source to said electrical brushless motor,
and means for adjusting the frequency of said electrical power to control the speed of said rotary motion to a maximum in the range of 200,000 r.p.m.

3,427,721
LAYOUT SYSTEM AND ATTACHMENTS FOR FLEXIBLE COILED TAPES

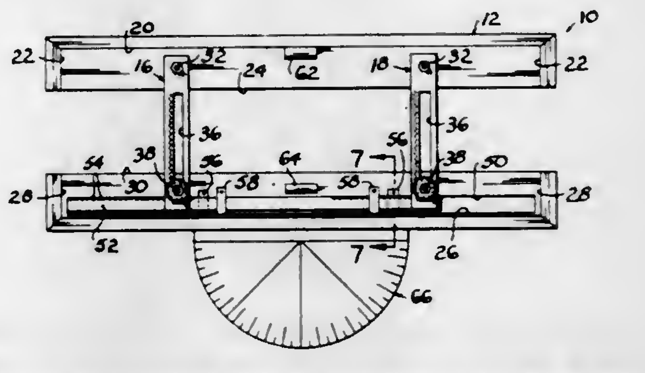
Oswin C. Moll, 1640 Chippendale Circle, Bethlehem, Pa. 18017
Continuation-in-part of application Ser. No. 418,163, Dec. 14, 1964. This application Mar. 29, 1966, Ser. No. 538,414
U.S. Cl. 33—1 **1 Claim**
Int. Cl. G01b *3/14, 5/24;* **G06g** *1/00*



A tool for determining the layout of work to be performed having a pair of detachable retractable tapes which are mounted on a pair of pivotally connected protractors.

3,427,722
PARALLEL RULER

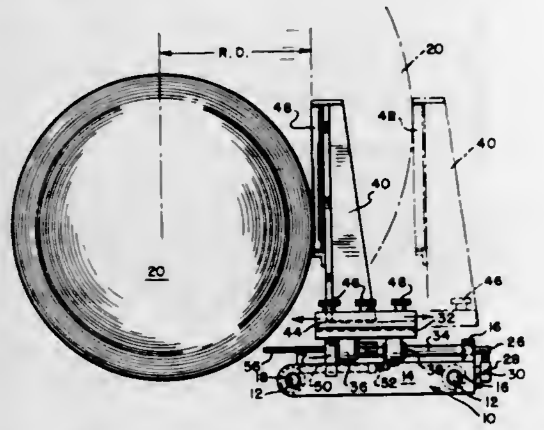
John E. Ingram, 740 87th St., Daly City, Calif. 94015
Filed Feb. 13, 1968, Ser. No. 705,103
U.S. Cl. 33—110 **4 Claims**
Int. Cl. B43l *13/24*



A pair of elongated rules are separably connected by a pair of arms pivotally connected at one end portion in spaced-apart relation to one of the rules. Each arm is provided with a longitudinal slot having a gear rack at one side of the slot. A pair of bolts extending through the other rule and the respective slot journal a pinion in mesh with the respective arm rack. A rack-like bar, having a series of teeth extending longitudinally along one side of each end portion, is longitudinally positioned slidably upon one rule with the teeth thereof engaging the teeth of the respective pinion.

3,427,723
ROLL PROFILER

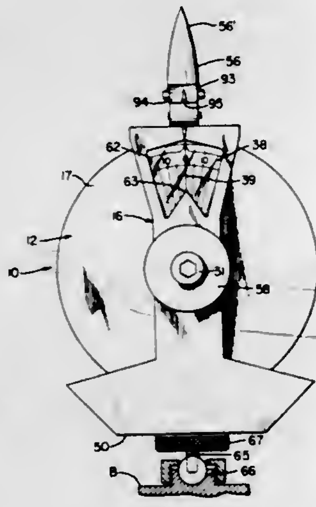
Cleve R. Leckey, West Peru, and Richard J. Quint and Richard L. Blanchard, Dixfield, Maine, assignors to Oxford Paper Company, Rumford, Maine
Application Sept. 23, 1964, Ser. No. 398,491, which is a continuation-in-part of application Ser. No. 313,342, Oct. 2, 1963. Divided and this application May 26, 1967, Ser. No. 660,846
U.S. Cl. 33—174 **2 Claims**
Int. Cl. G01b *5/08*



A roll profiler for measuring the differential stretch in a web of material wound into a roll comprising a support extending the length of the roll, a carriage slidably mounted on the support for movement along the length of the roll, sensing means attached to the carriage and engaging the diametrically opposite sides of the roll, means for moving the carriage along the length of the roll, and means for continuously recording the output signal of the sensing means as it moves along the length of the roll.

3,427,724
INDICATING DEVICE

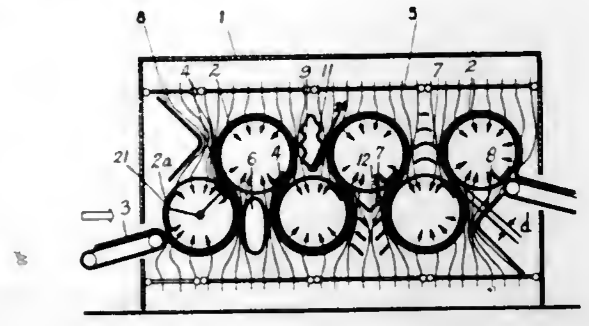
Harold James Tracy, 2160 S. Hooker Way, Denver, Colo. 80219
Filed Sept. 20, 1965, Ser. No. 488,709
U.S. Cl. 33—207 **13 Claims**
Int. Cl. G01c *9/02*



An indicating device comprises a weighted, gravity-responsive disk being mounted within a casing by means of a self-centering, self-lubricating bearing arrangement, and the disk has front and side peripheral indicator scales offset 90° from one another to facilitate reading of inclination and tilt from a common line of sight. An outer yoke associated with the casing facilitates mounting of the device in swivelled relation to a stationary base in motor vehicles and the like, in a carpenter's square or level, in a plumb bob or chalk marking device, or in a transit or surveying instrument.

3,427,725
SIEVE DRUM DRYER

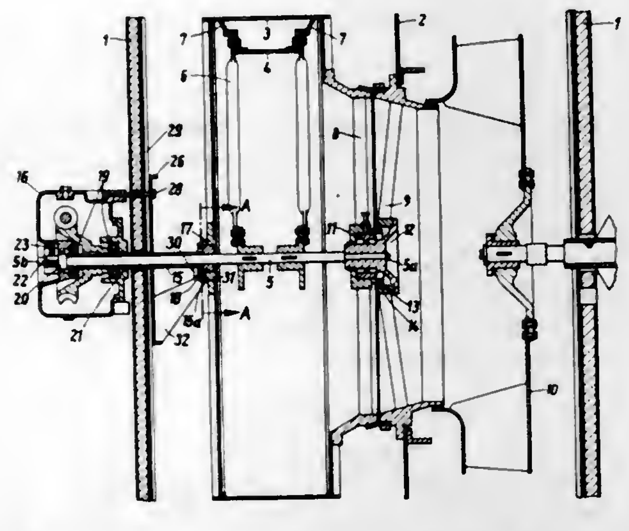
Heinz Fleissner, Egelsbach, near Frankfurt, Germany, assignor to Anstalt fur Patentdienst, Vaduz, Liechtenstein
Filed Apr. 27, 1965, Ser. No. 451,282
Claims priority, application Switzerland, Apr. 29, 1964, 5,578/64; July 1, 1964, 8,648/64
U.S. Cl. 34—115 **14 Claims**
Int. Cl. F26b *13/08*



The present disclosure relates to a heat-treatment apparatus comprising two rows of cylindrical sieve drums disposed in a treatment chamber in a staggered relationship with respect to each other, said sieve drums having a perforated surface, free from baffle means at that portion of said sieve drum not covered with the material being treated and said treatment chamber containing guide means, especially between adjacent sieve drums in the same row.

3,427,726
SIEVE DRUM INSTALLATION

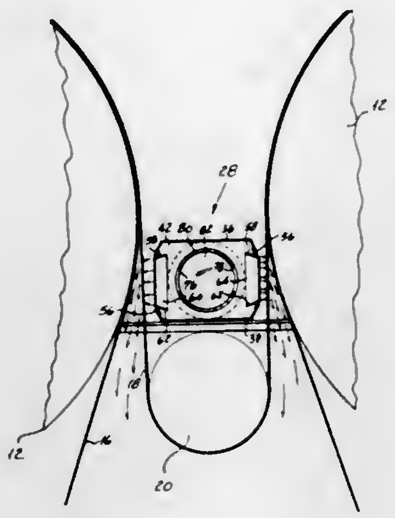
Gerold Fleissner, Frankfurt am Main, Germany, assignor to Anstalt fur Patentdienst, Vaduz, Liechtenstein
Continuation-in-part of application Ser. No. 451,275, Apr. 27, 1965. This application Jan. 23, 1968, Ser. No. 699,930
Claims priority, application Germany, Apr. 29, 1964, 5,577/64
U.S. Cl. 34—122 **9 Claims**
Int. Cl. F26b *11/02;* **B23p** *7/00*



The present disclosure relates to a sieve drum installation which provides means for supporting the sieve drum during assembly and repair operations. More particularly, the present disclosure is directed to a bearing block or support means secured to a plate of profiled iron mounted on a framework which is disposed on the inner side of the chamber wall. The bearing block supports a bearing flange which in turn provides support for the sieve drum during assembly and repair. Since the support of the present disclosure is secured to the framework, it can support the sieve drum even when the chamber wall is removed.

3,427,727
VENTILATING APPARATUS FOR PAPER MACHINE POCKET

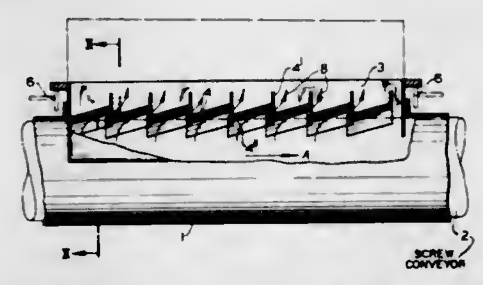
Joseph A. Villalobos, Ramsey, N.J., assignor to AER Corporation, Ramsey, N.J., a corporation of New Jersey
Filed Jan. 3, 1966, Ser. No. 518,194
U.S. Cl. 34—155 **11 Claims**
Int. Cl. F26b *13/00*



Ventilating apparatus for the pocket of a paper machine having a felt made of relatively highly gas permeable material in which a plenum chamber mounted outside the pocket adjacent a wall of the pocket formed by the felt includes a perforated plate through which relatively low pressure air passes toward and through the felt and an elongated nozzle extending substantially continuously around the perforated plate forms a curtain of air which forms a seal around the area of the pocket wall supplied by the perforated plate to prevent escape of the low pressure air.

3,427,728
SCREW CONVEYOR WITH VENTING STACKS

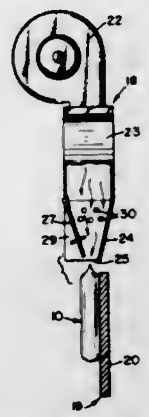
Herbert Wilhelm Gustav Ocker, Leonberg, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Baden-Wurttemberg, Germany, a corporation of Germany
Filed Jan. 17, 1967, Ser. No. 609,919
Claims priority, application Germany, Jan. 22, 1966, W 40,782
U.S. Cl. 34—183 **6 Claims**
Int. Cl. F26b *17/20*



A machine of the conveyor screw type for drying humid materials, comprising several conveyor screws or worms housed in a shared housing or casing which carry the material to be processed, in a thin continuous layer, to the discharge end through at least one degasification section; the casing comprises a plurality of venting stacks in sequence, separated from each other by partitions which are curved to correspond to a portion of the periphery of the corresponding adjacent screw, and are arranged at a predetermined distance from the said screw.

3,427,729
APPARATUS FOR HEAT TREATING ONE END ONLY OF A PACKAGE

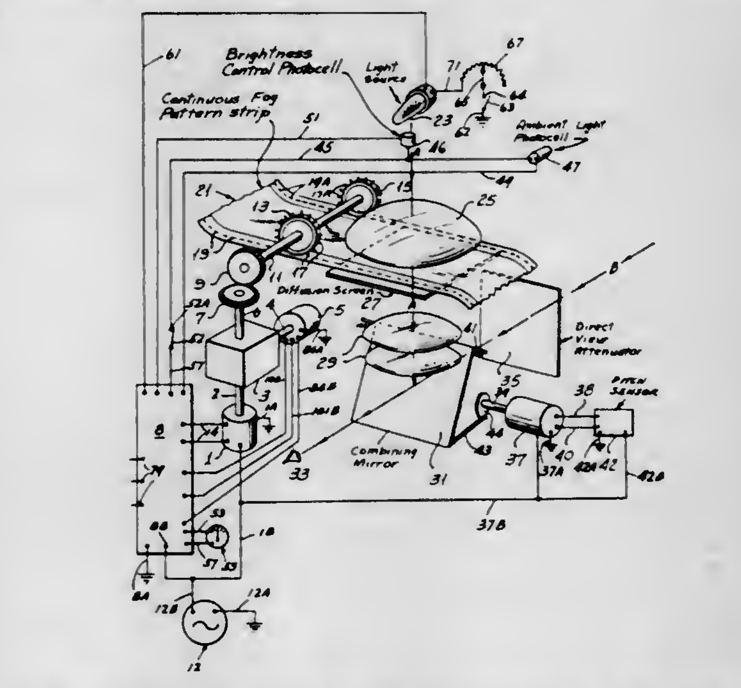
Thomas E. Piazze, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Application Apr. 19, 1963, Ser. No. 274,105, now Patent No. 3,347,013, dated Oct. 17, 1967, which is a continuation-in-part of application Ser. No. 221,599, Sept. 5, 1962. Divided and this application Oct. 21, 1965, Ser. No. 499,171
U.S. Cl. 34—223 **7 Claims**
Int. Cl. F26b *19/00;* **B65d** *33/24*



An apparatus is provided for directing hot air against an end of each one of a plurality of bags being passed serially therepast, on a moving conveyor. A means for heating the air within an air inlet duct is provided, as well as a hinged member adapted to direct the air as desired, according to the height of the package conveyed therepast. An enclosing hood is provided, enclosing the heater and a major portion of the inlet duct, as well as providing an outlet duct whereby air re-circulation is effected. The packages being conveyed past the open end of the air duct comprise a thermoplastic pocket closely fitting a contained product, one end of which has been heat sealed to completely enclose the product, the heat seal being generally loose and remote from an adjacent end of the product. The direction of the hot air against this loose end of the thermoplastic bag facilitates the shrinkage of the bag, against the contained product end.

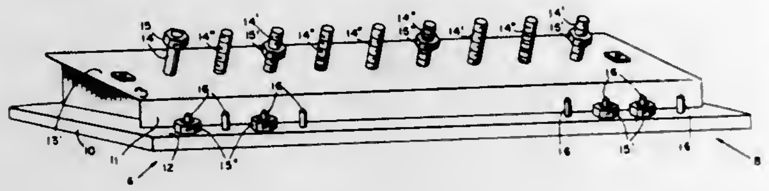
3,427,730
FOG SIMULATOR AND METHOD FOR ACCOMPLISHING AIRBORNE SIMULATION OF A FOG

Paul A. Noxon, Tenafly, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,476
U.S. Cl. 35—12 **34 Claims**
Int. Cl. G09b *9/08*



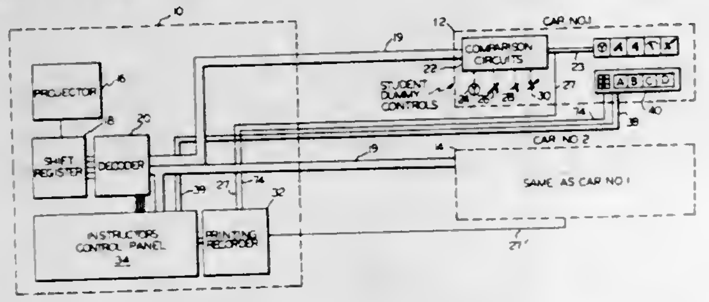
A method for accomplishing simulation of fog conditions by the selective programming of a variable light gradient effecting the fog simulation in response to various operating criteria.

3,427,731
EDUCATIONAL TESTING DEVICE
William H. Debolt, 255 Dill Ave.,
Frederick, Md. 21701
Filed Dec. 7, 1966, Ser. No. 599,793
U.S. Cl. 35—13 **1 Claim**
Int. Cl. G09b *25/02*



A device for testing the manual dexterity of a person consisting of a base with a number of threaded elements mounted thereon, each of the latter having predetermined thread characteristics as to pitch and hand and a corresponding number of individual threaded elements having thread characteristics corresponding to the threaded elements on the base and adapted to be threadedly connected thereto.

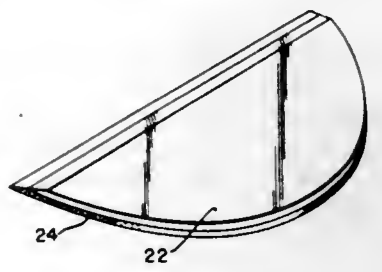
3,427,732
EDUCATIONAL TESTING APPARATUS
James F. Wopart, Jr., Binghamton, N.Y., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,069
U.S. Cl. 35—48 **8 Claims**
Int. Cl. G09b *7/06*



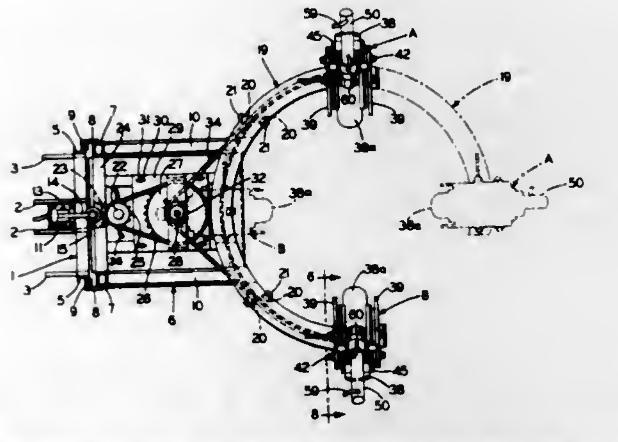
Electrical apparatus for performing educational testing of a group of students by presenting questions having two or more possible answers and allowing the students to indicate their answers by manual operation of switching means associated with a transponder device located at each student station. A corresponding indicating device at the instructor's station shows which switching means was operated, and thus which answer chosen, by each student during the time period allowed for answering. Additional indicating means on the transponder devices are actuated to provide a visual indication to each student of the time period during which the circuits are energized to record the answers. Further novel circuitry is provided to give a still further indication to the student of whether his selected answer was right or wrong.

3,427,733
IONOMERIC RESIN STIFFENING ELEMENT
Edwin L. Beckwith, Harvard, Mass., assignor to Beckwith-Arden Inc., Watertown, Mass., a corporation of New Hampshire
Filed Oct. 3, 1966, Ser. No. 583,725
U.S. Cl. 36—68 **3 Claims**
Int. Cl. A43b *13/42;* **A43c** *13/14*

Disclosed herein is a laminated shoe stiffener that includes a relatively thin sheet of thermoplastic hydrocarbon polymer resin having ionic cross linking bonds. The resinous sheet is bonded on one or both of its surfaces to a fabric sheet. The laminated stiffener is bondable to the integuments of a shoe upper by applying an adhesive between the upper and the fabric surface of the stiffener or by pressing the resinous surface of the stiffener to the upper under heat.

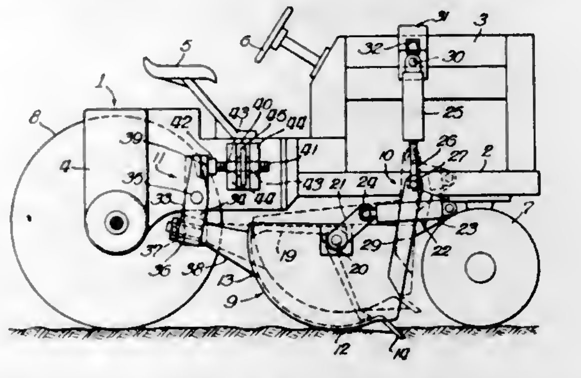


3,427,734
TREE DIGGER CONSTRUCTION
Edwin J. Eberhart, R.D. 1, near
Bolivar, Ohio 44612
Filed May 26, 1966, Ser. No. 553,155
U.S. Cl. 37—2 **9 Claims**
Int. Cl. A01g *23/06*



A tree digger having support means, a substantially semi-circular horizontal bed vertically movable upon the support means, a substantially semi-circular frame rotatably slidable upon the bed, and a pair of opposed angularly disposed, downwardly converging spade blades slidably mounted at opposite ends of the rotatable frame.

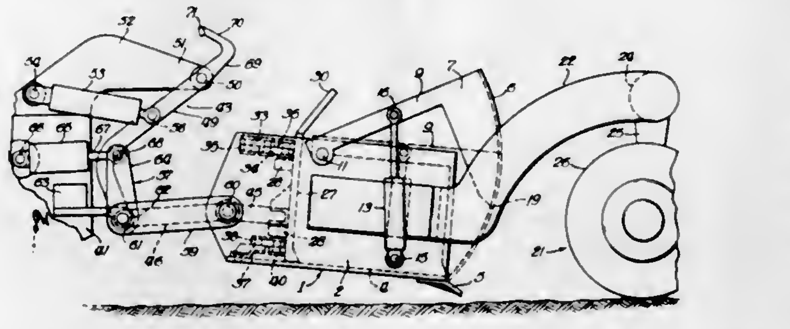
3,427,735
SWEEP EJECTOR TYPE EARTH WORKING SCRAPER ATTACHMENT FOR FARM TRACTORS
William E. Martin, % Martin Company, P.O. Box 187,
Kewanee, Ill. 61443
Filed Mar. 7, 1966, Ser. No. 532,254
U.S. Cl. 37—126 **10 Claims**
Int. Cl. E02f *3/72, 3/76*



A scraper attachment for a farm type tractor or the like comprising a scraper bowl positioned between the front and rear wheels thereof, means mounting the bowl for up and down rocking movement to place the bowl

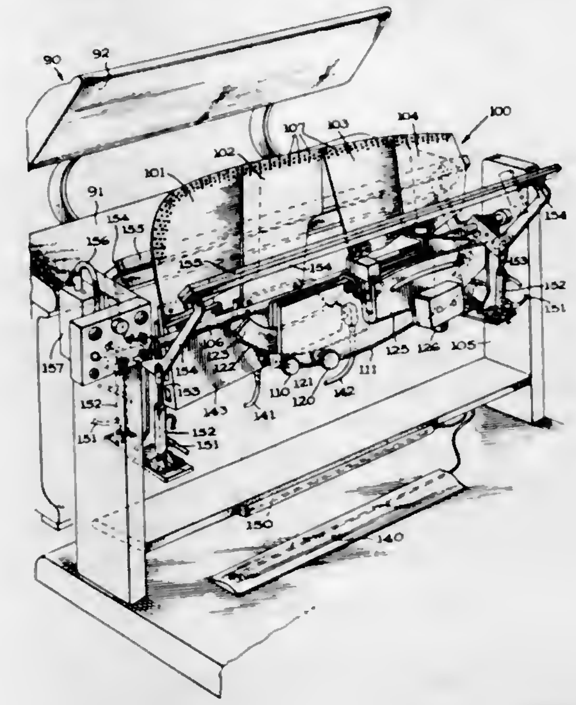
blade adjacent the ground and power means to elevate and lower the bowl. The mounting means is constructed to push the scraper bowl upon forward movement of the tractor. The device further comprises adjustable stop means providing a limit for bowl movement.

3,427,736
SCRAPER BOWL MANIPULATING APPARATUS ATTACHABLE WITH AND OPERABLE FROM AN ATTENDANT VEHICLE
William E. Martin, % Martin Company, P.O. Box 187,
Kewanee, Ill. 61443
Filed Jan. 3, 1966, Ser. No. 518,283
U.S. Cl. 37—129 **10 Claims**
Int. Cl. E02f *3/72, 3/82*



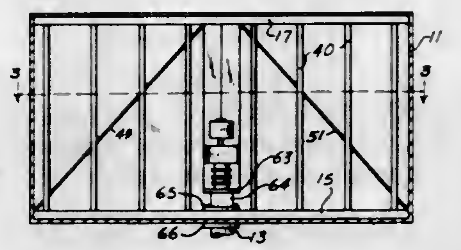
An earth working assembly and vehicle therefor comprising a scraper bowl having an ejector therein and means for independently manipulating the bowl and the ejector. Means are provided to raise and lower the bowl without disturbing the ejector position. Additional means are provided to ensure that the ejector maintains an unskewed position throughout its movement through the bowl.

3,427,737
FRONT EDGE PRESSING MACHINE
Philip C. Feffer, Baltimore, and Amleto C. Polino and Arthur L. Rickell, Frederick, Md., assignors to Sagner, Inc., Frederick, Md., a corporation of Maryland
Filed Nov. 30, 1966, Ser. No. 598,057
U.S. Cl. 38—20 **12 Claims**
Int. Cl. D06f *71/00*



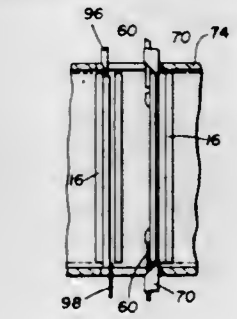
In the process of manufacturing a coat, a method of pressing a coat front along the seam while the coat front is held on a form which may be adjustable for different sizes and different styles; and an embodiment of apparatus which may be used to implement the method. The apparatus comprises a plurality of plates with thin edge portions slidingly and pivotally movable in relation to each other.

3,427,738
INVISIBLE DRIVE UNIT FOR LARGE DISPLAY SIGNS
James W. Bevan, 750 17th Ave.,
Salt Lake City, Utah 84103
Filed Feb. 7, 1967, Ser. No. 614,431
U.S. Cl. 40—33 **3 Claims**
Int. Cl. G09f *11/10, 13/00*



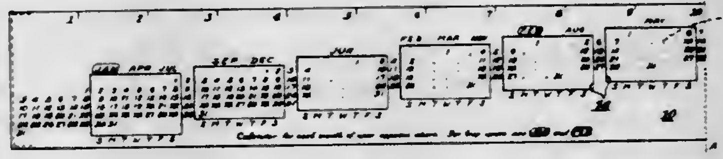
Drive mechanism for a translucent movable or rotatable sign, readable from either face and illuminated by a set of lighting elements arranged in central plane midway between its major faces, is substantially in such plane and arranged in a slender column, located between a pair of adjacent lighting elements in a manner that no externally visible shadow is cast.

3,427,739
COMBINED TOP LOAD STACK SLIDE ADAPTER AND PROJECTOR
Herbert T. Robinson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 23, 1967, Ser. No. 610,994
U.S. Cl. 40—79 **15 Claims**
Int. Cl. G09f *11/30;* **G03b** *23/04*



A combined top load stack slide adapter and projector for handling a stack of slides which are transported one at a time by gravity into a projecting position for projection on a screen. The stack slide adapter comprises, among other things, means for releasably holding the second slide in the stock while the first or leading slide is being transported to the projecting position.

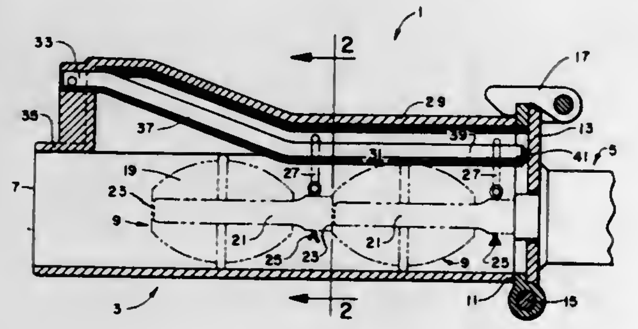
3,427,740
PERPETUAL CALENDAR
Jacob Heskes, 90—15 68th Ave.,
Forest Hills, N.Y. 11375
Filed Nov. 22, 1966, Ser. No. 596,216
U.S. Cl. 40—109 **1 Claim**
Int. Cl. G09d *3/10*



A perpetual slide calendar comprising an inner member bearing rows and columns of daily and yearly date indicia and horizontally slidable with respect to an outer member having one or more century-representing vertical slots and seven windows spaced one column of date indicia apart horizontally and one row of date indicia apart vertically in any one tier along one or more tiers; in sweeping over said daily date indicia, said windows exposing seven constantly changing monthly calendars each starting on a different day of the week in any simultaneous display, fixed monthly appellations applied to said windows relating said calendars displayed to the yearly date indicia exposed in the century slots.

3,427,741
SELF-ARMING GRENADE LAUNCHER

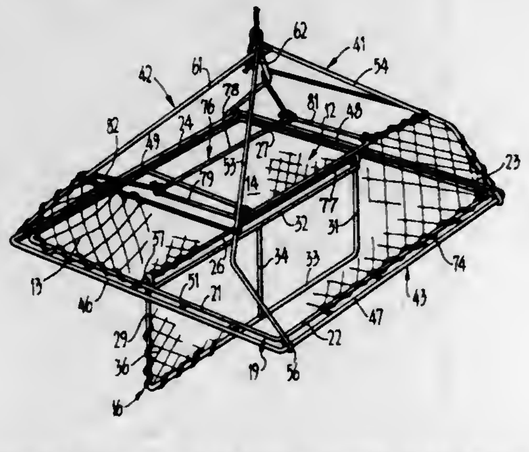
Harold H. Wiese, Davenport, Iowa, assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 10, 1967, Ser. No. 674,353
U.S. Cl. 42—1 **7 Claims**
Int. Cl. F41f *7/00, 15/00*



The invention relates to grenade launchers and provides automatic means for extracting the safety pin from a grenade in response to its propulsion through the barrel of the launcher. Extraction is accomplished by a cam rod which pulls the safety pin from the grenade as it is propelled through the barrel.

3,427,742
FOLDABLE FRAME CONSTRUCTION FOR CRAB POTS AND THE LIKE

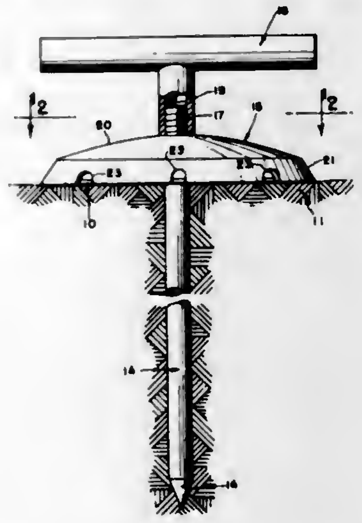
Neil Brown, Suisun, Calif.
(101 1st St., Benicia, Calif. 94510)
Filed May 23, 1967, Ser. No. 640,748
U.S. Cl. 43—100 **10 Claims**
Int. Cl. A01k *69/10*



A foldable frame including a base portion having inner and outer frame portions and a single pair of side frame portions, the latter being hingedly connected to the former and movable between an inoperative folded position overlying the base and an upwardly extending operative position. The side portions include flexible walls which, together with the base, define an enclosure. An entrance frame is adjustably secured to the flexible walls and defines an opening through which crabs or the like may enter the enclosure. A latch on the side frame portions releasably holds the frames in operative position and a line is secured to one side frame portion and is threaded through an aperture in the other side frame portion.

3,427,743
INSECT BAIT DISPENSER

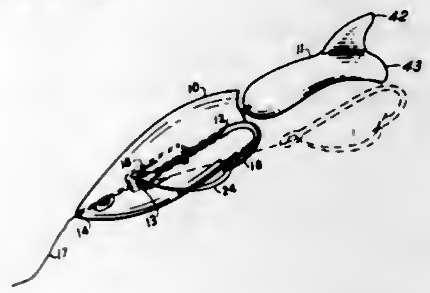
Robert F. Brunner, 1624 1st Ave., Cincinnati, Ohio 45205, and Charles H. C. Van Pelt, 2625 Fair Oaks Lane, Cincinnati, Ohio 45237
Continuation-in-part of application Ser. No. 616,622, Feb. 16, 1967. This application Feb. 21, 1968, Ser. No. 712,323
U.S. Cl. 43—131 **9 Claims**
Int. Cl. A01m *1/20, 25/00*



Insect exterminating device containing poisoned bait which may be dispensed to insects but constructed to prevent children or animals from reaching the poisoned bait.

3,427,744
FISHING LURE

William M. Roberts, 32 Euclid Ave., Winchester, Ky. 40391
Filed Aug. 16, 1966, Ser. No. 572,740
U.S. Cl. 43—42.05 **3 Claims**
Int. Cl. A01k *85/00*

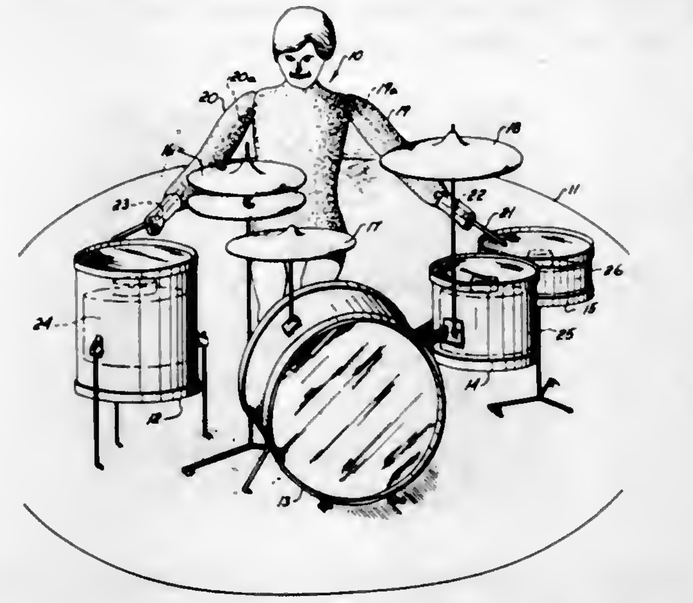


A fishing lure formed of molded, elastic plastic body, having the texture, color and feel of a live bait. In one side of the body of the lure is a slot for receiving a hook, and seated in the body of the lure, just below the slot is a metal counterweight with upturned ends extending upwardly into the slot, the upturned forward end of the counterweight being bent backwards to overhang the main portion thereof and the rear end thereof being notched to receive the shank of the hook. A line is secured to the eye of the hook and passes through a hole in the forward end of the counterweight and in the forward end of the body. The sides of the slot grip the shank of the hook and conceal all but the bend and point of the hook.

3,427,745
ANIMATED FIGURE

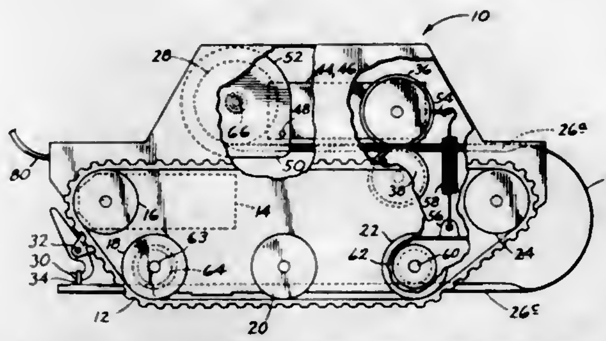
Francis A. Duffy, Jr., 26 E. Wister St., Philadelphia, Pa. 19144
Filed Jan. 16, 1967, Ser. No. 609,433
U.S. Cl. 46—118 **5 Claims**
Int. Cl. A63h *5/00, 33/26*

An animated figure of a drummer gives musical performance by means of electromagnetic circuitry. Electromagnets draw drumsticks towards striking engagement with a plurality of drums and cause operation of associated musical instruments. A multichannel magnetic tape controls the playing of the drums. Musical compositions are recorded on the tape; these are reproduced by conventional play-back equipment in synchronism with the movements of the animated performer.



3,427,746
VEHICLE WITH BRIDGING STRUCTURE

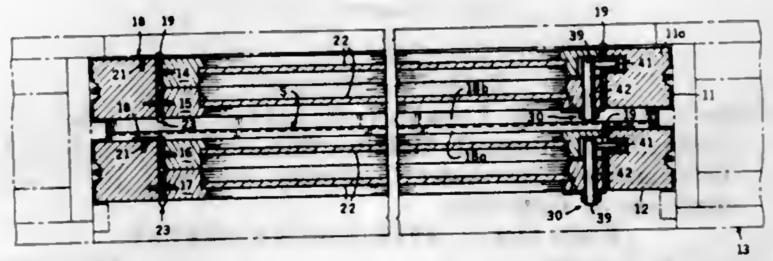
Winston W. Jacobs, Portland, Oreg., assignor to New Rochelle Manufacturing Company, New Rochelle, N.Y., a corporation of New York
Filed Sept. 13, 1965, Ser. No. 486,610
U.S. Cl. 46—206 **7 Claims**
Int. Cl. A63h *17/00, 17/04;* **B62d** *55/00*



Vehicle with bridging structure comprising an elongated member which is extensible from one end of the vehicle and has an arcuate transverse cross section when extended imparting rigidity to the member such cross section is flattenable with the support then having sufficient flexibility to enable coiling of the same. The support is stored in the vehicle as coils on a drum.

3,427,747
SLIDING SASH ASSEMBLY WITH STORM WINDOW

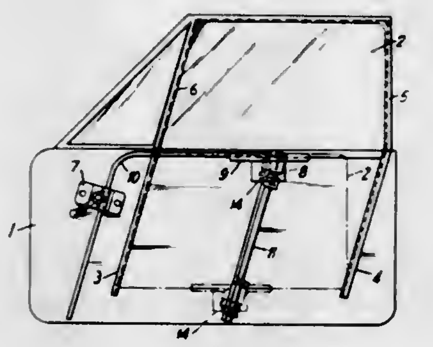
Robert F. Ober, Sr., 2916 Flad, St. Louis, Mo. 63110
Filed Oct. 30, 1967, Ser. No. 679,125
U.S. Cl. 49—162 **4 Claims**
Int. Cl. E05d *7/06*



A sliding sash assembly of standard construction equipped with a pair of hingedly mounted window panes in which one of the panes provides the normal glazing and the other forms a storm window, the window panes opening relatively inwardly for purposes of access for cleaning and repair.

3,427,748
GUIDING ARRANGEMENT FOR SLIDING WINDOWS OF AUTOMOTIVE VEHICLES

Fritz Marr, Offenbach am Main, Germany, assignor to Firma H. T. Golde G.m.b.H., Frankfurt am Main, Germany
Filed Jan. 23, 1968, Ser. No. 699,843
Claims priority, application Germany, Jan. 24, 1967, G 49,064; Nov. 29, 1967, G 51,776
U.S. Cl. 49—352 **20 Claims**
Int. Cl. B24b *9/02*



A guiding arrangement for slidable windows of automotive vehicles, the windows being of the type which can be raised and lowered relative to a window well in the body of the vehicle, is disclosed as including at least one guide rail extending parallel to the direction of motion of the window pane during raising and lowering of the latter. This rail has at least one longitudinal leg extending perpendicular to the plane of the window pane, and may have other longitudinal legs extending parallel to the plane of the window pane.

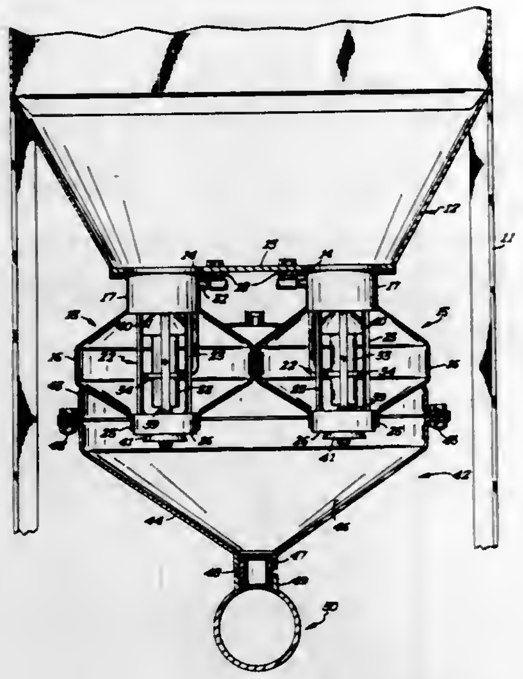
A relatively flat supporting plate is fastened on a bar or the like which is secured to the lower edge of the window pane, and this plate carries guide members spaced longitudinally of the guide rail, each guide member being formed with a slot closely embracing a leg of the guide rail. The slot provides parallel guide surfaces whose spacing is substantially that of the thickness of the leg of the guide rail, and these guide surfaces engage opposite surfaces of the leg.

Various arrangements are disclosed for various types of window operators. In the particular case where the window operator is a cable guided in a slotted tube extending parallel to the direction of window pane motion, the guide rail may be fixed relative to the guide tube as by spot welding or the like.

3,427,749
FLUID PRESSURE PUMP APPARATUS AND METHOD USING THE SAME

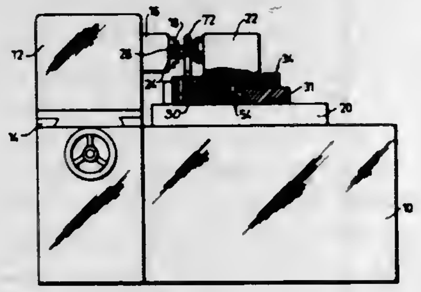
Lilburn T. Ryan, Houston, Tex., assignor to G. H. Tennant Company, Minneapolis, Minn.
Filed May 13, 1966, Ser. No. 549,889
U.S. Cl. 51—12 **10 Claims**
Int. Cl. B24c *3/00*

A method and apparatus of entraining and discharging a flowable abrasive material into a stream of air under pressure which includes introducing flowable abrasive material alternately into one and then another of a pair of pressure chambers, while the pressure chambers are in an unpressurized condition. Pressurizing each loaded pressure chamber and then intercommunicating the loaded pressurized chamber with a collection chamber to permit the abrasive material to flow into the latter. Each pressure chamber being alternately filled with abrasive material and then evacuated so that the collection chamber is continuously supplied with abrasive material. Continuously discharging the flowable abrasive material from the collection chamber and entraining the abrasive material in a rapidly moving stream of air under pressure.



3,427,750
WHEEL MOUNT FOR INTERNAL GRINDING MACHINES

Gerszon Gluchowicz, Stockholm, Sweden, assignor to Ulvsunda Verkstader Aktiebolag, Bromma, Sweden, a corporation of Sweden
Filed Apr. 5, 1965, Ser. No. 445,589
Claims priority, application Sweden, Apr. 6, 1964, 4,215/1964
U.S. Cl. 51—50 **3 Claims**
Int. Cl. B24b *41/04, 39/02*

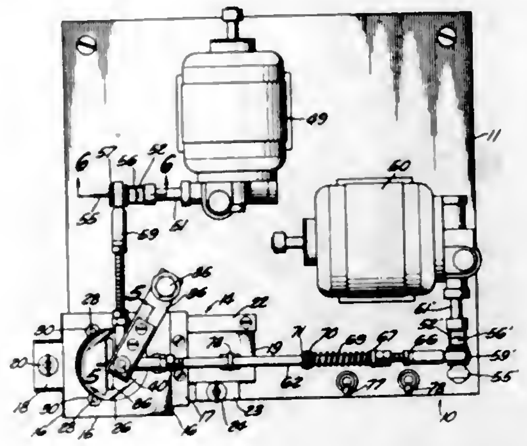


The grinding wheel spindle is of truncated-conical configuration, with its larger end secured in the tailstock, and with the grinding disc secured to its smaller end. This minimizes undesirable flexing of the spindle during grinding, and permits the use of relatively thick discs, having longer life. The tailstock of the machine is mounted for pivotal movement about a fixed vertical axis, which intersects the axis of the spindle. This permits compensating for wear of the disc. Grinding is effected by movement of the disc axially of the hole to be ground, while effecting relative movement between disc and work in a direction perpendicular to the work axis.

3,427,751
DIE FINISHING MACHINE

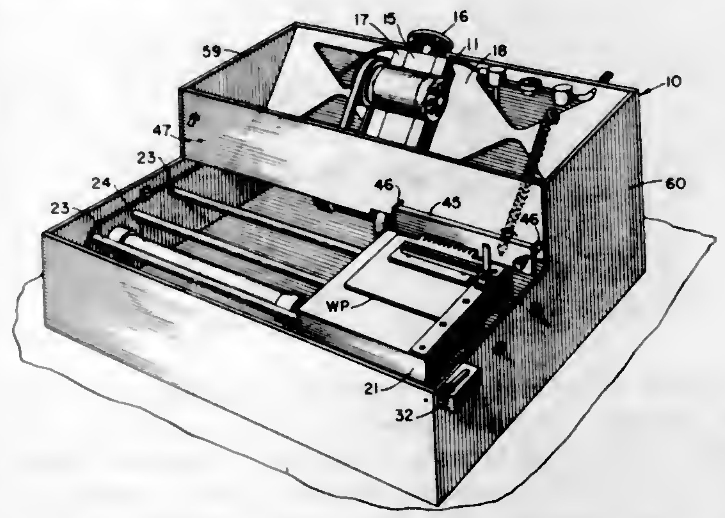
Robert K. Lanman, Pasadena, Calif., assignor to Armorlite Lens Company, Inc., Burbank, Calif., a corporation of California
Filed June 29, 1965, Ser. No. 468,051
U.S. Cl. 51—57 **17 Claims**
Int. Cl. B24b *7/00, 9/00*

A high precision machine for shaping and polishing the surfaces of dies for use in casting optical elements with bifocal and trifocal finished surfaces. The machine includes means for grinding and polishing surfaces of different local lengths in the principal non-planar surface of a die with one portion of the depression merging smoothly and imperceptibly with the surrounding die surface and another portion connected to an adjacent die surface by a long narrow polished surface generally normal to both the die and the depression surfaces. The driving means for the grinding and polishing subassembly is arranged to move through a continually changing excursion path.



3,427,752
EDGE BEVELING MACHINE FOR NON-METALLIC SHEETS

Lee H. Barron, 4515 Alta Canyoda Road, La Canada, Calif. 91011
Filed Sept. 12, 1966, Ser. No. 578,587
U.S. Cl. 51—92 **5 Claims**
Int. Cl. B24b *9/00;* **B24d** *5/00*

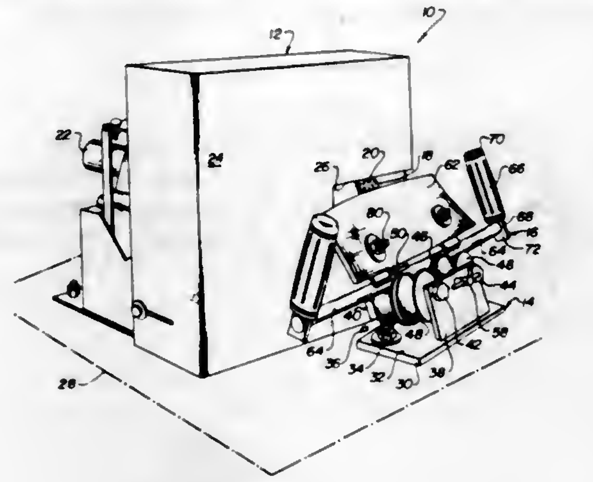


A machine specifically for beveling the edges of printed circuit boards wherein the bevel angle is accurately cut relative to one face of the circuit board, and the depth of cut is precisely adjustable. A circuit board is adjustably clamped on a reciprocable table which is passed across the peripheral face of a rapidly rotated cylindrical abrasive wheel positioned therebelow. A micrometer adjustable means is disposed adjacent the forward edge of the table and is adapted to fix the depth of bevel cut of the adjustably clamped circuit board.

3,427,753
KNIFE GRINDER

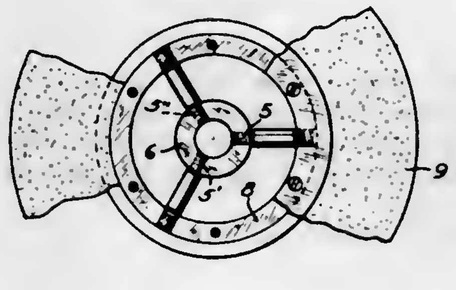
Manfried L. Hoch, Lockport, Ronald F. Zitko, Downers Grove, and James D. Wilkins, Geneva, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 7, 1966, Ser. No. 585,081
U.S. Cl. 51—94 **12 Claims**
Int. Cl. B24b *9/00, 7/00*

A guide for a helical knife for sharpening against a grinding wheel, the guide comprising a bar of helical form conforming to the edge profile of the knife and operative within the grooves of a pair of rollers spaced lengthwise of the bar, the bar being adapted to be positioned in a second set of guide rollers for positioning the cutting edge at a different angle to the grinder to obtain a second bevel.



3,427,754
GRINDING APPARATUS

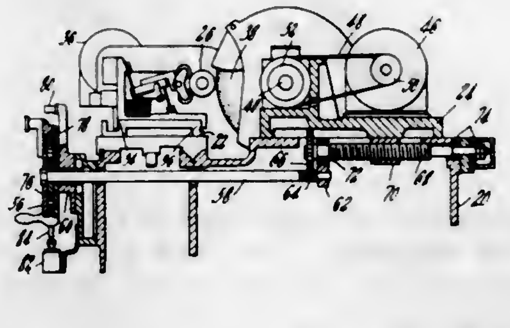
Loring Coes, Jr., Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusettts
Filed Nov. 29, 1966, Ser. No. 597,637
U.S. Cl. 51—98 **13 Claims**
Int. Cl. B24b *7/00, 9/00, 41/00*



Apparatus for intermittently changing the eccentricity of grinding wheels during the grinding process.

3,427,755
COUNTER-FORCE MOTIVATED BACK REST

George Napoleon Levesque and Paul Eugene Taylor, Warwick, and Neil Ide Barney, Riverside, R.I., assignors to Brown & Sharpe Manufacturing Company, North Kingstown, R.I., a corporation of Rhode Island
Filed Dec. 20, 1965, Ser. No. 515,062
U.S. Cl. 51—105 **10 Claims**
Int. Cl. B24b *5/00, 17/00, 49/00*

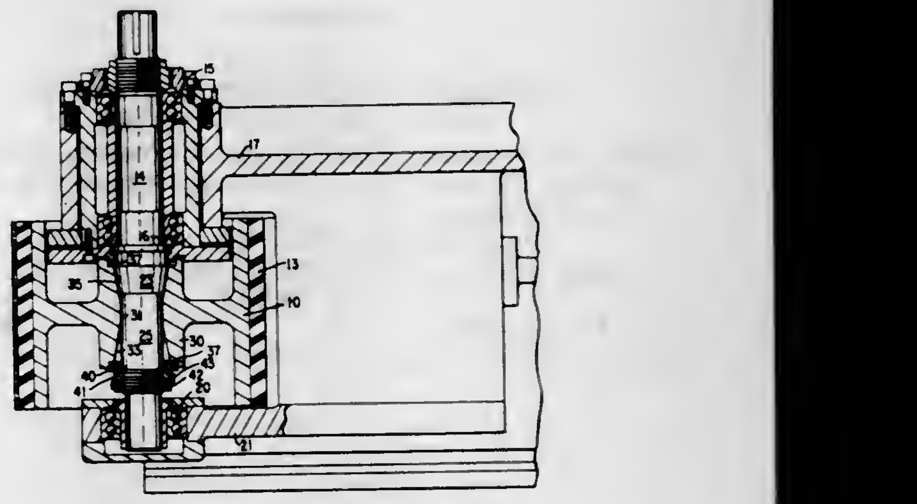


A counter-force motivated back rest for a cylindrical grinding machine, having a grinding wheel assembly including a grinding wheel, a grinding wheel support and power means for driving the grinding wheel, a rotatable work support, and means for relatively moving said supports to advance the grinding wheel against the work, which comprises "a support on which the back rest is movable against the rotating work in a direction opposed to the force of the grinding wheel, means for applying pressure to force said back rest against the work, a device for sensing and for signalling variable loading stresses within said grinding wheel assembly produced by engagement of the grinding wheel with the work, and a control device for controlling the pressure exterted against the back rest responsive to said signalled unbalance of pressure for regulating said back rest applied pressure to apply a counter-force against the work piece proportionate to said pressure unbalance."

In a preferred form of the invention a device is provided to sense and to signal any unbalance of pressure in opposed hydrostatic pressure pockets corresponding with the engaging force of the grinding wheel against the workpiece, a device for signalling the force applied to force the back rest against the work, and a servo-valve for controlling the force applied to force the back rest against the work, including a device controlled by a signalled increase of hydrostatic pressure unbalance to open said valve and by the signalled increase of the force applied to force the back rest against the work to close said valve, thereby moving said valve to a position in which said signals are in balance.

3,427,756
REVERSIBLE CONTACT WHEEL FOR CENTERLESS GRINDERS

Robert L. Schaller, Camillus, N.Y., assignor to Sundstrand Corporation, Belvidere, Ill., a corporation of Illinois
Filed Dec. 30, 1966, Ser. No. 606,115
U.S. Cl. 51—135 **2 Claims**
Int. Cl. B24b *21/00, 5/18, 5/00*

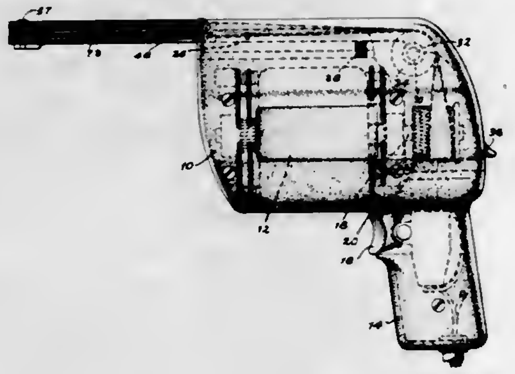


1. A contact wheel structure for centerless grinders wherein the contact wheel is reversible comprising a driven shaft journalled in bearings mounted in the grinding machine frame, the shaft having a portion extending outwardly from the bearings, said shaft being formed with an inner conical surface and a cylindrical surface extending outwardly from said conical surface, a contact wheel mounted on the extending portion of said shaft, said wheel having a hub formed intermediate its ends with a cylindrical bore, the ends of said hub being formed with like bores tapered outwardly from said cylindrical bore, said tapering bores being formed complemental to the taper of the conical surface on said shaft, the end facings of said hub being formed with like counterbores encircling the outer ends of said tapered bores and being concentric therewith, an annular member adapted to be

positioned in either of said counterbores, said annular member having an outer diameter to snugly fit the counterbore, and an inner diameter to snugly engage the cylindrical portion of said shaft, said contact wheel being positioned on the extending portion of said shaft with the tapered bore in the hub of the wheel engaging the conical surface on said shaft, and with said annular member positioned in the counterbore at the opposite outer end of the hub, and means for clamping said annular member against said hub and clamping said hub against the conical surface on said shaft.

3,427,757
MINIATURE BELT GRINDER

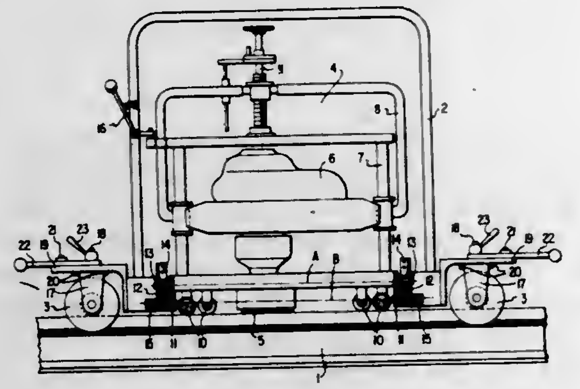
Richard A. Redman, 916 Oneida St.,
Lewiston, N.Y. 14092
Filed Feb. 17, 1967, Ser. No. 616,949
U.S. Cl. 51—170 **9 Claims**
Int. Cl. B24b *23/00, 21/00*



A hand tool grinder having an endless belt entrained over pulleys having three non-parallel axes, with the belt having a narrow extended grinding area and being under constant tension and being readily replaceable by a pivotal movement of a belt carrying arm.

3,427,758
MOTORIZED GRINDING MACHINE FOR GRINDING RAILS

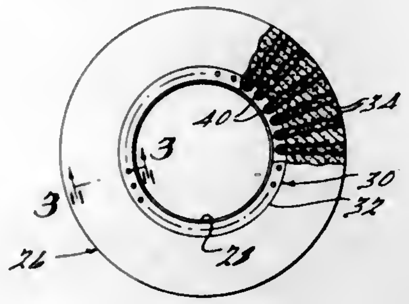
Hans Guntermann, Essen-Steele, Germany, assignor to Elektro-Thermit G.m.b.H., Essen, Germany, a corporation of Germany
Filed July 12, 1966, Ser. No. 564,562
Claims priority, application Germany, Aug. 17, 1965, E 29,907
U.S. Cl. 51—178 **4 Claims**
Int. Cl. B24b *23/00, 7/10, 9/00*



A frame has rollers thereon for engaging a rail to be ground. A first pair of longitudinally spaced pivot means extend longitudinally of the frame and support a pair of rocker arms. A pair of spaced rocker arms are pivotally supported at one end thereof by the first pair of pivot means, and a second pair of longitudinally spaced pivot means extending longitudinally of the frame are supported at the opposite ends of the rocker arms. A grinding means is pivotally supported by these last-mentioned pivot means such that the grinding means is adapted to swing to either side of vertical with respect to the frame to grind both sides of the rail head of an associated rail.

3,427,759
PRESTRESSED GRINDING WHEEL

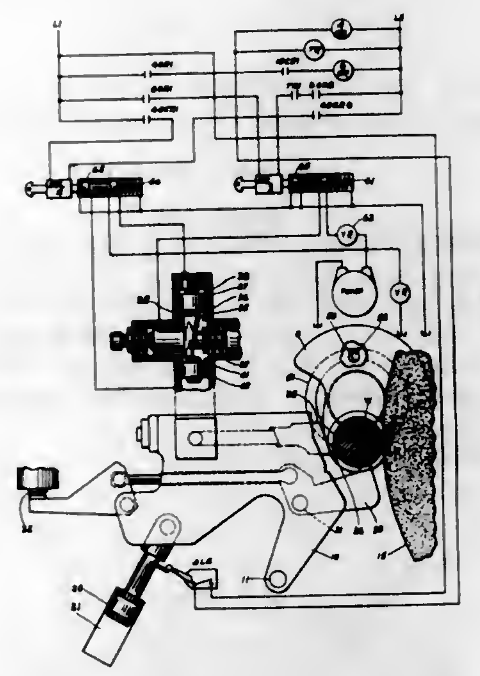
Samuel S. Kistler, Salt Lake City, Utah, and Charles V. Rue, Tiffin, Ohio, assignors, by mesne assignments, to International Telephone and Telegraph Corporation
Filed Aug. 25, 1965, Ser. No. 482,431
U.S. Cl. 51—206 **4 Claims**
Int. Cl. B24d *5/00, 7/00*



A reinforced prestressed grinding wheel comprising an abrasive matrix including a plurality of abrasive grains and a bonding agent, and further incorporating a reinforcing network extending from a position adjacent to the periphery of the wheel to a position spaced inwardly therefrom and oriented in a direction to impose a residual compressive stress in a tangential direction on the abrasive matrix in which it is embedded and interlocked.

3,427,760
ROTARY LOCATOR FOR CRANKSHAFTS

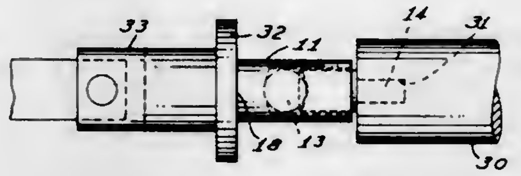
William E. Happel, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Jan. 21, 1965, Ser. No. 427,019
U.S. Cl. 51—237 **4 Claims**
Int. Cl. B24b *5/00, 41/06, 19/02*



The apparatus of this application is a steady rest used primarily for supporting crankshaft journals during a grinding operation. In addition to the function of supporting the crankpin journals during a grinding operation, the device also is used to provide a precision rotary location of a crankshaft prior to a grinding operation by effecting a firm contact between locating surfaces which locate each crankpin in axial alignment with the work drive axis. In order to perform this locating operation to best advantage, it has been found advisable to use means other than the members which hold the work engaging shoe against the work during a grinding operation. In this case, the work engaging shoe is mounted on the end of a piston-type plunger which is held by means of a spring in engagement with a hydraulically operated actuating wedge. The wedge is moved endwise to urge the plunger and shoe into engagement with a crankpin during a grinding operation. A separate source of fluid under relatively low pressure is connected to act directly on the plunger, i.e., independently of the wedge, to urge a work engaging shoe against a crankpin for the rotary locating function. This is a decided improvement over previous devices for performing the same function, none of which involves applying a low pressure directly to the shoe supporting plunger.

3,427,761
RADIALLY MOVABLE LIVE CENTER WORK SUPPORT

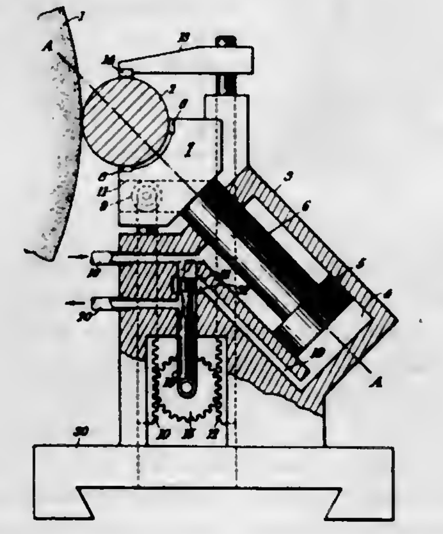
Walter A. Kulson, 30034 Paul Court,
Warren, Mich. 48092
Filed Mar. 20, 1967, Ser. No. 624,344
U.S. Cl. 51—237 **1 Claim**
Int. Cl. B24b *5/00, 41/06;* **B23b** *5/22*



A rotary workholder for holding a workpiece between a machine headstock and tailstock including a live center on the tailstock having a ball and opposed conical faces engaging the ball to permit slight radial shifting of the work to prevent stress in the work due to misalignment.

3,427,762
HYDRAULICALLY OPERATED SELF-ADJUSTING STEADY REST

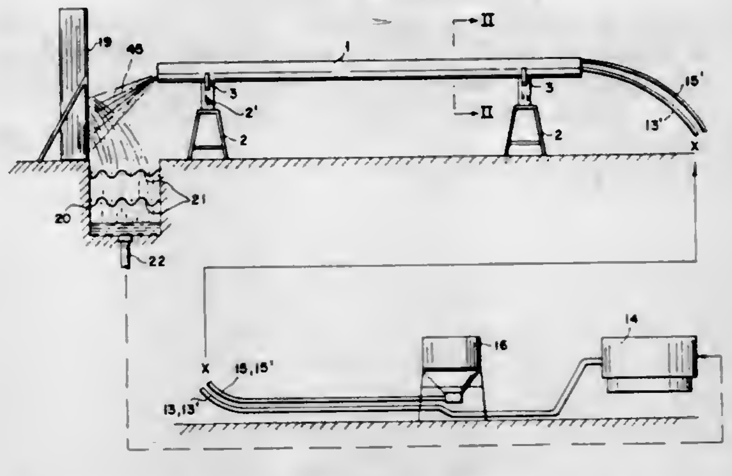
John Penrose Mills, Penn, Wolverhampton, Staffordshire, England, assignor to H. M. Hobson Limited, London, England, a company of Great Britain
Filed Dec. 15, 1966, Ser. No. 601,895
Claims priority, application Great Britain, Dec. 28, 1965, 54,948/65
U.S. Cl. 51—238 **2 Claims**
Int. Cl. B24b *41/06;* **F15b** *13/10*



A work steady for a machine tool which exerts on the workpiece a reaction which counterbalances the load exerted by the tool, despite progressive reduction in the size of the workpiece.

3,427,763
METHOD OF TREATING SOLID SURFACES

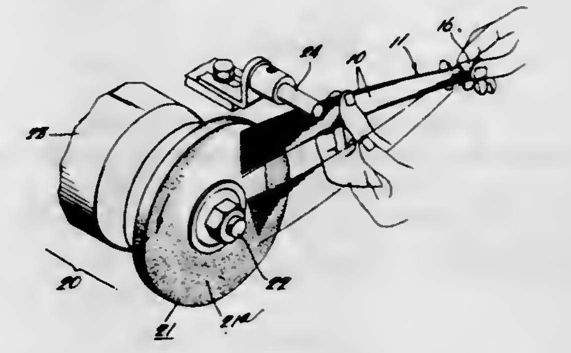
Wolfgang Maasberg, Duisburg, and Willi Heinrich, Rheinkamp-Repelen, Germany, assignors to Firma Woma-Apparatebau W. Maasberg & Co. G.m.b.H., Rheinhausen, Germany, a corporation of Germany
Filed July 18, 1966, Ser. No. 566,092
U.S. Cl. 51—321 **4 Claims**
Int. Cl. B24b *1/00;* **B24c** *1/00, 3/00*



A method of treating a surface in which a recirculated mixture of sand, quartz particles, corundum or fly ash with a particle size of 0.01 to 3 mm. (preferably 0.1 to 1 mm.) is directed against the surface in a water jet at a pressure of 100 to 900 atmospheres, the jet having a diameter of 2 to 3 mm.

3,427,764
METHOD OF POINTING WIRE-LIKE ELEMENTS

Walter J. Draving, Willow Grove, Pa., assignor to Micro-Miniature Parts Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Feb. 21, 1966, Ser. No. 528,891
U.S. Cl. 51—324 **3 Claims**
Int. Cl. B24b *1/00, 19/00*



The present invention relates to a method of pointing wire-like elements and more particularly to a method of placing conical or pointed tips on a plurality of wire-like elements simultaneously.

3,427,765
ABRASIVE BELTS AND METHOD OF MAKING SAME

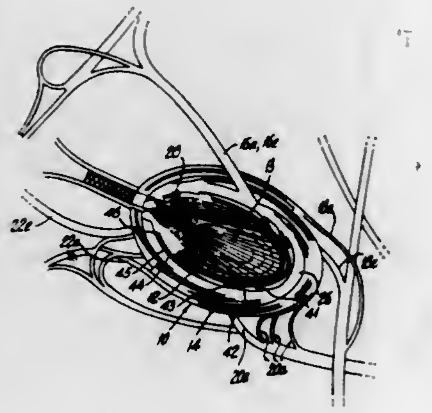
Jarvis M. McGarvey, Grand Island, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Feb. 11, 1966, Ser. No. 526,823
U.S. Cl. 51—399 **3 Claims**
Int. Cl. B24d *11/00;* **B24b** *21/00*

A high strength smooth running joint for abrasive belts formed by removing the abrasive grain adjacent to the ends of an abrasive coated strip, butting the ends of the strip together to form a non-abrasive recessed area on the abrasive surface of the belt and adhesively bonding a patch of high strength flexible material in the recessed area to maintain the strip ends in abutting relationship.

3,427,766

AMPHITHEATER COMPLEX WITH INTEGRAL PARKING FACILITIES

Frederick I. Goldberg, Brooklyn, N.Y. (65—25 160th St., Flushing, N.Y. 11365), and Robert Colwell Petrucelli, 228 New Hanover Ave., Meriden, Conn. 06450
Filed Mar. 25, 1966, Ser. No. 537,411
U.S. Cl. 52—6 **1 Claim**
Int. Cl. E04h *3/10*

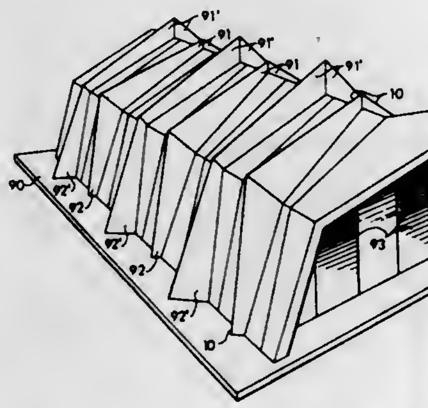


A building structure having a central event-staging area, a spectator seating area located radially outwardly of said staging area, parking areas located radially outwardly of said seating area, and pedestrian safety-access means connecting the parking areas with the seating area portions immediately adjacent thereto, so that the spectators can walk between the parking areas and their seats without having to cross in front of vehicular traffic.

3,427,767

BUILDING STRUCTURE

Ernest R. Schaefer, 40 Country Corners Road, Wayland, Mass. 01778
Filed July 21, 1965, Ser. No. 473,769
U.S. Cl. 52—18 **8 Claims**
Int. Cl. E04b *7/12, 1/34;* **E04c** *2/38*

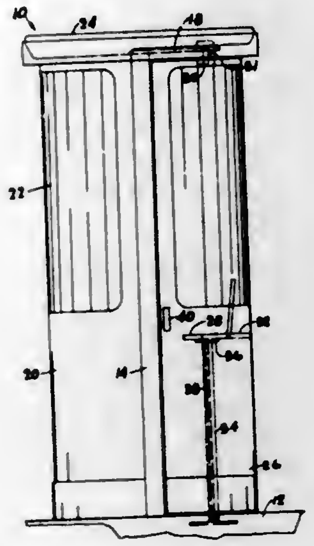


A building panel of rectangular outline having a planar surface from which a ridge protrudes is described. The ridge extends in the longitudinal direction of the panel and is of substantial height and width with respect to the panel width at one end of the panel and of lesser height and width at the other end of the panel. The resulting panel is one having a high resistance to twist deformation about its longitudinal axis as well as to bending.

3,427,768

BOOTH WITH A ROTATABLE DOOR AND SEAT

James F. Fulton, 806 The Crescent, Mamaroneck, N.Y. 10543
Filed Jan. 19, 1968, Ser. No. 699,104
U.S. Cl. 52—36 **7 Claims**
Int. Cl. E04g *1/14;* **E04b** *1/343, 1/36*

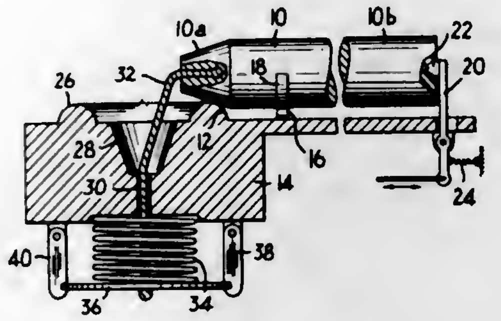


An enclosure construction that has a support means, a wall mounted on the support means partially enclosing the booth. Advantageously a rotatable door and corotatable seat are pivotally mounted on the support means, the door and wall cooperating to form an enclosure when the door is in the closed position. A spring is provided for biasing the seat and the door into the closed position.

3,427,769

ERECTING MECHANISM

Joseph Star, Roslyn Heights, N.Y., assignor to Lundy Electronics & Systems, Inc., Glen Head, N.Y., a corporation of New York
Filed July 26, 1966, Ser. No. 568,043
U.S. Cl. 52—113 **6 Claims**
Int. Cl. E04h *12/34;* **H01q** *1/08*

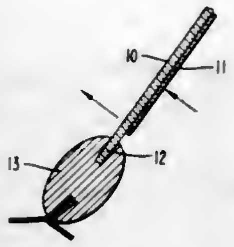


As described herein, an erecting mechanism is provided which comprises a plurality of joints, each joint possessing a controlled breakaway characteristic and including two elements having profile matching complementary surfaces which inhibit relative pivotal movement therebetween to retain the elements in a relatively fixed cooperative relation. The elements cooperatively mate together when actuated by a motive force. In one embodiment, the joint comprises a tapered plug and a profile matching socket and the motive force includes a spring biased flexible cable. The strength of the joint and its inherent breakaway characteristic are controlled by suitably selecting the mating configurations of the plug and socket and the biasing of the flexible cable.

3,427,770

SAFETY GLASS

Heinz Kunert, Cologne, and Wilhelm Biermann, Aachen, Germany, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Oct. 11, 1965, Ser. No. 494,346
Claims priority, application France, Oct. 10, 1964, 991,019
U.S. Cl. 52—203 **13 Claims**
Int. Cl. B60j *1/02;* **E06b** *3/02;* **C03b** *27/00*

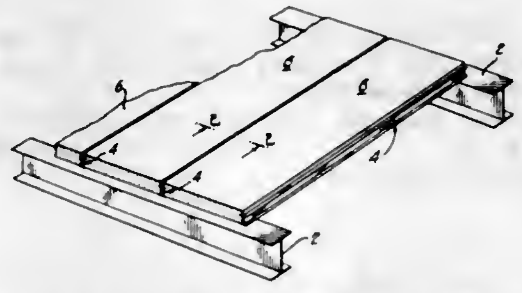


1. A window comprising a first sheet of tempered glass bonded to a second sheet of untempered transparent material and of smaller size than said first sheet, said sheets being secured together in surface-to-surface relation to leave a border of said first sheet which extends beyond the periphery of said second sheet and is adapted to be gripped by a frame, the said border being highly tempered and frangible into small pieces.

3,427,771

ROOF DECK SYSTEM

Frank G. Cacossa, Livingston, N.J., assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts
Filed Feb. 11, 1966, Ser. No. 526,897
U.S. Cl. 52—262 **4 Claims**
Int. Cl. E04b *5/10, 5/52, 1/40*



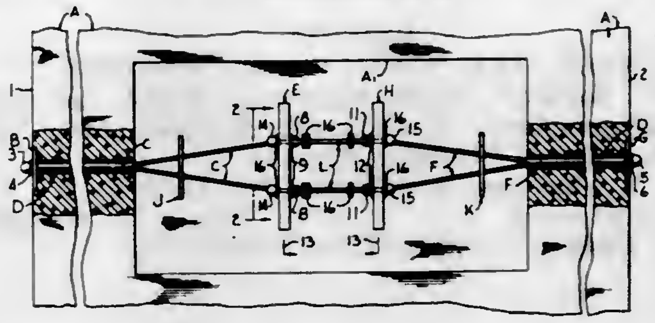
A roof deck system in which metal I-beams are used together with panels made of a mixture of Portland cement and wood fibers. The upper flanges of the beams fit tightly into grooves cut into the edges of abutting panels, and the bottom edges of the panels rest on the bottom flanges of the beams. The edges of adjoining panels are close together so that grouting of the seams is not required. The roof deck has improved strength and ease of installation.

3,427,772

APPARATUS FOR POST-TENSIONING AND INTERCONNECTING RE-ENFORCING WIRES USING KEY HOLE ANCHOR PLATES IN A CONCRETE STRUCTURE

George W. Williams, 3205 Ralston Ave., Hillsborough, Calif. 94010
Filed Sept. 6, 1966, Ser. No. 577,462
U.S. Cl. 52—223 **2 Claims**
Int. Cl. E04c *3/10, 3/26, 5/12*

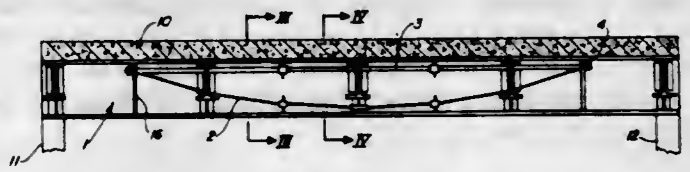
An apparatus and method for post-tensioning a concrete structure where the post-tensioning wires extend in opposite directions and in substantial alignment with each other from a central recess in the structure and have their outer ends anchored to the opposite sides of the structure. The inner wire ends have heads that can be inserted into keyhole slots provided in spaced apart inner anchor plates and then the wires can be moved transversely into the narrow portions of the slots for causing the heads to bear against the inner plates. One or more washers may be used on the wires to space the heads from adjacent plates to alter the effective lengths of the wires. Tie wires have heads at each end that are receivable in the same slots that receive the wires and then the tie wires can be moved laterally into the narrow slot portions after the post-tensioning wires have been tensioned and the tie wires with the inner anchor plates will constitute a connection between the aligned post-tensioning wires that is substantially in alignment with these wires for post-tensioning the concrete structure.



3,427,773

STRUCTURE FOR INCREASING THE LOAD-CARRYING CAPACITY OF A BEAM

Charles Kandall, 2383 Cornaga Ave., Far Rockaway, N.Y. 11691
Filed June 6, 1966, Ser. No. 555,490
U.S. Cl. 52—225 **4 Claims**
Int. Cl. E04c *3/10, 5/08*

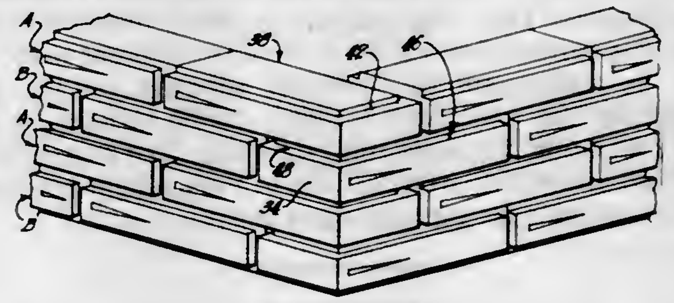


To strengthen the load-carrying capacity of a beam resting on spaced supports, a compression-resistant bar is placed alongside the beam on lateral projections in the vicinity of the supports so that the ends of the bar can slide freely with reference to the beam; a cable is then anchored under tension to these slidable ends and is connected with the beam at an intermediate point to exert an upward thrust on the beam without placing same in longitudinal compression.

3,427,774

GROOVED BRICK CONSTRUCTION AND COMPOSITE THEREOF

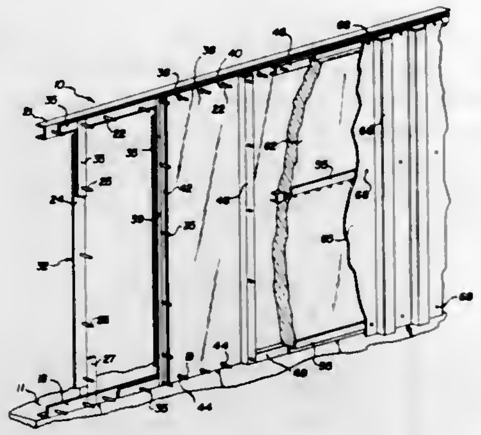
Stanley R. Curtis, Toledo, Ohio, assignor to Tru-Lay Masonry Products Corporation, Toledo, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 429,952, Jan. 27, 1965. This application Oct. 5, 1965, Ser. No. 493,213
U.S. Cl. 52—284 **5 Claims**
Int. Cl. E04c *1/04, 2/04;* **E04b** *2/64*



A brick and a wall made with the brick employ a thin bonding agent between the courses of brick so that a wall can be laid with relatively little skill. The brick can be provided in three forms, a stretcher brick and two types of corner brick which enable the bricks to be laid with uniform grooves therebetween and with the bricks at uniform levels, even when each brick is slightly thicker at one end.

3,427,775
INSULATED STRUCTURAL BARRIER

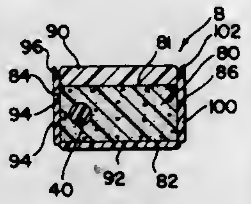
Jakob L. Bachrich, North Vancouver, British Columbia, Canada, assignor to Galbraith & Sulley Ltd., Vancouver, British Columbia, Canada
Filed Dec. 6, 1966, Ser. No. 599,535
U.S. Cl. 52—402 **5 Claims**
Int. Cl. E04b *1/74;* **E04f** *17/04;* **E04c** *1/04*



Construction for the walls and roof of a prefabricated dry kiln and including supports providing a series of adjoining rectangular frames. Inner wall panels clamped into sealing engagement with the supports to close the frames. Outer wall panels supported in spaced relation to the inner wall panels to define therewith a drained and ventilated air space. Insulating material interposed between the inner and outer wall panels.

3,427,776
SELF-ADHERENT, SHOCK ABSORBING, SEALING AND SPACING STRIP

Clarence L. Lake, Cleveland Heights, James A. Box, Parma, and William J. Golla, Garfield Heights, Ohio, assignors to The Tremco Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed June 14, 1966, Ser. No. 557,484
U.S. Cl. 52—403 **9 Claims**
Int. Cl. E04b *1/68;* **E06b** *7/22*



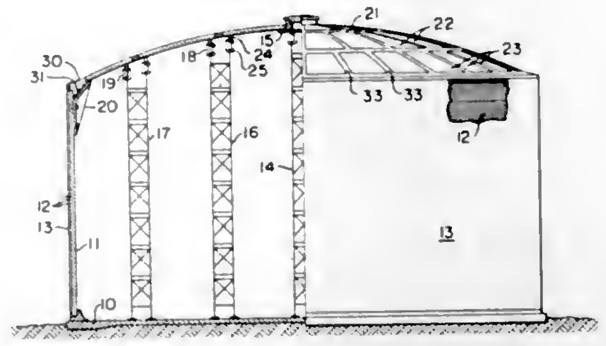
There is provided a sealing strip for use between a glass pane and a supporting structure having pronounced irregularities. This strip includes a shock absorbing support tape formed from a high memory, resilient material, such as sponge rubber, with an adhesive on the side contacting the pane and a heavy mastic coating on the side contacting the supporting structure. The mastic flows into and around the irregularities to form a tight moisture-proof seal with the supporting structure.

ERRATUM

For Class 52—502 see:
Patent No. 3,428,326

3,427,777
PROCESS OF MAKING DOMES

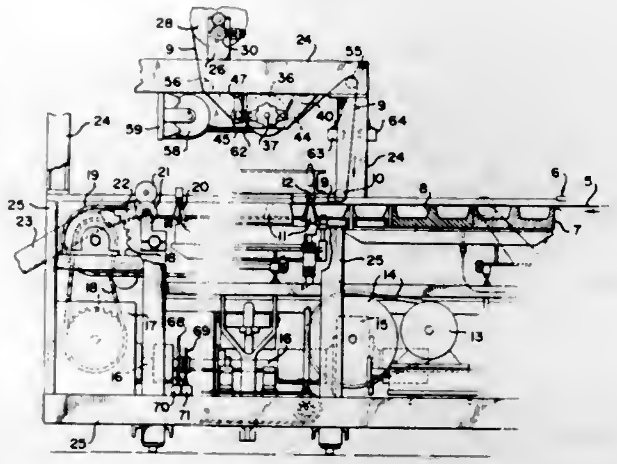
Francis X. Crowley, Wellesley, Mass., assignor to Crowley Hession Engineers, Boston, Mass., a partnership composed of Francis X. Crowley and John Hession
Filed Oct. 26, 1966, Ser. No. 589,650
U.S. Cl. 52—744 **4 Claims**
Int. Cl. E04g *21/00, 11/36;* **E04b** *7/08*



Process of making concrete domes characterized by arranging a group of precast concrete segments in a defined area while providing peripheral spaces about each segment, closing the bottom of these spaces thus forming channels between the segments and filling the channels with concrete. The panels are formed on a casting bed having a curved mold surface, each panel acting as a molding bed for the one above it.

3,427,778
WEB REGISTERING METHOD AND APPARATUS FOR PACKAGE-FORMING MACHINES AND THE LIKE

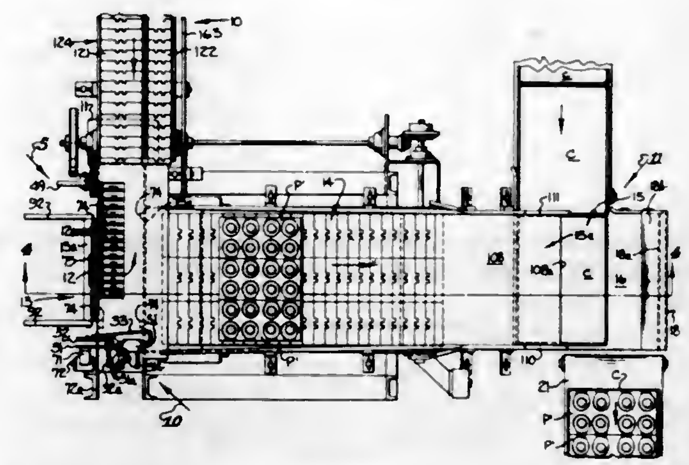
David C. McCluskey, Western Springs, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 10, 1965, Ser. No. 478,774
U.S. Cl. 53—3 **30 Claims**
Int. Cl. B65b *57/00, 5/02*



Package forming machines wherein an indicia bearing cover web is applied to a pocketed web as the pocket web is moved intermittently or step-by-step are disclosed herein. Registration of the indicia on the cover web is provided by monitoring the cover web with a photoelectric or electric eye scanner and by continually actuating switch provisions from the continuously driven input to the step-by-step driving arrangement. The cover web is "printed short " and first and second tension levels are applied thereto via a magnetic brake controlled in response to the electric eye scanner and the switch provisions.

3,427,779
APPARATUS FOR PACKAGING ARTICLES

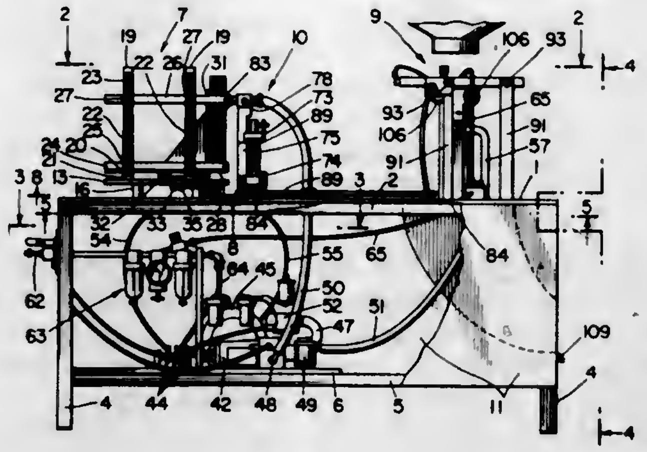
Morris Goldman, Philadelphia, Pa., assignor to Colonial Beverage Equipment, Philadelphia, Pa., a partnership composed of Morris Goldman and Philip A. Connelly
Continuation-in-part of application Ser. No. 546,021, Apr. 28, 1966. This application June 15, 1967, Ser. No. 646,382
U.S. Cl. 53—61 **10 Claims**
Int. Cl. B65b *57/10, 35/30;* **B65g** *47/24*



An apparatus for loading articles into receiving cases wherein the articles are conveyed in single file to an accumulating station where they are grouped in contiguous relation and isolated from subsequently fed articles, and thereafter fed in lines-abreast to and simultaneously inserted in receiving cases; and wherein "wrap-pack" cartons having a pair of open, opposing sides are selectively turned during their single file conveyance to avoid open-side contact of adjacent cartons during their accumulation and insertion into receiving cases.

3,427,780
BAG OPENING AND CLOSING MACHINE

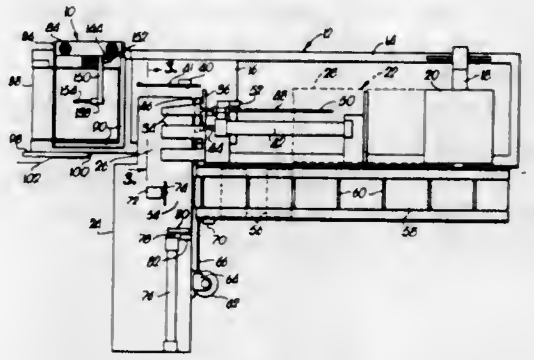
Philip Bock, 14025 Crenshaw Blvd., Hawthorne, Calif. 92050
Filed Dec. 5, 1966, Ser. No. 599,288
U.S. Cl. 53—63 **16 Claims**
Int. Cl. B65b *57/06, 43/26*



1. In a machine for opening and closing bags as an incident to the filling of such bags, a frame structure, a magazine means on said frame structure supporting a supply of collapsed bags, a bag transport means movable on said frame structure operable to engage and remove a collapsed bag from said magazine means and transport the bag to a point at which the bag is to be filled, other means on said frame structure disposed adjacent to said point of bag filling operable to open a bag held by said transport means at said point, and a bag sealing means disposed at said point operable to engage and close the filled bag while the bag is being held by said transport means.

3,427,781
AUTOMATIC TRAY MECHANISM FOR PACKAGE SEALERS

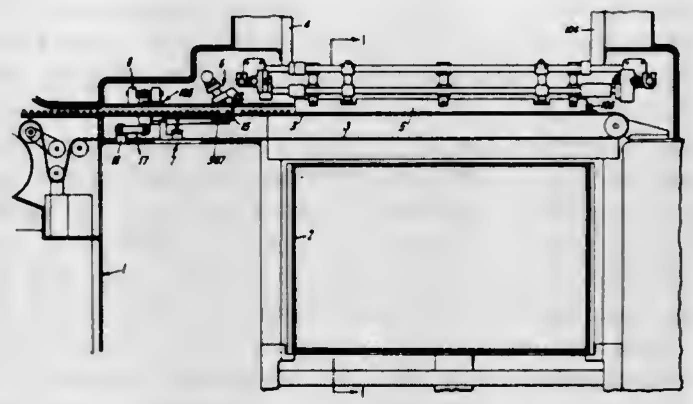
Robert E. Kral, 6351 W. 10th St., Topeka, Kans. 66615
Filed Dec. 29, 1966, Ser. No. 605,855
U.S. Cl. 53—74 **10 Claims**
Int. Cl. B65b *57/12, 9/12, 51/30*



A folded, heat-sealable packaging film is repeatedly fed to a sealing device in unison with successive articles to be packaged. A pusher between the layers of the film engages individual articles inserted between the layers and advances each article toward the sealer to, in turn, also advance the film by forcing the leading edge of the article against a transverse seal line in the film formed by the previous sealing operation.

3,427,782
AUTOMATIC CIGARETTE CATCHER

Goffredo Gamberini, Bologna, Italy, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed May 18, 1965, Ser. No. 456,692
Claims priority, application Italy, June 1, 1964, 12,257/64
U.S. Cl. 53—78 **5 Claims**
Int. Cl. B65b *57/18, 19/04*



An automatic cigarette catcher in which cigarettes are counted while moving along a conveyor, and in response to a predetermined count, a group of the cigarettes is pushed off the conveyor into a container.

3,427,783
BISCUIT CUTTING AND PACKING APPARATUS

Francis R. Reid, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Sept. 27, 1966, Ser. No. 582,298
U.S. Cl. 53—123 **10 Claims**
Int. Cl. B65b *25/16, 63/00*

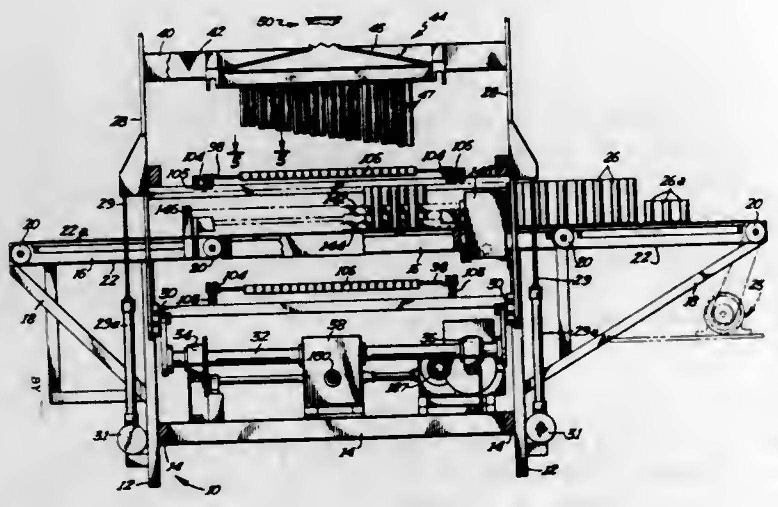
1. A dough cutting and packing apparatus for dividing a dough strip into a plurality of pieces and for packing the pieces into a container, said apparatus comprising:

(a) a cutter unit having a plurality of adjacent openings therein to define a grid work with the openings having straight side edges and abutting against one another,

(b) each of the side edges of the openings comprising a substantially vertically disposed plate, each of said adjacent openings having a single plate between them,

(c) a movable member provided for pressing the dough strip into the openings with the upward edge of each of the side walls being adapted to thereby cut the strip into a plurality of said pieces as the strip is pressed therewithin,

(d) a means on the cutter unit for compressing each dough piece radially inwardly as it is pressed downwardly into the openings and for frictionally engaging the sides of the pieces as they travel downwardly into the openings,



(e) gas operated retaining and releasing heads mounted above the cutter unit for reciprocation through the cutter unit and adapted to retain the dough pieces in a predetermined position on the lower end of each head during a portion of their downward travel and for releasing the cut pieces of dough away from the lower ends of the positioning heads as the heads reach a predetermined lower position whereby the dough pieces are removed from their confined positions in the cutter unit without substantial permanent deformation and then released into said containers,

(f) a container positioning means provided below the cutter unit for supporting the containers in a predetermined position below the cutter unit and for advancing the containers from one opening of the cutter unit to the next to receive said pieces as they are expelled from successive openings to thereby fill each of said containers with a plurality of said cut pieces.

3,427,784
MECHANISM FOR PACKING PARALLELEPIPEDAL ARTICLES

Paul Engeler, Neuhausen am Rheinfall, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland

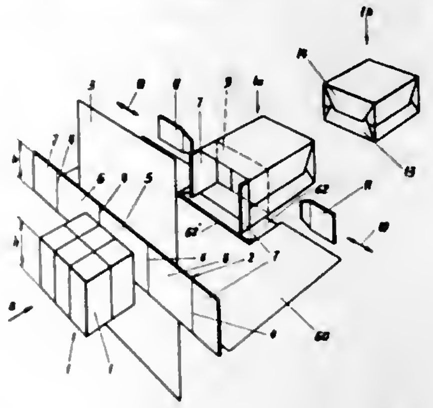
Filed June 13, 1966, Ser. No. 556,947

Claims priority, application Switzerland, June 30, 1965, 9,140/65

U.S. Cl. 53—172 **5 Claims**

Int. Cl. B65b *5/06, 11/06, 41/18*

A packaging mechanism for substantially parallelepipedic articles comprises a fold passage through which the articles are conveyed from an input end to an output end while packaging material is applied therearound, an extractor device being provided at said input end for extracting a packing strip from a magazine and move it in upper and lower guide members to said input end, said upper guide member being movable upwardly away from the packing strip to release the same.



ERRATUM

For Class 53—329 see:
Patent No. 3,427,789

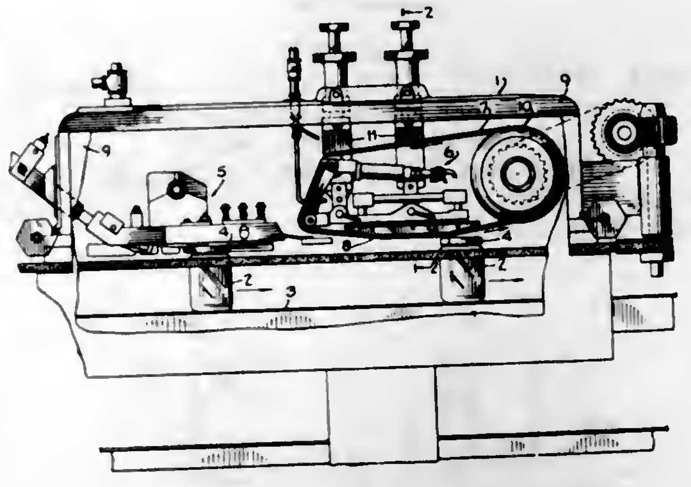
3,427,785
FRICTION MEMBER FOR CONTAINER SEALING MACHINE

Bernard H. Osterhage, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Mar. 25, 1966, Ser. No. 537,395

U.S. Cl. 53—331.5 **6 Claims**

Int. Cl. B65b *7/28;* **B67b** *1/06, 3/20*



An improved friction drag member for container sealing machines for engaging the upper surfaces of closure caps on moving containers for turning the caps onto the container threads. It comprises a number of individual multi-layer friction sections fastened together or laminated to form a continuous friction pad with the several layers of the individual friction sections all being oriented generally at right angles to the closure tops.

3,427,786
CLOSURE HEAD FOR APPLYING AND SECURING CAPS TO CONTAINERS

Paul Nofer, Schoofstrasse 6, Brunsbuettelkoog, Germany

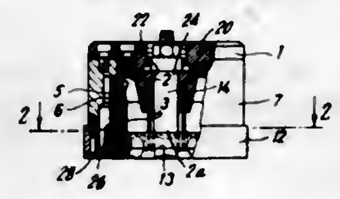
Filed Dec. 5, 1966, Ser. No. 599,306

Claims priority, application Germany, Dec. 4, 1965, N 27,712

U.S. Cl. 53—356 **7 Claims**

Int. Cl. B65b *7/28, 3/10*

The drawings and specification explain the particular details of a capping chuck or container cap-applying device which includes a cylindrical housing which is open at one end for receiving the cover which is to be applied to a jar or similar container. A feature of the construction is that the housing encloses a cylindrical member which is axially slotted so as to form a plurality of circumferentially arranged segments which carry roller elements or disks which are arranged to engage around the periphery of a cap cover which is to be applied to a container by the chucking head.



3,427,787
DEVICE FOR CLEANING THE ELECTRODES IN AN ELECTROSTATIC DUST SEPARATOR

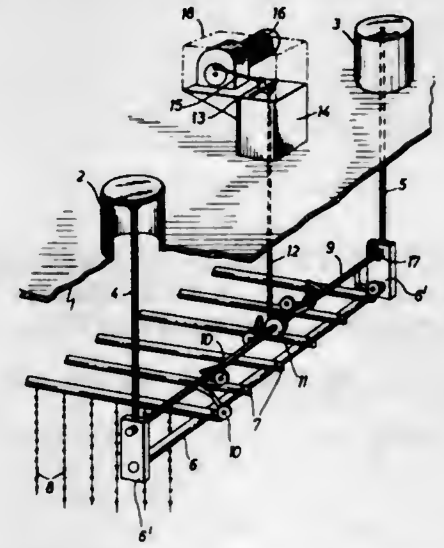
Helmut Hilge, Cologne-Ehrenfeld, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany

Filed Mar. 8, 1968, Ser. No. 711,612

Claims priority, application Germany, Jan. 12, 1968, K 64,430

U.S. Cl. 55—112 **7 Claims**

Int. Cl. B03c *3/76, 3/41*



A device for cleaning the vertically arranged electrodes in an electrostatic dust separator in which a horizontal beater shaft with pivoted hammer members thereon is mounted in the upper region of the separator housing parallel to a horizontal main carrier rod which has attached thereto transversely extending holder rods from which the electrical ionizing wires to be cleaned are suspended. The beater shaft when rotated by a ratchet device causes the hammer member to tap against the ends of the holder rods which in turn cause the ionizing wires to vibrate. The drive motor for the beater shaft is mounted on the outside of the cover of the separator housing and the bearings for the beater shaft which bearings also carry the main carrier, are mounted on the lower ends of vertical rods, the upper ends of which are secured to electrical insulators extending upwardly from the upper face of the cover of the separator housing.

3,427,788
VALVED TRAP MANIFOLD

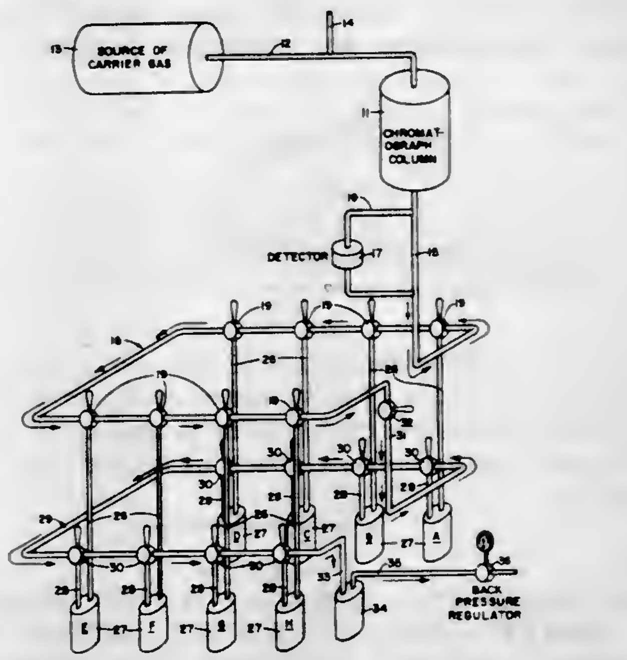
Alfred B. Carel, Denver, Colo., and William A. Bush, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Sept. 12, 1966, Ser. No. 578,682

U.S. Cl. 55—197 **5 Claims**

Int. Cl. B01d *15/08*

A trap system is provided comprising two headers connected serially, and a plurality of traps, each of which has its inlet connected to one of the headers, and its discharge connected to the other. Means are provided for selectively isolating each trap from its two connections to the headers, and for blocking serial flow between the two headers.



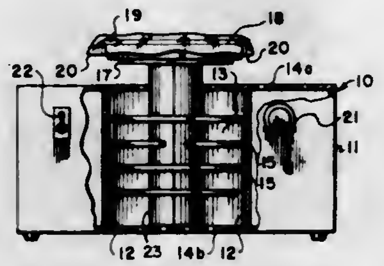
3,427,789
APPARATUS FOR HEAT SHRINKING BIAXIALLY ORIENTED POLYMER FILMS

Ronald Wilbur Emus, Greenville, S.C., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Nov. 30, 1962, Ser. No. 241,335

U.S. Cl. 53—329 **3 Claims**

Int. Cl. B65b *11/52*



1. A device for forming shrink covers on a container comprising:

(a) a hollow member having upright walls with an open upper end and an open lower end defining a chamber,

(b) a supporting platform positioned immediately above said upper end adapted to support a container, the periphery of said platform being spaced within the vertical projection of the open upper end of said hollow member,

(c) means for supporting said platform above said upper end and

(d) means for heating said chamber thereby causing the upward flow of heated gases therethrough by natural convection, said gases flowing upwardly through said chamber and around the edges of a container supported on said platform and over the top of said container.

3,427,790
ENSILAGING MEANS AND METHOD

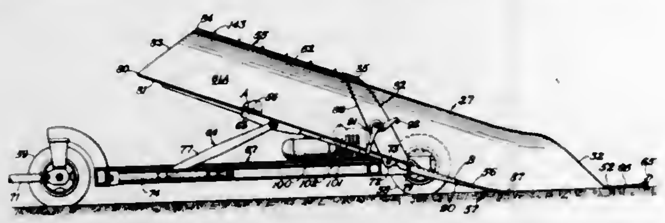
William J. Flittie, Dallas, Tex., assignor to Henry C. Goldwire, Irving, Tex.

Filed Oct. 31, 1966, Ser. No. 590,866

U.S. Cl. 56—1 **24 Claims**

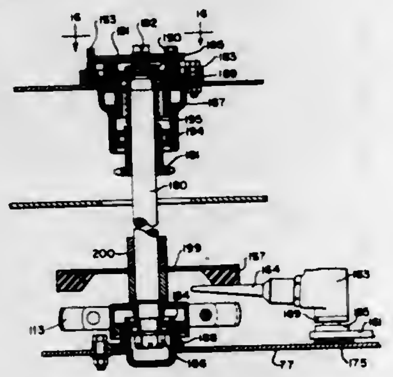
Int. Cl. A01d *35/22;* **A01g** *19/06*

A method of harvesting and ensilaging feed stuff plant material in which an ensilaging container receives plant material directly from a machine that moves over ground bearing the material, which material the machine chops and expels. The container is deposited on the ground, where fermentation of the plant material occurs. Disclosed apparatuses for ensilaging feedstuff plant portions and implementation of the above operations permit the utilization of a capsule or container of lightweight, readily expendible materials or a capsule of largely preshaped construction and made of heavier, re-useable materials.



3,427,791
METHOD AND APPARATUS FOR POSITIONING DOFFING STRUCTURE IN A COTTON PICKER

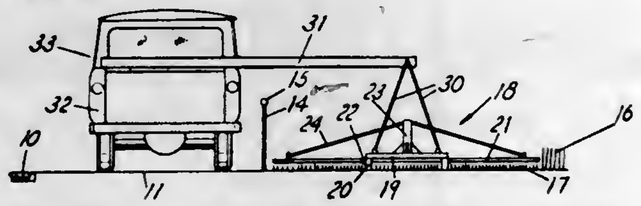
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,130
U.S. Cl. 56—41 **9 Claims**
Int. Cl. A01d *45/18*



A method and apparatus for positioning doffing structure in a cotton picker, the doffing structure including an upright doffer shaft supported in vertically spaced shaft support structure with vertically spaced radial doffing plates on the shaft, means biasing the shaft upwardly to counterbalance the weight of the shaft and plate, and means between the shaft and support structure for locking the shaft against vertical movement; and in which the method is composed of drivingly rotating the doffing structure with an associated picking spindle drum having spindles extending between the plates while the shaft is not locked so as to permit the spindles to bear against the underside of the plates and thereby vertically position the doffing structure, and while the doffing structure and spindle drum are still rotating to lock the doffer shaft against vertical movement.

3,427,792
TRACTOR PROPELLED MOWER WITH FIXED CUTTERS

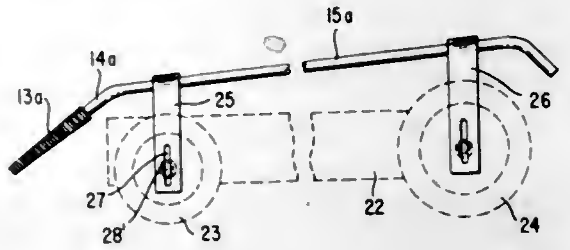
Frederick B. Curtenius, 1537 Long Road, Kalamazoo, Mich. 49001
Filed Aug. 22, 1966, Ser. No. 574,235
U.S. Cl. 56—229 **15 Claims**
Int. Cl. A01d *55/02, 35/08*



A straight cutter bar is mounted on a support for linear advance parallel to the ground and transverse to its length. The bar is carried on a towed skid or directly on a powered vehicle to be advanced over the ground at speeds in excess of 20 miles per hour.

3,427,793
TRIM LIFT GUARD FOR LAWNMOWERS

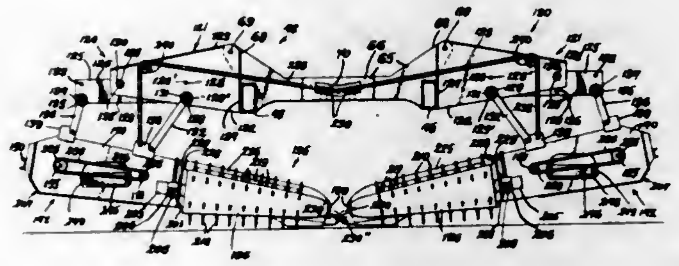
Charles Greulich, R.D. 1, Bellevue, Ohio 44811
Filed Oct. 14, 1965, Ser. No. 495,861
U.S. Cl. 56—255 **1 Claim**
Int. Cl. A01d *55/18*



A trim lift guard for lawnmowers having a downwardly and forwardly inclined bar portion arranged in advance of a front ground wheel of the mower and having at it's front end a resilient feeler in the form of a tapered helical coiled spring with a smaller end outermost for engaging and lifting flowers, vines and the like out of the path of the mower. Integral with the bar portion is a rearwardly and upwardly inclined bar along which the flowers, vines and the like travel as the mower advances. The bar is attached to the mower and is capable of up and down adjustment.

3,427,794
MOBILE CUCUMBER HARVESTER

Charles G. Burton, Lewiston, N.Y., assignor to Chisholm-Ryder Company, Inc., Niagara Falls, N.Y., a corporation of New York
Filed Oct. 20, 1965, Ser. No. 498,886
U.S. Cl. 56—327 **10 Claims**
Int. Cl. A01d *45/22*



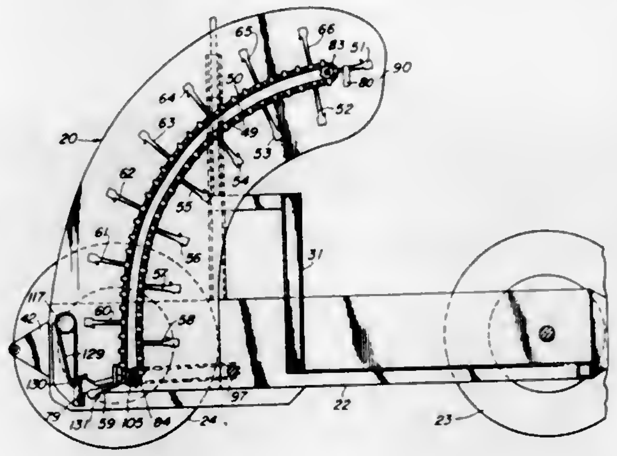
A mobile cucumber harvester is disclosed which gently lifts and handles cucumber laden vines so as to enable cucumbers of the desired size to be harvested and thereafter gently lays the vines back on the ground, this all occurring while the harvester is being moved through a field.

3,427,795
MACHINE FOR PICKING ASPARAGUS

Lloyd Gilbert, Ravenna, Mich. 49451
Filed Oct. 3, 1966, Ser. No. 583,877
U.S. Cl. 56—327 **16 Claims**
Int. Cl. A01d *43/06*

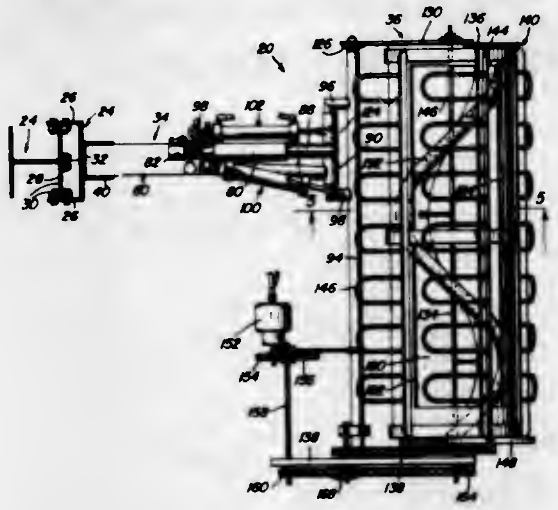
This invention provides a machine for snap-picking asparagus. The progressive automation of farm operations has resulted in the development of machines for mechanically harvesting most crops. The elimination of manual operations produces great savings, and eliminates dependence upon itinerant or migratory labor sources. The harvesting of asparagus, however, has included an

operation that has resisted mechanization. Stalks of asparagus have a transition point between a rough woody lower part and a tender portion which includes the tip. This transition takes place at roughly ⅛ of the stalk height above ground and a stalk will tend to break at that point on bending. The break will be sharp, giving rise to the term "snap-picking." Canneries and frozen-food processors require breaking of the asparagus stalk, and do this as a secondary operation if the asparagus has been harvested by cutting. The main concern is to separate the touch part of the stalk from the tender edible portion. The necessity of the extra operation results in a lower value for cut asparagus, and an outright refusal of some processors to accept it. The common harvesting process is therefore to employ large numbers of persons to laboriously pick the stalks by hand by snapping them between the fingers. In the period of maximum growth, a row of asparagus should be picked every day to obtain the optimum stalk length. The labor problems in such an operation are obvious.



3,427,796
FRUIT PICKER

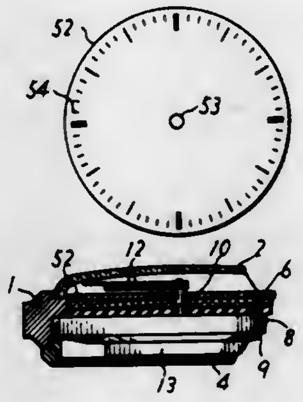
Donald C. McCray, 226 Coral Drive; Donald E. McCray, 222 Coral Drive; and Allan S. McCray, 226 Coral Drive; all of Hudson, Fla. 33568
Filed Oct. 23, 1965, Ser. No. 502,853
U.S. Cl. 56—328 **15 Claims**
Int. Cl. A01g *19/08*



A fruit picker including an adjustably mounted picker head. The picker head is adapted to rotate in a first direction while individual gripping roller or rollers carried by the head rotate in the opposite direction so as to grip and twist fruit free as the head is advanced into the foliage of a tree. Comb-like members are provided to initially receive and direct the fruit, the picker head also including foliage guards to deflect the foliage and breaker bar means to assist in the actual severing of the fruit.

3,427,797
TIMEPIECE USING A SOLAR BATTERY AS THE POWER SOURCE

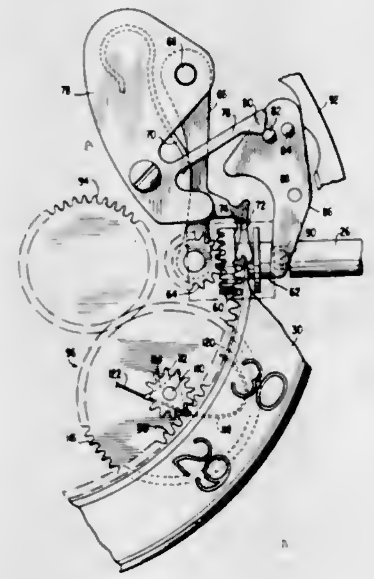
Kenjiro Kimura, 2303 Kurozuchi-cho, Sakai-shi, Osaka-fu, Japan; Akio Negoro, 3 Kumano-cho, Higashi 5-chome, Sakai-shi, Osaka-fu, Japan; Yasuo Kojima, 50 Tezakayama Nishi 1-chome, Abeno-ku, Osaka, Japan; and Tsutomu Saiji, 239 Shindo-cho, Matsubara-shi, Osaka-fu, Japan
Continuation-in-part of application Ser. No. 412,701, Nov. 20, 1964. This application Dec. 12, 1966, Ser. No. 607,121
U.S. Cl. 58—23 **7 Claims**
Int. Cl. G04c *3/00*



This invention concerns an improved timepiece utilizing solar cells as the energy source which enables the construction of a compact, attractive and dependable device wherein an opening extends through each said solar cell and said opening having on its wall a diffusion layer to connect layers on each side of said solar cell.

3,427,798
WATCH CALENDAR SETTING MECHANISM

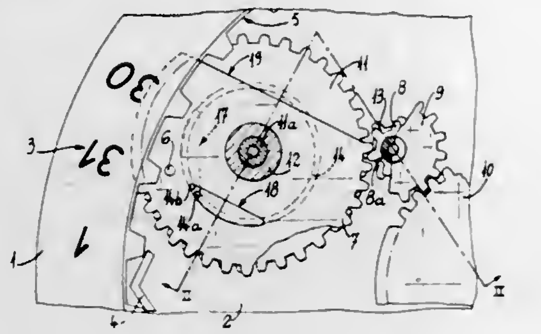
Donald J. Rogers and John A. Van Horn, Lancaster, Pa., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Nov. 10, 1966, Ser. No. 593,374
U.S. Cl. 58—58 **20 Claims**
Int. Cl. G04b *27/02*



The watch calendar setting mechanism has a rotatable stem axially movable into three positions. A pivoted setting wheel is biased into engagement with a clutch slidably mounted on the stem. When the stem is in an innermost position, the setting wheel engages the stem winding mechanism. When the stem is in an intermediate position, the setting wheel engages the calendar ring which may then be rotated in response to rotation of the stem. When the stem is in the outermost position, the setting wheel engages a hand setting gear. The dial train continuously drives the calendar ring through a slip clutch.

3,427,799
SPRING-LOADED INSTANTANEOUS DATE INDICATOR STEPPER AND INDEXER

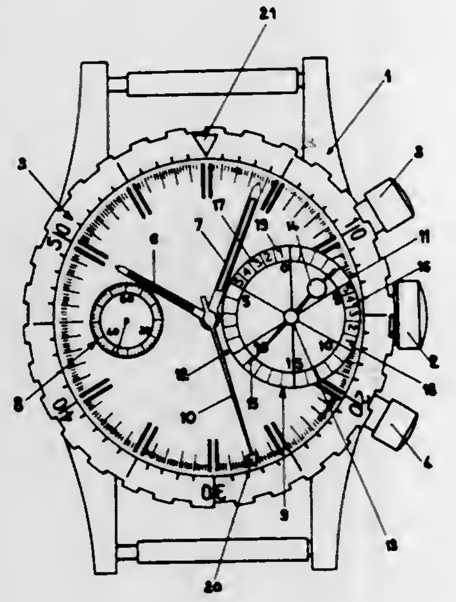
René Besson, Les Loges, Les Hauts-Geneveys, Switzerland, assignor to Ebauches S.A., Neuchatel, Canton of Neuchatel, Switzerland, a firm of Switzerland
Filed Jan. 31, 1967, Ser. No. 612,949
Claims priority, application Switzerland, Feb. 22, 1966, 2,563/66
U.S. Cl. 58—58 **5 Claims**
Int. Cl. G04b *19/24*



A calendar timepiece with means for the instantaneous stepping-forward of the date indicator.

3,427,800
WATCH FOR YACHTING AND UNDERWATER USE

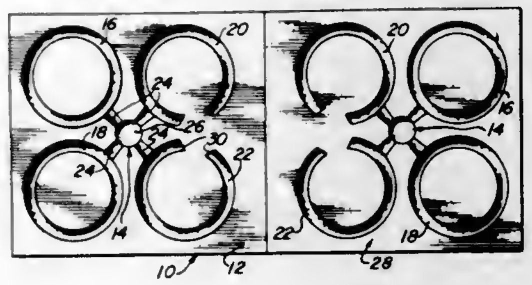
Henry L. Blum, Besancon, France, assignor to Montres Yema S.A., Besancon, Doubs, France, a French company
Filed Mar. 3, 1967, Ser. No. 620,427
Claims priority, application France, June 30, 1966, 67,717
U.S. Cl. 58—126 **3 Claims**
Int. Cl. G04b *19/26*



This disclosure is concerned with a chronometer watch intended particularly for yachting purposes and having a main scale indicating hours and minutes, coaxial hour, minute and sweep second hands cooperating with the scale; a bezel marked with a sixty second scale and rotatable about the main scale, the bezel having an index settable with the second hand; a minute scale graduated in 30 minutes and comprising two zones of 180°, one of the zones having three five minutes scales graduated thereon, two of the scales being coloured differently and the other zone having three differently coloured five minute scales; one of the zones further being marked off to provide count-down indications from the sixth to the tenth minute and the other, from the eleventh to the fifteen minute; a two-ended band cooperating with the 30 minute scale and a chronometric system for controlling the sweep second hand and the two-ended hand.

3,427,801
CAST CHAINS

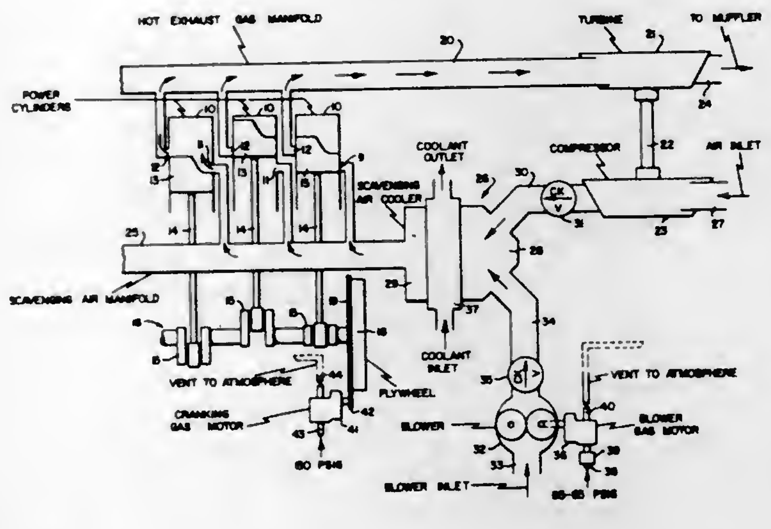
Charles D. McLeish, Waterloo, Ontario, Canada, assignor to Indiana General Corporation, Chicago, Ill.
Filed Aug. 11, 1964, Ser. No. 388,834
U.S. Cl. 59—1 **4 Claims**
Int. Cl. B21l *17/00;* **B22d** *25/02*



A cast metal chain and the method of making same, which chain has links cast of an alloy having high creep strength, high wear resistance and high heat resistance characteristics. Some links are cast open and some closed and when alternately assembled, the open links are welded closed. The chains are especially useful in cement or lime kilns of the like.

3,427,802
GAS STARTING ARRANGEMENT FOR TWO-CYCLE TURBOCHARGED ENGINE

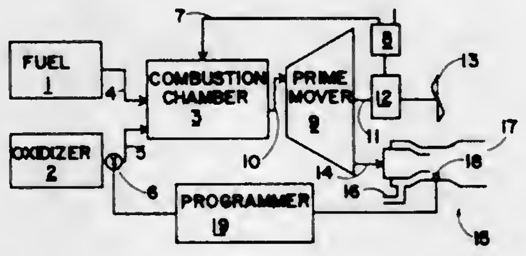
Gordon L. Ruoff, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,258
U.S. Cl. 60—13 **2 Claims**
Int. Cl. F02b *41/10, 33/22;* **F02n** *9/00*



A two-cycle engine includes an exhaust driven turbine compressor unit for supplying scavenging air to the engine cylinders, the scavenging air being directed to a chamber including an air cooler and then to the intake manifold of the engine. To provide scavenging air upon engine starting, an auxiliary positive displacement blower is provided for directing scavenging air to the air cooler chamber, in a path parallel to the flow path from the turbo-compressor. The auxiliary blower is driven by a gas motor supplied from an outside source. The conduits, on the downstream side of the blower and compressor, are provided with check valves to prevent backflow to these units. A second gas motor is coupled to the engine flywheel to crank the engine. A pressure regulator is associated with the blower gas motor to reduce the gas pressure supplied to this motor, when the two gas motors are connected to a common supply.

3,427,803
OXIDIZER TO FUEL RATIO CONTROL RESPONSIVE TO CONDENSUCTOR PRESSURE

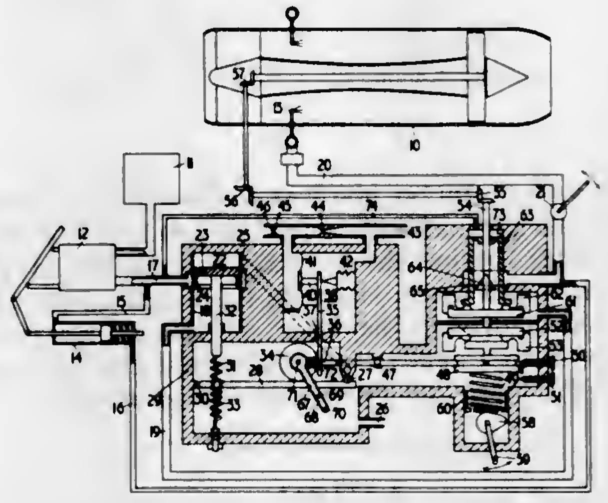
Leonard Greiner, Palo Alto, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,046
U.S. Cl. 60—39.03 **7 Claims**
Int. Cl. F02c *9/14, 3/20*



Means for maintaining stoichiometric oxidizer to fuel ratio in an underwater power plant employing a condensuctor. Such means adjust the flow of at least one of the propellant components in response to changes in back pressure sensed by the prime mover.

3,427,804
FUEL SYSTEMS FOR GAS TURBINE ENGINES

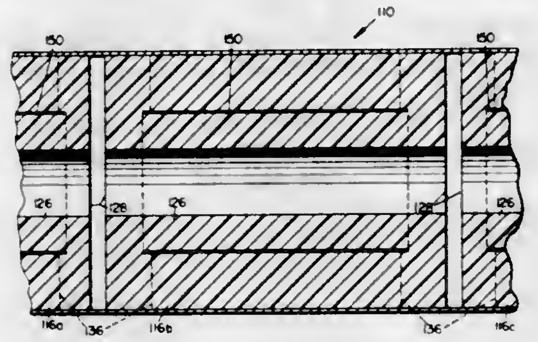
Owen Napier Lawrence, London, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 17, 1967, Ser. No. 624,017
U.S. Cl. 60—39.28 **1 Claim**
Int. Cl. F02g *3/00;* **F02c** *9/08;* **G05g** *11/00*



A gas turbine engine fuel system having a pump supplying fuel through a passage to the engine, a plunger for controlling flow, a lever connected to the plunger and controlled by a mechanical mechanism responsive to at least two parameters related to engine conditions.

3,427,805
COMBUSTION BARRIER FOR ROCKET MOTOR

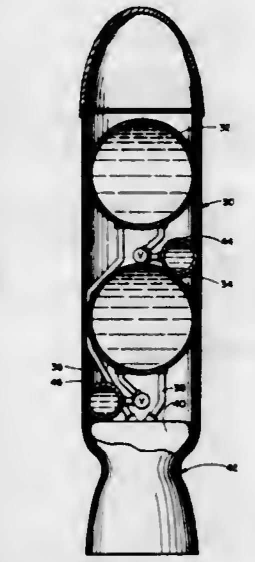
Albert R. Osburn, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,768
U.S. Cl. 60—39.47 **4 Claims**
Int. Cl. F02k *9/04;* **F42b** *1/00, 15/00*



A solid propellant rocket motor having incorporated within the grain thereof means for varying the burning pattern of said grains comprising combustion barriers embedded therein in various positions depending upon the desired burning pattern.

3,427,806
PRESSURIZATION SYSTEM EMPLOYING LIQUID PRESSURANT FOR EFFECTING PROPELLANT FLOW IN A LIQUID PROPELLANT ROCKET

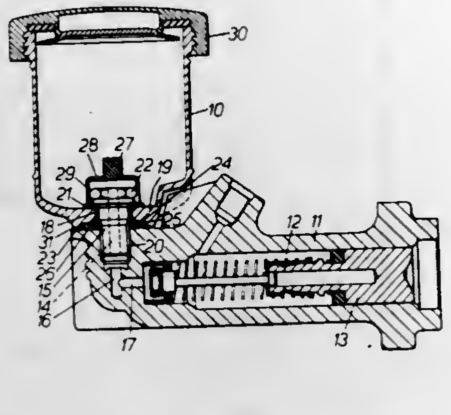
Robert C. Truax, Shingle Springs, and William J. Sprow, Fair Oaks, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of California
Original application Dec. 4, 1962, Ser. No. 242,257, now Patent No. 3,320,742, dated May 23, 1967. Divided and this application July 21, 1966, Ser. No. 599,655
U.S. Cl. 60—39.48 **3 Claims**
Int. Cl. F02c *3/22, 3/24;* **F02k** *9/02*



This disclosure concerns a pressurization system for effecting the flow of liquid propellant materials from propellant containers into the combustion chamber of a liquid propellant rocket. The pressurization system relies upon the production of a vapor pressure in the propellant containers which are filled with liquid oxidizer and liquid fuel respectively, the vapor pressure produced in the respective containers being sufficiently high to force the liquid oxidizer and the liquid fuel from the containers into the combustion chamber of the rocket. The pressurization system includes a pair of receptacles filled with a saturated liquid pressurant and respectively connected to the propellant containers. The vapor pressure in the propellant containers is produced by discharging the saturated liquid pressurant from the receptacles into the propellant containers where the saturated liquid pressurant vaporizes because the temperature of the liquid oxidizer and the liquid fuel is above the boiling point of the saturated liquid pressurant.

3,427,807
CONNECTING MEMBER, E.G., FOR PIPES OR THE LIKE

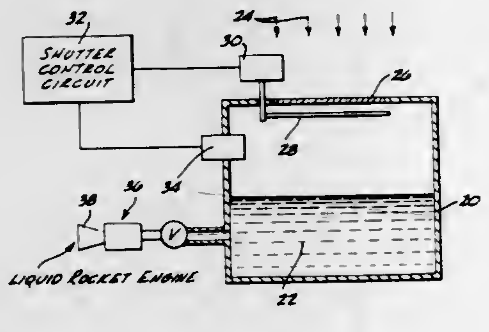
Gordon Haswell Moyes, Sutton Coldfield, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Nov. 6, 1967, Ser. No. 680,844
Claims priority, application Great Britain, Nov. 8, 1966, 49,864/66
U.S. Cl. 60—54.6 **9 Claims**
Int. Cl. F15b *7/08, 15/20*



In a combined master cylinder and reservoir assembly the reservoir in the form of a nylon or like container is connected to the master cylinder by a bolt screwed into a tapped hole in the body or casing of the master cylinder, and means are included to ensure compression at the radially outer part of a resilient washer or gasket interposed between adjacent surfaces on the container and the body or casing.

3,427,808
LIQUID CONTAINER PRESSURIZATION BY NON-ELECTROLYTIC DISSOCIATION OF CONTAINER CONTENTS

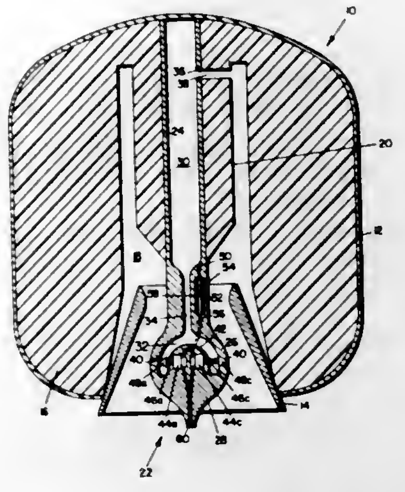
Walter W. Butcher, Santa Monica, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,744
U.S. Cl. 60—204 **14 Claims**
Int. Cl. F02k *9/02;* **B64g** *9/00*



Liquid container contents are pressurized by dissociating container contents by other than electrolytic means. When liquid container contents are selected from a suitable group, dissociation of the container contents can be accomplished by heating, solar radiation or energetic radiation and results in gaseous products. This dissociation from the liquid to the gaseous state increases the volume of material in the container, and pressurizes the container to expel the liquid container contents.

3,427,809
ROCKET THRUST VECTORING APPARATUS

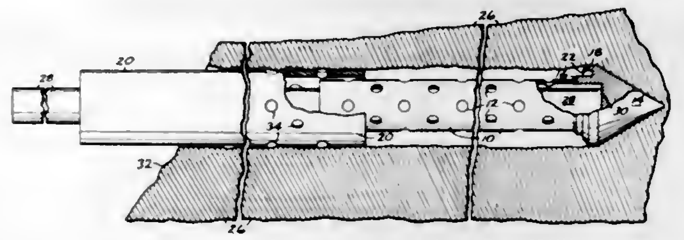
John L. Lavoie, Ogden, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,218
U.S. Cl. 60—231 **3 Claims**
Int. Cl. F02k *1/20;* **B63h** *25/46;* **B64c** *15/10*



A rocket motor thrust vector control system in which a secondary fluid is injected into the rocket exhaust gases from a source contained within a central housing contained within the motor. The combustion gases pressurize the secondary fluid and a valve system controls its flow.

3,427,810
METHOD AND APPARATUS FOR DRAINING WATER

John F. Petersen, 1950 SW. Camelot Court, Portland, Oreg. 97225
Filed Dec. 1, 1966, Ser. No. 598,437
U.S. Cl. 61—10 **6 Claims**
Int. Cl. E02b *11/00*

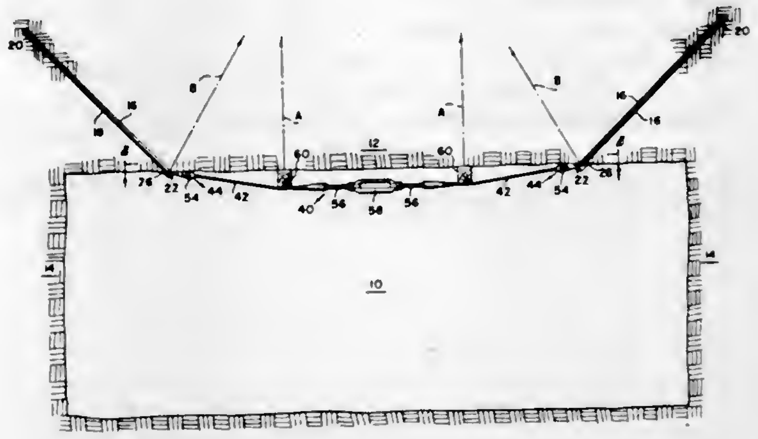


The present invention involves the initial arrangement of a perforate pipe, closed at its front end, freely within an outer pipe; driving the telescoped assembly of pipes into the earth to a depth less than the length of the outer pipe; and then driving the inner, perforate pipe further into the earth to a depth at which its rear end still is encircled by the front end portion of the outer pipe.

3,427,811
MINE ROOF SUPPORT SYSTEM

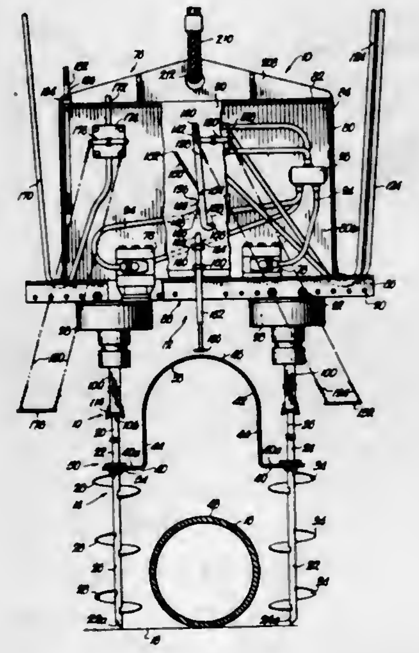
Claude C. White, 3912 Cahaba Road, Birmingham, Ala. 35243
Filed Mar. 22, 1967, Ser. No. 625,070
U.S. Cl. 61—45 **13 Claims**
Int. Cl. E21d *11/00;* **E04c** *5/08, 3/26*

A roof support for underground mines and openings embodying angular roof bolts installed in the mine roof and extending above the pillars of the mine in opposed relationship, prestressed reinforcing members extending between the roof bolts subjacent the roof, utilizing the inherent compressive strength of the roof masonry to form a reinforced prestressed masonry beam or a combination reinforcing member masonry roof truss in the existing roof which spans the opening, a plurality of the support members being positioned in spaced parallel relationship transversely of the mine passage and diagonally at the intersection of mine openings, a second roof support member being installed inwardly of the first roof support in openings where a large area of roof is to be supported.



3,427,812
METHOD AND APPARATUS FOR ANCHORING OFFSHORE PIPELINES

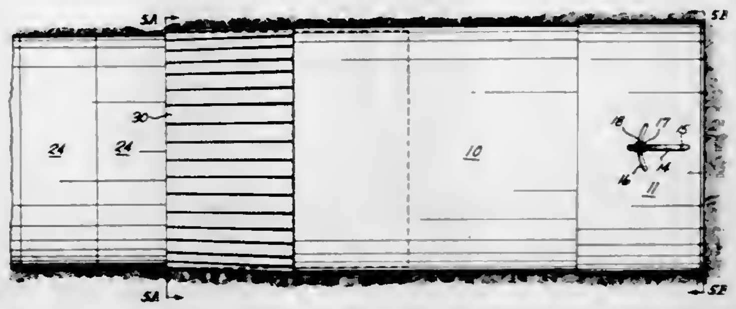
William L. Hollander, Centralia, Mo., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed July 13, 1966, Ser. No. 564,872
U.S. Cl. 61—72.3 **37 Claims**
Int. Cl. F16l *1/00*



An underwater pipe anchoring device having pipe-spanning structure engages a pipe and holds the pipe in position by a pair of spaced depending screw anchors provided with oppositely inclined helixes for engagement with the earth in the vicinity of the pipe. Power means rotates the screw anchors simultaneously in opposite directions of rotation. A method secures the pipe using a device, senses the proximity of holding structure of the device to the pipe as the anchors are oppositely rotated and discontinues the rotation when the structure firmly anchors the pipe.

3,427,813
SHIELD TUNNELING APPARATUS

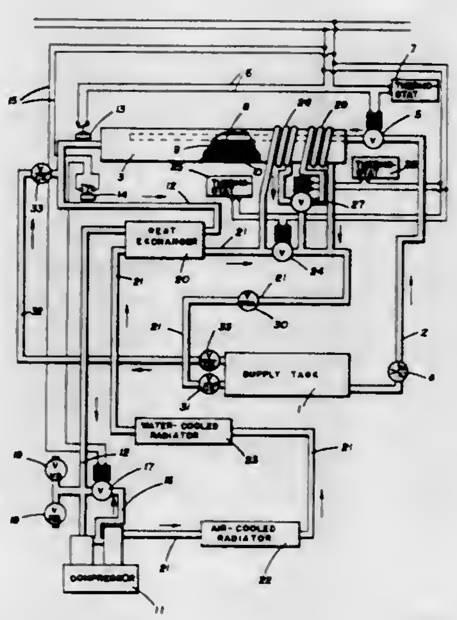
Edward W. Hayes, 412 3rd Ave., S., Edmonds, Wash. 98020
Filed Feb. 8, 1967, Ser. No. 614,706
U.S. Cl. 61—85 **8 Claims**
Int. Cl. E01g *5/14*



A tunneling system is disclosed which includes a hydraulic tunneling shield having an adjustable front cutting edge which permits control over the direction of shield movement. The trailing end of the assembly is provided with overlapping and spaced apart sections which overlie the tunnel liners as the same are assembled inside of the rear section of the shield. Anti-rotation devices secured to the exterior of the shield prevent shield rotation.

3,427,814
HEAT REMOVAL PROCESS

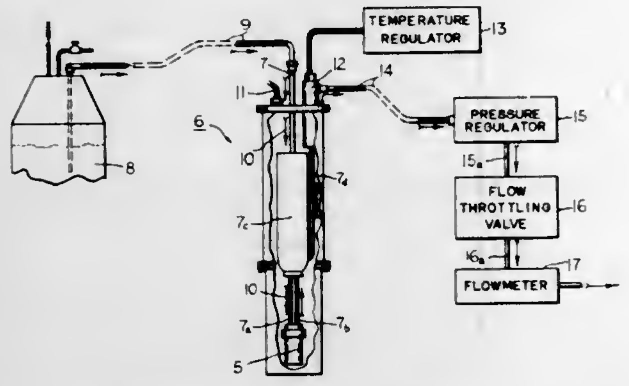
Clyde M. Lawley, 3320 John Lee Lane, Modesto, Calif. 95350
Filed Apr. 6, 1967, Ser. No. 628,947
U.S. Cl. 62—48 **5 Claims**
Int. Cl. F25b *17/08;* **F25d** *17/00*



A heat removal process, for refrigeration or freezing operations, which is best defined as an enclosed, continuous acting, carbon dioxide cycling process; such process being carried out by an electro-mechanical system which will cycle—on demand—the carbon dioxide from a liquid state to Dry Ice, to its gaseous state, and then back to such liquid state.

3,427,815
CRYOGENIC TEMPERAURE CONTROL

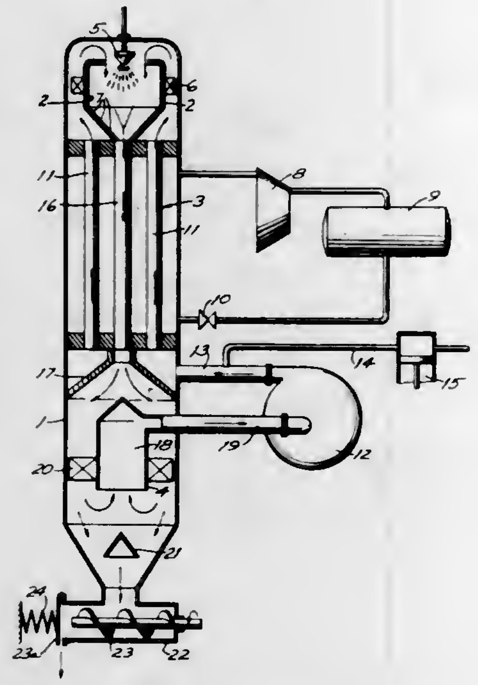
Joel R. Pitlor, Belmont, Mass., assignor to Ventron Instruments Corp., Burlington, Mass., a corporation of Massachusetts
Filed Jan. 24, 1967, Ser. No. 611,450
U.S. Cl. 62—52 **10 Claims**
Int. Cl. F17c *7/02;* **F25b** *19/00*



In preserving a sample at a predetermined low temperature via the open-loop flow of cryogenic fluid, the mass rate of cryogenic fluid flow is maintained essentially constant through downstream heater control of the fluid temperature at a conveniently high level, simultaneously with control of fluid pressure by a regulator at a further-downstream position, in advance of an orifice-type flow controller.

3,427,816
PROCESS AND APPARATUS FOR MAKING GRANULATED FROZEN PARTICLES

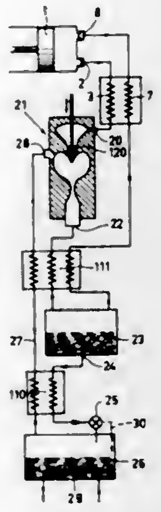
Jost Hänny, Winterthur, and Hans Günther Hirschberg, Effretikon, Zurich, Switzerland, assignors to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Jan. 10, 1967, Ser. No. 608,386
Claims priority, application Switzerland, Jan. 11, 1966, 353/66
U.S. Cl. 62—74 **19 Claims**
Int. Cl. A23l *3/36;* **F25c** *1/00*



A process for making granulated frozen particles by spraying or atomizing a liquid capable of being formed into drops into a cooling gas stream. The frozen particles are maintained out of contact with each other while in the gas stream to avoid adhesion of the particles during the freezing process. A nozzle sprays the liquid into a flowing cooling gas stream and a separator separates the frozen particles from the gas stream for recirculation of the gas and collection of the frozen particles.

3,427,817
DEVICE FOR PRODUCING COLD AND/OR LIQUEFYING GASES

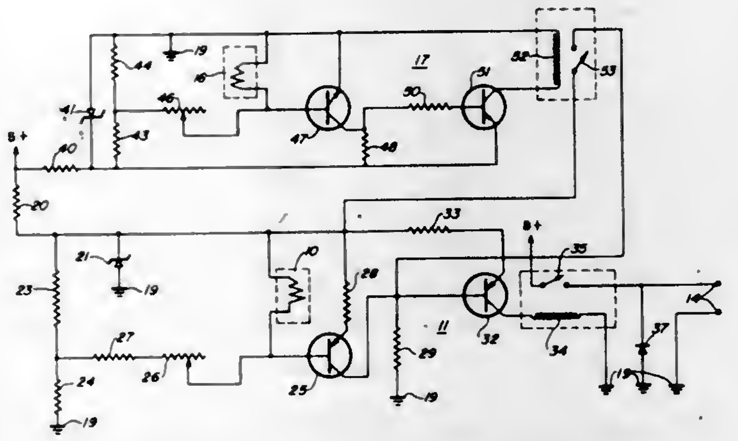
Johan Adriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,044
Claims priority, application Netherlands, Dec. 19, 1964, 6414856
U.S. Cl. 62—113 **17 Claims**
Int. Cl. F25b *1/10, 41/00, 5/00*



A gas refrigerator having a high pressure medium supply and incorporating at least two devices for cooling and pressure reduction of said medium. One of the devices is an ejector which additionally pumps up part of the medium at the lowest pressure and temperature to said ejector to mix with the cooled and pressure-reduced medium.

3,427,818
ELECTRONIC CONTROL

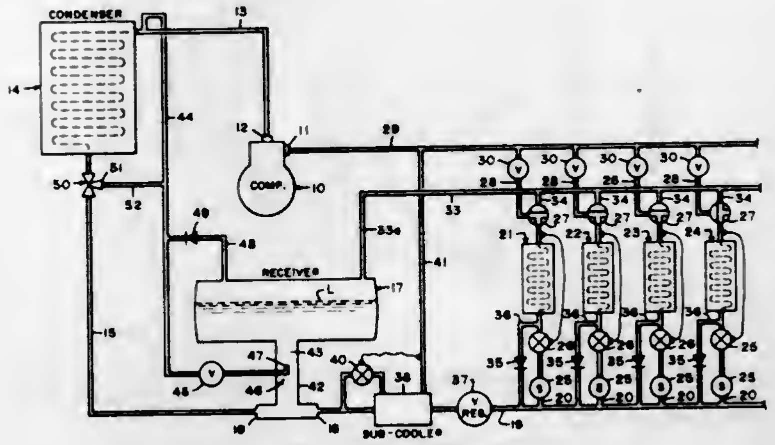
Ernest A. Erickson, Sturtevant, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Continuation-in-part of application Ser. No. 530,082, Feb. 26, 1966. This application Dec. 19, 1966, Ser. No. 611,515
U.S. Cl. 62—140 **20 Claims**
Int. Cl. F25d *21/02, 29/00;* **B60h** *3/04*



A transistorized control circuit for a vehicle air conditioner including an icing sensor which prevents energization of the cooling device when a freeze-out condition occurs. The cooling device and a blower fan are controlled both by a temperature sensor and by a photoelectric cell responsive to reflected sunlight.

3,427,819
HIGH SIDE DEFROST AND HEAD PRESSURE CONTROLS FOR REFRIGERATION SYSTEMS

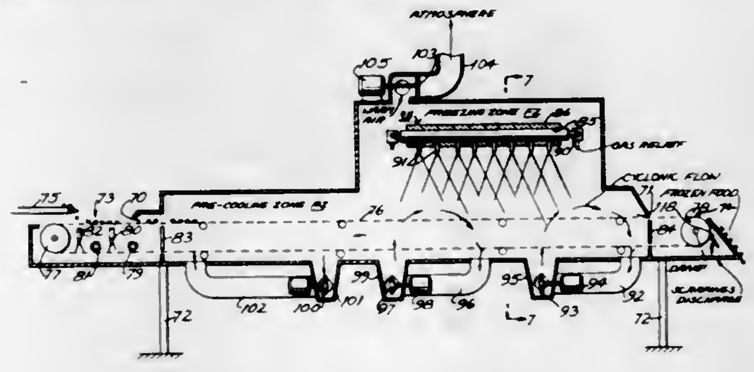
Leland L. Seghetti, Bridgeton, Mo., assignor to Pet Incorporated, St. Louis, Mo., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,797
U.S. Cl. 62—196 **12 Claims**
Int. Cl. F25b *41/00, 39/04*



A hot gas percolation device in a liquid refrigerant supply providing a constant source of saturated gas for defrosting evaporators in a refrigeration system, and pressure valves controlling condenser flooding, hot gas percolation, receiver equalizing and liquid line refrigerant flow to balance the high side of the refrigeration system.

3,427,820
CRYOGENIC FLASH FREEZING MACHINES

James Hart, Tucson, Ariz., assignor to Reliquifier Corporation of America, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 437,414, Mar. 5, 1965. This application Nov. 14, 1966, Ser. No. 594,144
U.S. Cl. 62—307 **6 Claims**
Int. Cl. F25d *3/10, 17/02, 25/04*

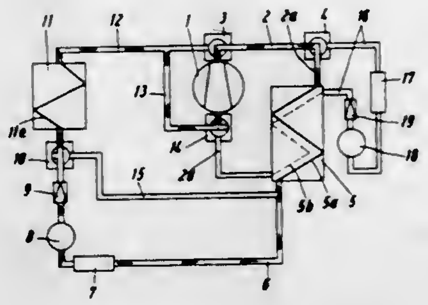


A flash freezing machine constituted by an open-ended tunnel having a foraminous conveyor therein to transpose food from the open inlet to the open outlet, the food being sprayed by a cryogenic liquid in a freezing zone within the tunnel, cold gas evolving from the sprayed food being directed in cyclonic flow paths which pass through the conveyor in the freezing zone.

3,427,821
AIR CONDITIONER FOR COOLING AND HEATING OF AUTOMOBILES

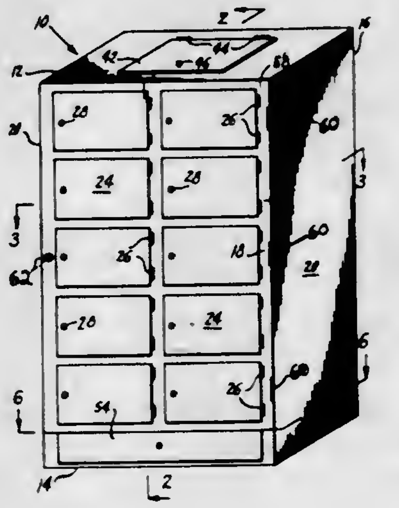
Jürgen Bennewitz, Heidelberg, Germany, assignor to Mecano-Bundy G.m.b.H., Heidelberg-Pfaffengrund, Germany
Filed Nov. 7, 1967, Ser. No. 681,124
Claims priority, application Germany, Dec. 21, 1966, M 72,109
U.S. Cl. 62—324 **6 Claims**
Int. Cl. F25b *13/00, 41/00*

An automotive air conditioner for heating and cooling of the passenger space which faultlessly heats at low outside temperatures. The device consists of a compressor, a heat exchanger in the passenger compartment, another heat exchanger outside the passenger compartment, closed circuit conduit and valve means. The coolant flow is reversible for cooling or heating. The external heat exchanger has two separate coolant passages. During the cooling phase of the device, at least one of these passages is used for condensation of the coolant. During the heating period, the coolant traverses both passages, one after the other.



3,427,822
LOBSTER COOLING CONTAINER

Frank E. Conly, 35—61 92nd St., Jackson Heights, N.Y. 11372
Filed Jan. 24, 1967, Ser. No. 611,272
U.S. Cl. 62—461 **1 Claim**
Int. Cl. F25d *3/08*

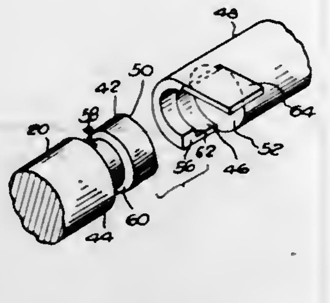


A cabinet-like container provided with a plurality of vertically spaced shelves, each having a compartmented tray removably supported thereon for receiving lobsters or the like. The container has an ice receiving compartment at the center top and a drip pan with a sponge therein at the bottom for chilling the interior thereof and maintaining the lobsters live during transport, storage, display and the like, by a combination of cool and moist air circulating throughout said container.

3,427,823
LOCKING RING FOR CHARM BRACELETS AND THE LIKE

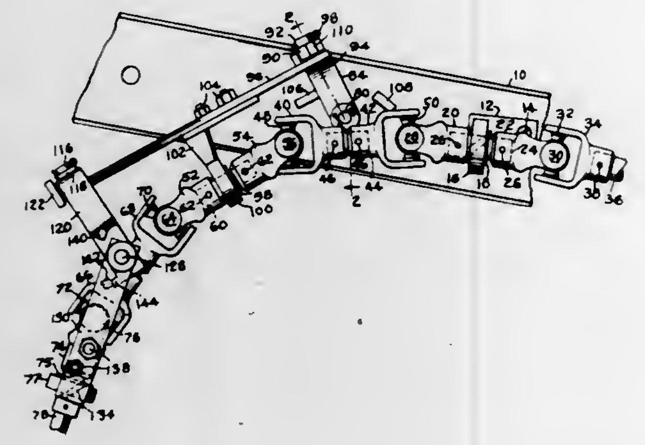
Robert G. Musillo, 5349 Fieldcrest Drive, Pittsburgh, Pa. 15236
Continuation-in-part of application Ser. No. 440,252, Mar. 16, 1965. This application Aug. 30, 1965, Ser. No. 483,734
U.S. Cl. 63—3 **7 Claims**
Int. Cl. A44c *5/00;* **F16g** *13/06, 13/08*

This invention is a locking ring used for attaching charms to a bracelet to make up an article of jewelry. The locking ring has complementary ends which are brought together and are mechanically interlocked with a portion of the lock being covered by a bendable section which surrounds and protects the mechanical interlock against accidental opening.



3,427,824
UNIVERSAL JOINT DRIVE CONNECTION FOR LARGE ANGLES OF SHAFT DEVIATION

Martin Mayrath, 10707 Lennox Lane, Dallas, Tex. 75229
Filed Feb. 13, 1967, Ser. No. 615,668
U.S. Cl. 64—2 **9 Claims**
Int. Cl. F16c *1/04*

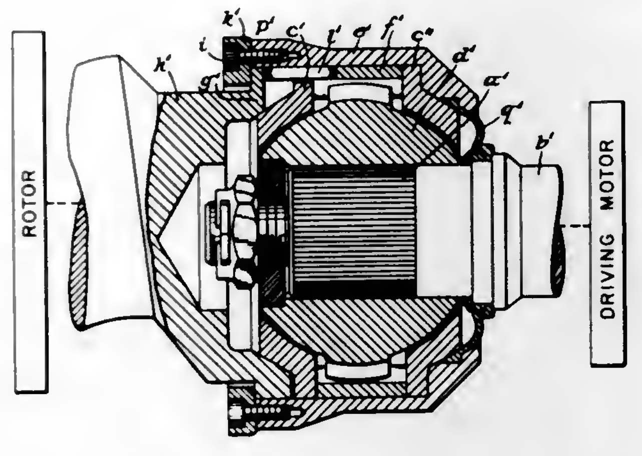


A train of pairs of directly connected Cardan joints having the axis-angulation movements relative to each other controlled by means of pivotal linkage, to prevent excessive angulation of the individual joints and thereby to efficiently transmit power from the inlet end of the train to the outlet end, for all permitted values of total angulation or offset.

3,427,825
MOTOR COUPLING

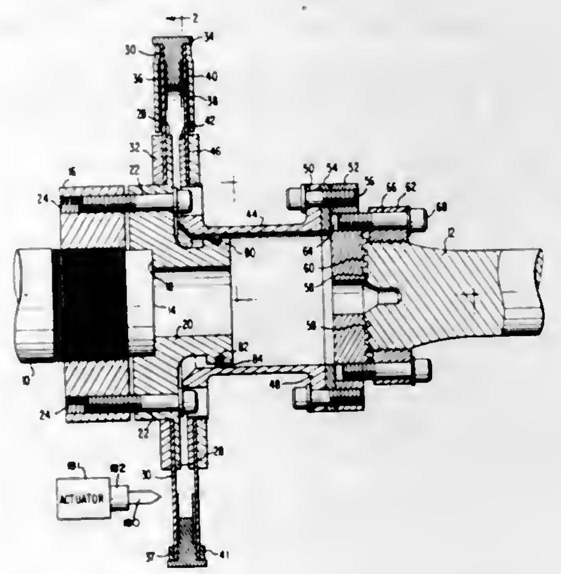
Willy John and Herbert Bauerfeind, Selb, Germany, assignors to Gebruder Netzsch, a German company
Filed Nov. 30, 1966, Ser. No. 597,998
Claims priority, application Germany, Mar. 31, 1966, N 28,314
U.S. Cl. 64—7 **10 Claims**
Int. Cl. F16d *3/76*

A gear coupling between an operating motor and driving motor wherein the drive shaft is connected to the rotor of a worm gear pump with the transmission of force taking place by a driving part having external teeth engaged with the internal teeth of a ring is characterized by having the driven end of the rotor shaft engaged with the coupling housing in a fluid tight manner to seal the driven end for direct fluid connection with the ring having internal teeth and with this interchangeable ring being of substantially the same outer diameter as the driven end and further with connecting means joining the ring to the driven end.



3,427,826
QUICK DISCONNECT FLEXIBLE COUPLINGS AND HUB MOUNTINGS

James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Feb. 8, 1967, Ser. No. 614,707
U.S. Cl. 64—13 **22 Claims**
Int. Cl. F16d *3/78, 3/56, 1/10*

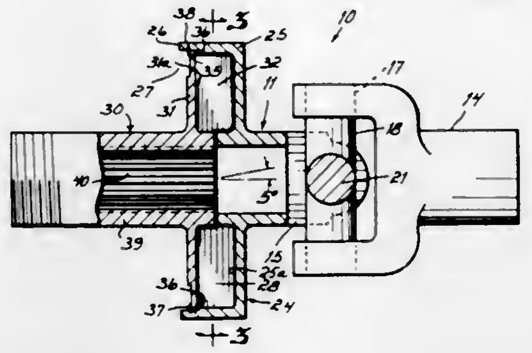


A flexible coupling for connecting two substantially aligned rotating shafts wherein at least one of the said rotating shafts is in pure frictional engagement with the coupling. The coupling members for transmitting torque between the said shafts in each of the preferred embodiments includes at least one flexible disc member, which disc member projects radially outwardly from the shafts such that a signal operated cutting tool may be moved into contact with the disc to thereby sever the coupling and thus, quickly disconnect the shafts from each other.

3,427,827
SHOCK JOINT

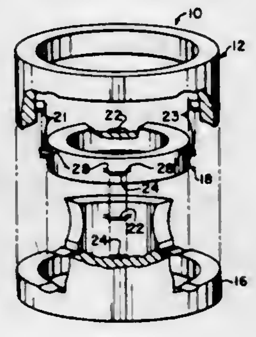
Franklin B. Airheart, Granada Hills, Calif., assignor to Airheart Products Inc., Van Nuys, Calif., a corporation of California
Filed Oct. 21, 1966, Ser. No. 588,375
U.S. Cl. 64—14 **2 Claims**
Int. Cl. F16d *3/68, 3/14*

A shock joint having a first plate coupled to one yoke of a universal joint, a second plate mounted with respect to the first plate so as to permit angulation between the axes of the plates, overlapping blades transversely projecting from each said plate, and an elastomer located between the two plates and forming a driving connection between said plates through said overlapping blades.



3,427,828
GYRO WITH FLEXURE HINGE

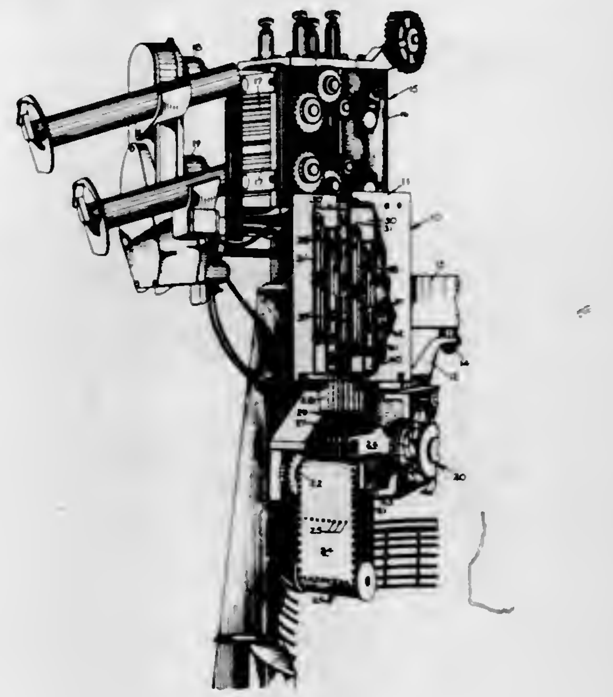
John Callender Stiles, Mountain Lakes, N.J., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,230
U.S. Cl. 64—15 **7 Claims**
Int. Cl. F16d *3/56;* **G01c** *19/04*



This invention relates to a flexure joint or suspension torsion hinge providing a two-axis support to the rotor of a free rotor gyroscope having a high angular compliance and a low radial compliance. In its overall configuration, the flexure member or torsion hinge comprises a cylindrical outer portion and a concentric annular inner portion connected to the outer portion by four equiangularly spaced, thin, radial webs. Equi-angularly spaced between the webs, the cylindrical outer portion contains four radial apertures. The diameter of these apertures is materially larger than the axial dimensional thickness of the inner annular portion. A pair of chordal slots are formed in a plane axially displaced from one face of the annular inner portion, cutting through the cylindrical portion at a diametrically opposite location, and connecting between pairs of adjacent apertures. Similarly, different adjacent pairs of apertures are connected by respective diametrically opposed cuts displaced axially from the other face of the annular inner portion. The chordal cuts or slots effectively divide the unit into three segments interconnected by the thin radial web portions which define torsional axes, permitting relative angular displacement of the three segments about mutually perpendicular axes.

3,427,829
CONTROL MEANS FOR PILE FABRIC KNITTING MACHINES

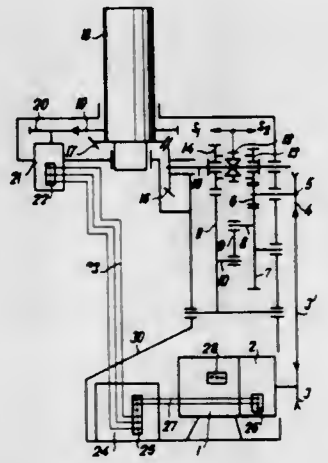
Frederick C. Wiesinger, Feasterville, Pa., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar as trustees of The Carolina Patent Development Trust
Filed July 6, 1966, Ser. No. 563,139
U.S. Cl. 66—9 **6 Claims**
Int. Cl. D04b *9/14*



A switching device involving magnetically activated reed switches being responsive to the dictates of an endless patterning mechanism for controlling electromagnetic clutches to alternately drive pairs of drafting-carding units which are being fed high-pile sliver from two sources.

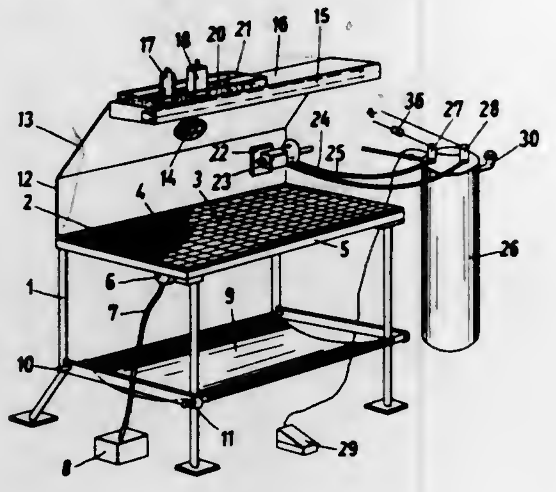
3,427,830
DRIVE ARRANGEMENT FOR OSCILLATING THE NEEDLE CYLINDER OF A CIRCULAR KNITTING MACHINE

Pavel Uhlíř, Trebic, Czechoslovakia, assignor to Zavody textilniho strojirenstvi Generalni reditelstvi, Brno, Czechoslovakia
Filed May 3, 1967, Ser. No. 635,903
U.S. Cl. 66—56 **5 Claims**
Int. Cl. D04b *9/00*



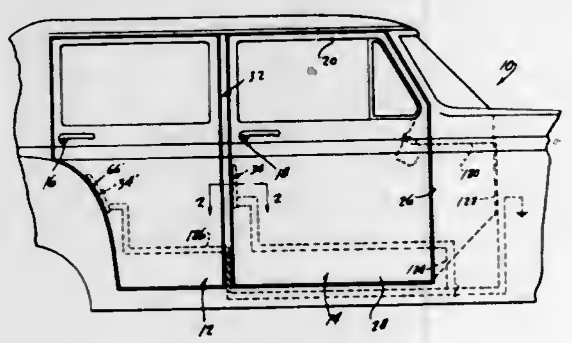
In a circular knitting machine whose needle cylinder is oscillated about its axis by an electric motor connected to the cylinder by a crank transmission, an induction coupling is interposed between the motor and the crank transmission, and the electric power which normally keeps the coupling engaged is reduced by a regulator when the output voltage of an electric tachometer coupled to the cylinder exceeds a certain value.

3,427,831
PRE-SPOTTING UNIT FOR DRY CLEANING
Manfred Frauendorf, Lortzingstr. 1,
Nuremberg, Germany
Filed Nov. 15, 1966, Ser. No. 594,557
Claims priority, application Germany, Jan. 29, 1966,
N 27,976
U.S. Cl. 68—240 **4 Claims**
Int. Cl. D06f *43/08*



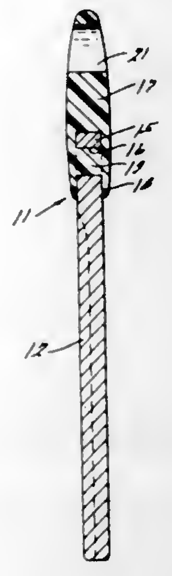
Pre-spotting unit for cleaning garments comprising a working support, a spraying device for steam and cleaning actuator, an associated catch basin and conduits for steam and actuator, magnetic control valves for supplying steam and actuator at a rate of 1:5 or for supplying actuator alone, and where an insulated pressurized container for actuator has a filling stub and a riser tube with magnetic valves operable by a foot pedal.

3,427,832
ELECTROMAGNETIC SAFETY LOCK FOR AUTOMOTIVE VEHICLES AND THE LIKE
Samuel R. Planer, P.O. Box 1493,
Gastonia, N.C. 28052
Filed Oct. 22, 1965, Ser. No. 502,211
U.S. Cl. 70—264 **9 Claims**
Int. Cl. E05b *63/14, 65/20;* **E05c** *17/56*



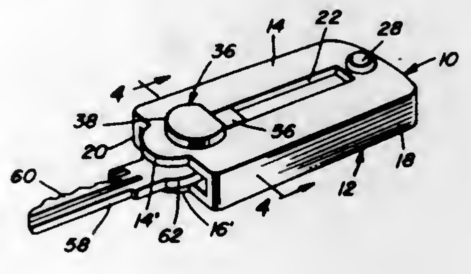
A safety lock for vehicle doors wherein each door carries a latch-bearing solenoid and each door jamb a member mating with such latch; a switch for disabling each solenoid; a master switch for disabling all of said solenoids, and a keylock type switch in parallel with all of said solenoids for simultaneously energizing all of said solenoids.

3,427,833
LOCK KEY
James L. Lempke, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 5, 1967, Ser. No. 607,553
U.S. Cl. 70—408 **4 Claims**
Int. Cl. E05b *19/26, 19/02, 19/04*



Lock key having the key head formed of a resilient plastic material so as to be yieldable under impact loading conditions.

3,427,834
KEY HOLDER AND EJECTOR
Dominick J. Tutino, 26 Kaywin Ave.,
Hawthorne, N.J. 07500
Filed Aug. 9, 1967, Ser. No. 659,396
U.S. Cl. 70—414 **8 Claims**
Int. Cl. E05b *19/00;* **A44b** *15/00;* **A45c** *11/32*

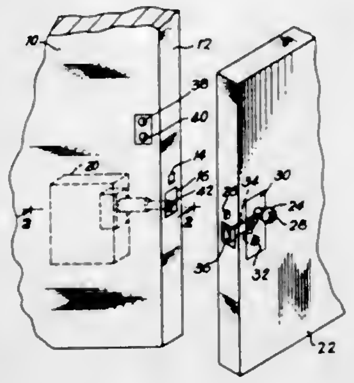


A key holder and housing into which an associated key may be retracted and from which the key may be extended, the housing including means operative to yieldingly urge the associated key toward a retracted position, means shiftable to an active position upon extension of the key to releasably retain the key in an extended position and means responsive to the application of a torsional force to the housing so as to rotate the latter about the longitudinal axis of the associated key independently of the key in one direction for shifting the key retaining means to the inactive position.

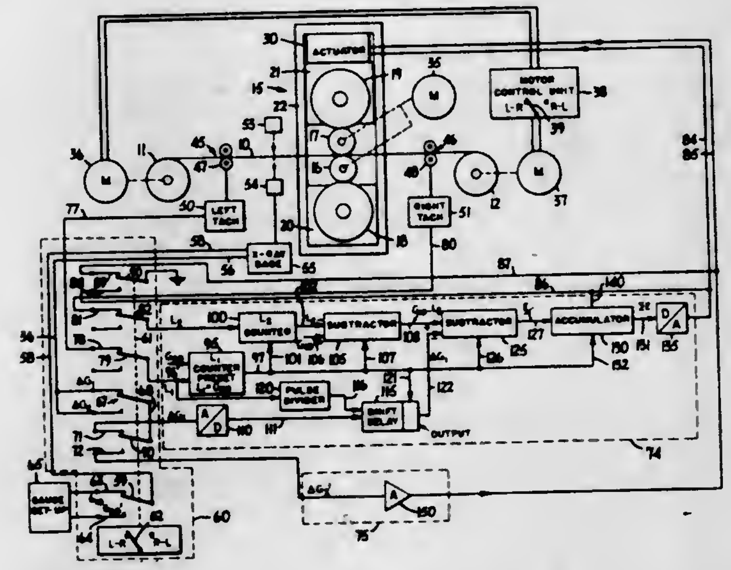
3,427,835
LOCKING ARRANGEMENT WITH INDICATOR
Saul Jeffee, Scarsdale, N.Y.
(619 W. 54th St., New York, N.Y. 10019)
Filed Jan. 3, 1967, Ser. No. 606,763
U.S. Cl. 70—432 **4 Claims**
Int. Cl. E05b *41/00, 63/12, 65/48*

A locking arrangement between a door and wall which includes two latchbolt and keeper means, one of which

has lamp indicating means associated therewith. The lamp is actuated by engagement of one latchbolt against a compressible member located in the associated keeper recess to yieldably transmit force to a switch connected to the lamp.



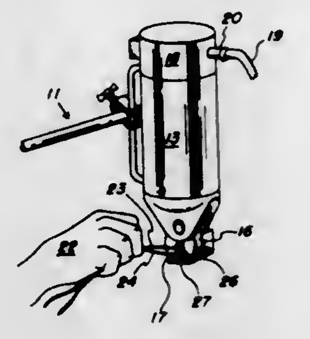
3,427,836
THICKNESS REDUCTION CONTROL SYSTEM
Martin J. Fetner, New London, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 16, 1967, Ser. No. 623,694
U.S. Cl. 72—9 **15 Claims**
Int. Cl. B21b *37/12, 37/02;* **G05d** *13/62*



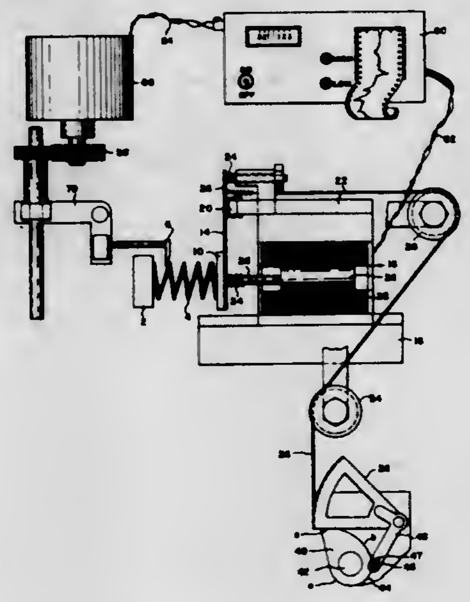
Reversible rolling mills in which the thickness reduction of rolled strip is controlled in one direction of pass by a mode of control based on the constant volume principle and in the other direction of pass by a follow-on mode of control.

3,427,837
SOLENOID-ACTUATED AIR CYLINDER
Harry A. Faulconer, 5760 Kelton St.,
La Mesa, Calif. 92041
Filed May 6, 1966, Ser. No. 548,247
U.S. Cl. 72—15 **5 Claims**
Int. Cl. B21b *37/00;* **B21d** *7/06;* **B21j** *15/24*

A solenoid-actuated air cylinder coupled to a pair of crimping jaws for crimping work placed therein having a solenoid-actuated valve coupling air under pressure to the air cylinder mechanism for actuating the air cylinder's piston; the solenoid being actuated by applying electrical power to it; a switch in series with the solenoid mechanically coupled to the piston for opening at the top of the piston's stroke, deactivating the solenoid and thereby closing the pressurized gas supply and opening and allowing a discharge through an exhaust port; a second switch coupled to the exhaust port in series with the first switch for holding the solenoid in an inactuated position during the exhaust cycle of the cylinder; another switch in series with the first and second switches for insuring proper positioning of the work prior to the actuation of the solenoid in operation of the air cylinder.



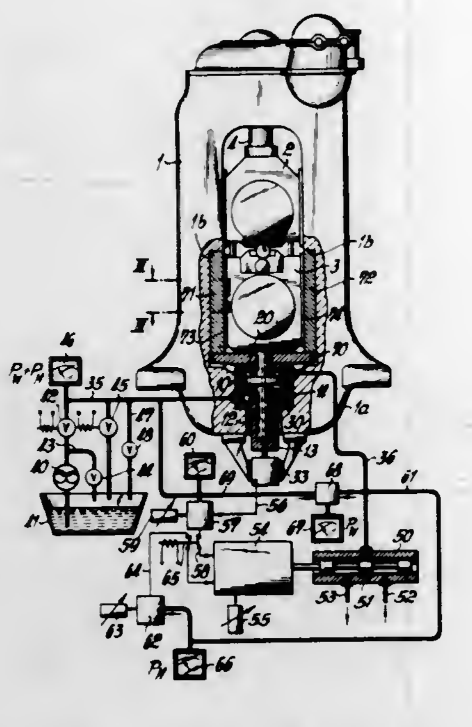
3,427,838
AUTOMATIC LENGTH ADJUSTMENT OF HELICAL SPRINGS DURING COILING
Stanley M. Rimmer, Bristol, Conn., assignor to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,571
U.S. Cl. 72—15 **5 Claims**
Int. Cl. B21b *37/04, 39/02;* **B21f** *3/10*



During coiling the free end of a helical spring which is being coiled engages a target plate which is being moved away from the spring coiling point at a rate and for a distance exactly proportional to the designed pitch and length of the spring. Any variation between the pitch or length actually being coiled and the designed pitch or length causes movement of the pitch tool of the coiling mechanism in a direction to correct the pitch or length of the spring being coiled, thereby causing the spring to be coiled in exact accordance with its design.

3,427,839
HYDRAULIC ADJUSTING MEANS FOR ROLLING MILLS
Karl Josef Neumann, St.-Ingbert, Saar, Germany, assignor to Verwaltungsgesellschaft Moeller und Neumann Offene Handelsgesellschaft
Continuation of application Ser. No. 352,722, Mar. 16, 1964. This application Nov. 8, 1966, Ser. No. 592,878
U.S. Cl. 72—20 **15 Claims**
Int. Cl. B21b *31/32, 37/08*

The invention relates to metal working and more particularly to a rolling mill frame with chocks for the rolls which are mounted adjustably in the windows of solid, unitary cast or assembled stand elements which are placed under tension by tension bolts. The chocks of a roll bear against the cross-yokes of the stands over a first pressure piston which is subjected to a variable hydraulic pressure in a first pressing chamber. By varying the pressure in the adjusting circuit established for these first pressure chambers the interval between the rolls and the rolling mill frame is altered.

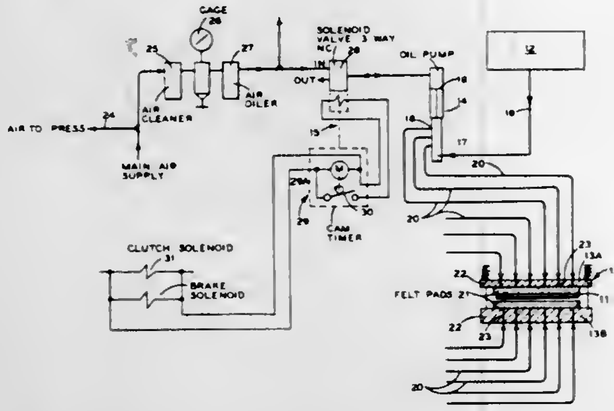


3,427,840
AUTOMATIC STOCK LUBRICATING SYSTEM

Walter Richter, Syosset, N.Y., assignor to Hudson Machine & Tool Corporation, Farmingdale, N.Y.

Filed Dec. 16, 1965, Ser. No. 514,346

U.S. Cl. 72—44 **12 Claims**
Int. Cl. B21b *45/02;* **B05c** *11/00, 5/00*



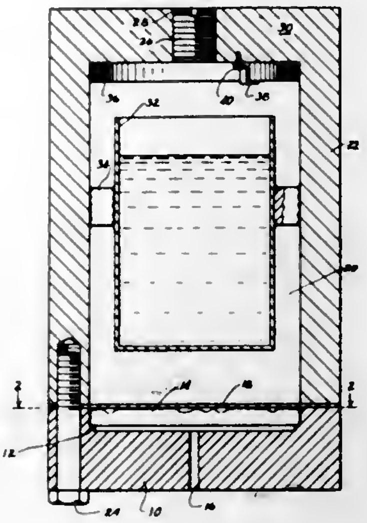
This disclosure is directed to a metal forming machine in combination with a lubricating system for automatically lubricating stock material as it is fed toward the forming station of the machine. The lubricating system includes a supply tank for containing the source of lubricating fluid. A spreader means adapted to engage the stock material is disposed in the path of stock travel for uniformly distributing the lubricating fluid to the stock material as it advances toward the forming station. A pump means is interposed in the line between the supply means and the spreader for pumping controlled amounts of lubricating fluid from the supply means to the spreader. Operatively connected to the pump is a means which is rendered responsive to the cycle of the machine for controlling the frequency of operation of the pump so that only predetermined optimum amounts of lubricating fluid are directed from the supply means to the spreader during machine operation.

3,427,841
EXPLOSIVE METAL FORMING, SINTERING AND PLATING

Max Goldberger, Wapping, and Hellfried Neuhold, Wethersfield, Conn., assignors to Pioneer Research, Inc., Manchester, Conn., a corporation of Delaware

Filed Apr. 25, 1966, Ser. No. 544,990

U.S. Cl. 72—56 **9 Claims**
Int. Cl. B21d *26/08, 28/18, 22/10*



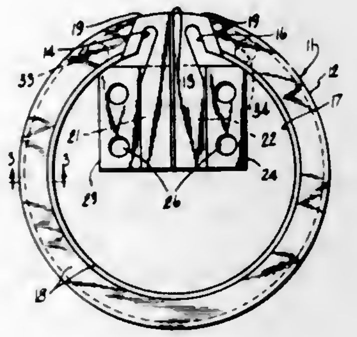
An explosive forming press and method are provided for producing formed metal parts comprising a sealable enclosure having contained therein a monogolee fuel comprising an aqueous solution of a catalytically activatible material, a catalyst positioned within said chamber and contactably separated from the fuel, a die positioned within the chamber, and means for supporting a metal part adjacent the die, the fuel being located relative to the catalyst so that, during the forming operation, the fuel is caused to contact the catalyst whereby to generate a high forming pressure and form the metal part against the die.

3,427,842
MAGNETIC FORMING APPARATUS

Hansjorg Jansen, Santiago, Chile, assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,378

U.S. Cl. 72—56 **10 Claims**
Int. Cl. B21d *26/02, 26/14;* **B21j** *5/04*



A forming element is described for use in magnetic forming apparatus. A conductor, which produces a pulsed magnetic field when a current pulse is applied thereto, includes a recess therein. The recess is of sufficient depth to concentrate the current toward one surface of the conductor and thus prevent a degradation of field strength in the region of the juncture between the one surface and a contiguous surface utilized for conducting current to or from the one surface.

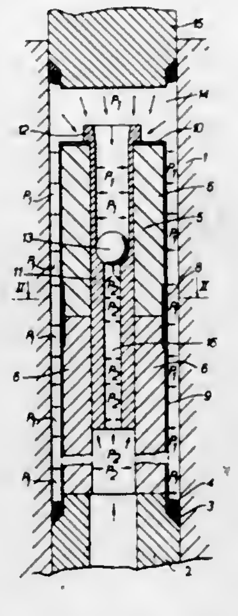
3,427,843
APPARATUS FOR THE FABRICATION OF TUBES BY WALL THINNING IN TUBULAR BLANKS

Derek Green, Lytham, St. Anne's, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 7, 1966, Ser. No. 525,655

Claims priority, application Great Britain, Feb. 17, 1965, 6,881/65

U.S. Cl. 72—57 **6 Claims**
Int. Cl. B21d *39/08, 28/18, 22/10*



Apparatus for the production of a thin walled tube by forcing a plug through the bore of a tubular blank, the plug being of larger diameter than the bore of the tubular blank comprising a pressure resistant containing vessel corresponding in internal diameter to the external diameter of the tubular blank, means for generating pressure in a primary hydraulic liquid in the bore of the tubular blank on one side of the plug when entered into the bore of the tubular blank and means for generating a lower pressure in a secondary hydraulic liquid on the other side of the plug in the bore of the tubular blank.

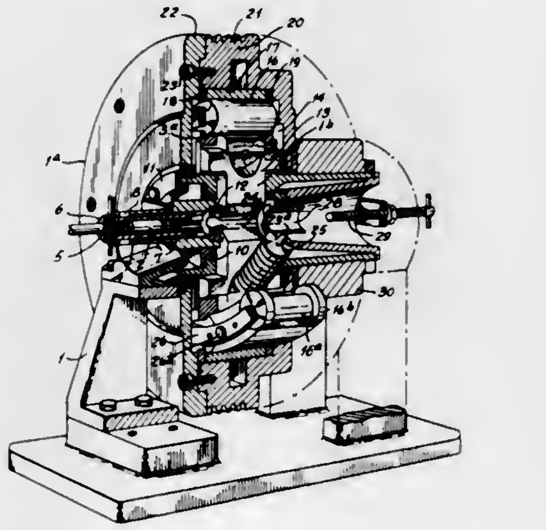
3,427,844
PROCESS AND AN APPARATUS FOR THE MANUFACTURING OF SPIRAL DRILLS

Johan Erik Bergström, Fjallro, Frovi, Sweden

Filed Apr. 23, 1963, Ser. No. 274,979

Claims priority, application Sweden, June 25, 1962, 7,072/62

U.S. Cl. 72—64 **4 Claims**
Int. Cl. B21d *11/14;* **B21k** *5/04*



1. A machine for twisting a grooved drill blank comprising a support, a pile of axially aligned disc elements, means mounting the disc elements on the support for rotation about their axes with respect to the support and each other, each disc element having an axial hole therethrough for receiving the grooved drill blank, each disc element having means affixed thereto providing a finger projecting generally radially into the hole in the disc and into a groove of the drill blank, means engaging the drill blank at one end thereof to retain it from rotation as the drill blank is being twisted, means positively to rotate the disc element at one end of the pile of disc elements, and lost motion driving means between said driven disc element and the next disc element in the pile, and between each successive pair of disc elements, said lost motion driving means being so constructed and arranged that successive disc elements from the driven disc to the other end of the pile rotates through a predetermined angle independently of the subsequent disc elements, and that after such predetermined angle of rotation each successive disc element becomes locked to and rotatably driven by the next preceding disc elements.

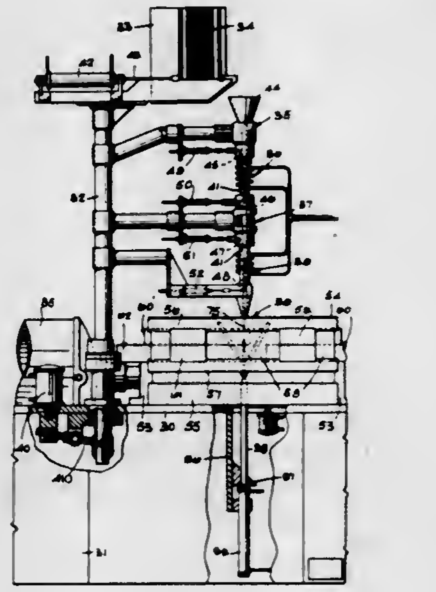
3,427,845
MANUFACTURE OF ELONGATED ARTICLES OF NONCIRCULAR CROSS SECTIONAL SHAPE SUCH AS FOR EXAMPLE TWIST DRILLS

Philip Henry Evans, Pelsall, near Walsall, England, assignor, by mesne assignments, to Fred Fowler Limited, Old Hill, Stafford, England

Filed Jan. 15, 1964, Ser. No. 337,833

Claims priority, application Great Britain, Jan. 24, 1963, 2,966/63

U.S. Cl. 72—64 **7 Claims**
Int. Cl. B21d *11/14;* **B21b** *15/02;* **B21k** *5/02*



1. An apparatus for shaping elongated blanks comprising, in combination:

(a) holding means for holding one of said blanks in a longitudinally secured position while permitting rotation of said blank about an axis extending in the direction of elongation thereof;

(b) a plurality of die members having respective edge portions obliquely inclined relative to said axis; and

(c) moving means for simultaneously moving said die members in respective paths transverse of said axis,

  (1) each path being tangential to a circle about said axis and intersecting the respective paths of two other die members,

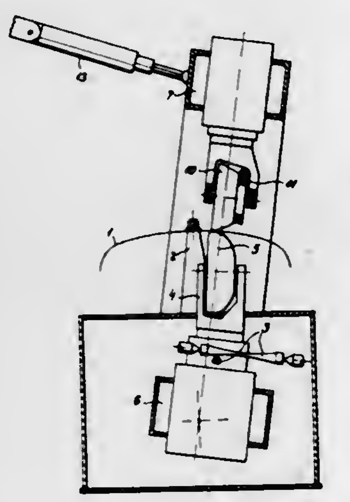
  (2) said edge portions of said die members jointly defining a nip about said axis during a portion of the simultaneous movement thereof, said nip being substantially closed in a plane perpendicular to said axis, and

  (3) the inclination of said edge portions relative to said axis and the direction of simultaneous

movement of said die members being such that said plane moves in the direction of said axis during said simultaneous movement of said die members.

3,427,846
HYDRAULIC METAL PRESS

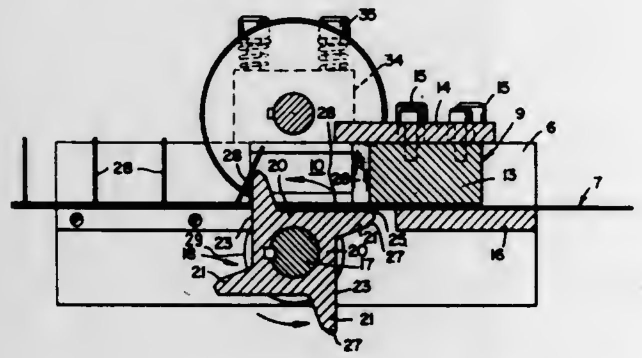
Endre Viltschek and Laszlo Gal, Budapest, Hungary, assignors to Technoimpex Magyar Gepipari Kulkereskedelmi Vallalat, Budapest, Hungary
Filed May 16, 1966, Ser. No. 550,464
U.S. Cl. 72—81 **5 Claims**
Int. Cl. B21b *1/10;* **B21d** *22/18*



Large dished ends of metal containers can be made very simply by spinning, by means of opposed rollers that move radially outwardly on opposite sides of a rotating blank in the form of a disc of sheet metal. The rollers swing about a common axis until they are part way out to the edge of the dish, after which the roller on the concave side remains stationary and the roller on the convex side continues to swing about that axis and forms an edge portion of reduced radius of curvature progressively about the roller which is on the concave side.

3,427,847
ROTARY STAMPING MACHINE

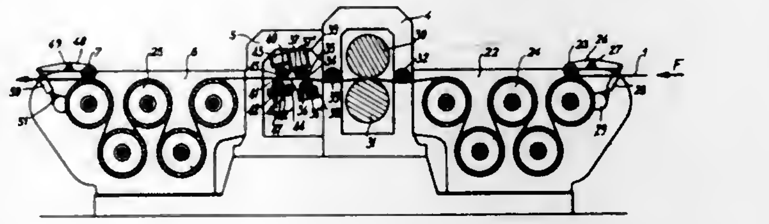
Laffie Harper, 1192 Montgomery Ave.,
San Bruno, Calif. 94066
Filed Feb. 23, 1967, Ser. No. 618,000
U.S. Cl. 72—186 **7 Claims**
Int. Cl. B21d *13/08, 31/02;* **B21c** *37/02*



This disclosure relates to a machine having a stationary female shear plate and a rotary shear die between and past which plate and die a sheet of metal is driven. Said plate and die are formed and positioned, relatively, so that sections of the sheet are progressively cut therefrom and progressively bent to one side of the sheet as the latter is driven past the plate and die, leaving a row of such sections connected with and projecting to said one side.

3,427,848
DEVICES FOR COLD-ROLLING AND PLANISHING METAL SHEET

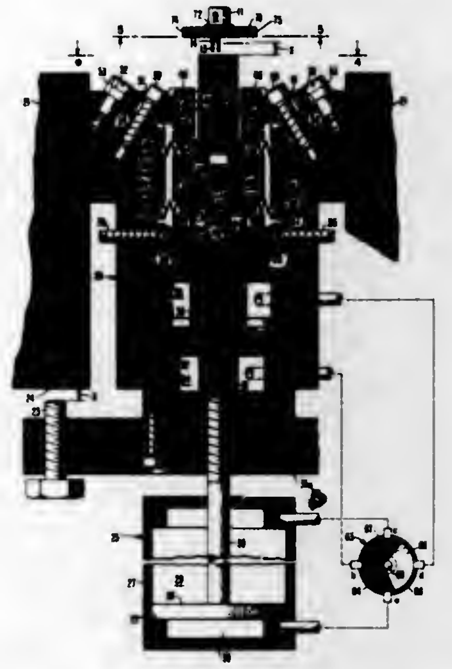
Pierre Gay, St. Etienne, Loire, France, assignor to Compagnie des Ateliers et Forges de la Loire (St. Chamond, Firminy, St. Etienne, Jacob-Holtzer), Paris, France
Filed June 20, 1966, Ser. No. 558,634
Claims priority, application France, Aug. 23, 1965, 29,134
U.S. Cl. 72—205 **6 Claims**
Int. Cl. B21b *39/08, 1/28*



A device for cold-hardening sheet metal stock, comprising a cold-rolling stand and a leveling stand disposed in succession in the direction of feed of the sheet to be processed, a sheet driving unit disposed at the outlet end of said leveling stand, a sheet retaining unit disposed at the inlet end of said cold-rolling stand, and means for adjustably setting the ratio of the linear speed of said sheet at the inlet end of said cold-rolling stand to the linear speed of said sheet at the outlet end of said leveling stand, at a predetermined adjustable value.

3,427,849
COMPONENT LEAD OFFSET BENDING APPARATUS

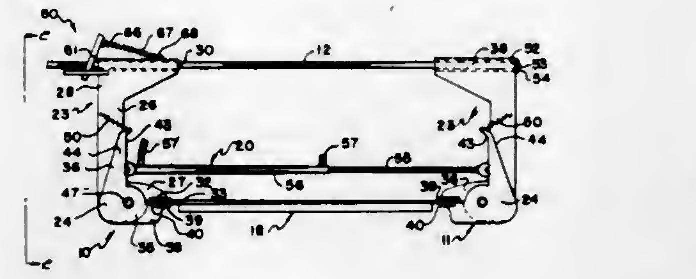
Willard E. Ainsworth, Endicott, and Norman C. Hill, Binghamton, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 17, 1967, Ser. No. 623,875
U.S. Cl. 72—296 **10 Claims**
Int. Cl. B21d *11/10, 45/04;* **B21f** *1/00*



An apparatus for concurrently providing double offset right angle bends intermediate the ends of a plurality of parallel non-aligned wire leads of a component while maintaining the offset end portions of each such leads substantially parallel.

3,427,850
SHEET METAL STRETCHING TOOL

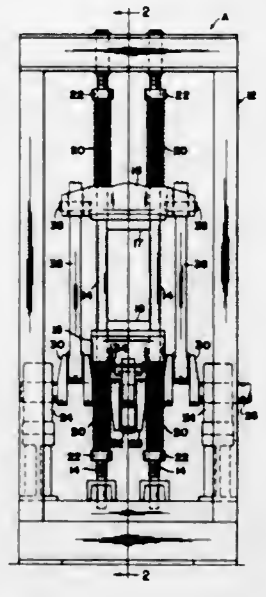
Jacob Anton, 1009 6th Ave. E., Prince Rupert, British Columbia, Canada
Filed Feb. 7, 1966, Ser. No. 525,398
U.S. Cl. 72—300 **5 Claims**
Int. Cl. B21d *11/02, 1/04, 41/02*



A sheet metal stretching tool having a pair of clamps, each of which has a movable jaw element and a fixed jaw element, mounted on a rigid guide, at least one of the clamps being movable longitudinally of the latter. An extensible jack positioned between the movable jaw elements simultaneously moves the latter into a gripping position relative to the fixed jaw elements and moves the clamps apart.

3,427,851
HIGH ENERGY RATE METAL FORMING MACHINE

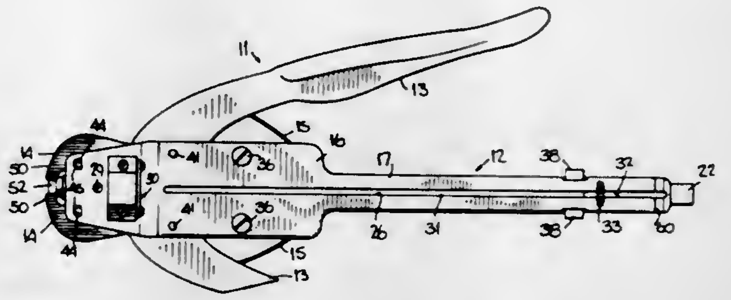
Anatol Michelson, Glenolden, Pa., asignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,912
U.S. Cl. 72—408 **10 Claims**
Int. Cl. B21j *7/12;* **B30b** *1/00;* **B21d** *37/00*



A high energy rate metal forming press including a pair of opposed rams mounted on guide rods for reciprocating movement between an open and a closed or work contacting position. The rams are moved to their open position by a crankshaft driven through an overrunning clutch and having crank arms spaced 180° apart. One of the crank arms is connected to one of the rams while others, spaced 180° from the first, are connected to the other ram. Energy storing means in the form of springs or a vessel containing pre-compressed gas are provided to resist the movement of the rams to their open position and to store energy which is released to drive the rams rapidly together as the crank passes a neutral center position and the clutch overruns.

3,427,852
COMPRESSION TOOL FOR ELECTRICAL CONNECTORS

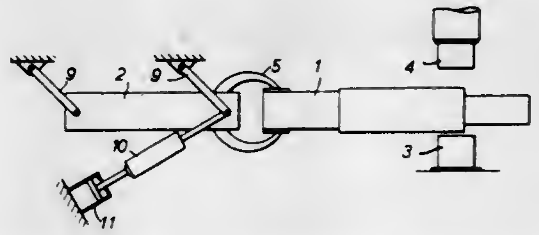
Francis A. O'Loughlin, Scotch Plains, and Maurus C. Logan, Elizabeth, N.J., asignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 10, 1966, Ser. No. 571,465
U.S. Cl. 72—410 **9 Claims**
Int. Cl. B21d *9/08, 43/20*



The tool is constructed with a pair of pivotally mounted jaws on spaced sides of the magazine frame as well as with a pair of handles pivotally mounted on the frame and connected to the jaws. The spring loaded handles pivot towards each other so as to close the jaws on a deformable connector between the jaws. Upon closing of the jaws the connector is radially deformed under compression about a plurality of conductors inserted therein.

3,427,853
APPARATUS TO AVOID BENDING DURING FORGING

Jack M. Thomas, Rotherham, England, assignor to The British Iron and Steel Research Association
Filed Dec. 6, 1965, Ser. No. 511,877
U.S. Cl. 72—420 **6 Claims**
Int. Cl. B21d *11/22;* **B21j** *13/10, 9/12*

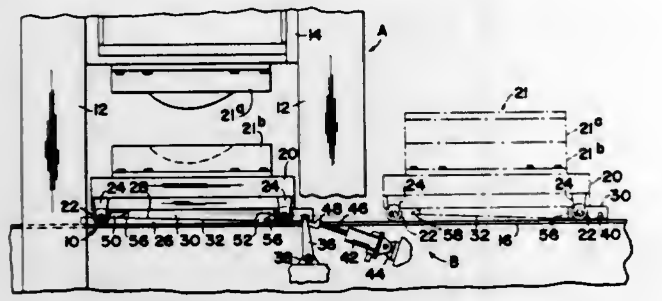


A manipulator and press assembly which maintains a workpiece presented to the press in a horizontal attitude and absorbs vertical shocks imparted to the workpiece during a pressing operation. A hydraulic cylinder and piston assembly is connected to the workpiece supporting means. Fluid is selectively admitted to the cylinder by a control valve from a pressure supply line in order to raise the supporting means whereby the workpiece may be presented to the open tools. Prior to the pressing step, fluid is exhausted from the cylinder by the control valve through a pressure relief line. The pressure relief line is adjusted to provide sufficient back pressure to balance only the weight of the supporting means whereby the workpiece lowers under its own weight until it rests upon the lower tool. As the press compresses the workpiece, additional fluid is exhausted through the relief line to absorb vertical shock and maintain the workpiece horizontal.

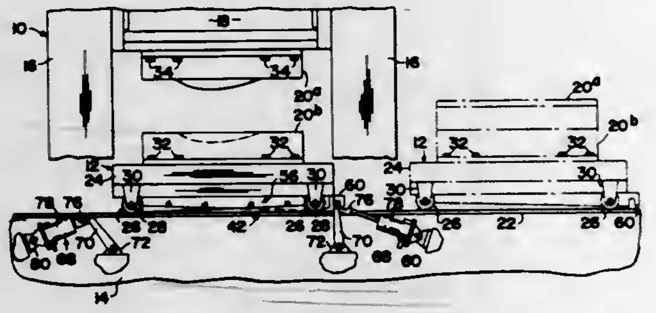
3,427,854
MOVABLE BOLSTER FOR PRESSES

Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Mar. 28, 1967, Ser. No. 626,460
U.S. Cl. 72—448 **8 Claims**
Int. Cl. B21j *13/00;* **B30b** *15/02, 15/06*

A movable press bolster arrangement especially suited for die changing in metal working presses. The arrangement includes a carrier or bolster provided with wheels which permit it to be rolled into and out of the press. In order to relieve the load from the wheels and permit the carrier to remain in the press during press operation, cooperating inclined surfaces are provided on the carrier and the press bed. The surfaces are arranged so that as the carrier is moved toward a final position in the press, the surfaces engage and further movement of the carrier causes it to move up the surface on the bed to thereby relieve the load from the wheels.



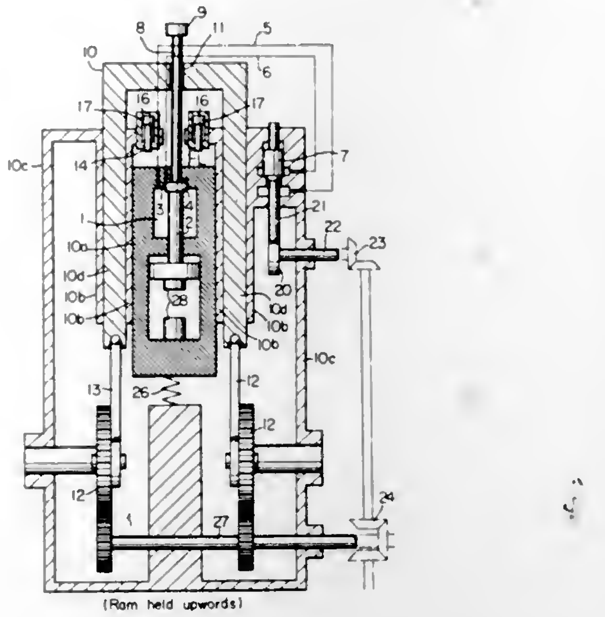
3,427,855
MOVABLE BOLSTER FOR PRESSES
Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,474
U.S. Cl. 72—448 **18 Claims**
Int. Cl. B21j *13/02;* **B30b** *15/02*



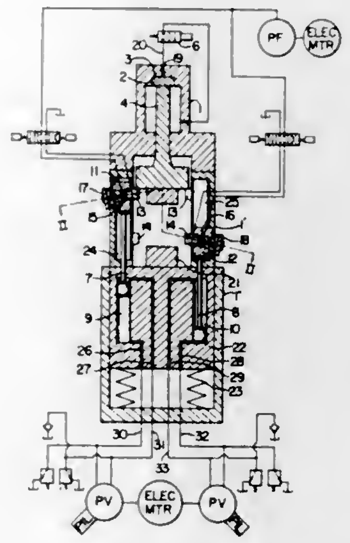
A movable press bolster arrangement specially suited for die changing in metalworking presses. The arrangement includes a carrier or bolster provided with wheels which permit the carrier or bolster to be rolled into and out of the press. In order to relieve the load from the wheels and to permit the carrier to remain in the press during the press operation, cooperating inclined surfaces are provided on the carrier and on the press bed. The press bed surfaces are so arranged as to accept a carrier being moved into the press from either side of the press structure. The surfaces are arranged so that as the carrier is moved toward a final position in the press, the surfaces engage and further movement of the carrier causes it to move up the surfaces on the bed to thereby relieve the load from the wheels.

3,427,856
HIGH SPEED RETURNING IMPACT FORMING MACHINE
Akira Asari, Osaka-shi, Japan, assignor to Kobe Steel Ltd., Fukiai-ku, Kobe, Japan
Filed Mar. 9, 1967, Ser. No. 621,940
Claims priority, application Japan, Mar. 14, 1966, 41/16,048
U.S. Cl. 72—450 **8 Claims**
Int. Cl. B21j *9/18;* **B30b** *1/32*

The disclosed high speed returning impact forming machine has a high pressure gas chamber, a ram actuated at a high speed by the pressure in the chamber, a combined plunger-cylinder assembly, a valve communicated between the chamber and the cylinder, a ram supporting member for returning the ram by being driven by a mechanical force such as a crank mechanism so as to return it in high speed, a movable frame, and hydraulic pressure stopper means for safely supporting the movable frame when the ram returns to its uppermost position.

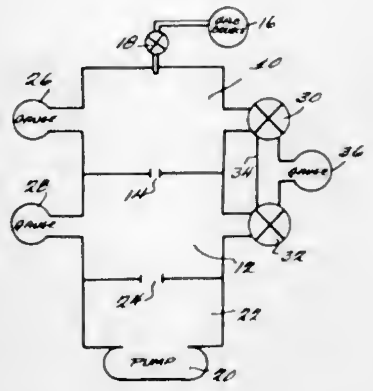


3,427,857
METHOD AND APPARATUS FOR OPERATING THE RAM OF AN IMPACT MACHINE
Akira Asari, Osaka-shi, Japan, assignor to Kobe Steel Ltd., Kobe, Japan
Filed July 12, 1966, Ser. No. 564,681
Claims priority, application Japan, July 27, 1965, 40/45,744
U.S. Cl. 72—453 **2 Claims**
Int. Cl. B21j *9/18, 7/36;* **G01n** *3/62*



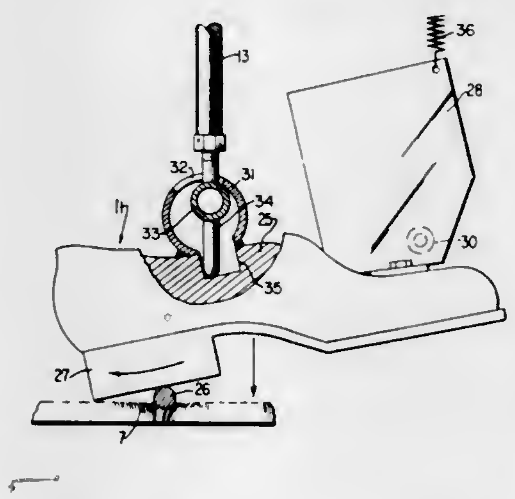
A method for raising a ram in an impact processing machine. Two pairs of jack assemblies which are movable between an uppermost ram supporting position and a lowermost ram supporting position are provided. Each of them has vertically movable jack members and associated ram support members. The first pair of jack assemblies supports the ram in the raised position at the start of the operation, and the ram support members are retracted to allow the ram to descend. The second pair of jack members raises the ram while the first pair of jack members descends. The ram is again released, and subsequently raised by the first pair of jack members while the second pair descends.

3,427,858
METHOD AND APPARATUS FOR DYNAMICALLY CALIBRATING VACUUM GAUGES
Charles F. Morrison, Boulder, Colo., assignor to Granville-Phillips Company, Boulder, Colo., a corporation of Washington
Filed June 23, 1966, Ser. No. 559,978
U.S. Cl. 73—4 **26 Claims**
Int. Cl. G01l *27/02*



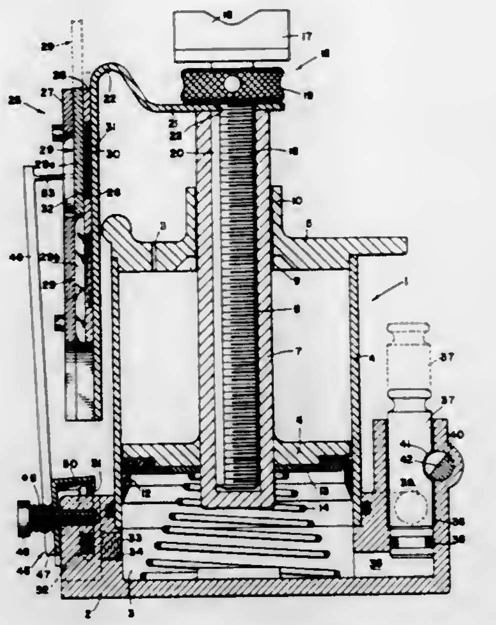
A method and apparatus for calibrating vacuum gauges is disclosed wherein a finite succession of pressures P_n are sequentially generated in time. The pressures are dynamically generated in that the calibration chamber is actively pumped during every moment of the calibration procedure. One of the generated pressures is P_R which is a reference pressure which is known to a desired degree of accuracy. $P_{n+1}=KP_n(K+1)$ and thus, any of the pressures P_n may be calculated once P_R has been determined. Once P_n's have been calculated, the recorded values of the gauges to be calibrated can be correlated with the respective calculated values to thereby effectuate the desired calibration.

3,427,859
WEAR-TESTING MACHINES
Stephen E. Taub, Brooklyn, N.Y., assignor to Institutional Research Council, Inc., New York, N.Y., a corporation of New York
Filed Apr. 26, 1967, Ser. No. 633,852
U.S. Cl. 73—7 **4 Claims**
Int. Cl. G01n *3/56, 19/02*



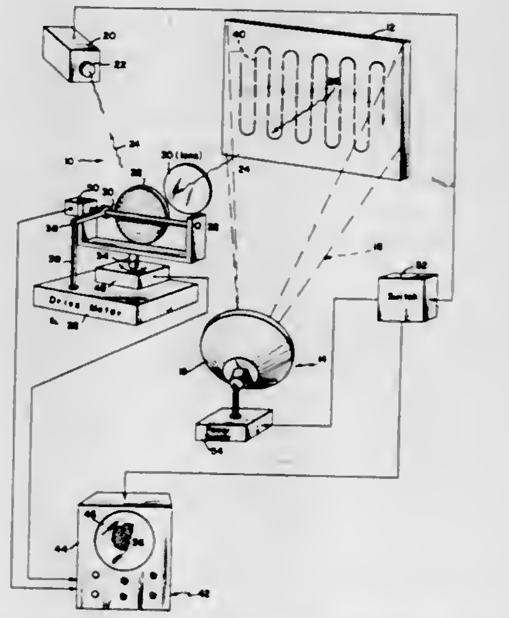
The invention comprises a wear tester for floor coverings which simulates wear induced by normal walking. A wear member strikes the covering first on its heel, and then the heel is raised as the toe strikes the covering. This motion also induces rotary movement to the covering support. Twisting action is provided to the wear member while it is in contact with the covering to simulate wear induced as a person turns a corner.

3,427,860
SHOCK ABSORBER TESTING APPARATUS
Gerald W. Kelly, Bridgeport, Mich., assignor to Wilson Engineering, Inc., Saginaw, Mich., a corporation of Michigan
Filed June 5, 1967, Ser. No. 643,646
U.S. Cl. 73—11 **16 Claims**
Int. Cl. G01m *17/04*



A device for testing vehicle shock absorbers having a support reciprocable in a cylinder and including indicating means reciprocable with the piston and operated by an actuating member mounted on the cylinder to indicate the accumulative travel of the piston in both directions of its travel and thereby provide a measure of the efficiency of shock absorbers under test.

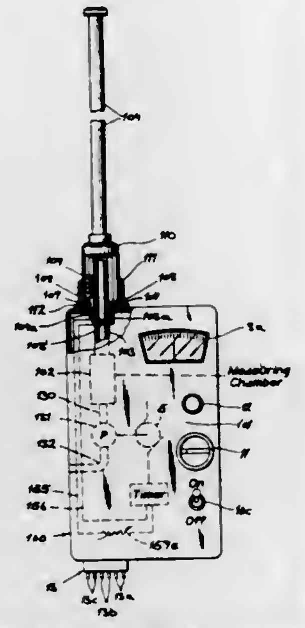
3,427,861
NONDESTRUCTIVE TESTER
Dale R. Maley, Boulder, Colo., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed July 28, 1965, Ser. No. 475,479
U.S. Cl. 73—15 **10 Claims**
Int. Cl. G01n *25/20*



The disclosure includes a nondestructive tester wherein a heat transfer zone on the surface of the workpiece is heated to transfer thermal energy into the interior of the workpiece whereby the surface temperature varies as a function of the internal characteristics of the workpiece. A radiometer scans the surface of the heat transfer zone whereby a signal is produced that is a function of the characteristics of the workpiece.

3,427,862
GAS ANALYZER WITH GAS-SAMPLE ASPIRATION

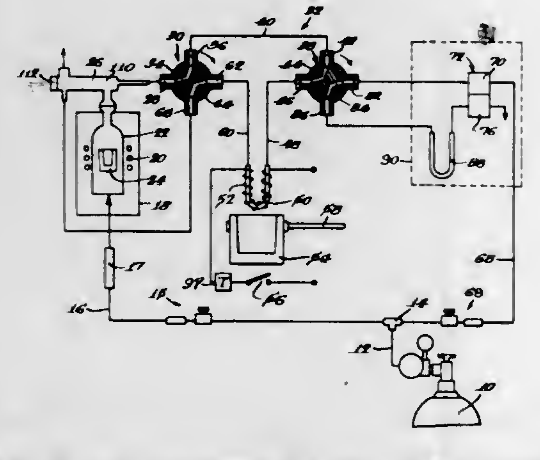
Rolf Hübner, Westfalendamm 267,
Dortmund, Germany
Filed Feb. 23, 1966, Ser. No. 529,463
Claims priority, application Germany, Feb. 24, 1965,
H 55,281
U.S. Cl. 73—23 **11 Claims**
Int. Cl. G01n *1/22, 31/00*



Gas analyzer wherein a time-constant network measures an interval during which aspirated ambient gas is analyzed in a measuring chamber, a demountable and/or extensible sampling tube being attached to the housing inlet to enable samples to be taken at different levels; the tube is provided with a compensating impedance, such as a resistance or a capacitance, which modifies the operating interval of the time-constant network in accordance with the variation in the effective volume of the intake duct of the chamber caused by the attachment of the tube or by the change of its length.

3,427,863
METHOD AND APPARATUS FOR THE DIRECT DETERMINATION OF GASES

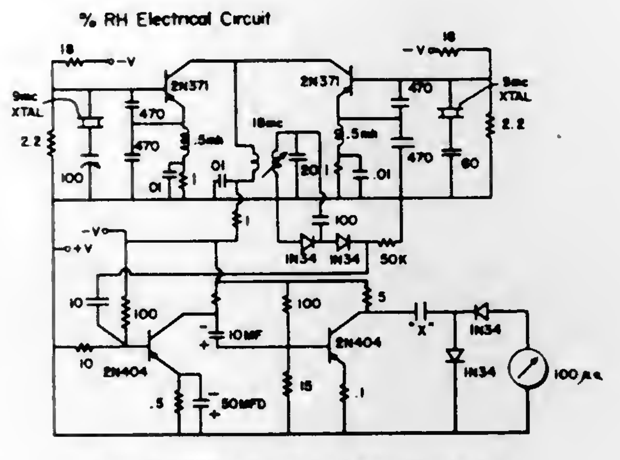
Frederick C. Schultz, St. Joseph, Mich., assignor to Laboratory Equipment Corporation, St. Joseph, Mich., a corporation of Michigan
Continuation of application Ser. No. 270,974, Apr. 5, 1963. This application Nov. 21, 1966, Ser. No. 597,196
U.S. Cl. 73—23.1 **2 Claims**
Int. Cl. G01n *31/08, 7/00*



Method and apparatus for the direct analytical determination of gases in samples which comprise heating the sample in a stream of carrier gas to release the gases to be determined and entrain them in the stream, trapping the gases out of the stream in a cold trap, disconnecting the cold trap from that stream and connecting it in a second stream of carrier gas flowing through a measuring cell, and heating the trap to release the trapped gases therefrom.

3,427,864
MOISTURE ANALYZER

William H. King, Jr., Florham Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 110,189, May 15, 1961. This application Aug. 21, 1964, Ser. No. 391,274
The portion of the term of the patent subsequent to Jan. 5, 1982, has been disclaimed
U.S. Cl. 73—29 **12 Claims**
Int. Cl. G01n *27/00, 31/00*

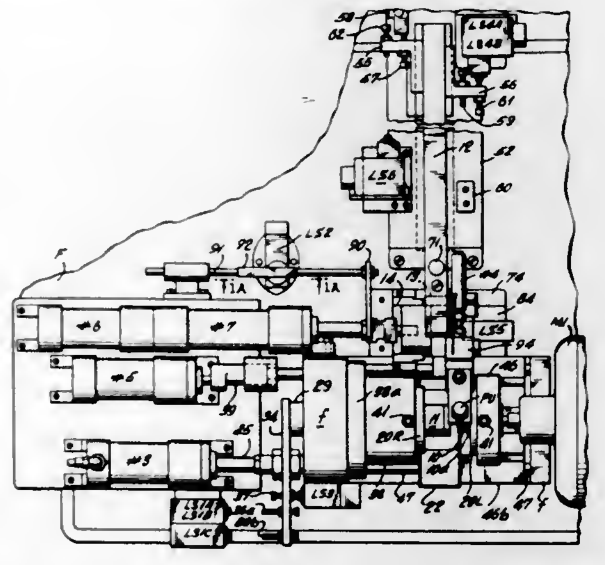


RESISTORS IN K OHMS CAPACITORS IN PF DECIMAL VALVES MFD UNLESS SPECIFIED V=18 VOLTS DC

The instant disclosure is directed to an improved detector for use in a moisture analyzer. The improved detector comprises a piezoelectric crystal which has been coated with a deliquescent salt such as lithium chloride or calcium chloride. The improved detector of the invention is highly accurate and exhibits extremely fast response to changes in the amount of moisture present.

3,427,865
TESTING DEVICE FOR ANTIFRICTION BEARINGS OR THE LIKE

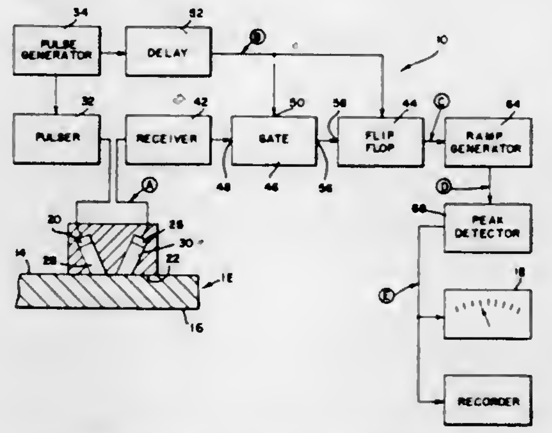
William J. Kelly, New Britain, and Dudley V. Bickford, Berlin, Conn., assignors, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,330
U.S. Cl. 73—67 **27 Claims**
Int. Cl. G01n *29/00;* **G01m** *7/00*



The present invention provides a novel shop machine for automatically testing bearings for vibration. The novel machine is capable of testing a bearing under stress at either side without requiring reversal of the bearing relative to the stressing means. The machine automatically separates the bearings which exhibit passable vibration from those which exhibit vibration exceeding a chosen norm. The utility of the machine is enlarged by enabling it to operate on bearings of various sizes and for this purpose changeable tooling is provided. The machine operates at high speed and can run through a bearing lot rapidly and the next lot may consist of bearings of a different size. Accordingly, to save productive machine time, quick-change tooling, involving novel features, is provided.

3,427,866
ULTRASONIC THICKNESS GAUGE AND FLOW DETECTOR

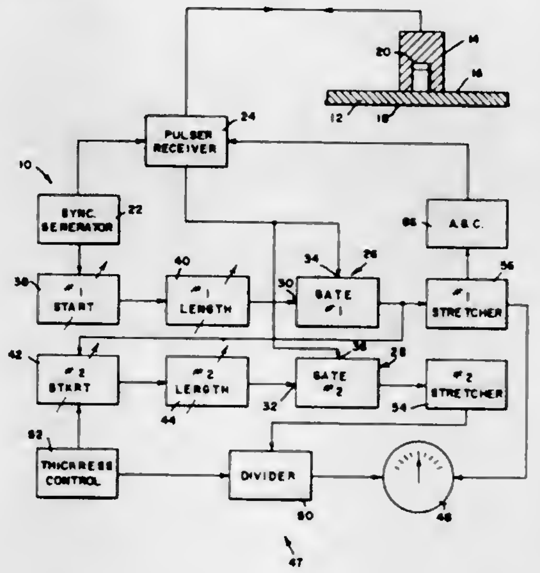
Frederick Gordon Weighart, Sunset Cove, Brookfield, Conn. 06804
Filed Oct. 26, 1965, Ser. No. 505,289
U.S. Cl. 73—67.7 **3 Claims**
Int. Cl. G01h *9/24*



Ultrasonic thickness measuring apparatus having separate transmitting and receiving transducers angled with respect to the entrant surface of the object so that their beam patterns overlap only at the rear surface of the object. A timing wave generator is initiated by delay means at a time corresponding to the entrance of a transmitted pulse into the front surface and cut off by reception of the echo from a further reflecting surface of the object.

3,427,867
ULTRASONIC ATTENUATION METER

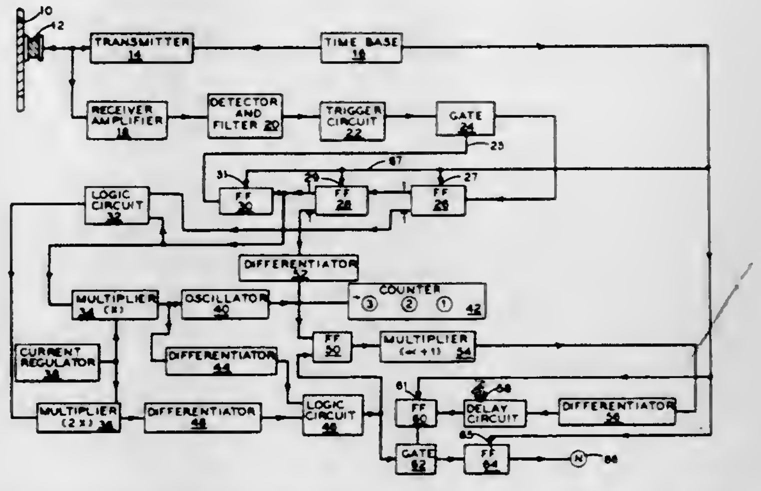
Philip R. Nute, Sandy Hook, Conn., Steven Serabian, Chelmsford, Mass., and Frederick Weighart, Brookfield, Conn., assignors to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Nov. 22, 1965, Ser. No. 531,007
U.S. Cl. 73—67.9 **11 Claims**
Int. Cl. G01n *9/24*



A transducer launches a pulse of ultrasonic energy into a workpiece, the energy repeatedly reflecting between front and rear surfaces of the workpiece. Amplitude of the echoes decreases as a function of attenuation. Sampling circuits select two predetermined echo signals. The predetermined echo signals are compared to provide an output signal which is a function of the ratio between the amplitudes of the two predetermined signals.

3,427,868
ULTRASONIC DEVICE FOR MEASURING THE THICKNESS OF OBJECTS

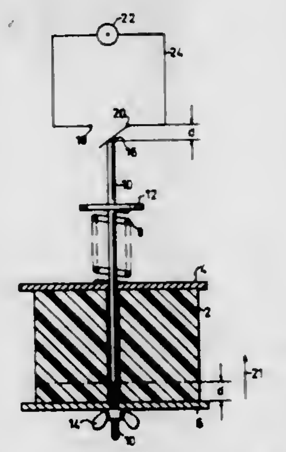
Roger Charbonnier, Meudon, and Clement Picot, Massy, France, assignors to Societe d'Instrumentation Schlumberger, Paris, France, a corporation of France
Filed Dec. 20, 1965, Ser. No. 515,021
U.S. Cl. 73—67.9 **6 Claims**
Int. Cl. G01n *9/24*



An ultrasonic thickness measuring apparatus in which an ultrasonic pulse is transmitted into the test piece and the echoes are used to generate measuring pulses having durations proportional to the time intervals between selected ones of the pulses. The measuring pulses are then multiplied by preselected factors related to the propagation velocity of the material, producing pulses which are still proportional to echo spacing but are significantly longer in duration. One of the elongated pulses activates an oscillator for its duration and a counter counts the oscillations thus produced and digitally displays the result as a measure of thickness. The elongated pulses are also used to check the sequence of events and assure a proper measurement.

3,427,869
FLUID-DETECTING SYSTEM

Nils Gunnar Rikard Karlbom, Lidingo, Sweden, assignor to Ingeniorsfirma G. Karlbom A.B., Lidingo, Sweden, a corporation of Sweden
Filed July 13, 1965, Ser. No. 471,639
Claims priority, application Sweden, July 16, 1964, 8,699/64
U.S. Cl. 73—73 **3 Claims**
Int. Cl. G01b *25/56*



A detection system for petroleum or the like, for example, when leaking from storage tanks, comprises a body of polystyrene foam which is waterproof but which is softened by petroleum. The body of plastic foam is placed in compression in such a way that when softened by petroleum, it will at least partially collapse and a member movable with the collapsing body will close an alarm circuit.

3,427,870

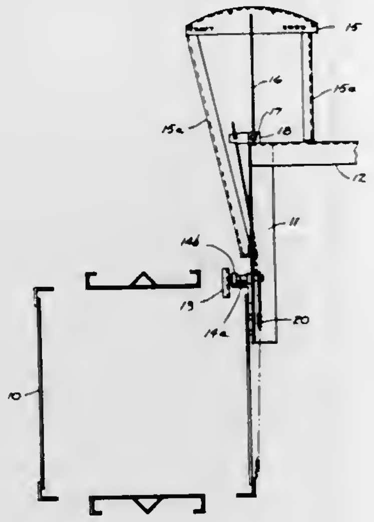
BALE DENSITY METER

James Arthur Merriman, Crosby, Ontario, Canada

Filed Dec. 6, 1965, Ser. No. 511,943

U.S. Cl. 73—81 **3 Claims**

Int. Cl. G01n *3/48*



A bale density meter comprising a cam mounted on the discharge chute of a baling machine for penetrating contact with a bale discharged through the chute, a scale having a pointer movable over the scale and means connecting the pointer and cam together so that upon rotation of the cam the pointer is moved to indicate on the scale the density of the bale.

3,427,871

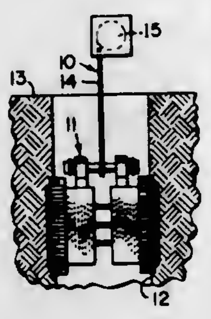
METHOD AND APPARATUS FOR IN SITU BORE HOLE TESTING

Richard L. Handy, Des Moines, and Nathaniel S. Fox, Ames, Iowa, assignors to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa

Filed July 11, 1966, Ser. No. 564,189

U.S. Cl. 73—84 **8 Claims**

Int. Cl. G01n *3/24*



An expansible testing device is lowered into a bore hole; and the device is expanded to exert a predetermined normal pressure on the side walls of the bore hole. The pressure surfaces of the device are grooved for promoting interlocking with the soil and minimizing slippage of the soil relative to the device during shearing. The pressure is exerted by feeding fluid pressure into cylinder and piston rod units interconnecting the two expansible surfaces of the device. After the predetermined normal pressure is exerted against the wall, the device is pulled longitudinally of the hole to cause shearing of the soil. The force required for shearing is measured. The normal pressure is increased to a second predetermined value; and the device is again pulled to cause a second shearing. By plotting the normal pressure against the required shearing stress, the angle of internal friction and the cohesion coefficient of the soil may be determined.

3,427,872

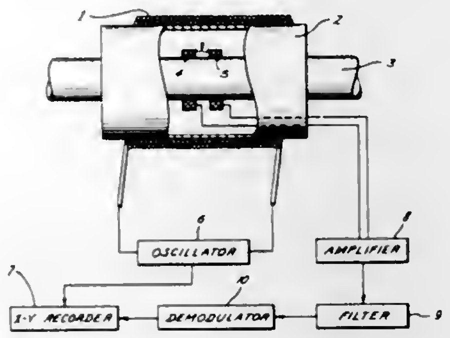
METHOD AND SYSTEM FOR INVESTIGATING THE STRESS CONDITION OF MAGNETIC MATERIALS

Richard W. Leep, Los Alamos, N. Mex., and Richard L. Pasley, San Antonio, Tex., assignors to Southwest Research Institute, Bexar County, Tex., a trust estate of Texas

Filed Oct. 5, 1966, Ser. No. 584,543

U.S. Cl. 73—88.5 **15 Claims**

Int. Cl. G01n *27/72, 27/80*



The Barkhausen effect, the series of abrupt changes or jumps in the magnetization of a substance when the magnetizing field is gradually altered, may be employed as the basis for a stress investigation of such substance. A qualitative indication results from the fact that appreciable tensile stress is accompanied by substantial Barkhausen "noise," and appreciable compressive stress produces relatively little. Quantitative data may be obtained through the use of calibration procedures with known loads. The method and system for practicing same basically involve creating the Barkhausen noise and detecting, demodulating and displaying it for observation and analysis.

3,427,873

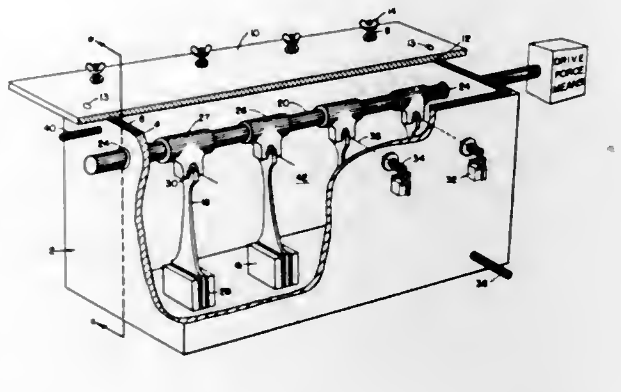
CORROSION FATIGUE TESTING APPARATUS AND PROCEDURE

Parviz Mehdizadeh, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,739

U.S. Cl. 73—91 **2 Claims**

Int. Cl. G01n *3/32, 17/00*



Apparatus and method for determining the behavior of solid materials exposed to a corrosive environment while the solid materials are being flexed comprising: a fluid container means to hold the corrosive fluid, attaching means for fixedly mounting specimens of the solid material in the fluid container means in contact with the corrosive fluid and a reciprocating means which attaches to and flexes the specimens of the solid material during the test period.

3,427,874

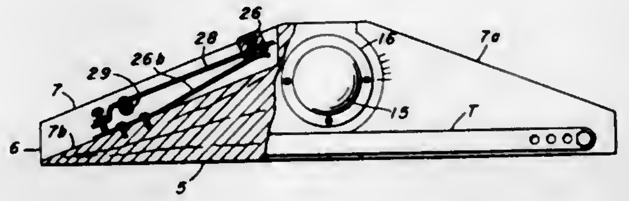
INCLINE DYNAMOMETER

William A. Munroe, New Brunswick, N.J., and Frederick B. Kruger, Pittsburgh, Pa., assignors to Bacharach Industrial Instrument Co., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 10, 1967, Ser. No. 613,382

U.S. Cl. 73—116 **5 Claims**

Int. Cl. G01m *15/00*



1. Portable apparatus for use upon a road surface to simulate pre-determined loading conditions of an internal combustion engine moving the vehicle thereover for obtaining samples of the engine exhaust gases for determination of smoke density and other air-polluting gases and vapors therein, comprising

(a) ramp means having a flat road surface engaging bottom face and an upwardly inclined top face over which a wheel of the vehicle is to be moved,

(b) means, connected to the said ramp means for withdrawing a sample volume of the vehicle engine exhaust gases from the engine exhaust outlet as a vehicle wheel moves over the upwardly inclined face of the first named means, and

(c) means on said first named means upwardly inclined face and engaged by the vehicle wheel moving thereover for actuating said second named means for obtaining an engine exhaust gas sample.

3,427,875

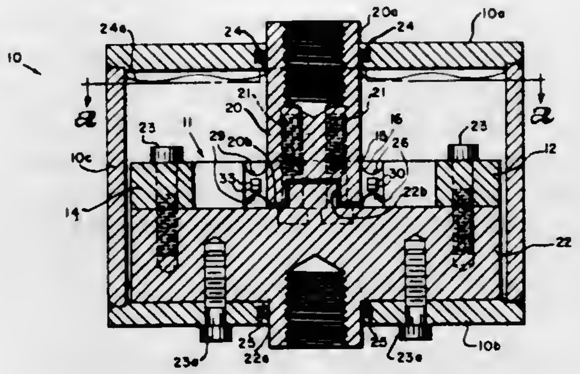
MULTIPURPOSE LOAD CELL

Erwin J. Saxl, P.O. Box 185, Harvard, Mass. 01451

Filed July 18, 1966, Ser. No. 565,757

U.S. Cl. 73—141 **15 Claims**

Int. Cl. G01l *5/12, 9/00;* **G01p** *15/08*



Force measuring load cells having a plurality of load sensing beams of either circular ring or spider configuration, each beam of which includes with respect to the direction of force to be measured a relatively rigid apex portion and a base portion between which is a relatively flexible portion with strain gages arranged about the flexible portion in a plurality of positions for imparting, in cooperation with the flexible portion, to a single load cell a capacity for measuring a plurality of load types such as tension, compression and torque loads.

3,427,876

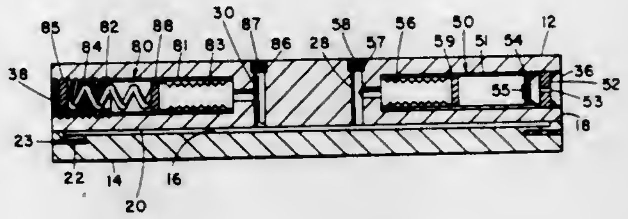
PRESSURE SENSING CELL AND SYSTEM

Richard K. Steele, Carmichael, Thamo C. Cruise, Rancho Cordova, and Samuel W. Jang, Sacramento, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed July 25, 1966, Ser. No. 567,455

U.S. Cl. 73—141 **10 Claims**

Int. Cl. G01d *5/42*



This disclosure concerns a pressure sensing cell for measuring the static and dynamic pressures within a structural body, such as an earth-fill dam, in which the pressure sensing cell is embedded. The pressure sensing cell comprises a support member and a pressure plate member capable of deflection under load which are joined together such that a reservoir is defined between them. The reservoir is filled with a pressure transmitting fluid. A transducer means mounted in the support member is in fluid communication with the reservoir for sensing pressure applied to the pressure plate member. An adjustment means is operably associated with the support member and the pressure plate member for adjusting the rate of deflection of the pressure plate member under load to a value substantially matching that of the intended environment of the sensing cell.

3,427,877

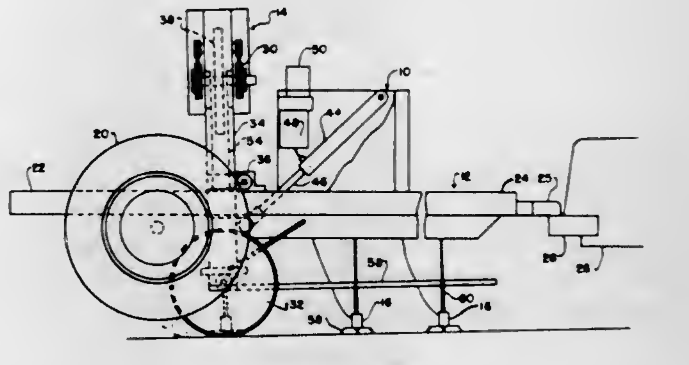
DYNAMIC DEFLECTION DETERMINATION DEVICE

Gilbert Swift and Alton D. Carpenter, Houston, and David M. Smith, Austin, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,931

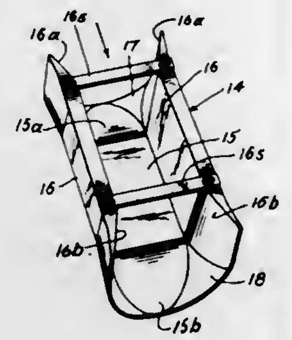
U.S. Cl. 73—146 **9 Claims**

Int. Cl. G01m *7/00*



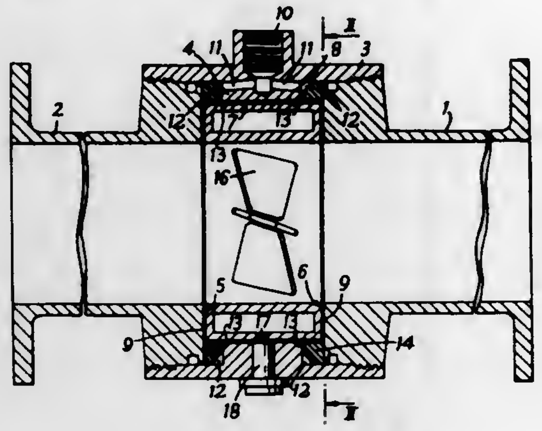
An apparatus having the ability to traverse a highway structure or the like has a pair of counter-rotating weighted members for applying a cyclic force to the structure. A tiltable assembly allows the weighted members to commence rotating while in the horizontal position and then allows them to continue rotating after being tilted to the vertical position. Motion sensing devices are provided on the apparatus for detecting deflections of the structure resulting from the application of the cyclic force.

3,427,878
PORTABLE LIQUID MEASUREMENT FLUME
Frank E. Gerlitz, Jr., Lancaster, and Calvin E. Levis, Millersville, Pa., assignors to F. B. Leopold Company, Inc., Zelienople, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 474,883, July 26, 1965. This application Jan. 18, 1968, Ser. No. 705,256
U.S. Cl. 73—215 **2 Claims**
Int. Cl. G01f *1/00*



Liquid measuring equipment, particularly adapted for use in measuring liquid flow in an upwardly open conduit extended across the floor of a manhole, the mechanism comprising a flume having an external profile adapted to fit the inside contour of the bottom and sides of the upwardly open conduit, and measuring equipment adapted to be mounted on and transported with the flume.

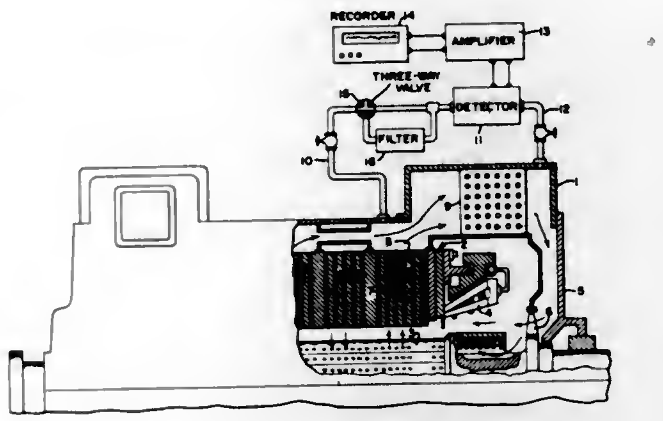
3,427,879
FLOW METER
William C. Dee, Bournemouth, England, assignor to Gilbert C. Davis, Forest Town, Johannesburg, Transvaal, Republic of South Africa
Filed June 13, 1966, Ser. No. 557,230
Claims priority, application Great Britain, June 25, 1965, 26,987/65
U.S. Cl. 73—231 **4 Claims**
Int. Cl. G01f *1/06*



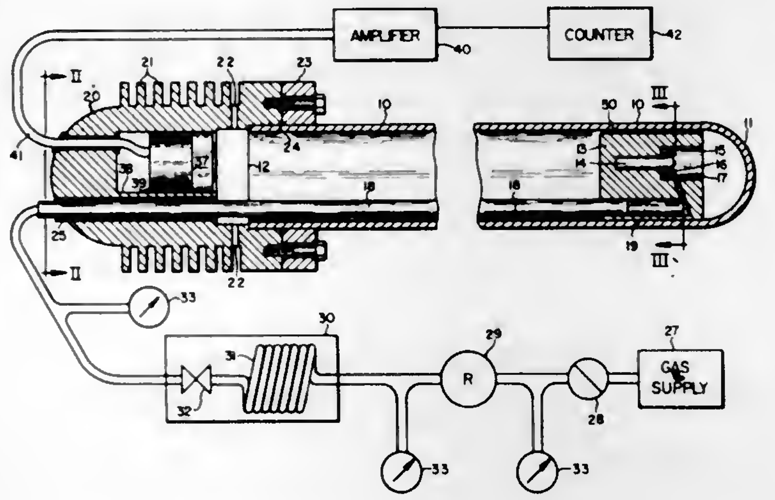
A rotor of a flow meter is driven by the fluid at a rate of rotation dependent on the flow velocity. The rotor is supported wholly externally of the fluid flow path by a gas bearing means located at the outer periphery of the rotor. Such a location of the bearing means eliminates a central obstruction in the bore of the meter.

3,427,880
OVERHEATING DETECTOR FOR GAS COOLED ELECTRIC MACHINE
Lloyd P. Grobel, Schenectady, and Chester C. Carson, Ballston Spa. N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 12, 1966, Ser. No. 578,855
U.S. Cl. 73—339 **6 Claims**
Int. Cl. G01k *1/02, 3/00;* **G08b** *21/00*

A device and method for detecting excessive heating of gas cooled components of an electric machine. The components for which overheating is to be detected are coated with a substance that produces sub-micron decomposition particles at an ascertained temperature. Some of the cooling gas is circulated through a particle detection system, which senses the presence of the sub-micron decomposition particles.



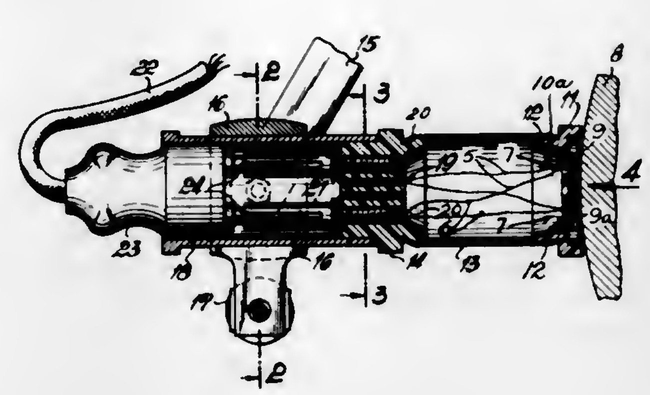
3,427,881
SYSTEM FOR MEASURING TEMPERATURE
David R. Steinberg, Raleigh, N.C., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 25, 1966, Ser. No. 589,367
U.S. Cl. 73—339 **10 Claims**
Int. Cl. G01k *11/26*



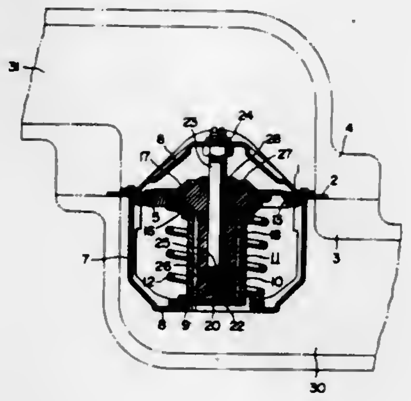
A high temperature measuring system having an ultrasonic resonant cavity oscillator as a temperature sensor. A gas maintained at a constant pressure is conducted through the high temperature region to the resonant cavity oscillator. High frequency sound waves generated by the oscillator travel to a microphone located remote from the oscillator which produces an electrical signal, the frequency of which is related to the temperature of the region.

3,427,882
CONTACT-FREE TEMPERATURE-SENSING DEVICE
Fritz W. Wagner, Krefeld, Germany, assignor to Joh. Kleinewefers Sohne, Krefeld, Germany
Filed Apr. 4, 1966, Ser. No. 539,899
Claims priority, application Germany, Apr. 5, 1965, K 55,725
U.S. Cl. 73—351 **10 Claims**
Int. Cl. G01k *1/12, 11/00, 7/04*

A temperature-sensing apparatus and supporting structure having a thermoelement, a temperature responsive resistor, or semi-conductor or the like as a thermal radiation sensor for contact-free temperature measuring of rotating objects. The apparatus includes the thermal radiation sensor arranged on a large surface heat conductive plate of small mass, and heat accumulating means of low heat conductivity arranged between said heat conductive plate and the support structure.



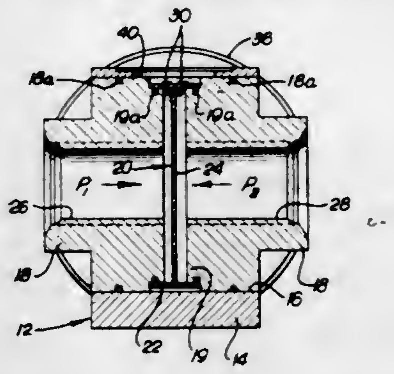
3,427,883
THERMOSTAT
Yoshikazu Kuze, 3-Go, 31-Ban, 1-chome, Magome, Higashi, Ohta-ku, Tokyo, Japan
Filed Aug. 14, 1967, Ser. No. 660,508
Claims priority, application Japan, Aug. 27, 1966, 41/56,213; Nov. 5, 1966, 41/72,620; Feb. 14, 1967, 42/9,059; Mar. 29, 1967, 42/19,156
U.S. Cl. 73—368.3 **6 Claims**
Int. Cl. G01k *5/32*



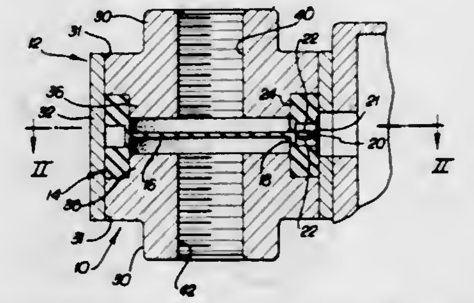
A thermostat having a heat sensitive chamber with a guide member fixedly mounted therein to define an annular space therebetween. The guide member has a straight axial bore passing therethrough with a push rod slidably mounted in said bore, a rubber-like sealing plug being mounted in said bore with one end in contact with said push rod. The plug is shaped to flare outwardly at its free end to provide a tight seal in the bore. A thermally responsive expansive substance fills the annular space and, upon application of heat to the thermostat, expands, exerting a force on the plug and push rod to open the valve.

3,427,884
DIFFERENTIAL PRESSURE TRANSDUCER
Julian Delmonte, La Canada, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif.
Filed Dec. 23, 1966, Ser. No. 604,215
U.S. Cl. 73—398 **12 Claims**
Int. Cl. G01l *7/08, 9/04*

A diaphragm element having a flexible tubular support wall or section and a thin flexible diaphragm that extends transversely across the support wall and is exposed at either side to a pressure medium. The diaphragm and the wall are so proportioned and arranged that a differential pressure across the diaphragm in a selected or operating range will flex the diaphragm and will also flex or bend and thus stress the support wall. The stress, which is in proportion to that pressure differential, is sensed at the exterior of the support wall.

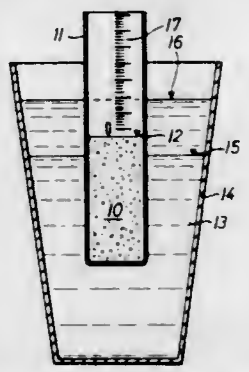


3,427,885
DIFFERENTIAL PRESSURE TRANSDUCER
Ephraim Konigsberg, Sierra Madre, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif.
Filed Dec. 23, 1966, Ser. No. 604,234
U.S. Cl. 73—398 **10 Claims**
Int. Cl. G01l *7/08, 9/04*



A sensing element having a thin flexible diaphragm supported across a flexible tubular wall to define portions of two chambers on either side of the diaphragm. A spur, which forms an extension of the diaphragm externally to the tubular wall, is restrained from axial motion at its outer end. Pressure differentials between two chambers causes strain in the spur. The strain in the spur is proportional to the differential pressure across the diaphragm. This strain is measured by strain gauges.

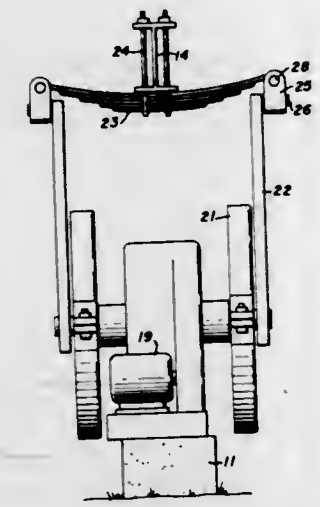
3,427,886
PROCESS AND APPARATUS FOR THE DETERMINATION OF PARTICLE SIZE DISTRIBUTION
Hans Haas, Hoffnungsthal, near Cologne, Germany, assignor to Strabag Bau-A.G., Cologne-Deutz, Germany, a corporation of Germany
Filed Feb. 16, 1966, Ser. No. 527,805
U.S. Cl. 73—432 **9 Claims**
Int. Cl. G01d *21/00;* **G01p** *1/02*



Particle size distribution in terms of the amount of the material below a selected particle size is determined by taking the under-liquid weight of a sample of the material and the under-liquid weight of the particles in a settlement sample (obtained by suspending a sample, letting the sample partially settle and then taking the settlement sample), and then calculating the amount below the selected particle size.

3,427,887
PUMPING UNIT WITH SPRING CONNECTED PITMAN

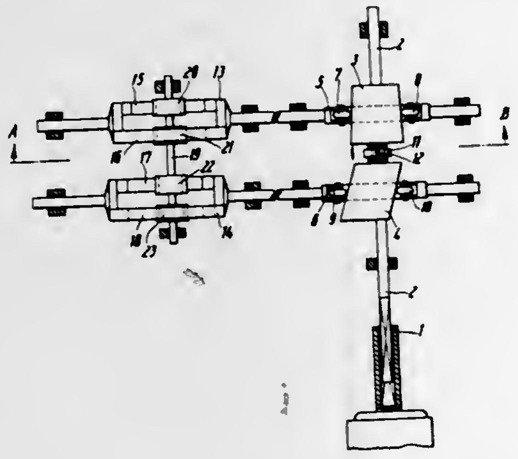
William E. Jones, 3951 Shannon Drive,
Fort Worth, Tex. 76116
Filed June 3, 1966, Ser. No. 555,071
U.S. Cl. 74—41 **3 Claims**
Int. Cl. F16h *21/38*



A pumping united wherein a walking beam is pivotally balanced intermediate its ends, a mulehead on one end of the beam and an extending leaf spring on the other end, rotary drive means beneath the beam and a pitman connecting said means with an extending end of the leaf spring. In its preferred form the construction has two separate pitmans and the leaf spring is transversely mounted on the beam.

3,427,888
CONTINUOUSLY VARIABLE ANGULAR SPEED TRANSMISSION

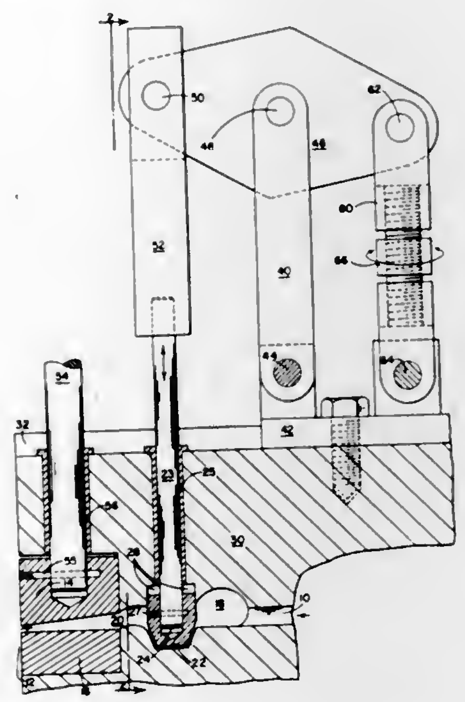
Paul Rheinländer, Wolfenbuttel, Germany, assignor to Thermo-Industrie G.m.b.H. & Co., Hannover, Germany
Filed Aug. 3, 1967, Ser. No. 658,073
Claims priority, application Germany, Mar. 15, 1967, T 33,445, T 33,446
U.S. Cl. 74—55 **6 Claims**
Int. Cl. F16h *25/08*



Continuously variable angular speed transmission includes driving means, eccentric cam means rotatable by the driving means and having a continuously variable profile in the axial direction thereof, a plurality of roller pairs spaced apart from one another on opposite sides of the cam means and positively constrained to engage and follow the cam means at all times, a separate intermediate member carrying each of the roller pairs, each intermediate member being adapted to perform to-and-fro motion out of phase with the other, driven shaft means, means coupling the intermediate members to the driven shaft means for continuously rotating the driven shaft means by the to-and-fro motion of the intermediate members, and means for adjusting the cam means and the respective roller pairs relatively to one another in the axial direction of the cam means so as to vary the form of the to-and-fro motion of the respective intermediate member and, accordingly, the ratio of the angular speed of the driven shaft means relatively to the angular speed of the driving means.

3,427,889
ADJUSTING MECHANISM

Sidney J. Baum, Encino, Calif., assignor to Baum Chemical Corporation, El Segundo, Calif., a corporation of California
Filed Nov. 13, 1967, Ser. No. 682,457
U.S. Cl. 74—89.15 **5 Claims**
Int. Cl. F16h *57/00*

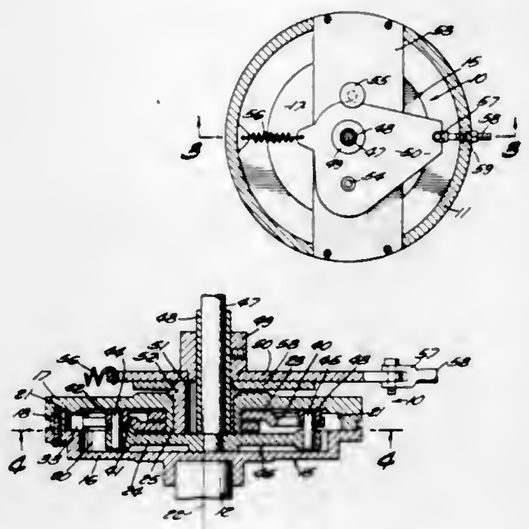


In a mechanism where rectilinear motion is required for the adjustment of a movable member relative to another member, a linkage mechanism connecting the respective members is provided. Adjustment of the movable member is accomplished by lengthening or shortening one bar of the linkage mechanism. It is particularly adaptable to adjusting flow controls, such as the dies, of a sheet extruding machine.

3,427,890
CALIBRATOR

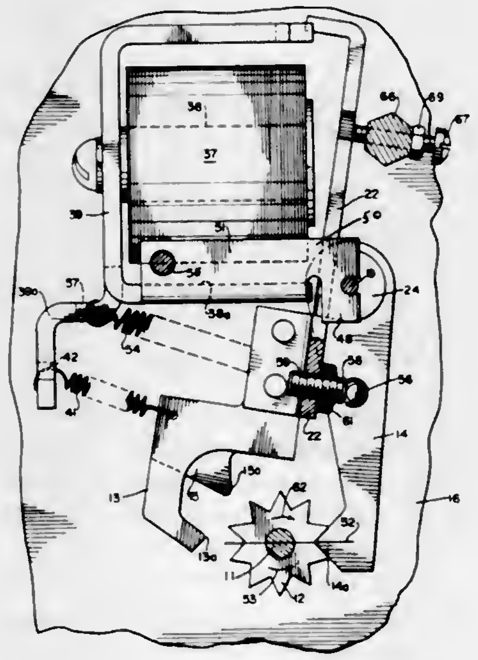
Lawrence T. Rossi, Albany, and Raymond L. Wrinkle, Oakland, Calif., assignors, by mesne assignments, to American Meter Company, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 533,360
U.S. Cl. 74—116 **7 Claims**
Int. Cl. F16h *29/04*

A variable speed transmission for use as a calibrator has a rotary driving member provided with a concentric circular track. Two clutch elements turn concentrically with respect to the track and each has radiating arms with overrunning clutch means engaging the same track. Each clutch element has a radial slot receiving a slide block pin-connected to the driven member. The driven member is shiftable laterally with respect to the driving member to change the speed ratio between the members by stepless increments.



3,427,891
BIDIRECTIONAL SOLENOID DRIVING DEVICE

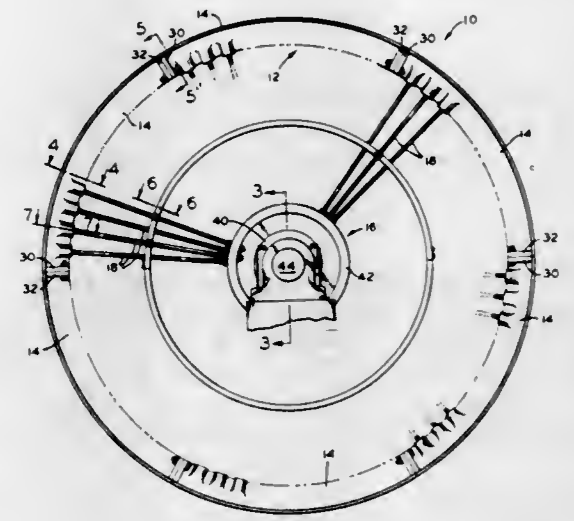
Ernest R. Stoddard, 89 Knollwood Drive,
Wolcott, Conn. 06716
Filed Aug. 23, 1966, Ser. No. 574,430
U.S. Cl. 74—142 **15 Claims**
Int. Cl. F16h *27/10, 31/00*



A bidirectional impulse stepping device having a first coil operating an armature which controls a first pawl to move a star wheel in one direction at least one-half a step. A resiliently biased second pawl moves the wheel in the same direction the remaining portion of the step when the first pawl is retracted. A second coil controls a second armature which in turn controls a third pawl to engage the star wheel and move it in the reverse direction at least one-half a step. The second pawl engages the star wheel when the third pawl is retracted to continue the motion begun by the third pawl to complete the movement of the star wheel one full step. Thus the star wheel may be rotated both clockwise and counterclockwise and in either case the second pawl changes part of the motive power to move the wheel part of a step.

3,427,892
LARGE DIAMETER CAST SHEAVES

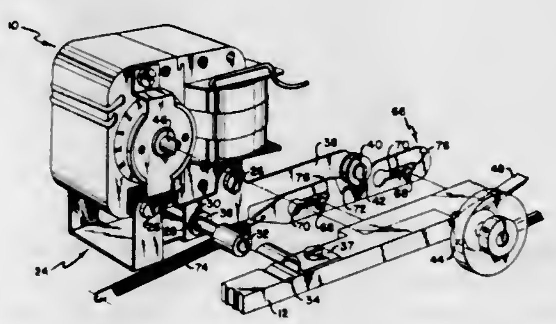
Daniel C. Leonard and Fredrick M. Lamb, Orillia, Ontario, Canada, assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 621,729
U.S. Cl. 74—230.13 **3 Claims**
Int. Cl. F16h *55/40*



The present invention relates to an improved casting and fabrication method for large diameter head sheaves. The rim is cast separately and in relatively small segments and the hub has a clearance to permit easy entry and removal of individually attachable spokes.

3,427,893
BELT TENSIONING DEVICE

Samuel D. Cappotto, Syracuse, N.Y., assignor to SCM Corporation, a corporation of New York
Filed Jan. 26, 1967, Ser. No. 611,907
U.S. Cl. 74—242.13 **6 Claims**
Int. Cl. F16h *7/12*

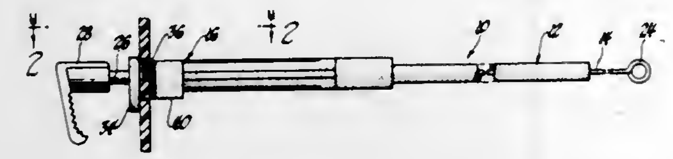


A device having a spring biased wedging member operable to act on a pivotally mounted motor for stabilizing the tension of a belt drive system which is subjected to wear, stretching and sudden excessive loading.

3,427,894
REMOTE CONTROL ASSEMBLY

August E. Tschanz, Birmingham, Mich., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,207
U.S. Cl. 74—501 **8 Claims**
Int. Cl. F16c *1/26*

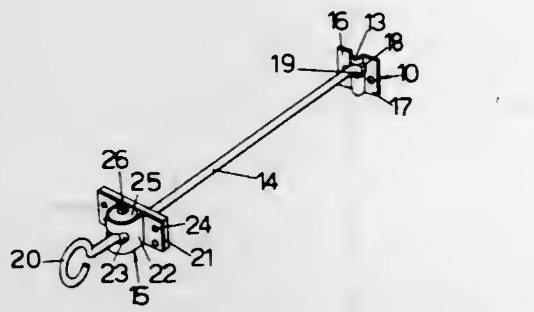
A motion transmitting remote control assembly having a fitting for supporting the assembly in an aperture, the fitting including a flange for engaging one extremity of the aperture, a pair of flexible legs which pass through the aperture and present angulated end surfaces for engaging the other end of the aperture, the end surfaces being angulated to compensate for the various distances through various apertures in which the fitting may be disposed



whereby the fitting may be snapped into and firmly retained in any one of various apertures which may have any one of various different distances therethrough.

3,427,895
SPLITTER DAMPER LINKAGE

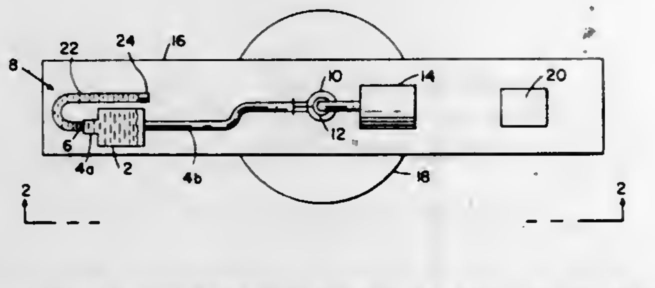
Roy J. Jackson, 4 Lachlan Grove, Carlingford, New South Wales, Australia, and Peter J. Brooks, 40 Wellington Road, East Lindfield, New South Wales, Australia
Filed Oct. 10, 1966, Ser. No. 585,524
Claims priority, application Great Britain, Oct. 14, 1965, 43,618/65
U.S. Cl. 74—503 **4 Claims**
Int. Cl. F16h *21/44, 21/54;* **G05g** *1/00*



A splitter damper linkage of the type used on air conditioning ducts is disclosed. The linkage includes a flap for directing air flow, a tumbler assembly arranged for mounting on the duct and a blade clevis for mounting on the flap. The flap is moved in relation to the duct by an actuating rod which is pivotally mounted with respect to the flap and pivotally and slidably mounted with respect to the tumbler assembly.

3,427,896
VARIABLE COUNTERWEIGHT SYSTEM

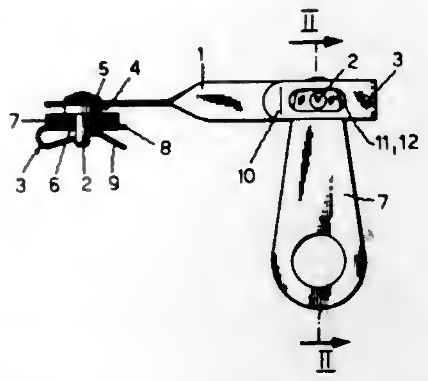
Thomas L. Hartman, Jr., Winter Park, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 23, 1967, Ser. No. 662,831
U.S. Cl. 74—573 **4 Claims**
Int. Cl. G05g *1/00*



A variable counterweight system located on an arm of a centrifuge. A fluid container is supplied with air to expel the fluid from the container through a U-tube, to vary the weight of the combination of the container and the U-tube.

3,427,897
CONTROL LINKAGE

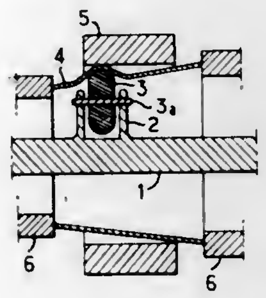
Walter Engelmann, Eislingen (Fils), Germany, assignor to Fibora AG, Zurich, Switzerland
Filed Oct. 13, 1966, Ser. No. 586,529
U.S. Cl. 74—588 **27 Claims**
Int. Cl. G05g *1/00, 3/00;* **F16b** *17/00*



A control linkage with an angle connection made of spring steel band, especially of the type adapted for pull operation, having laterally angular pins riveted thereto or screwed thereon and a sheet metal securing safety device.

3,427,898
PRODUCTION OF LOW VELOCITY MOTION

Ferdy Mayer, 22 Rue Ampere, Grenoble, France
Filed May 19, 1964, Ser. No. 368,600
Claims priority, application France, May 20, 1963, 4,578; Sept. 29, 1963, 4,629
U.S. Cl. 74—640 **8 Claims**
Int. Cl. F16j *15/50;* **F16h** *35/00;* **H02k** *7/06*

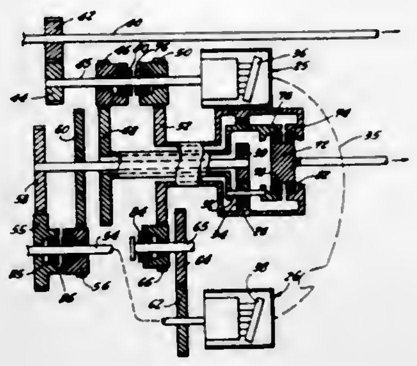


An arrangement for producing low velocity motion between a flexible, nonextensible motion transmitting member and a rigid driven member having, in the direction of relative motion, a surface extent which is different from that of the corresponding flexible member surface, relative motion being produced by rolling at least one rolling element in such direction along the flexible member so as to press the flexible member against the driven member at at least one point which moves in such direction without permiting any slip to occur between the flexible and driven members.

3,427,899
INFINITELY VARIABLE TRANSMISSION SYSTEM

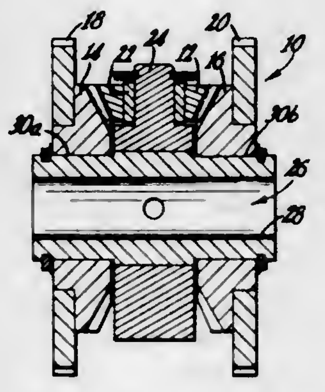
Frederick Allan Gunderson, San Pedro, and Einar Jonsson, Palos Verdes, Calif., assignors to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 2, 1966, Ser. No. 531,172
U.S. Cl. 74—687 **22 Claims**
Int. Cl. F16h *47/04, 37/06*

A transmission unit comprising a reversible first hydraulic motor-pump and a reversible second hydraulic motor-pump is combined with an input shaft for power flow from the input shaft to an output shaft through simple planetary gearing that includes a ring gear, a planet gear carrier and a sun gear. For an initial low speed stage the planet gear carrier is connected to the output shaft and all of the power from the input shaft is routed through the hydraulic transmission unit to both the ring gear and the sun gear to accelerate the sun gear in one rotary direction with recirculation of power back to the input side of the transmission unit. For an intermediate speed stage the input shaft delivers power directly to the ring gear and at the same time employs the transmission unit first to decelerate the sun gear and then to accelerate the sun gear in the opposite rotary direction. For a third speed stage, the ring gear is connected to the output shaft and the input shaft delivers power directly to the planet gear carrier while employing the transmission unit first to decelerate the sun gear and then to accelerate the sun gear in the reverse direction.



3,427,900
MINIATURE DIFFERENTIAL

Melvin F. Walker, Deer Park, N.Y., assignor to Designatronics, Inc., Mineola, N.Y.
Filed Oct. 25, 1966, Ser. No. 589,265
U.S. Cl. 74—710 **4 Claims**
Int. Cl. F16h *1/38;* **F16c** *17/02*

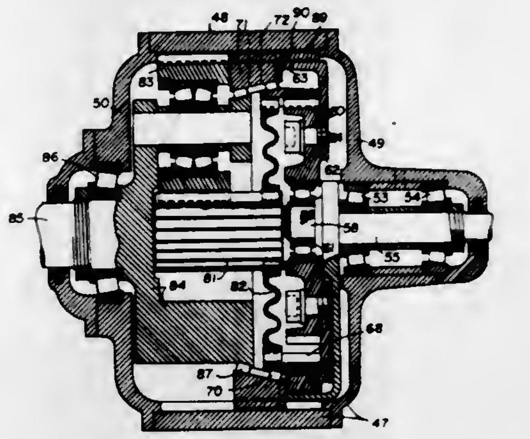


1. A differential gearing assembly comprising:
(a) a single elongated, tubular bearing member having means for securing a shaft thereto;
(b) first and second gears mounted directly on said bearing proximate the ends thereof; and
(c) a rotatable pinion gear secured to said bearing member at the central portion thereof and in meshing engagement with said first and second gears.

3,427,901
GEARING

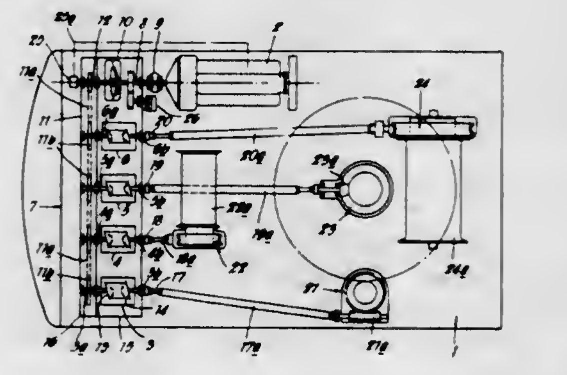
Ernest Wildhaber, Brighton, N.Y. (124 Summit Drive, Rochester, N.Y. 14620)
Filed Oct. 14, 1966, Ser. No. 586,767
U.S. Cl. 74—804 **6 Claims**
Int. Cl. F16h *3/48*

This gear unit comprises planetary gearing connecting coaxial rotary driving and driven members, an internal gear being fixed to the driven member, and the driving member having an eccentric portion. A planet member, which is rotatably mounted on said eccentric portion, has two external gears of different diameter rigid with it. The teeth of these external gears overlap axially. There is a stationary internal gear coaxial with said rotary members; and the two external gears mesh with the two internal gears. The rotary internal gear drives an external gear disk with a wavy cross-section which drives a sun pinion which meshes with three planet gears rotatably mounted on the rotary driven member. A counterweight or counterweights are secured to the eccentric member.



3,427,902
CRANES

Robert Arthur Smith, Letchworth, England, assignor to K & L Steelfounders and Engineers Limited, Letchworth, England, a British company
Filed Jan. 30, 1967, Ser. No. 612,399
Claims priority, application Great Britain, Feb. 7, 1966, 5,192/66
U.S. Cl. 74—859 **7 Claims**
Int. Cl. F02d *35/00;* **F16h** *47/04;* **B66c** *23/36*

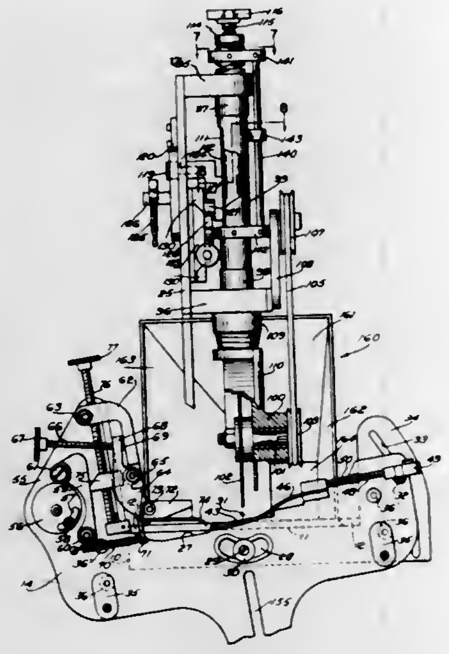


A mechanical power transmission system having a prime mover coupled to drive a plurality of driven members through a torque converter and a plurality of hydro-static, variable swash, transmission units. Each driven member being coupled through a transmission unit to the torque converter so that for any given power input to the torque converter, overload on at least one of the driven members results in a proportional increase in torque to and a decrease in speed of the input to the transmission units.

3,427,903
SAW SHARPENING MACHINE

Frederick M. Bodington, Jr., South of Commons, Little Compton, R.I. 02837
Filed May 3, 1966, Ser. No. 547,236
U.S. Cl. 76—37 **15 Claims**
Int. Cl. B23d *63/12*

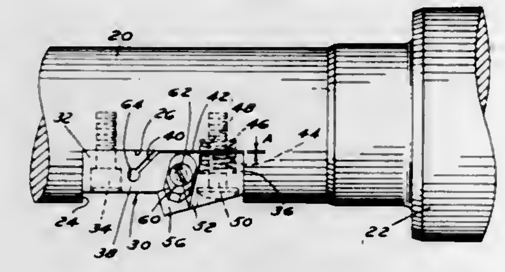
The machine comprises essentially a bed which may be fastened securely to some horizontal table or support and presents a generally horizontal surface. The bed mounts a swinging plate or tilting plate at right angles to its horizontal surface and in substantially a vertical plane upon which a carriage for holding the saw is mounted. This tilting plate also carries a feeding means for moving the saw step by step in accordance with its teeth for advancing it to a position so that each tooth may be individually sharpened. Upon the bed there is mounted a base with an upstanding support which base and support may be moved with reference to the bed for centering purposes generally toward and from the tilting plate upon



which the saw is fed. This upstanding support mounts a grinding wheel which reciprocates vertically as the saw is advanced to grind the teeth of the saw. A motor, which may be separate or may be conveniently carried by the base, serves to drive the grinding wheel and also serves to drive the mechanism carried by the support for lifting and lowering the grinding wheel and also for turning the grinding wheel at different angles to the plane of the saw to accommodate the bevel of the teeth. The motor, also, through an extendable and universal joint shaft drives the feeding means for the saw.

3,427,904
BORING BAR CARTRIDGE

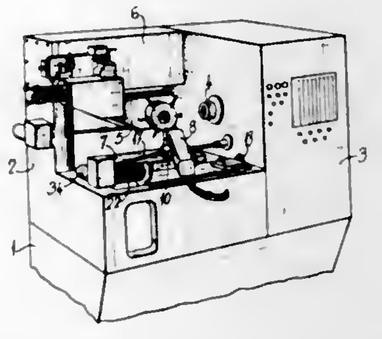
Stanley M. Arendt, Ferndale, Mich., assignor to Fansteel Inc., North Chicago, Ill., a corporation of New York
Filed Aug. 31, 1966, Ser. No. 576,330
U.S. Cl. 77—58 **2 Claims**
Int. Cl. B23b *5/00;* **B23d** *77/04*



1. In a rotating cutter assembly having a body with one or more surfaces to mount an insert holding back, that improvement which comprises:
- (a) an elongate block having a mounting base and a slot formed in said base transversely of said block and angled from said base in a direction toward one end thereof leaving an integral joining section in a top surface thereof of fairly thick proportions to create a bending fulcrum, the end toward which said slot angles serving as a mounting end, and the other end on the other side of said slot serving as an insert mount for a cutting insert,
- (b) means in said mounting end to lock said end solidly on a mounting surface,
- (c) means in the other end to position said other end about said fulcrum in relation to the center of a boring bar, and
- (d) means on said other end for releasably retaining a cutting insert having a cutting edge to be related to a mount in a selected dimension.

3,427,905
AUTOMATIC LATHE

Heinrich Imgrund, Geneva, Switzerland, assignor to Tarex S.A., Geneva, Switzerland, a firm of Switzerland
Filed July 7, 1966, Ser. No. 563,527
Claims priority, application Switzerland, Aug. 31, 1965, 12,189/65
U.S. Cl. 82—14 **6 Claims**
Int. Cl. B23b *3/28*



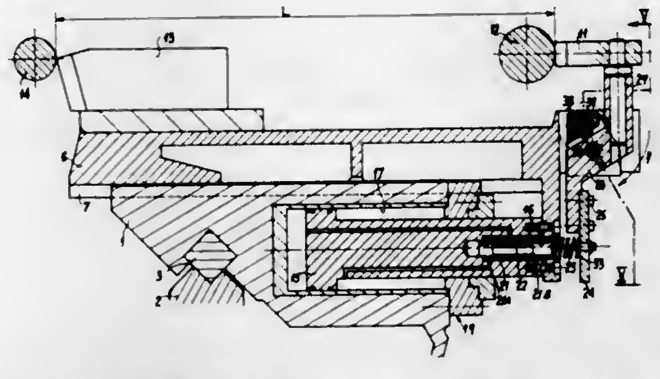
In an automatic lathe comprising, a multi-cut hydraulic copying device mounted on a carriage, a stop arrangement which determines the strokes and speeds of said carriage, a device limiting the depth of cut of said copying device, and an indexing mechanism connected on the one hand to said device limiting the depth of cut of the copying device and on the other hand to said stop arrangement, whereby the indexing of the said limiting device and stop arrangement is thus synchronized, a first shaft terminating at said limiting device, a Maltese cross on said first shaft, a second shaft terminating at said stop arrangement, a Maltese cross on said second shaft, said indexing mechanism including a control shaft, a motor rotating said control shaft, a plate mounted on said control shaft, and at least one driving pin on said plate acting in succession on said two Maltese crosses, in such manner as to actuate both of them in step.

3,427,906
TEMPERATURE COMPENSATED MACHINE TOOL CROSS-SLIDE

Marcel H. Berly, Garches, France, assignor to H. Ernault-Somua, Paris, France, a French body corporate
Filed July 25, 1966, Ser. No. 567,668
Claims priority, application France, July 26, 1965, 25,969
U.S. Cl. 82—14 **5 Claims**
Int. Cl. B23b *3/28;* **B24b** *7/20, 17/00*

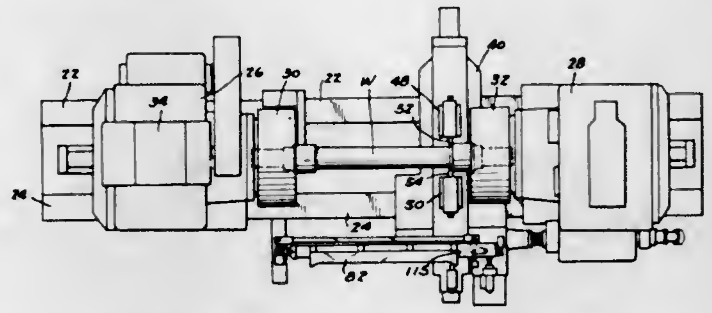
A duplicating type machine tool having a tool and a feeler at the ends of a cross-slide, and also having on the cross-slide a servo-control element connected by a drive mechanism to the feeler to be actuated by the latter. The cross-slide further carries a temperature compensating element of different expansion coefficient. A transmission

means connects the compensating element to the drive mechanism to alter the action of the latter so as to compensate for temperature induced changes in the dimensions of the cross-slide.



3,427,907
PROFILE MACHINING APPARATUS

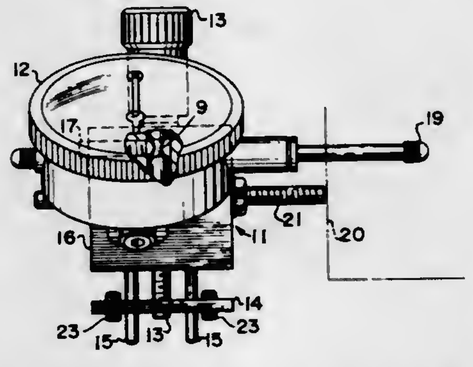
Leo P. Gajda and Frank A. Hevonkoski, Detroit, Mich., assignors to Snyder Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 10, 1966, Ser. No. 585,696
U.S. Cl. 82—14 **5 Claims**
Int. Cl. B23b *3/28, 3/04, 5/14*



An apparatus for machining contours wherein a rotating work piece is associated with a tool carriage and a tool cross slide in which a template is mounted in a relatively stationary position on the machine independently of the tool carriage, the template being movably mounted so that any departure of the tool cross slide from the template will be reflected in a servo mechanism which will bring a response in the cross slide, thus making it possible to mount the servo control and the cross slide power device in a stationary position on the machine with only mechanical contact points between the template and the servo for control.

3,427,908
PROTECTIVE MOUNTING FOR A DIAL INDICATOR

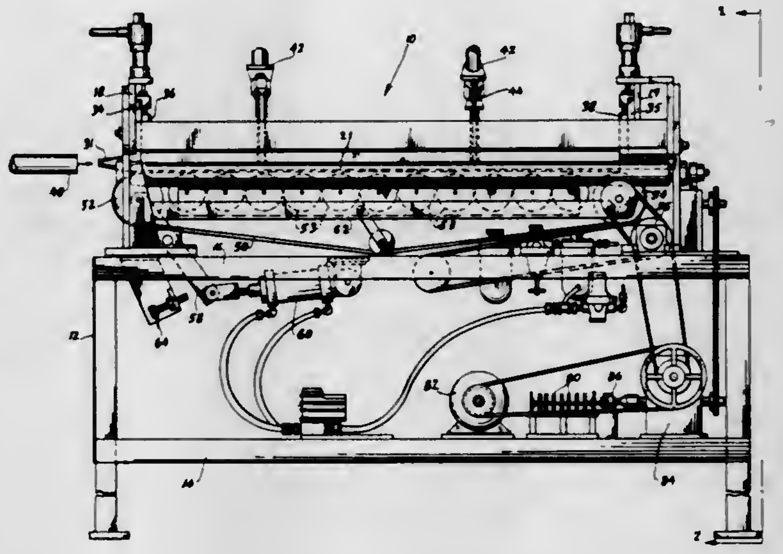
Peter A. Dorzan, 1 Muir Road, Union, N.J. 07083
Filed Mar. 31, 1967, Ser. No. 627,381
U.S. Cl. 82—34 **8 Claims**
Int. Cl. B23b *25/06*



A protective mounting for a dial indicator that yields to the lathe-carriage by sliding on gripping surfaces of the mounting that have seized the way on which the lathe-carriage moves, the mounting being pushed by a stop carried by the mounting that is engaged by the advancing lathe-carriage.

3,427,909
TUBE RECUTTER

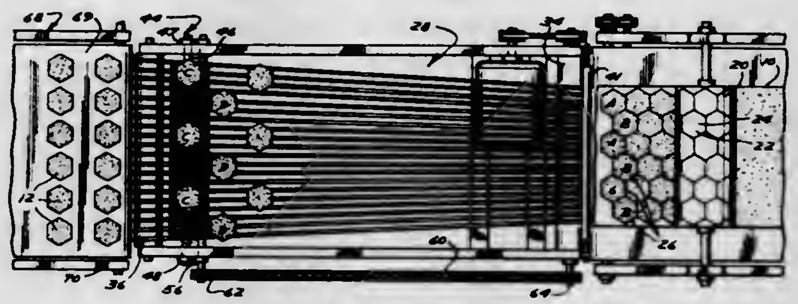
Wayne M. Schaap, Rochester, N.Y., assignor to M. D. Knowlton Company, Monroe County, N.Y.
Filed Nov. 7, 1966, Ser. No. 592,551
U.S. Cl. 82—101 **7 Claims**
Int. Cl. B23b *5/14*



A floating mandrel rests upon a frame bed. Two stop means are provided, one at each end of the mandrel and each capable of preventing longitudinal displacement thereof. A tube is placed by longitudinal movement around the mandrel from a first end while the second end stop is engaged therewith. The tube is cut, the second end stop retracted while the first end stop is engaged, and the tube is drawn from the mandrel in the same longitudinal direction.

3,427,910
PASTRY TABLE PRODUCT SEPARATING CONVEYOR

Gary R. Zempel, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 573,988
U.S. Cl. 83—107 **12 Claims**
Int. Cl. B65h *35/04;* **B26d** *7/18;* **A21c** *9/08*

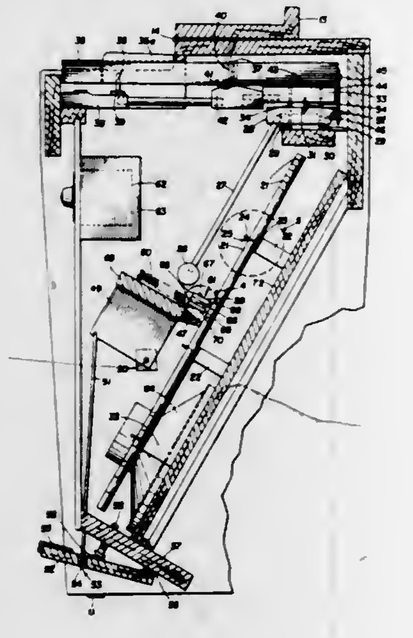


An apparatus for spacing pastry products such as doughnuts at the proper distance from each other in both longitudinal and laterally extending rows. Doughnuts are dropped on diverging endless belts having their downstream ends spaced further apart than the upstream ends. The conveyor transports the doughnuts towards further processing equipment and simultaneously spreads the doughnuts apart laterally. Intermittently operated arms that project up between the belts at times act as stops for engaging predetermined doughnuts at timed intervals to bring longitudinally spaced rows into lateral alignment.

3,427,911
KEYBOARD OPERATED ELECTRICAL MUSICAL INSTRUMENT

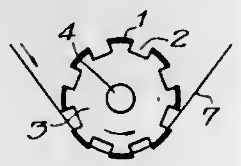
Jack Anthony Liddall, Weston, Ontario, Canada, assignor of one-half to Junn S. Kashino, Cooksville, Ontario, Canada
Filed Dec. 23, 1964, Ser. No. 420,589
U.S. Cl. 84—1.14 **12 Claims**
Int. Cl. G10h *1/00, 3/00*

A keyboard operated electrical musical instrument having a plurality of electrically conductive, non-magnetic vibratile members positioned in a magnetic field and in proximity to an inductive transducer whereby movement of the vibratile members in the magnetic field results in the formation of eddy currents in the vibratile members and detection of the eddy currents by the inductive transducer for generation of electrical signals suitable for amplification to drive a loud-speaker.



3,427,912
PROCESS FOR PREPARATION FOR SPLITTING FIBER AND ITS APPARATUS FOR THE SAME

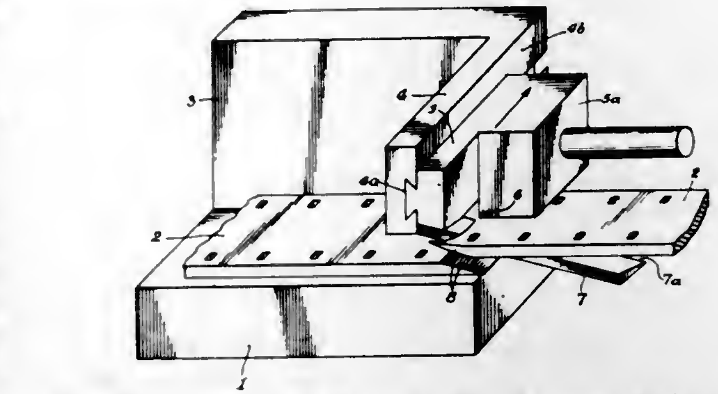
Masayuki Nozawa, Toshinori Ito, and Shingo Hayashi, Numazu-shi, and Naotoshi Otsuka, Mishima-shi, Japan, assignors to Toshiba Machine Co., Ltd., Chuo-ku, Tokyo, Japan, a corporation of Japan
Filed July 27, 1965, Ser. No. 475,128
Claims priority, application Japan, Aug. 13, 1964, 39/46,606
U.S. Cl. 83—20 **10 Claims**
Int. Cl. B26d *7/14;* **B26f** *1/20*



1. In a process for manufacturing yarns from slit film, the step of guiding film around and in contact with a portion of the peripheral surface of a roller having cutting edges thereon which extend through and slit the film substantially in the direction of travel of said film during guiding of the latter around said roller.

3,427,913
FILM CUTTING DEVICE

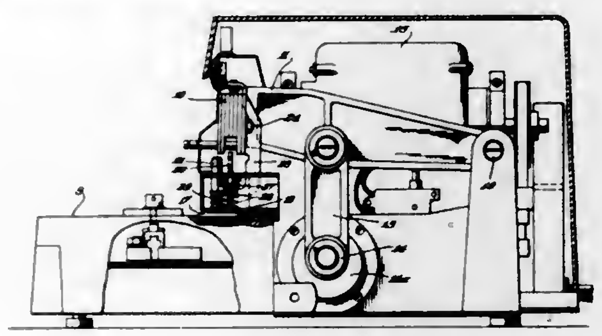
Ernst Hammann, Kirchzellerstrasse 105, Amorbach, Germany
Filed Oct. 26, 1967, Ser. No. 678,394
Claims priority, application Germany, Nov. 9, 1966, H 60,952
U.S. Cl. 83—176 **2 Claims**
Int. Cl. B26d *7/14, 5/08*



A film cutting device in which the two ends of the film strip produced by the cutting operation are at the same time prepared for splicing by providing a cutting blade which is arranged inclined to the plane of the film and moves transversely of the film so that the film ends produced have beveled edges of a length which is a multiple of the thickness of the film.

3,427,914
PUNCH CONSTRUCTION

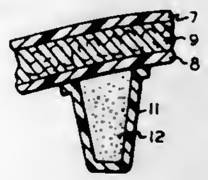
Henry N. Staats, Deerfield, Donald P. Vincent, Wheeling, and John F. Winkelmann, Mundelein, Ill., assignors to General Binding Corporation, Northbrook, Ill., a corporation of Illinois
Filed Aug. 26, 1965, Ser. No. 482,679
U.S. Cl. 83—467 **6 Claims**
Int. Cl. B26d *7/16;* **B26f** *1/02*



An improved punch apparatus and back-gauge construction providing jam-proof material backstop means and improved pressure bar construction providing increased machine versatility.

3,427,915
ACOUSTIC PANELS

Melvin Mooney, Mountain Lakes, N.J. (413 W. Main St., Boonton, N.J. 07005), Dorothy Stevens, executrix of said Melvin Mooney, deceased
Filed Aug. 19, 1964, Ser. No. 390,702
U.S. Cl. 84—275 **13 Claims**
Int. Cl. G10d *1/02*

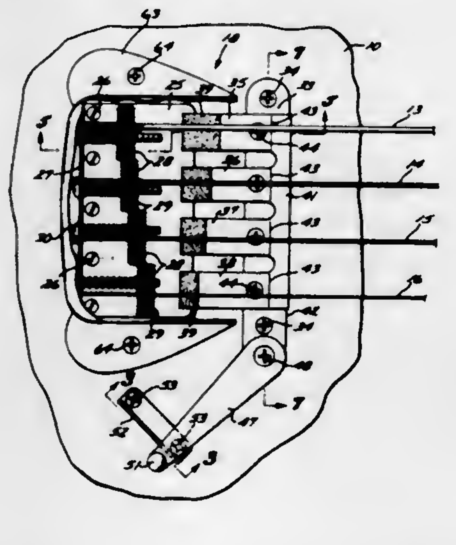


Improved acoustic panels, especially front and back plates for violins, are made from non-wood materials in such a way as to match the acoustic properties of a high-grade wood violin. This is accomplished by application of mathematical rules for selecting materials having usable combinations of density, flexural modulus, and damping factor. The optimal panel thickness for the particular materials selected is then determined mathematically by formulas relating thickness to density and flexural modulus, so as to achieve the desired areal density and pitch characteristic.

By this method violins can be made in quantity whose tone quality and responsiveness match those of a high-grade hand-made violin of wood.

3,427,916
GUITAR AND ADJUSTABLE MUTE THEREFOR

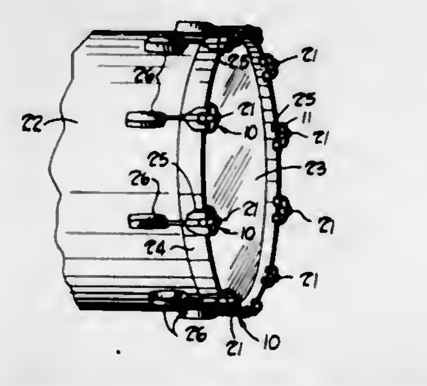
Clarence L. Fender, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed June 2, 1966, Ser. No. 554,828
U.S. Cl. 84—267 **13 Claims**
Int. Cl. G10d *3/04;* **G10c** *3/26*



A bass guitar incorporating a spring-finger mute, there being one spring finger for each guitar string, such spring finger having a resilient damper means on the string-engaging end thereof. Screws are provided to individually adjust each spring to thereby regulate the muting pressures. Pivot and actuating means are provided to simultaneously release or engage all of the damper elements.

3,427,917
TYMPANI HANDLE TENSION ROD FOR DRUMS

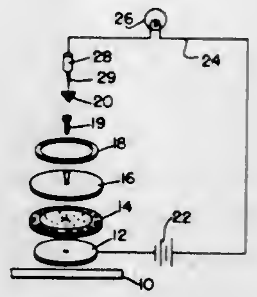
Josephus B. Thompson, Covington, Ohio, assignor to Columbia Broadcasting System, Inc., New York, N.Y.
Filed May 19, 1966, Ser. No. 551,385
U.S. Cl. 84—419 **1 Claim**
Int. Cl. G10d *13/04*



A tympani handle tension rod and supporting foot for drums in which the handle and rod elements are locked together, against relative rotation, by a press fit between corresponding square portions on both elements.

3,427,918
MUSIC TEACHING DEVICE

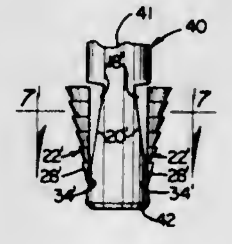
Dominic John Amoruso, 35 Avola St., Arlington, Mass. 02174
Filed June 10, 1966, Ser. No. 556,736
U.S. Cl. 84—477 **6 Claims**
Int. Cl. G09b *15/02*



A self-teaching device for music is composed of two circular elements, each rotatable with respect to each other, one of which overlaps the other. Each element contains information on the periphery thereof and is characterized by a plurality of spaced, cut-out portions which are so arranged, that when the proper information in one element is aligned with the corresponding information in the other, the cut-out portion will overlap and an electrical probe can be inserted into the cut-out portions to make contact with an underlying conductive circuit, actuating signal means indicating a correct answer. When the information is not properly aligned, the cut-out portions are not aligned and the probe cannot contact the conductive material.

3,427,919
WEDGE EXPANSION DEVICE

Lester Lerich, Lakewood, Colo., assignor to Wej-It Expansion Products, Inc., Broomfield, Colo., a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,720
U.S. Cl. 85—72 **10 Claims**
Int. Cl. F16b *13/04, 33/04*

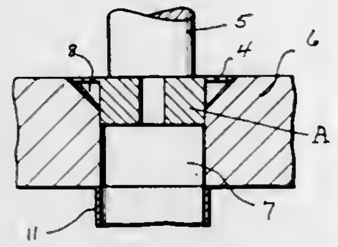


An anchor bolt has one or more wedge members aligned with recesses on the bolt, and each wedge member is temporarily secured in outwardly spaced relation to its recess by a frangible joint, the latter being broken by engagement of the wedge with the wall of the hole in which it is inserted so that the wedge is displaceable outwardly into anchored engagement within the hole.

3,427,920
BASE WAD

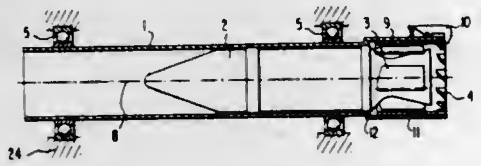
Homer E. Clark, Jr., Alton, Ill., assignor to Alcan Company, Incorporated, Alton, Ill., a corporation of Illinois
Filed June 19, 1967, Ser. No. 646,929
U.S. Cl. 86—12 **3 Claims**
Int. Cl. F42b *7/02*

A method for installing a base wad within a shotgun cartridge, which base wad is formed from suitable moldable material, having a cylindrical body portion with a central axial, primer-receiving bore and being provided with an endwise-projecting peripheral flange or skirt inherently biased for outward urging against the confronting portion of the cartridge casing to prevent gas leakage.



3,427,921
ROCKET LAUNCHING MOUNT

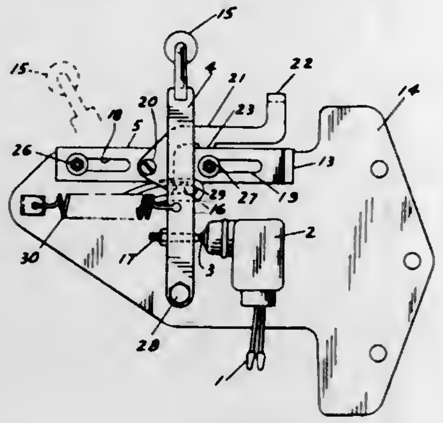
Helmut Bode, Westercelle, and Joachim Nicodemus, Nienberg, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed June 27, 1966, Ser. No. 560,455
Claims priority, application Germany, July 5, 1965, D 47,660
U.S. Cl. 89—1.808 **12 Claims**
Int. Cl. F41f *3/04*



A tubular rocket launcher having guide vanes to produce rotational force from the exhaust of the rocket and auxiliary power units having rotation producing propellant charges. The guide vanes and charges are on a separate tube that contains the foldable rocket tail assembly, with the remainder of the rocket launcher being rotatably mounted with respect to a support.

3,427,922
LOADER'S SAFETY SWITCH

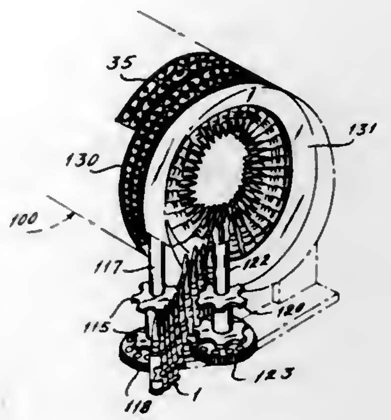
Donald L. Wagner, Detroit, Mich., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 13, 1967, Ser. No. 682,686
U.S. Cl. 89—28 **4 Claims**
Int. Cl. F41f *13/08*



A new electro-mechanical loader's safety switch whereby a manually operated lever is rotated and latched in a position wherein the lever causes an electric switch to be closed to complete part of a gun firing electric circuit. The latching means releases the lever either automatically upon recoil of the breech or by manual operation. A pin on the lever moves in an arcuate path to intercept a trip link carried by a slide link which cooperates with the reciprocating motion of the breech.

3,427,923
STORAGE OF LINKED AMMUNITION FOR CARTRIDGE FEED SYSTEMS

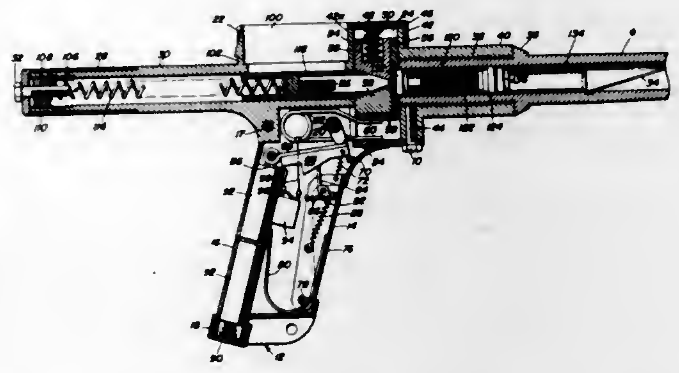
Elwyn A. Meyer, Granite City, Ill., and Charles L. Brownfield, St. Louis, Mo., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Feb. 8, 1967, Ser. No. 614,703
U.S. Cl. 89—33 **13 Claims**
Int. Cl. F41d *9/02;* **F41c** *25/10*



A method of feeding cartridges to a rapid fire gun by linking the cartridges for hinge movement with respect to one another, accordion folding the linked cartridges to form a package, pushing the folded cartridge package into a feed channel wide enough to accommodate the package, and subsequently pulling the linked cartridges from the package to form a single file of cartridges at a gun feed station. Apparatus for accomplishing the method by moving a single file of cartridges between the nip of alternately notched, facing, power driven elements such as sprockets, the notches of two elements being staggered at the nip with respect to one another and of a depth and spacing to receive cartridges at the nip whereby successive cartridges are offset from one another, and the driven elements force the offset cartridges into accordion folded condition. A second driven element station in the course of a long channel to act as a booster.

3,427,924
ELECTRICALLY FIRED GUN AND CARTRIDGE THEREFOR

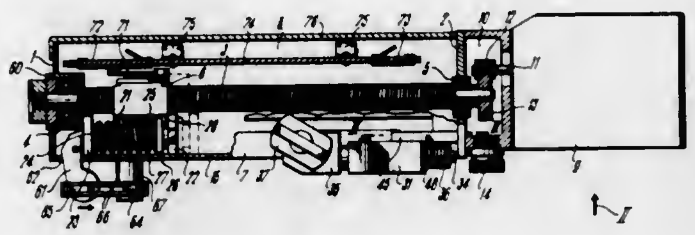
Erich Cornelius Johnsen, 1205 Broad St., Victoria, British Columbia, Canada
Filed Oct. 20, 1966, Ser. No. 588,094
U.S. Cl. 89—135 **8 Claims**
Int. Cl. F41d *9/02, 11/02*



An automatic gun for electrically firing a cartridge. The gun is provided with a breech having a pair of blocks. One of the blocks is provided with a pair of electric contacts. The cartridge is provided with a similar pair of contacts. The pairs of contacts are engaged when the gun is loaded. A pair of electrical circuits are supplied for firing the cartridges. The trigger is operated to a first position to complete one circuit for firing a single shot or to provide for continuous firing and is moved to a second position to complete a second circuit for providing a preselected firing pattern.

3,427,925
ACTUATING DEVICE FOR AUTOMATIC FIREARMS

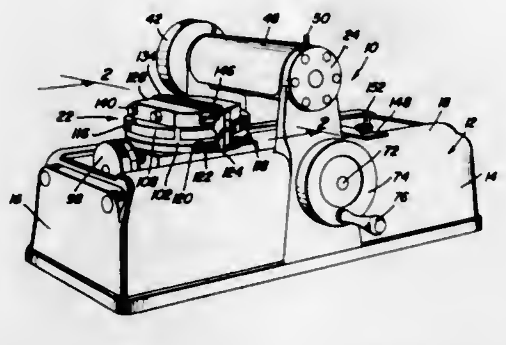
Kurt Horn, Oberndorf (Neckar), Germany, assignor to Heckler & Koch G.m.b.H., Oberndorf (Neckar), Germany
Filed July 7, 1966, Ser. No. 563,490
Claims priority, application Germany, July 15, 1965, H 56,596
U.S. Cl. 89—136 **23 Claims**
Int. Cl. F41d *9/02, 11/02*



Apparatus for actuating automatic firearms, especially machine guns, comprising an actuating member including a nut mounted on a threaded spindle with ball bearings interposed therebetween, said actuating member being non-rotatably constrained with respect to a housing wherein said spindle is supported, but being axially-displaceable with respect thereto, a single electric motor adapted by means of a suitable gear drive, to reversibly drive said spindle, thereby effecting displacement of said nut with respect to said housing, and an intermediate member activated by said nut to move the breech block of an automatic weapon in one direction to cock said weapon and to activate the trigger of said weapon when said electric motor drive is reversed. According to an alternative embodiment of the present invention, the actuating member is connected with one end of the core of a cable, thus enabling the actuation of the weapon to be effected from a place remote from the weapon.

3,427,926
INTERRUPTED TYPE FACING MACHINE

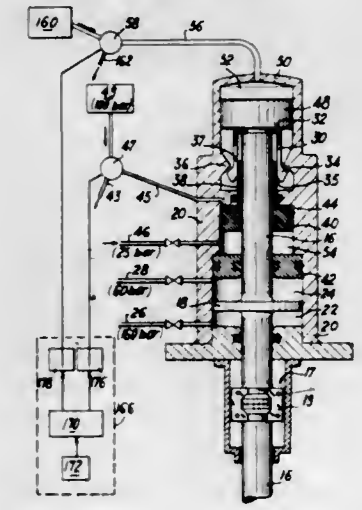
George A. Simms, 3265 Queenstown Drive, Mount Rainier, Md. 20822
Filed Mar. 2, 1967, Ser. No. 620,133
U.S. Cl. 90—18 **5 Claims**
Int. Cl. B23c *1/00;* **B23p** *17/04*



A device for making interrupted type faces on a conventional type slug by forming grooves or recesses across the type face incorporating structural arrangements which enable accurate adjustment and variation in the interruptions thereby varying the configuration of the type face and the appearance characteristics of the printed work produced by the interrupted type faces produced by the device. The angular relation of the interruptions may be accurately set as well as the spatial relation of the interruptions, the width characteristics of the interruptions and the depth and length of the interruptions may also be adjusted and varied thereby, enabling the characteristics of the interrupted type face to be accurately and precisely varied depending upon the requirements of the printed work.

3,427,927
METHOD AND APPARATUS FOR PRODUCING HIGH-SPEED TRANSLATIONAL MOVEMENT

Jean-Jacques Beauval, Saint-Denis, Jean Duhem, Ivry-sur-Seine, and Antenore Pacchioni, Versailles, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Nov. 15, 1966, Ser. No. 594,603
Claims priority, application France, Nov. 17, 1965, 38,822
U.S. Cl. 91—36 **26 Claims**
Int. Cl. B15b *21/02, 15/26;* **G60g** *11/26*

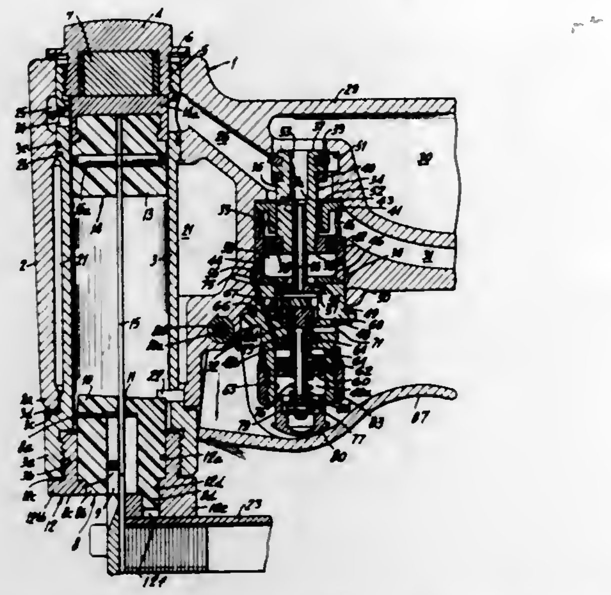


The present disclosure is directed to an apparatus for moving a moveable assembly back and forth at a high speed which comprises a stationary casing, a shaft secured to a drive piston and forming a part of the moveable assembly, said piston slidably disposed within said casing and establishing two substantially pressure-type compartments, means for establishing different pressures in said compartments such that the pressure in one is higher than the pressure in the other, a mechanism for positively latching the piston in a predetermined position, said mechanism being capable of resisting the pressure force exerted on the piston, a plunger forming part of the moving assembly and having a surface which defines a drive space between it and the stationary casing, and timing means which successively deenergizes the latching mechanism for releasing the moving assembly, establishes within said drive space an over pressure which produces action in the opposite direction to said original pressure force on said piston, and relatches the moving assembly in said predetermined position. The present disclosure is also directed to a method for producing translational movement at a high repetition frequency using the above described apparatus.

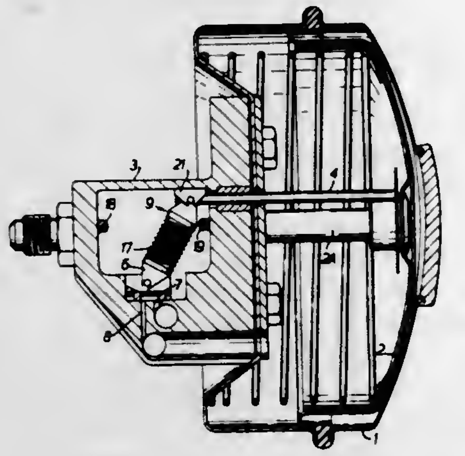
3,427,928
COMPRESSED AIR-OPERATED DRIVE-IN APPARATUS TO DRIVE-IN FASTENERS

Heinz Emil Bade, Hamburg, Germany, assignor to Joh. Friedrich Behrens, Ahrensburg, Holstein, Germany, a partnership
Filed July 6, 1966, Ser. No. 563,137
Claims priority, application Germany, Mar. 11, 1966, B 86,158
U.S. Cl. 91—305 **22 Claims**
Int. Cl. F15b *11/15;* **B25c** *5/06, 5/10*

The pneumatic fastener driver embodying the invention comprises a body formed with a cylinder. A working piston in the cylinder carries a fastener drive ram and is movable in said cylinder away from retracted position in a fastener drive direction to a predetermined fully driven position and back to said retracted position. A trigger is mounted on the body for movement from a normal position to an operating position and back to normal position. Compressed air operated means controlled by movement of said trigger away from its operating position automatically causes the working piston to repeatedly move in a fastener driving direction away from retracted position to fully driven position and back to retracted position, a number of successive times continuously while said trigger remains in operating position, and to terminate said repeated back and forth movement of said working piston upon said trigger moving back from its operating position to its normal position.

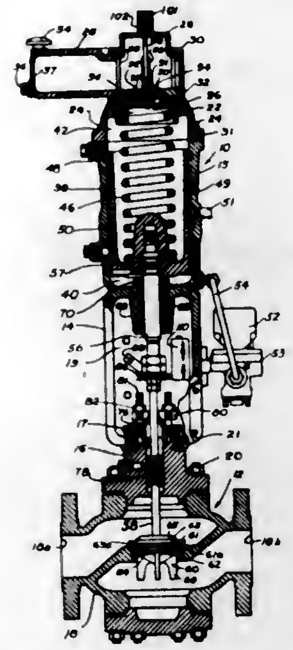


3,427,929
VALVES FOR FLUID OPERATED MOTORS
Stuart Bruce Dawson, Tyseley, Birmingham, England, assignor to Girling Limited
Filed Jan. 30, 1967, Ser. No. 612,583
U.S. Cl. 91—347 **3 Claims**
Int. Cl. F01l *31/04, 31/06, 29/10*



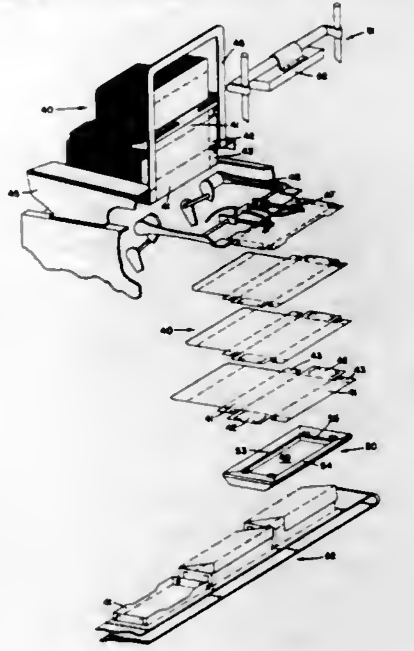
The invention is an automatic valve for controlling the supply of fluid to a reciprocating motor, which may be a pressure or vacuum operated motor, single or double acting. The valve has a reciprocating valve member actuated by an actuating member (which is reciprocated by the motor) through the intermediary of a novel linkage and a coil spring. As the actuating member moves in one direction of movement of the actuating member. In the and then passes an over centre position. The spring is then released and tends to drive the valve member towards its opposite end position, in a direction opposite to the direction of movement of the actuating member. In the event that the released energy of the spring is insufficient to overcome the static friction to which the valve member is subject, the link engages a stop just before the end of the stroke of the actuating member, and the link is thereby caused to pivot so as positively to drive the valve member away from its instant position.

3,427,930
VALVE ACTUATOR
Bob R. Roberts and William A. Etter, Marshalltown, Iowa, assignors to Fisher Governor Company, a corporation of Iowa
Filed July 2, 1965, Ser. No. 469,171
U.S. Cl. 92—12 **2 Claims**
Int. Cl. F15b *15/14, 21/00;* **F16k** *31/143*



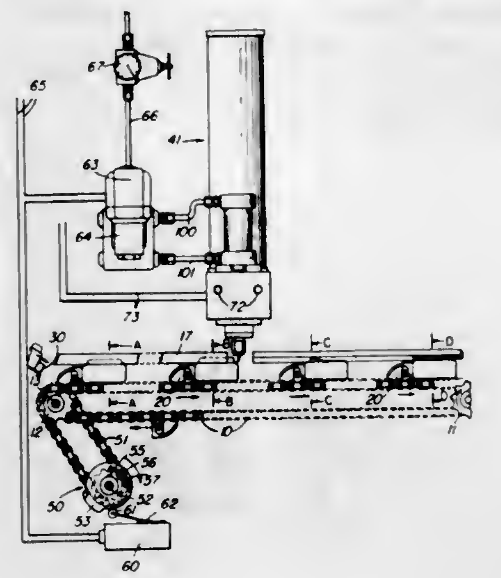
A pneumatically operated spring-return or actuated valve mechanism having a driven piston stroking speed control to permit adjustment of the speed of the piston in one direction of movement. The mechanism is provided with an elongated rotatably mounted reservoir constructed and arranged, so as to be mounted on the casing of the device either in a vertical position or a horizontal position.

3,427,931
METHOD AND MEANS OF PRODUCING MULTIFORM CONTAINERS FROM PRE-CUT BLANKS IN A CONTAINER-FORMING MACHINE
Daniel Wainberg, 4755 Blvd. des Grandes Prairies, St. Leonard, Montreal 38, Quebec, Canada
Filed Apr. 19, 1966, Ser. No. 545,211
U.S. Cl. 93—51 **1 Claim**
Int. Cl. B31b *1/44, 11/00, 1/26*



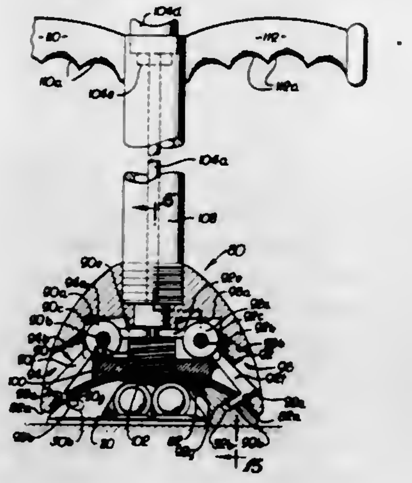
A method of producing a multiformity of containers from pre-cut blanks of various sizes and shapes in a container forming machine without interrupting the continuous operation of the container forming machine, and which consists in having a paradigm of a specified type of container blank which conforms with the dimensions of the plunger head and forming die and the blank handling structures of the magazine and feeding mechanism, the paradigm comprising a bottom wall of a predetermined length and width and provided with integral-end walls and side walls, the widths of the end walls and the lengths of the side walls being identical with the width and length of the bottom wall. The side walls are provided with integral locking flaps, and locking means are formed in the end walls and the locking flaps and are an integral part thereof, the length and width of the locking flaps being comparatively the same length and width as the portions of the end walls that encompass their locking means. The multiformity of the pre-cut blanks may differ with respect to their configurations and sizes from the paradigm from which they are patterned, always providing that such blanks maintain approximately the same lengths with respect to their bottom walls and accompanying side walls as to the corresponding parts of the paradigm, as well as maintaining the same width of their bottom walls and their integral end walls, together with the lengths and widths of their locking flaps maintaining the same lengths and widths as the portions of the end walls that encompass their locking means, all in accordance with the corresponding sizes in the said paradigm, and the blank handling structures of the magazine and the feeding mechanism and the dimensions of the plunger head and the forming die lending themselves to the differences of configurations and sizes of the multiformity of pre-cut blanks with respect to the paradigm in the formation of such blanks into containers.

3,427,932
APPARATUS FOR ATTACHING CONTAINER COVERS BY ADHESIVE MEANS
Edward E. Wagner, Chester, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed July 28, 1966, Ser. No. 568,492
U.S. Cl. 93—55.1 **12 Claims**
Int. Cl. B31b *17/00*



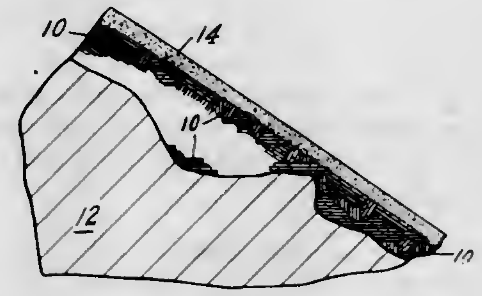
Apparatus for adhesively attaching cover members to body members of container units the units being preassembled and one of the members having a hinge flap to be secured to the other member, said units being conveyed seriatim through the apparatus past elements which hold the flap distended while a band of hot melt adhesive is applied and the flap then compressed down on the adhesive area, the apparatus including automatic means precisely controlling an adhesive applicator which includes a pump for delivering adhesive to the adhesive nozzle controlled by a differential pressure valve which is automatically opened upon operation of the pump on a discharge stroke.

3,427,933
ROAD SURFACE MARKER AND INSTALLATION APPARATUS THEREFOR
Robert W. Taylor-Myers, 2580½ N. Beachwood Drive, Hollywood, Calif. 90028
Continuation-in-part of application Ser. No. 602,985, Dec. 19, 1966. This application Dec. 29, 1967, Ser. No. 701,805
U.S. Cl. 94—1.5 **20 Claims**
Int. Cl. E01f *9/00;* **E01c** *23/16, 19/00*



A marker device comprised of a small flat structure having sloping forward and rear ramp-like faces and sloping side shoulders. Recessed below the outer surfaces of the structure are vertical faced reflectors positioned to reflect light in alignment with the longitudinal axis of the device. To quickly install marker devices an apparatus is provided which has a recessed bottom opening shaped to conform to the upper periphery of a marker device. A retractable caliper-type grip can be moved into the recessed opening to grasp and hold a marker device or triggered to release a marker device held therein.

3,427,934
SKI SLOPE OR THE LIKE WITH LAYER OF TREE BARK
Ira Zames, New York, N.Y., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 31, 1966, Ser. No. 576,382
U.S. Cl. 94—3 **2 Claims**
Int. Cl. E01c *13/00;* **A63c** *19/10*



A topographical slope suitable for skiing has a layer of tree bark distributed thereover to cover the underlying grass and rocks and to reduce the degree of natural occurring irregularities. The layer of tree bark tends to retard the growth of vegetation in the underlying terrain and to provide a more desirable surface for snow upon which skiing may be enjoyed.

3,427,935
EXPANSION JOINT FOR ROADS AND BRIDGES

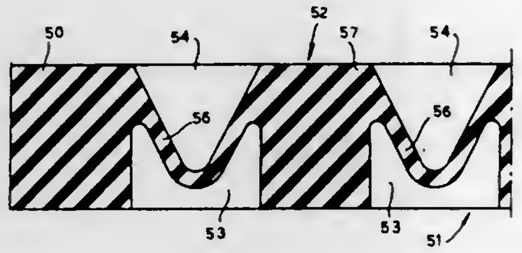
Antonio Boschi, Milan, Italy, assignor to Società Applicazioni Gomma Antivibranti "Saga" S.p.A., Milan, Italy

Filed Sept. 13, 1966, Ser. No. 579,056

Claims priority, application Italy, Sept. 27, 1965, 21,456/65

U.S. Cl. 94—18 **4 Claims**

Int. Cl. E01c *11/10*



An expansion joint for roadways comprises a flat strip of rubber having in its opposite faces symmetrically arranged arcuate grooves extending transversely of the strip and terminating short of the side edges to leave ungrooved marginal portions. Grooves in opposite faces of the strip are approximately in register so as to define, between successive grooves, arcuate webs extending between the marginal portions at opposite sides of the strip. Successive webs are connected by diaphragms formed by the material between the bottoms of grooves in opposite faces.

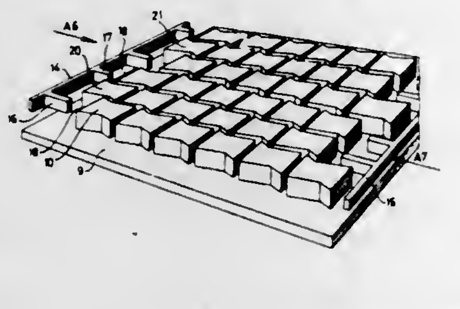
3,427,936
METHOD FOR PAVING A STREET

Antonius Johannes Van der Meijden, Boslaan 63, Son, Netherlands

Filed Aug. 1, 1966, Ser. No. 569,515

U.S. Cl. 94—22 **1 Claim**

Int. Cl. E01c *5/04, 5/06;* **B28b** *15/00*



Bricks are formed in mold having a plurality of rows of cavities mutually arranged according to the arrangement of bricks in the paved street. Mold removed while bricks still soft, and after bricks dry they are pushed together to form paving unit. Paving units piled on one another to form transportable stack. At the site, paving units are grasped by a clamp and deposited one after another on to the street bed.

3,427,937
SLOPE PAVING APPARATUS

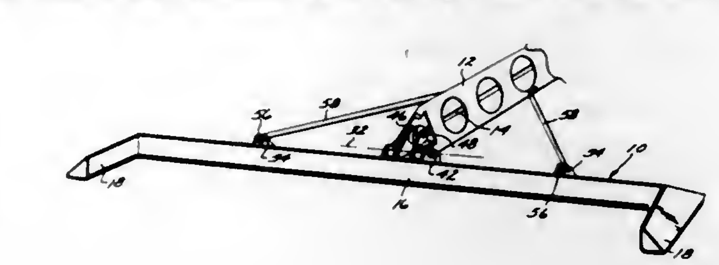
Clarke B. Tope, La Crescenta, Calif., assignor to Telstar Engineers, Inc., San Bernardino, Calif., a corporation of California

Filed Nov. 7, 1967, Ser. No. 681,443

U.S. Cl. 94—45 **2 Claims**

Int. Cl. E01c *19/48, 23/16*

Slope paving apparatus including an elongated screed bar movable upon the inclined surface of a slope by means of an extensible and retractable boom which can be raised and lowered and swung from side to side, so that the screed bar is enabled to spread and smooth plastic concrete up the slope.



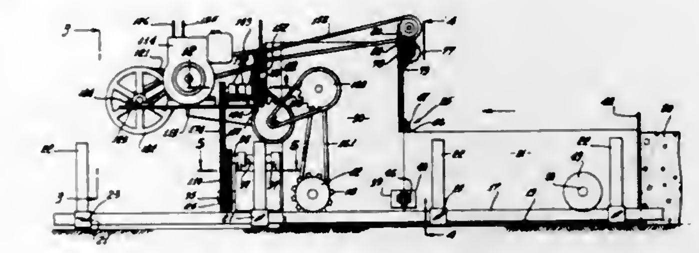
3,427,938
CURB AND GUTTER EXTRUDING MACHINE

Byron F. Handy, Jr., Allen R. Handy, and Gregory S. Handy, Riverside, Calif., assignors to BAS Equipment and Manufacturing Co., Inc., Riverside, Calif., a corporation of California

Filed Feb. 2, 1967, Ser. No. 613,648

U.S. Cl. 94—46 **6 Claims**

Int. Cl. E01c *19/48*



A travelling rail supported fluid concrete hopper from the bottom of which said concrete is screw-fed rearwardly through a curb extruding shoe to form on the soil a finished curb and having a vertical power ram for installing transversely in said curb and at suitable intervals lengthwise thereof a sheet expansion joint element.

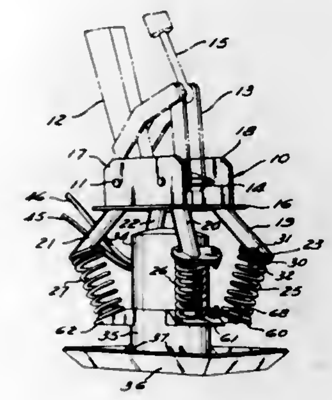
3,427,939
VIBRATORY COMPACTER

Joseph A. Braff, Woodmere, and Richard L. Fox, Cleveland Heights, Ohio, assignors to Allied Steel & Tractor Products, Inc., a corporation of Ohio

Filed Sept. 13, 1965, Ser. No. 486,968

U.S. Cl. 94—48 **5 Claims**

Int. Cl. E01c *19/30*



A steerable vibration compacter for use on tractor-mounted booms ("dip-sticks") to tamp back fill on level and inclined surfaces. Compaction unit is unsprung and comprises bottom plate carrying motor for rotated eccentric weights about a horizontal axis, frame for motor, housing, etc. Axis of rotation of eccentrics is in the horizontal plane of the center of gravity of compacter unit. Inwardly convergent stiff springs are connected to housing so that axes of springs substantially intersect the horizontal plane of center of gravity equidistantly about a vertical axis through center of gravity of compaction unit. The convergent springs are connected to a top plate by which constant pressure perpendicular to bottom plate is applied to compaction unit by the dip-stick, which also steers unit in directions perpendicular to direction of pressure. Convergence of springs on center of gravity plane overcomes tendency of compaction unit to "walk out" from under dip-stick, either under perpendicular pressure of dip-stick or opposite to a sidewise direction in which the unit is steered by the dip-stick.

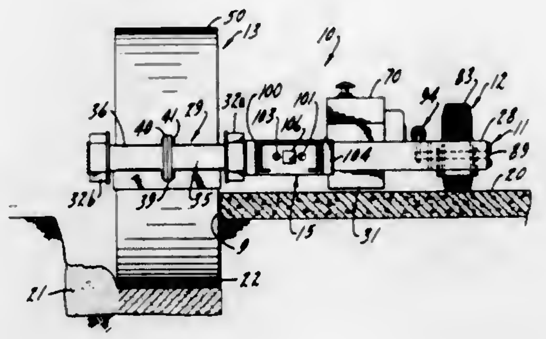
3,427,940
TOW-TYPE TWO-WHEELED VIBRATORY TRENCH ROLLER APPARATUS

Raymore D. MacDonald, Hinsdale, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 15, 1966, Ser. No. 579,702

U.S. Cl. 94—50 **10 Claims**

Int. Cl. E01c *19/28*



A two-wheeled tow-type vibratory trench roller having vibration isolating means which isolates the main frame from vibratory impulses imparted to the compacting roller by a vibrator assembly, said assembly being easily removable from the compacting roller for maintenance and repair.

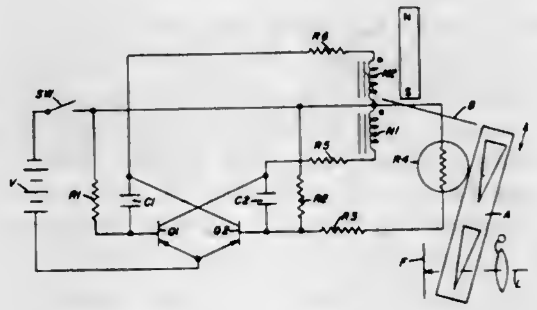
3,427,941
AUTOMATIC EXPOSURE CONTROL

Lenard M. Metzger, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 527,171, Feb. 14, 1966. This application July 28, 1966, Ser. No. 573,441

U.S. Cl. 95—10 **10 Claims**

Int. Cl. G01j *1/52;* **G03b** *7/08*



An automatic exposure control is driven by a trigger circuit which alternately drives the control in two directions. The amount of energy to drive the control in a particular direction is varied in order to position the control.

3,427,942
CAMERA APPARATUS AND FILM

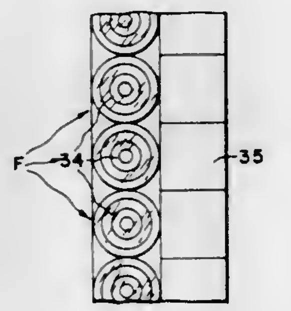
Iben Browning, 1176 Sesame Drive, Sunnyvale, Calif. 94087

Filed Aug. 30, 1965, Ser. No. 483,515

U.S. Cl. 95—11 **9 Claims**

Int. Cl. G03b *19/18, 21/00, 21/20*

A shutterless camera is described having a series of lenses positioned in side by side relation and moving with associated picture matrix areas for taking still or motion pictures without a shutter. The lenses can be in the form of Fresnel lenses positioned side by side on one half of the film for cooperating with a roof prism with picture frame areas arranged in side by side relation on the other half of the film. The film can include lenses having different focal lengths and the projector illumination for the recorded pictures can be slightly larger than a single or multiple number of frame areas.



3,427,943
CINEMATOGRAPHIC OR PHOTOGRAPHIC FILMING APPARATUS

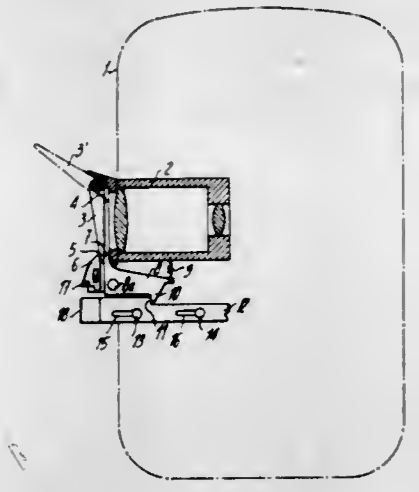
Max Leibundgut, Yverdon, Vaud, Switzerland, assignor to Paillard S.A., Sainte-Croix, Vaud, Switzerland, a company of Switzerland

Filed Oct. 5, 1966, Ser. No. 584,552

Claims priority, application Switzerland, Oct. 22, 1965, 14,651/65

U.S. Cl. 95—11 **3 Claims**

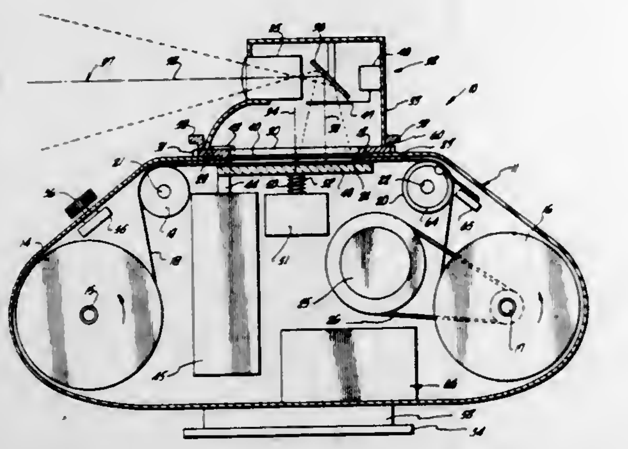
Int. Cl. G03b *19/04, 19/18*



An attachment for cameras which includes a cover for the objective lens to prevent dust from collecting thereon when the camera is not in use and a device for automatically locking the shutter release mechanism of the camera when the cover is in closed position so as to prevent accidental actuation thereof. A slidable catch which is engageable with an edge of the cover when the latter is closed is located on the camera casing adjacent an operating member for the shutter release mechanism. Movement of the catch to its unlatched position permits the cover to be opened and the shutter release mechanism to be unlocked so that the operating member can be actuated almost instantaneously when the user desires to take a picture.

3,427,944
TOPOGRAPHIC PANORAMA CAMERA

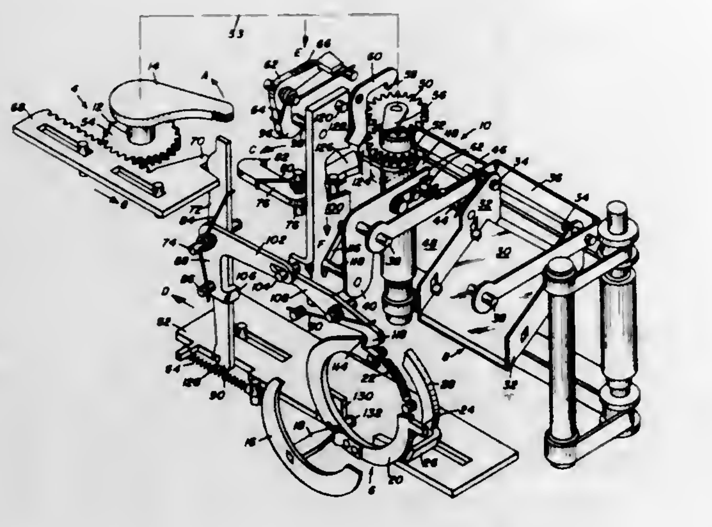
David D. Hatfield, Altadena, Calif., assignor to Card-Key Systems, Inc., Burbank, Calif., a corporation of California
Filed Dec. 13, 1965, Ser. No. 513,496
U.S. Cl. 95—15 **9 Claims**
Int. Cl. C03b *37/00*



A typographical survey camera in which a rotatable turret houses an optical system arranged to cast an image, erect relative to the axis of rotation of the turret, on a sheet of film disposed in a housing to which the turret is mounted, the camera producing a circular picture of a scene scanned by the turret. The camera includes means for local or remote operation of film advance, turret scanning and shuttering functions of the camera so that accurate surveys may be obtained by only a single individual in minimum time.

3,427,945
SINGLE LENS REFLEX CAMERA

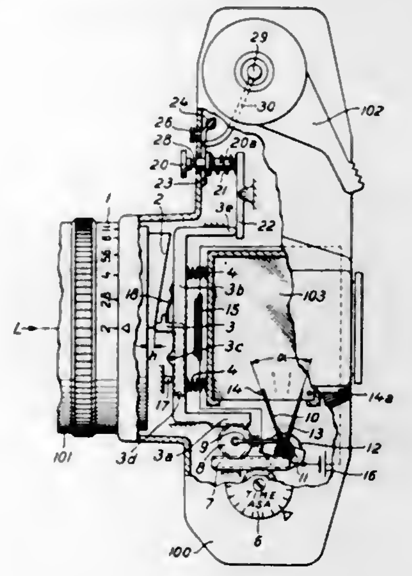
Helmut Ettischer, Ruit, Kreis, Esslingen, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 1, 1966, Ser. No. 524,034
Claims priority, application Germany, Feb. 5, 1965, K 55,196
U.S. Cl. 95—42 **5 Claims**
Int. Cl. G03b *19/12*



A control device for a single lens reflex camera for controlling operation of the mirror and shutter mechanisms. The control device consists of a pair of relatively movable members arranged to tension drive springs for each of the mirror and shutter mechanisms upon movement of the members from a normal position. One of the drive springs for the mirror and shutter mechanisms normally maintains the two control members in its normal position.

3,427,946
SINGLE LENS REFLEX CAMERAS

Heinrich Broschke, Werner Holle, and Willi Wiessner, Wetzlar, Germany, assignors to Ernst Leitz G.m.b.H., Wetzlar, Germany, a corporation of Germany
Filed Oct. 5, 1966, Ser. No. 594,648
Claims priority, application Germany, July 6, 1966, L 51,782
U.S. Cl. 95—42 **15 Claims**
Int. Cl. G03b *19/12*



1. In a single lens reflex camera system having a camera housing, and a plurality of exchangeable lenses of differing maximum aperture, the camera housing having a light meter including a light sensitive element positioned in the imaging ray path of any of the lenses when mounted to the housing, each lens having a lens mount which includes a diaphragm and a diaphragm selector ring for selecting a diaphragm opening over a range from a largest to a smallest opening, divisible in steps, with sequential selecting steps each effective for selectively halving or doubling of the light intensity, the selected diaphragm opening becoming the actual aperture when the diaphragm is closed down to the selected aperture value, the combination comprising:

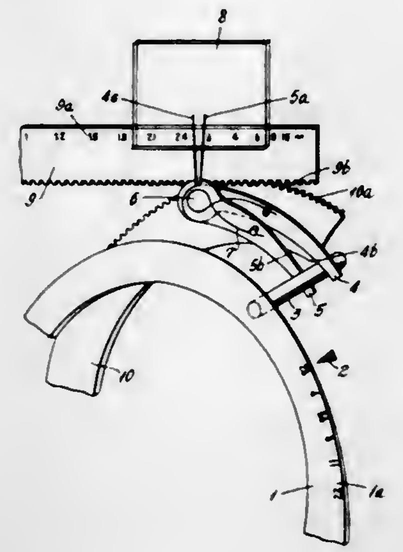
indicating means included in the light meter to provide an indication of the light intensity permitted to reach said element through one of the lenses when mounted to the camera housing;

reference means for the indicating means; and

control means for providing a variation in the relation between the reference means and the indicating means including a cam follower arrangement having feeler means for controlling said relation, further including a cam on the selector ring of the lens mounted to the camera and having a contour similar for the several selector rings, but having a different position relative to the diaphragm aperture values as selectable by the several selector rings, the contour providing a particular position of the feeler for the largest diaphragm aperture selectable for the lens mounted to the camera independently from the value thereof and providing positions for the feeler varying linearly for diaphragm aperture selections smaller than the largest value.

3,427,947
DEVICE FOR INDICATING THE DEPTH-OF-FIELD RANGE FOR PHOTOGRAPHIC CAMERAS

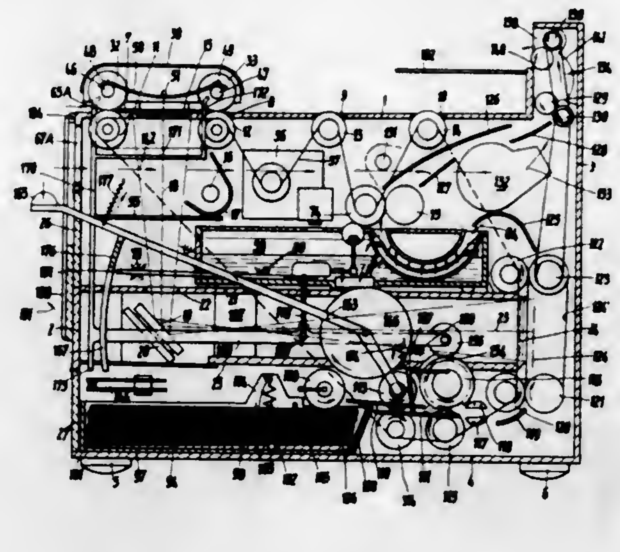
Waldemar Racki, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany
Filed Jan. 21, 1966, Ser. No. 522,184
Claims priority, application Germany, Feb. 5, 1965, G 42,760
U.S. Cl. 95—44 **6 Claims**
Int. Cl. G03b *3/08*



A device for indicating the depth-of-field range for photographic cameras fixes the indicators on two shear-like levers positioned about a fixed pin. The lever edges face each other. The control edges of the two levers are held against a control pin by a spring. The control pin is situated on an actuating ring for the diaphragm setting mechanism.

3,427,948
COPYING DEVICE

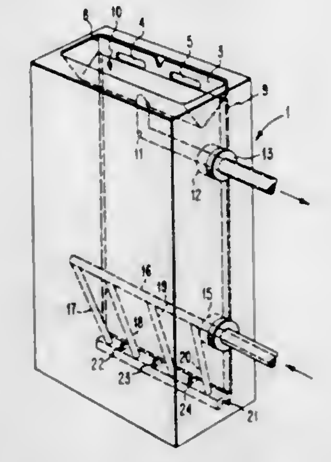
Walter Limberger, Hamburg, Poppenbuttel, Germany, assignor to Lumoprint Zindler KG., Hamburg, Germany
Filed Apr. 19, 1966, Ser. No. 543,593
Claims priority, application Germany, Apr. 23, 1965, L 50,549
U.S. Cl. 355—12 **14 Claims**
Int. Cl. G03b *27/04, 27/08, 21/00*



Apparatus for manufacturing copies employing the electrophotographic method in which individual sheets of copying material are transported along a path containing charging means, exposing means and developing means. For controlling operation of the apparatus, a control cam roller is provided in combination with the transport rollers for selectively operating the copying cycle within the apparatus.

3,427,949
LAMINAR FLOW FILM DEVELOPING APPARATUS

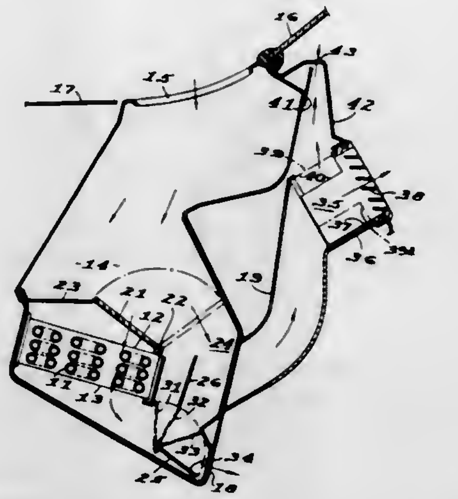
Robert D. Knight, Berkeley, and Daniel A. Nepela, Saratoga, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 7, 1966, Ser. No. 540,911
U.S. Cl. 95—89 **3 Claims**
Int. Cl. G03d *3/02*



A development apparatus used in the development of a silver halide film chip. Liquid introduced in the lower portion of the chamber will flow in a laminar manner on both sides of the film chip from the lower portion of the chamber up and out of the upper portion of the chamber into an overflow trough contacting the entire film area to be developed. Due to the laminar flow of liquid within the chamber a sharp interface between solutions is achieved so that the various solutions can be sequentially introduced with a following solution sweeping a prior solution out of the top of the chamber into the overflow. The laminar flow provides a sharp, distinct interface with a minimum amount of mixing of solutions.

3,427,950
MOTOR VEHICLE HEATING AND VENTILATING SYSTEM

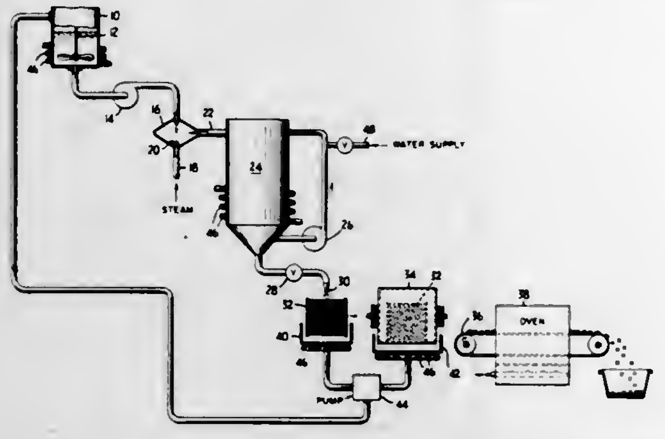
Ronald P. Pardy, Hockley, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 13, 1966, Ser. No. 586,480
Claims priority, application Great Britain, Oct. 14, 1965, 43,565/65
U.S. Cl. 98—2 **7 Claims**
Int. Cl. B60h *1/22*



A motor vehicle heating and ventilating system including a heat exchanger portion, a bypass portion, and valve means constructed to direct the air flow from the heat exchanger portion against the normal flow of the bypass portion, thereby assuring complete mixture of heated and bypass air.

3,427,951
PROCESS OF COATING FOOD

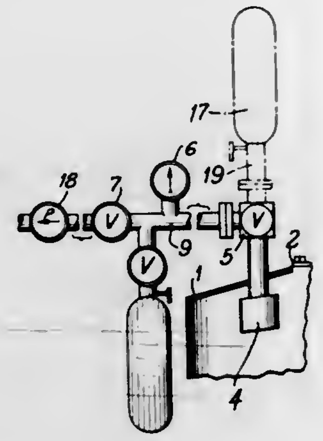
Frank J. Mitan, Whiting, Ind., and Louis Jokay, Evanston, Ill., assignors to American Maize-Products Company, a corporation of Maine
Filed Mar. 17, 1965, Ser. No. 440,559
U.S. Cl. 99—166 **6 Claims**
Int. Cl. A23b *7/16, 5/06, 3/14, 1/10*



Protective coatings are formed on the surface of foods and other articles by forming an aqueous slurry containing a hydroxyalkyl ether of starch having a natural amylose content of at least about 50% by weight, cooking the slurry under super-atmospheric pressure to at least partially gelatinize the starch ether granules, releasing the cooked slurry to atmospheric pressure and then applying it as a film on the surface of the food or article to be coated. A continuous process is also described for applying a coating of modified or unmodified starch, having a natural amylose content of at least about 50% by weight, to foods or other articles.

3,427,952
PROCESSING OF COFFEE

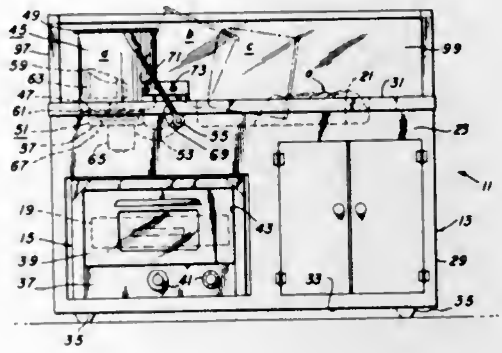
Anthony James Robertson Moon, Church Hill, Merstham, and Ronald Cheyney Champion, Ilford, Crawley, England, assignors to The Kenco Coffee Company Limited, London, England
Original application Dec. 17, 1963, Ser. No. 331,264, now Patent No. 3,333,963, dated Aug. 1, 1967. Divided and this application Mar. 25, 1966, Ser. No. 559,016
U.S. Cl. 99—236 **1 Claim**
Int. Cl. A23f *1/02;* **A23n** *9/04*



Apparatus for preconditioning roasted coffee in a closed upright container involving selectively evacuating the container and filling it with inert gas under pressure as part of the preconditioning. A manifold is positioned at the top of the closed container and extends interiorly thereof, the manifold also having common connection with a vacuum pump and two separate sources of inert gas under pressure, which can be placed in communication selectively with the interior of the closed container by manipulating suitable valve means interposed between them and said manifold.

3,427,953
APPARATUS FOR PREPARING CORNMEAL COLLETS FOR FOOD

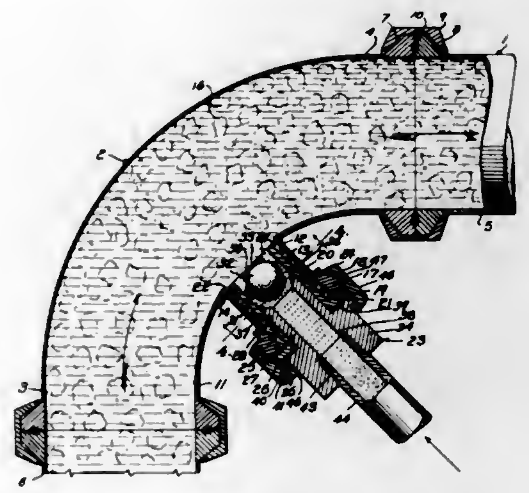
Melvin R. Staley, Paducah, Ky., assignor to Jif-Chips Snak Foods, Inc., Paducah, Ky., a corporation of Kentucky
Filed Sept. 25, 1967, Ser. No. 670,323
U.S. Cl. 99—237 **5 Claims**
Int. Cl. A23l *1/10*



Cabinet-mounted apparatus including an oven for baking cornmeal collets; revolving, tiltable kettle means for agitating and coating the baked collets with melted cheese and oil; receptacle means for receiving the coated baked collets; tray means including a sliding closure covered opening in the bottom wall of the tray means; and guide means for guidingly positioning the tray means over the kettle with the outlet opening of the tray means being arranged over the mouth of the kettle. The tray means of the apparatus being adapted to be filled with uncooked collets and placed in the oven for baking the collets and adapted for use in transferring the baked collets from the oven to the kettle.

3,427,954
APPARATUS FOR PROVIDING HEAT OF STERILIZATION IN PROCESSES OF CANNING FOOD MATERIAL

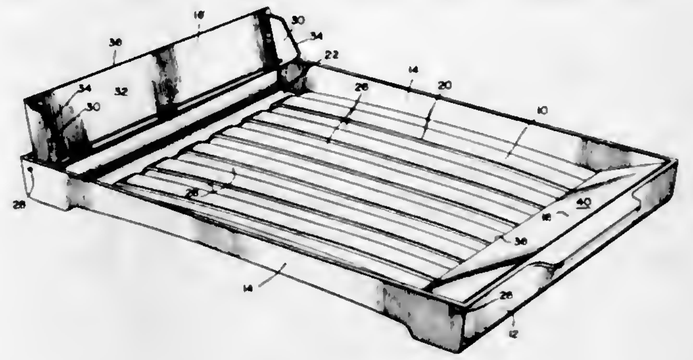
Marshall Long, Leawood, Kans., assignor, by mesne assignments, to Carnation Company, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 18, 1966, Ser. No. 535,477
U.S. Cl. 99—251 **5 Claims**
Int. Cl. B65b *55/06;* **A23c** *3/00;* **B05b** *7/02*



A continuous food sterilizer comprising a bent conduit through which the food is pumped and a steam injection nozzle mounted on the inside of the bend flush with the inside surface of the conduit. The turbulence of the food incident to its passage through the bent conduit facilitates mixture of the food and injected steam.

3,427,955
BROILER PAN

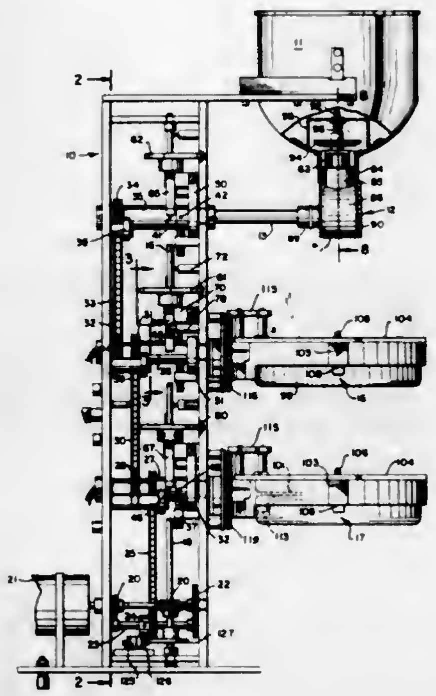
Marvin Menzin, 53 Ash St., Waltham, Mass. 02154
Filed Mar. 6, 1967, Ser. No. 620,726
U.S. Cl. 99—425 **10 Claims**
Int. Cl. A47j *37/10, 27/58;* **F24c** *3/00*



A boiling pan itself disposable or lined with a disposable material or washable and having wells covered by movable radiation shields at each end and a bottom wall that slopes from the center to the troughs to convey the meat juices to the troughs.

3,427,956
AUTOMATIC PANCAKE BAKER

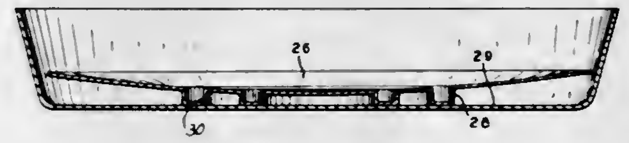
David Lawrence Jaffe, Great Neck, N.Y., assignor to Polarad Electronics Corporation, Long Island City, N.Y., a corporation of New York
Filed May 3, 1967, Ser. No. 635,810
U.S. Cl. 99—423 **15 Claims**
Int. Cl. A47j *37/10, 37/04*



The following specification discloses an automatic pancake baker which comprises a hopper for batter, a metering valve controlling discharge of batter from the hopper, a first griddle arranged immediately beneath the hopper, and a second griddle arranged immediately beneath the first griddle. Timing and control means are provided so that a measured amount of batter is discharged from the hopper through a metering valve onto the first griddle. This first griddle, after a predetermined time, rotates through 180 degrees under spring drive, while at the same time a spatula is moved about the griddle to loosen the pancake therefrom. The pancake is thus discharged in an upside-down condition on the second griddle, which after a predetermined time for baking on the second side, rotates through a 180 degree arc, also under drive of a spring, and also with a spatula operating to loosen the pancake, and discharges the pancake onto a plate placed beneath that second griddle. The metering valve and griddles are restored to operating position under positive drive. Three pancakes are baked and stacked on the receptacle, after which the motor stops and the machine remains idle until the control switch is again closed.

3,427,957
FRYING PAN INSERT

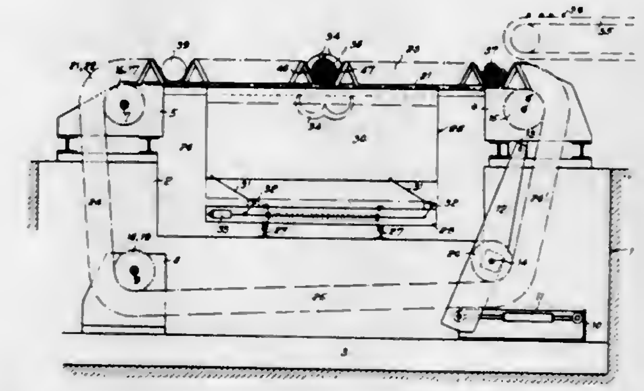
Campbell O'Reilly, 30 W. 11th St., New York, N.Y. 10011
Filed Mar. 31, 1967, Ser. No. 627,397
U.S. Cl. 99—446 **1 Claim**
Int. Cl. A47j *37/10, 36/36*



An insert for a frying pan and having a concave or convex upper face which is supported in heat conductive but spaced relation to the frying pan surface and allows grease from bacon, etc. to flow away from the surface.

3,427,958
DEVICE FOR GROUPING AND BUNDLING ROD-LIKE MEMBERS

Jean Emile Glasson, Argenteuil, France, assignor to Botalam, Paris, France, a corporation of France
Filed Mar. 20, 1967, Ser. No. 624,310
Claims priority, application France, Apr. 6, 1966, 56,654
U.S. Cl. 100—7 **6 Claims**
Int. Cl. B65b *13/02;* **B65g** *19/02, 19/24*

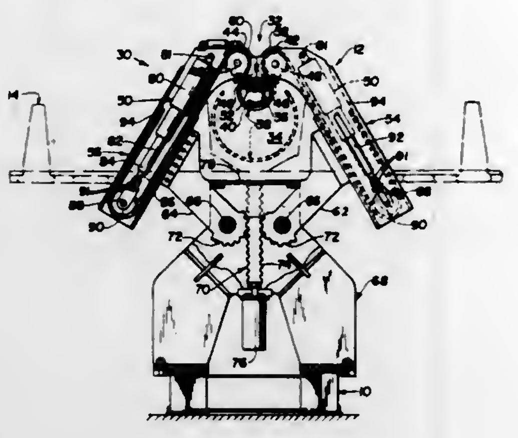


A device for grouping and bundling rod-like members having a conveyor comprised by at least a pair of adjacent endless chains rotatably driven and connected by an adjustment device for permitting relative movement to occur between said chains as desired so as to vary the phase relationship therebetween. Each of said chains has bundling members secured thereto which cooperate to define a substantially V-shaped grouping and bundling space for receiving the rod-like members. The bundling space is defined by a front wall member secured to one of the chains and a rear wall member secured to the other chain, whereby relative movement between the chains permits adjustment of the spacing between the wall members to vary the size and configuration of the bundling space.

3,427,959
APPARATUS FOR BUNDLING SLENDER ARTICLES

Walter M. Keil, Girard, Ohio, assignor to The Youngstown Foundry and Machine Co., Youngstown, Ohio, a corporation of Ohio
Filed Jan. 6, 1967, Ser. No. 607,812
U.S. Cl. 100—212 **7 Claims**
Int. Cl. B30b *5/04;* **B65b** *13/04*

A group of slender articles is supported on a strap which depends from the apex of an arch-shaped support. Tensile forces are applied to the opposite ends of the strap causing the articles to be bundled into a compact, generally circular configuration whereupon the articles are banded. The arch-shaped support preferably comprises a pair of arms which is pivotal between a raised position wherein the upper ends are abutted and define the apex and a lowered position wherein the upper ends are below the level of a conveyor. Groups of the articles are transported along a horizontal path to a position over the strap whereupon the arms are raised and the articles compacted. The compacted articles are then banded and lowered to the conveyor. With the arms in the lowered position, the conveyor transports the banded articles to a discharge station while, simultaneously, a new group of slender articles is conveyed to a position above the strap.



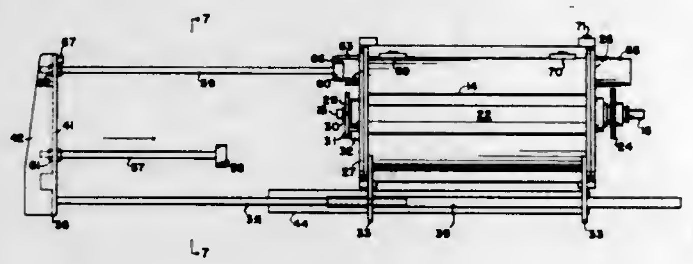
3,427,960
COMPACTING MACHINE

Guy C. Napolitano, San Francisco, Calif., assignor to Western Research and Scientific Laboratories, Inc., Berkeley, Calif.

Filed Apr. 21, 1966, Ser. No. 544,166

U.S. Cl. 100—218 **11 Claims**

Int. Cl. B30b *11/08;* **B65b** *63/02*



A machine for compacting friable material into cylindrical blocks, e.g., to form fire logs from sawdust and binder, including a drum having at least three compression chambers, each chamber being open at both ends and having an inlet opening toward the outside of the drum; a housing enclosing the chambers and mutually isolating them, the housing having an inlet passage with which the several chambers are successively brought into registry as the drum is rotated stepwise; and a reciprocable slide having (a) a compression ram and (b) an ejection plunger, both being fully retractable from the drum and movable to enter the chambers through an end opening. The drum is rotated in steps to bring each chamber in succession to a feed position, a compression position, and a discharge position, and the slide is reciprocated following each stepwise rotation, being movable only when the drum is stationary. When only one slide is used, the end of the chamber remote from the ram is closed at the compression position by a plate against which the friable material is compressed.

3,427,961
NUMBERING MACHINE ADJUSTER FOR PRINTING PRESSES

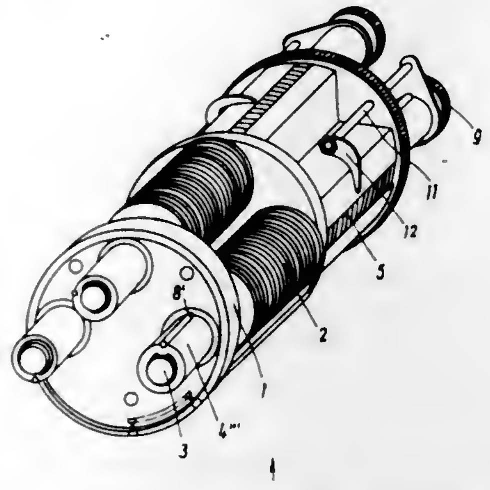
Heinz Eggeringhaus, Berlin, Germany, assignor to Maschinenbau "WAM" M. Osterhof, Berlin, Germany, a company of Germany

Filed Apr. 26, 1967, Ser. No. 633,955

Claims priority, application Germany, July 18, 1966, M 70,265

U.S. Cl. 101—76 **3 Claims**

Int. Cl. B41l *45/00*



A numbering machine adjuster for printing presses that comprises a printing cylinder, a shaft axially displaceable relative to the cylinder for coupling the number printing wheels with a manual operating member and, respectively, with indicating wheels. The coupling is carried out by means of two adjusting rings secured to the shaft. Three sleeves are provided in alignment on the shaft, and the shaft is sufficiently long so that it extends in the farthest working position, in which one end portion is pushed all the way into the cylinder, with its other end portion beyond the confines of the cylinder, and one of the sleeves covers that extending other end portion of the shaft.

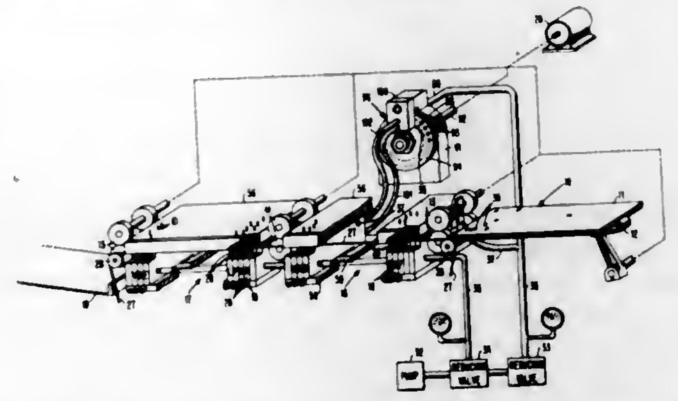
3,427,962
FLUID CONTROL MEANS FOR ZERO SUPPRESSION IN PRINTING AND SENSING DEVICES

George A. Giannuzzi and Donald W. Haney, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 14, 1965, Ser. No. 471,987

U.S. Cl. 101—93 **18 Claims**

Int. Cl. B41j *5/30;* **F15c** *1/12;* **G06m** *3/14*



1. In a machine for translating coded indicia in a document into character representation, apparatus for selectively suppressing the translation of a designated character comprising:

translation means including a predetermined duct arrangement and operable by the flow of pressurized fluid supplied thereto for sensing said document and recording said character in response to detecting indicia representative thereof;

means for selectively issuing a suppression signal when said character is to be suppressed; and

valve means interconnected in said predetermined duct arrangement and movable in response to said suppression signal for altering said duct arrangement to render said translation means inoperable.

3,427,963
ORDINAL PRINTING MECHANISM WITH ZERO SUPPRESSION MEANS FOR CALCULATORS

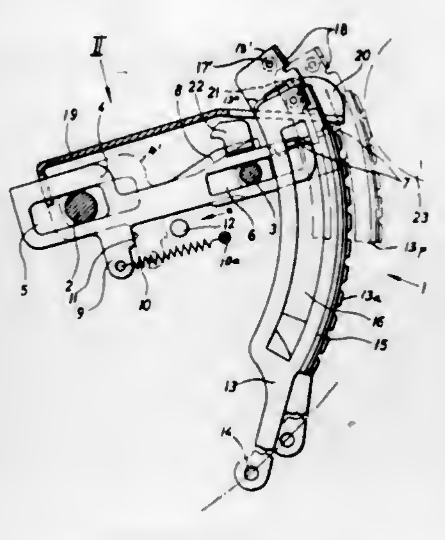
Alfred Hesse and Alfred Keiter, Wilhelmshaven, Germany, assignors to Olympia Werke AG., Wilhelmshaven, Germany

Filed Mar. 21, 1967, Ser. No. 624,959

Claims priority, application Germany, Mar. 30, 1966, O 11,550

U.S. Cl. 101—93 **10 Claims**

Int. Cl. B41j *5/46, 25/00*



Ordinal printing members, actuated by hammer slides, have coupling projections coupling adjacent printing members in zero position. The printing member of the highest order is blocked in the zero position so that a sequential series of printing members, down from the highest order to a lower order in which a digit different from zero is stored, is blocked so that no zeros are printed above the highest order of a number.

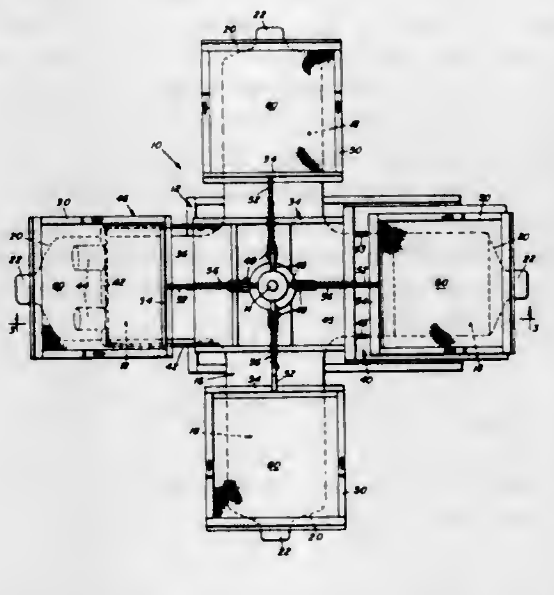
3,427,964
STENCIL PRINTING MACHINE

Michael Vasilantone, 401 John St., Roselle, N.J. 07203

Filed Feb. 16, 1967, Ser. No. 616,711

U.S. Cl. 101—115 **4 Claims**

Int. Cl. B41f *15/04;* **B41l** *13/02*



A stencil printing machine which has a stretcher assembly which is pivotal vertically and a horizontally rotatable platen assembly having a plurality of baseboards one of which is positioned beneath said stretcher assembly to tauten a shirt and prepare it for printing. A horizontally rotatable silk screen assembly has a plurality of silk screen stencils which are individually pivotal vertically for selective positioning and emplacement on the tautened shirt to achieve a successive multicolored printing operation.

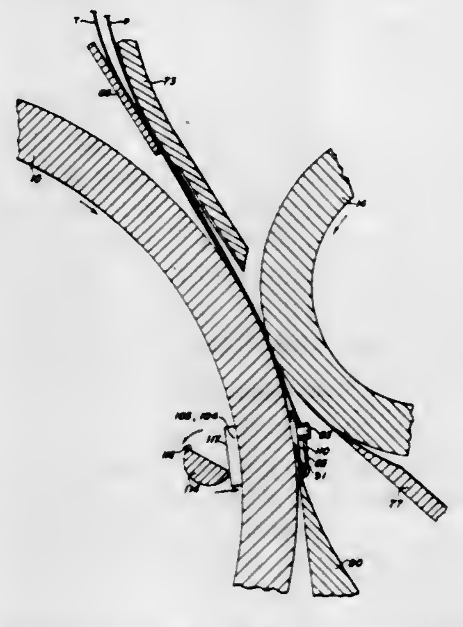
3,427,965
SHEET GRIPPER MEANS FOR REPRODUCTION MACHINE OF THE PRESSURE-TRANSFER TYPE

Lyman H. Turner, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,554

U.S. Cl. 101—132 **3 Claims**

Int. Cl. B41l *29/06;* **B41f** *21/04*



A reproduction apparatus of the pressure-transfer type incorporating a three-way roller bearing support for the rotatable copy drum and driving pressure roll, toggle type force generating means for holding the pressure roll in pressure contact with the copy drum, a foldable paper tray, automatic gripping means for attaching the transfer sheet to the copy drum, means for separating copies from the transfer sheet, and programming control means adapted at the last copy programmed to release the gripping means whereby the transfer sheet is expelled with the last copy.

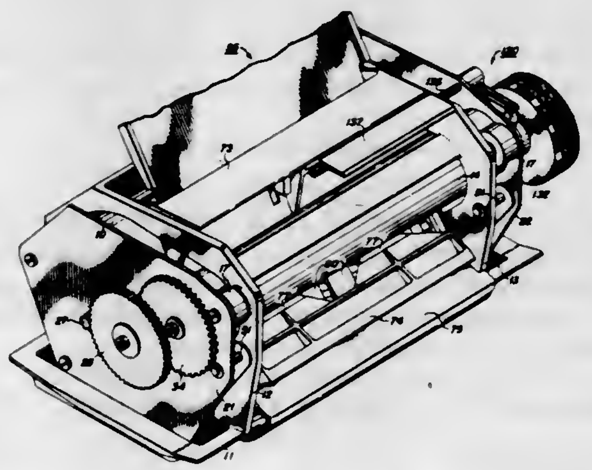
3,427,966
PRESSURE-TRANSFER TYPE REPRODUCTION MACHINE

Franklin L. Headd, Webster, and Jack O. Wilson, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,552

U.S. Cl. 101—132 **1 Claim**

Int. Cl. B41l *9/10, 31/00*

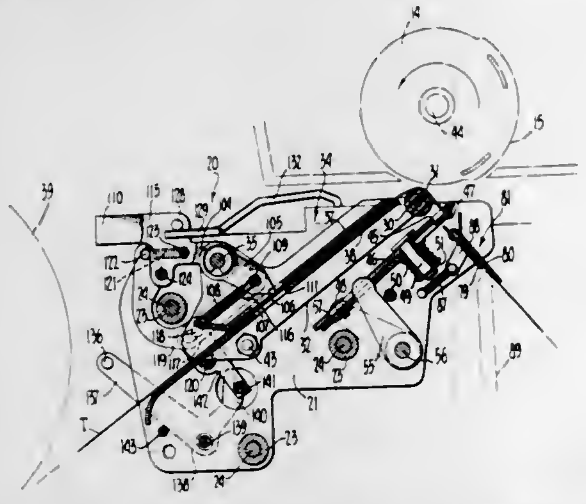


A reproduction apparatus of the pressure-transfer type incorporating a three-way roller bearing support for the rotatable copy drum and driving pressure roll, toggle type force generating means for holding the pressure roll in pressure contact with the copy drum, a foldable paper tray, automatic gripping means for attaching the transfer sheet to the copy drum, means for separating copies from the transfer sheet, and programming control means adapted at the last copy programmed to release the gripping means whereby the transfer sheet is expelled with the last copy.

3,427,967
METHOD OF PRINTING WITH LOW CONDENSATE PRINTING INK
Lawrence E. Thielen, Villa Park, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware
Continuation of application Ser. No. 544,965, Apr. 25, 1966. This application Nov. 13, 1967, Ser. No. 685,237
U.S. Cl. 101—211 **2 Claims**
Int. Cl. B41m *1/14*

A printing ink comprising a hydrocarbon soluble film forming resinous binder together with the solvent, pigment material and additives in which a least 98% of the ink is made up of ingredients that yield less than 6% condensate when measured by The Test Procedure described in the specification hereof with the result that the inks of this invention do not produce condensate streaks in letterpress and offset printing.

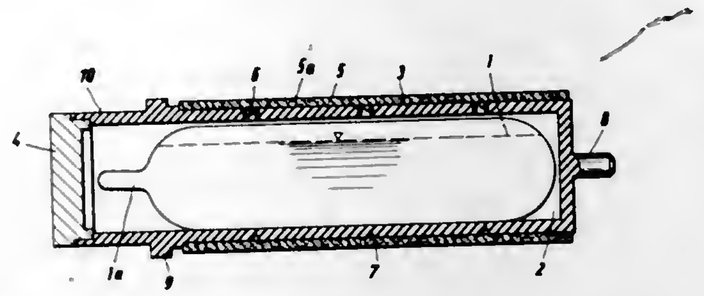
3,427,968
POSTAGE METER TAPE FEEDING MECHANISM
Vito Viola, Oakland, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,705
U.S. Cl. 101—228 **7 Claims**
Int. Cl. B41f *13/24*



A tape feeding mechanism for a postage machine whereby the tape is moved by the print head from a supply roll, printed and, thereafter, severed to provide a tap strip of a predetermined length. A yieldable means normally enabling feeding of the tape during a printing operation becomes effective to prevent retraction of the tape supply following the severing of the strip therefrom and, upon depletion of the tape supply, to prevent a tape feed operation.

3,427,969
METHOD AND DEVICE FOR REPLENISHING INK IN AN INK DISPENSER OF A BUSINESS MACHINE
Otto Strothmann, Ummeln uber Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Mar. 3, 1965, Ser. No. 436,844
Claims priority, application Germany, Mar. 5, 1964, A 45,408
U.S. Cl. 101—367 **4 Claims**
Int. Cl. B41f *31/22*

Method of supplying ink to a printing mechanism of a business machine includes placing a mechanically destructible and tightly sealed container filled with ink into the interior space of a hollow dispenser formed as an inking roller, closing the dispenser, destroying the container from outside the dispenser to release the ink into the interior space for dispensation, inserting the dispenser and container as a unit into the business machine in proximity to the printing mechanism thereof for inking the latter, and replacing the dispenser and container unit, when depleted of ink, with a similar unit filled with ink. The inking device produced by the method includes a hollow inking roller having a peripheral absorptive covering and openings through which the interior communicates with the cover, a sealed container of mechanically destructible material filled with ink, the container being inserted in the hollow space of the roller when in operative condition, the roller having means for enclosing the container in the hollow space, and exteriorly actuable means for mechanically destroying the container in the hollow space to release the ink therefrom into the hollow space.



3,427,970
METHOD OF PRODUCING MOLDED PRINTING PLATES
Edward M. Redding, Algonquin, Ill., assignor to Printing Plate Supply Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 19, 1966, Ser. No. 580,393
U.S. Cl. 101—401.1 **12 Claims**
Int. Cl. B41d *3/04*

1. The method of producing a molded printing plate, comprising,

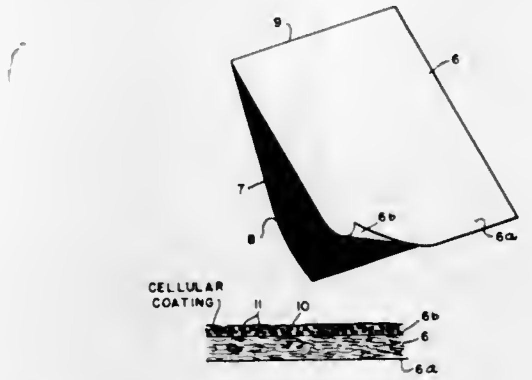
placing plate material including a layer of plastic between a first pair of closable dies, and closing and heating said dies to preheat said plastic layer under pressure for a first period of time,

thence placing said plate material between a second pair of closable dies, and closing and heating said dies to mold said plastic layer during a second period of time, with the maximum pressure applied during said second period of time being greater than the pressure exerted during said first period of time,

thence cooling said plate material by placing said plate material between a third pair of closable dies, and closing said dies for a third period of time at a temperature substantially lower than that applied during said second period of time,

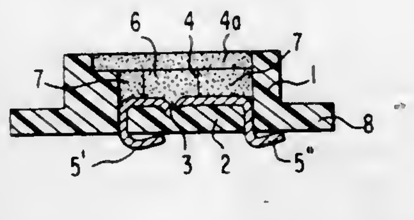
and controlling the minimum spacing between the dies of each pair of dies so that the minimum spacing of said dies of said first pair of dies during said first period of time is greater than the minimum spacing between said dies of said second pair of dies during said second period of time; and so that the minimum spacing between the dies of said second pair of dies during said second period of time is greater than the minimum spacing between said dies of said third pair of dies during said third period of time, each of said periods of time lasting several minutes and the length of time of minimum spacing not exceeding 15 seconds during at least said first and second periods of time.

3,427,971
HECTOGRAPHIC UNIT INCLUDING A MASTER SHEET HAVING A PIGMENTED PROTEINACEOUS CELLULAR COATING
Anthony J. Steber, Appleton, and Robert E. Weber, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,447
U.S. Cl. 101—473 **3 Claims**
Int. Cl. B41m *5/06*



A hectographic master unit including a master sheet having a pigmented proteinaceous cellular coating on the master sheet. The master sheet contacts the usual transfer sheet with the cellular coating contacting the oil-wax coating composition of the transfer sheet. No interleaving sheet is required between the transfer sheet and master as the cellular coating of the master inhibits premature transfer in shipment, storage and the like.

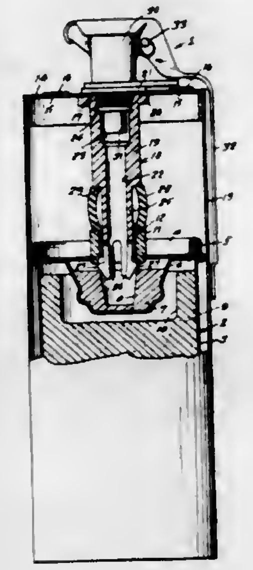
3,427,972
ELECTRICALLY IGNITED PRIMER ELEMENT
Hans Stadler, Nuremberg, Heinz Gawlick, Furth, and Hans Umbach, Stadeln, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed June 6, 1966, Ser. No. 583,153
Claims priority, application Germany, June 4, 1965, D 47,434
U.S. Cl. 102—46 **15 Claims**
Int. Cl. F42b *9/08*



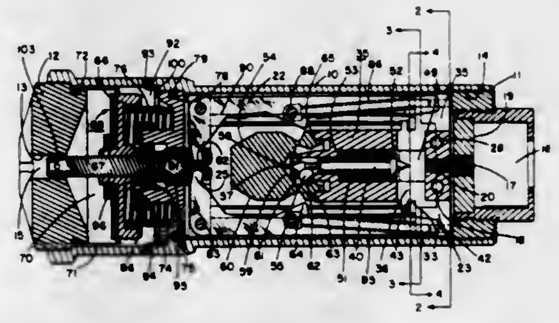
A gap-type electrically ignited primer element having two L-shaped conductors secured within a cup-shaped carrier or bottom piece to present a gap between them, which is filled and bridged by an electrically conductive primer composition accommodated within the cup-shaped carrier; the parallel legs of the conductors may be driven through the cup-shaped carrier and the aligned legs of the conductors may originally form a single bridging portion severed to form the gap.

3,427,973
GRENADE FLOATATION SHROUD HOLDING AND RELEASING ARRANGEMENT EMPLOYING PLASTIC CONNECTOR
Raymond L. Beers, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 6, 1968, Ser. No. 726,935
U.S. Cl. 102—65 **5 Claims**
Int. Cl. F42b *27/04*

A coupling to connect a smoke marker canister and a telescoping outer shroud. The coupling is made of a material that will soften under heat and consists of a member having a set of prongs normally holding the canister and shroud together, but softens under heat of an ignition mix to release the shroud for extension for making the assembly buoyant.



3,427,974
AUTOMATIC UNDERWATER EXPLODER
David P. Eastman, Novelty, Ohio, assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 25, 1960, Ser. No. 4,848
U.S. Cl. 102—81 **3 Claims**
Int. Cl. F42c *5/00, 15/08*

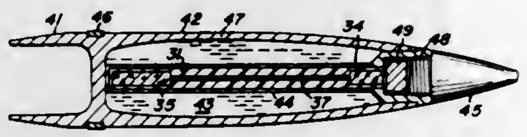


1. A hydrodynamically armed automatic underwate exploder comprising: an elongated casing having a centra axis and a first and a second opening for admitting water the axis of the first opening being substantially paralle and the axis of the second opening being substantially at right angle with respect to the central axis of said elongated casing; a partition member secured to and disposed within the casing dividing the casing into a forward and rearward chamber, said openings being located in said forward chamber; arming means operably disposed within said rearward chamber, portions of the arming means extending through said partition member; arming delay means including said openings operably associated with said forward chamber of said casing and responsive only to hydrodynamic pressure through said first opening, said delay means including diaphragm means movably disposed within said forward chamber between said first and second opening and axially displaceable therebetween and operatively connected with the said portions of said arming means to actuate the latter in response to hydrodynamic pressure acting against said diaphragm means; a spring member between the diaphragm means and the partition member and effective to retard the displace-

ment of the diaphragm means; and sealing means effective to sealingly connect the said diaphragm means to the casing.

3,427,975
ANTI-PILLARING WHITE PHOSPHORUS PROJECTILE

Russell I. Wessells and Bluford A. Dawkins, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed June 27, 1967, Ser. No. 649,365
U.S. Cl. 102—90 **9 Claims**
Int. Cl. F42b *11/24*

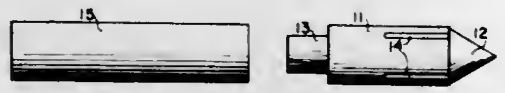


A novel burster charge configuration which upon detonation directs its maximum force at the base and nose sections of a smoke disseminating projectile.

The burster charge is a cylindrical body constructed into a forward and rear separate hollow slender chamber being positioned at each end of the said body and a centrally located bore connecting each said chamber.

3,427,976
ORDNANCE PROJECTILE

Carl F. Lucy, Mountain View, Calif., assignor to Singer-General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,810
U.S. Cl. 102—91 **2 Claims**
Int. Cl. F42b *11/10*

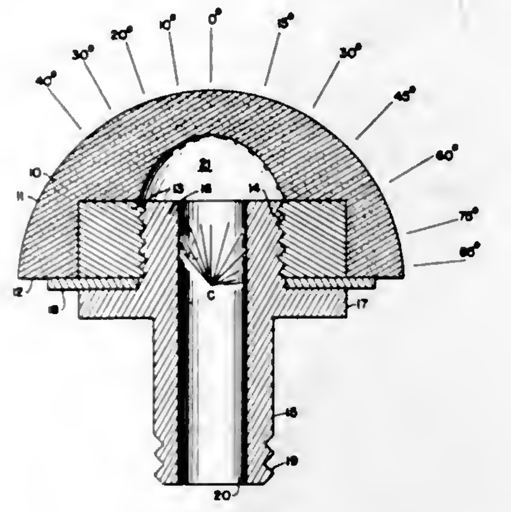


One problem in the increasing advanced design of weapons is the increase in the operational efficiency of the projectile. It has been found that the larger the proportion of the kinetic energy of the projectile which is absorbed by the target, the more effective that projectile is. This invention provides a projectile which spreads when it hits the target. By the distortion of the projectile, a substantially greater than normal proportion of the projectile's kinetic energy is transferred to the target, thereby increasing the efficiency of projectile operation. A soft material comrpises the core of the projectile, and the core is surrounded by a scored or cut jacket. When the nose of the projectile strikes the target, it begins to spread. The mass behind the nose continues to move forward causing the nose to spread more. The jacket, or casing, ruptures along the weakened lines to permit controlled spreading of the core. The unweakened portion of the jacket contains the covered part of the core in its normal, cylindrical configuration.

3,427,977
NOSE CONE TIP

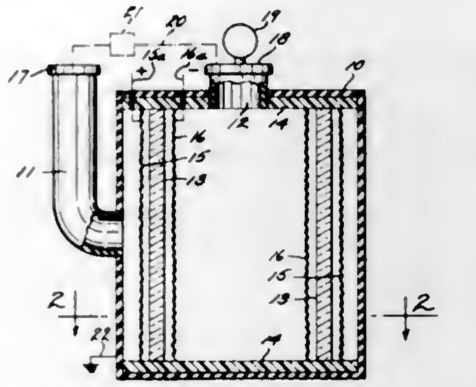
Lambert H. Mott, Farmington, Conn.
(272 Huyshope Ave., Hartford, Conn. 06114)
Filed June 1, 1966, Ser. No. 554,473
U.S. Cl. 102—105 **3 Claims**
Int. Cl. F42b *13/28*

A hemispherical porous nose cone tip has a coolant flow through it from an internal cavity to exude from its outer surface. A ring of impermeable material imbedded in the porous tip behind the cavity produces desired rates of coolant flow from the outer surface of the tip.



3,427,978
ELECTRO-HYDRAULIC TRANSDUCER

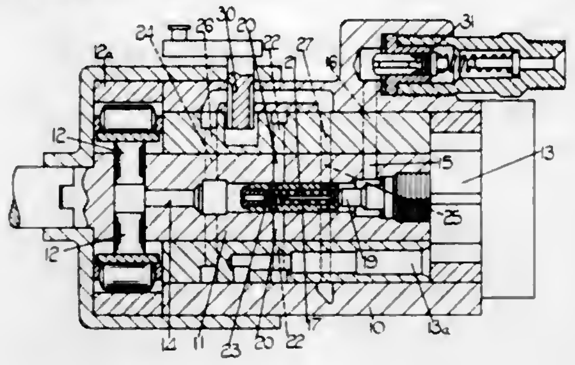
Robert Gorden Hanneman, Newbury, and Mack Gordon, Cleveland, Ohio, and Harry Gregor, New York, N.Y., assignors to Electro-Dynamics, Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 393,834, Sept. 2, 1964. This application Jan. 24, 1968, Ser. No. 700,149
U.S. Cl. 103—1 **9 Claims**
Int. Cl. F04f *17/00;* **B01k** *3/10;* **H01g** *9/02*



An electro-osmotic closed system is provided comprising a container having two chambers completely separated by a porous diaphragm having pores permitting flow between the chambers with pore openings not larger than .10 to 10.0 microns. The system is completely filled with a purified, non-aqueous liquid having a hydrocarbon portion and a polar group and having a dielectric constant between 5 and 100. Electrodes are provided in said liquid on opposite sides of the diaphragm and these are chemically inert to the liquid when subjected to an electrical potential. An electrical conductor leads from each electrode to a point outside of the container. A small amount of a redox material is added to the nonaqueous liquid so that when an electrical potential of opposite polarity is applied to the two electrodes, the oxidation occurring at the anode substantially exacting balances the reduction occurring at the cathode so that the composition of the ionizing liquid remains in operational stable condition over a period of a number of hours during the continuous application of an electrical potential of 200 volts and higher to the electrodes. In one application of the invention, an electrical potential between 200 and 1500 volts is applied to the electrodes causing an electro-kinetic effect which tends to cause movement of the ionizing liquid through the pores of the diaphragm. In another application of the invention, means is provided for applying a pressure between the two liquid filled chambers whereby to produce an electrical potential between the two electrodes.

3,427,979
LIQUID FUEL PUMPING APPARATUS FOR SUPPLYING FUEL TO INTERNAL COMBUSTION ENGINES

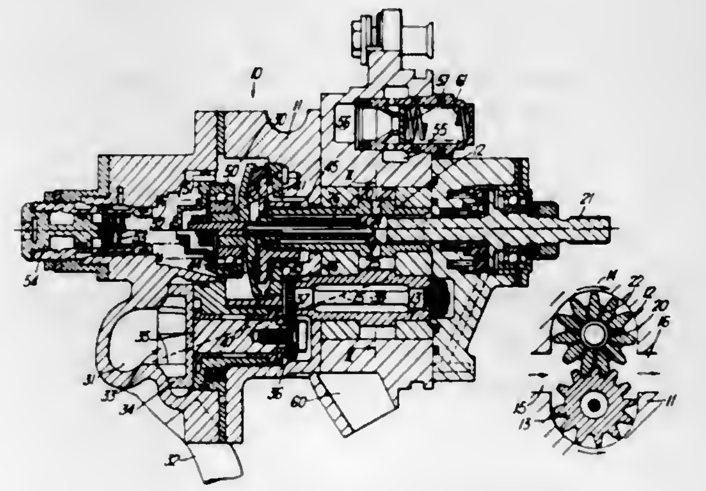
Kenneth Albert Walters Kemp, Ealing, London, England, assignor to C.A.V. Limited, London, England, a British company
Filed Mar. 6, 1967, Ser. No. 620,962
Claims priority, application Great Britain, Mar. 22, 1966, 12,494/66
U.S. Cl. 103—2 **8 Claims**
Int. Cl. F02m *55/00, 59/20*



A pumping apparatus including an injection pump which supplies liquid fuel to an outlet by way of a bore, the bore having a shuttle slidable therein, the movement of the shuttle due to fuel leaving the injection pump being limited by a stop, and valve means being provided which opens when the shuttle hits the stop to permit excess fuel to escape from the injection pump.

3,427,980
GEAR PUMP

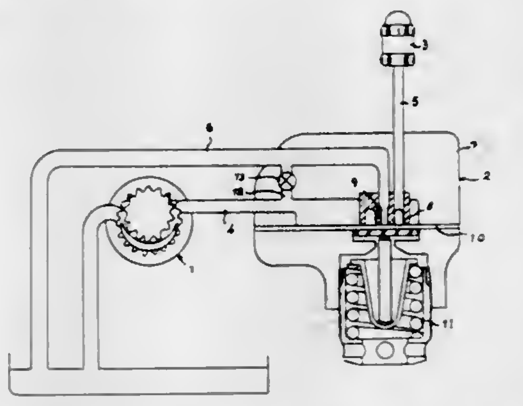
Albert Jubb, Derby, and Christopher Linley Johnson, Allestree, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Mar. 22, 1965, Ser. No. 441,512
U.S. Cl. 103—41 **3 Claims**
Int. Cl. F04b *49/08;* **F04c** *1/04*



1. In a gear pump structure having a body provided internally with an inlet passage and an outlet passage, a gear pump having a spill flow, a valve means and speed responsive means operable dependent upon the speed of the gear pump to control the extent of spill flow, said gear pump having first and second gear members which are in mesh with each other and are disposed between said inlet and outlet passages, the body having surfaces disposed adjacent to the first and second gear members, means for rotating the gear members so as to cause liquid supplied to the inlet passage to be pumped to the outlet passage as a main flow of liquid via the spaces between the respective gear members and the said surfaces, the first gear member having an axial passage and provided with an annular series of angularly substantially equidistantly spaced apart and axially coplanar radial passages therein for spill flow, the axial passage by means of its end remote to said radial passages communicating with the inlet passage, and each radial passage extending from adjacent the other end of the axial passage to the root of a tooth space of the first gear member, whereby, during the passage of the said main flow from the inlet passage to the outlet passage, a spill flow will at all times pass from the outlet passage and via the axial passage and all the radial passages back to the inlet passage, said valve means being a member which is axially movable in the said axial passage across the adjacent ends of the radial passages to vary the extent of opening and/or closing of such passage to regulate spill flow.

3,427,981
GEAR PUMP WITH VALVE MECHANISM

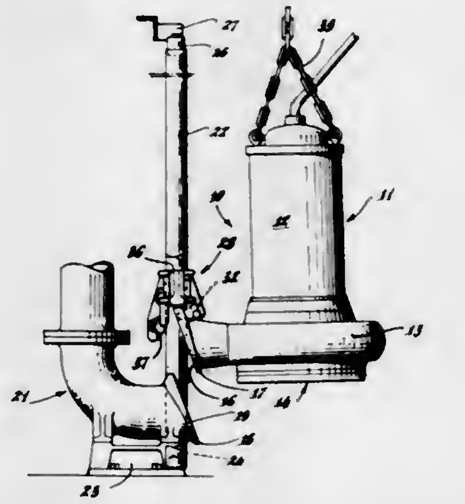
Sven Arne Martin Jansson, Norrviken, Sweden, assignor to System Paulin Aktiebolag, Stockholm, Sweden
Filed Jan. 27, 1967, Ser. No. 612,246
Claims priority, application Sweden, Jan. 31, 1966, 1,180/66
U.S. Cl. 103—41 **1 Claim**
Int. Cl. F04c *1/14, 29/08*



A gear pump with a valve mechanism of the type which keeps constant the pressure of the liquid delivered by the gear pump to a place of consumption. The valve mechanism preferably comprises a main valve inserted in a conduit leading from the pressure side of the pump to the place of consumption, a pressure control valve inserted in the conduit leading from the pressure side of the pump back to the pump suction side, and a branch line equipped with a solenoid actuated valve and leading from the pump pressure side to the pump suction side.

3,427,982
SUBMERSIBLE PUMPS

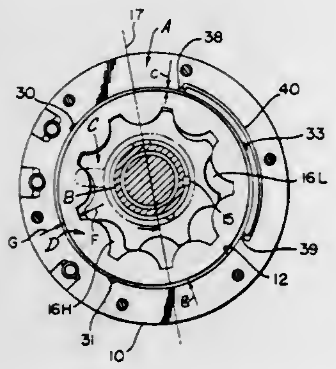
Sixten Englesson, Djursholm, Sweden, assignor to Flygt Corporation, Stamford, Conn., a company of New York
Filed Sept. 25, 1967, Ser. No. 684,881
U.S. Cl. 103—87 **10 Claims**
Int. Cl. F04d *13/08;* **B67d** *5/64*



Removable submersible pumps incorporating an outlet port connection conveniently engageable and disengageable with a normally submerged permanent outlet conduit provided with a permanent guide track extending upward to an easily accessible mounting station, at which the removable submersible pump unit is positioned with its outlet port extending laterally toward said guide track; having a flanged guide member protruding from its outlet casing near its outlet port and configured for sliding engagement with the guide track. The pump may be lowered along the guide track into operative mating engagement of the pump's outlet port with the entrance portal of the permanent outlet conduit.

3,427,983
PRESSURE BALANCED BEARING LOADS IN HYDRAULIC DEVICES

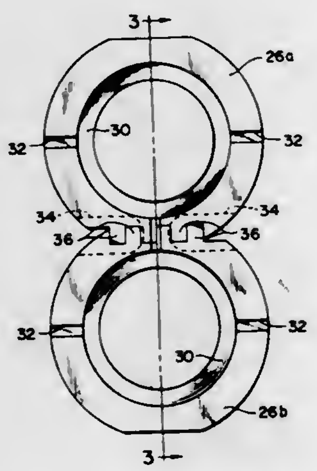
Robert W. Brundage, 2809 Wakonda Drive, Belnor, St. Louis, Mo. 63121
Continuation-in-part of application Ser. No. 373,761, June 9, 1964. This application May 31, 1966, Ser. No. 553,995
U.S. Cl. 103—126 **20 Claims**
Int. Cl. F01c *1/04, 21/02*



A bearing support sytsem for a hydraulic device in which the clearance between the bearing surfaces is greater than normal, i.e., between 0.0015 to 0.010 inch per inch of diameter. Hydraulic fluid is supplied at a pressure to the bearing clearance at a plurality of spaced places. Other places on the bearing surface spaced from the high pressure places are in communication with the low pressure of the hydraulic device, whereby the hydraulic fluid flows through the bearing clearance from the places of high pressure to places of low pressure.

3,427,984
TWO-PIECE THRUST PLATE FOR ROTARY PUMPS AND MOTORS

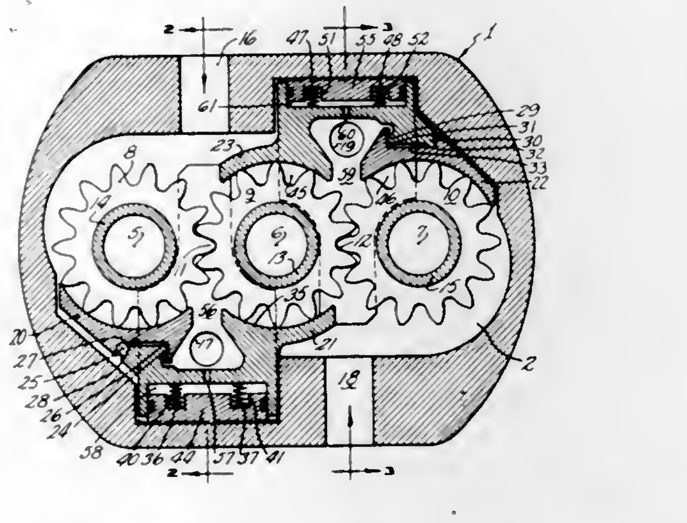
Dennis P. Slevin, 614 Tartan Drive, Monroeville, Pa. 15146
Filed May 25, 1967, Ser. No. 641,297
U.S. Cl. 103—126 **3 Claims**
Int. Cl. F01c *1/28, 21/10*



A thrust plate for rotary pumps and motors formed in two pieces to ease manufacturing and to permit relative movement of the two pieces. Relative movement prevents warping and binding of the thrust plate upon heating. The two pieces are identical in configuration to each other and the interconnecting portions of the thrust plates form a labyrinth seal to prevent leakage of fluid from inlet port to outlet port of the rotary pump or motor.

3,427,985
THREE-GEAR PUMP WITH MOVABLE ELEMENTS HAVING PLURALITY OF SEALING FORCES

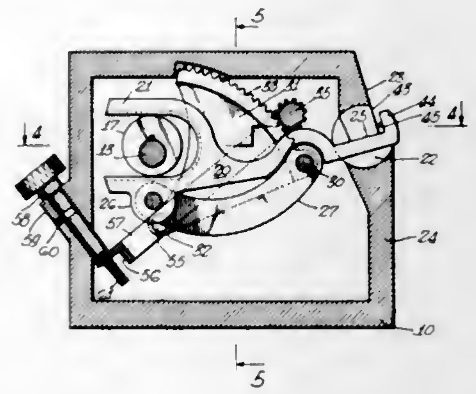
Le Roy A. Difford, Simsbury, Conn., assignor to Chandler Evans, Inc., West Hartford, Conn., a corporation of Delaware
Filed Aug. 9, 1967, Ser. No. 659,400
U.S. Cl. 103—126 **12 Claims**
Int. Cl. F04c *1/14*



A gear pump for pumping fluids containing highly abrasive contaminants having a center gear and two outer gears intermeshing with the center gear, separate pivotable movable elements positioned adjacent each pump outlet and engaging each of the outer gears, with pivotable element subject to a plurality of forces, one of said forces applied outboard the pivot point of each element such that each element is self-positioned with respect to its mating gear during independent movement of each of the outer gears and each element engages the periphery of its mating gear to maintain peripheral sealing engagement of the outboard extremity of each element under all pump operating conditions.

3,427,986
FLUID PUMP WITH CONTROLLED VARIABLE FLOW

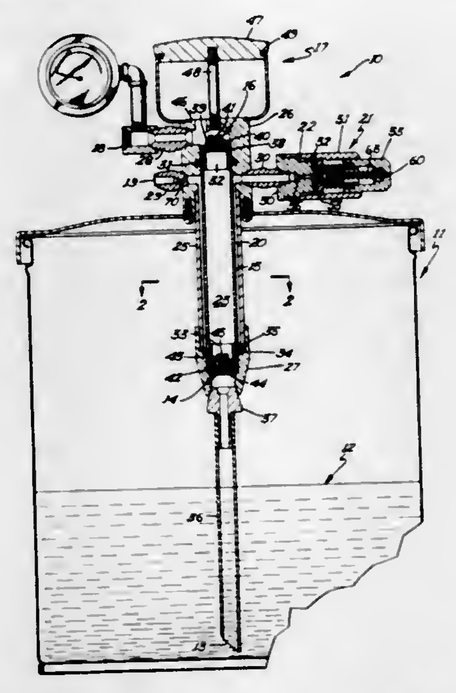
Ernest R. Cornell, R.R. 1, Thorold, Ontario, Canada
Filed June 27, 1967, Ser. No. 649,344
U.S. Cl. 103—149 **10 Claims**
Int. Cl. F04b *43/08*



Fluid pump in which reciprocating, or oscillating members distort a tube, progressively along a length of the tube to produce a fluid flow. The members are reciprocated about a first centre by a cam or similar action, and constrained by a linkage also to reciprocate about a second centre. By varying the position of the second centre, relative to a line through the first centre and a point of attachment of the linkage to a member, the displacement of the member, and the degree of distortion of the tube, between fully closed and fully opened, can be controllably varied and thus the flow rate varied, with constant speed.

3,427,987
TUBULAR DIAPHRAGM PUMP

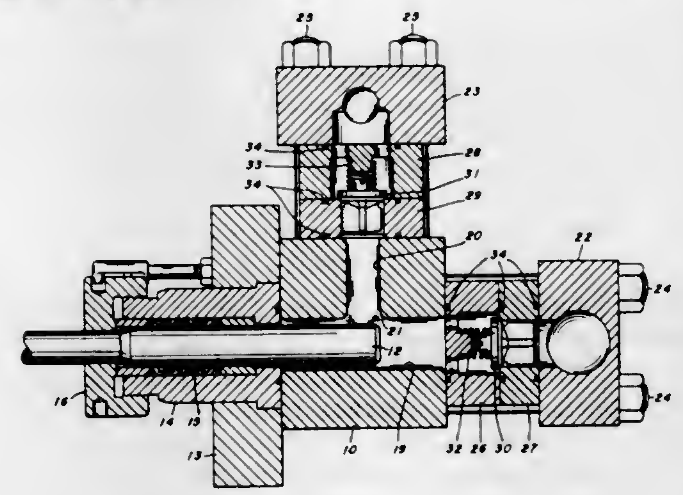
Marvin J. Eull, St. Michael, Minn., assignor to Gray Company, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed May 15, 1967, Ser. No. 638,389
U.S. Cl. 103—152 **8 Claims**
Int. Cl. F04b *43/02*



This invention relates to a pump having a tubular diaphragm and a two-stage automatically-operating pressure control valve. Air pressure is introduced into a pressure chamber adjacent the tubular diaphragm and pulsation of the diaphragm is caused by cyclically exhausting air pressure from the pressure chamber through the pressure control valve. The two-stage action of the pressure control valve provides a substantial pressure differential in the pressure chamber.

3,427,988
FLUID END CONSTRUCTION FOR PLUNGER PUMPS

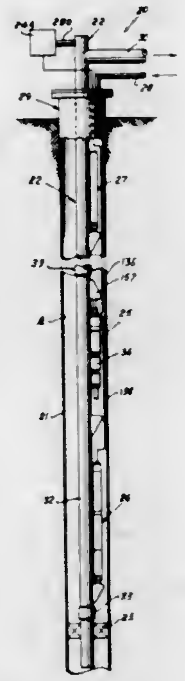
William J. Redman and Thomas E. Schmieman, Dallas, Tex., assignors to United States Steel Corporation, a corporation of Delaware
Filed Mar. 21, 1967, Ser. No. 624,949
U.S. Cl. 103—153 **2 Claims**
Int. Cl. F04b *19/22*



A fluid end construction in which the cylinder block has only two passages each of uniform diameter. One passage serves both as a cylinder bore and a suction passage. The other serves as a discharge passage. The construction eliminates points of stress concentration.

3,427,989
WELL TOOLS

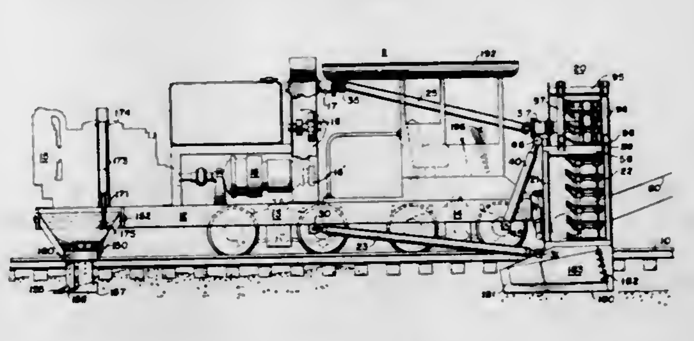
James H. Bostock, Dallas, and Phillip E. Pierce, Carrollton, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,490
U.S. Cl. 103—232 **25 Claims**
Int. Cl. F04f *1/20*



A well installation for producing fluids from the well in which an electrically operable valve means carried by the flow conductor is controlled by electric control means responsive to fluid pressure in the flow conductor for control-line operation of the valve means for admitting lifting gas into the flow conductor to flow fluids from the well. Electrical means is provided at the surface to control the period of admission of gas into the well.

3,427,990
RAILROAD BALLAST HANDLING SYSTEM

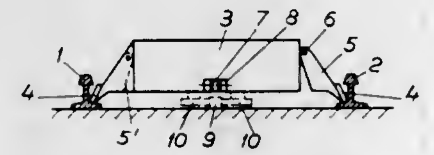
John F. Bryan, Jr., Dallas, Tex., assignor to Trakwork Equipment Company, Irving, Tex., a corporation of Texas
Original application Sept. 3, 1964, Ser. No. 387,114, now Patent No. 3,339,493. Divided and this application July 11, 1967, Ser. No. 672,406
U.S. Cl. 104—2 **3 Claims**
Int. Cl. E01b *27/06;* **E02f** *5/00*



This invention relates to the method of automatically removing ballast from between railroad ties by means of an articulated cutting head adjustable behind a track vehicle to drive a cutting chain at a predetermined depth below the top of a rail. The method includes progressively raising the rails and the ties above the normal base and inserting ballast under the ends of the ties to support them temporarily at a level above the base and continuously removing all ballast above said base in a zone which trails the first zone.

3,427,991
TRACKLESS MARSHALLING TROLLEY

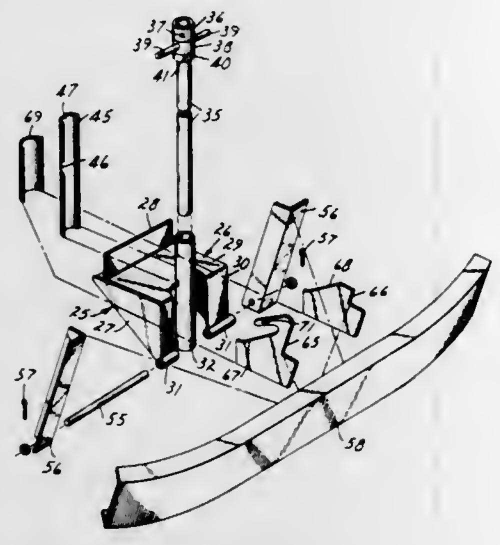
Henry Carlson, Farsta, Ingvar Lundquist, Barkarby, and Sten Henrik Danieli and Rune Andersson, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Dec. 22, 1966, Ser. No. 604,019
Claims priority, application Sweden, Dec. 27, 1965, 16,768/65
U.S. Cl. 104—26 **5 Claims**
Int. Cl. B61b *13/12;* **B61j** *3/04, 3/12*



A marshalling trolley for railroad yards is provided with wheels at each side for engaging the normal rails, at least one of these wheels being mounted on an arm turnable about a horizontal axis located inwardly from the wheel axis.

3,427,992
CONTROL APPARATUS

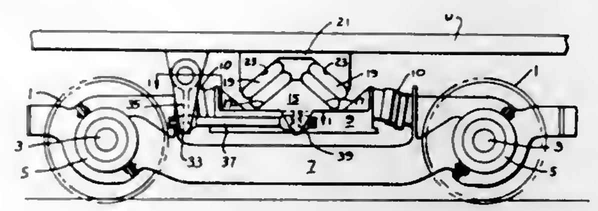
Vercoe C. Jones and Jackie L. Olson, Faribault, Minn., assignors to Nutting Truck and Caster Company, Faribault, Minn., a corporation of Minnesota
Filed Dec. 6, 1965, Ser. No. 511,727
U.S. Cl. 104—172 **14 Claims**
Int. Cl. B61b *13/00, 9/00, 7/20*



Apparatus for automatically disengaging a tow pin from a drag line when the bumper of a truck having the tow pin mounted thereon strikes an obstruction. The apparatus includes a member fixedly attached to the bumper for rearward pivotal movement therewith having a ramp with stops at either end and a horizontal pin attached to the tow pin and slidably engaged with said ramp. As the bumper is moved rearwardly by an obstruction, the horizontal pin slides up the ramp and, upon hitting the stop at the upper end, is engaged in a slot to hold the tow pin out of contact with the drag line. As the bumper is allowed to move forward, the stop at the other end of the ramp engages the pin and releases it from the slot to allow the tow pin to engage with the drag line.

3,427,993
RAILWAY CAR AND SUPPORTING TRUCK

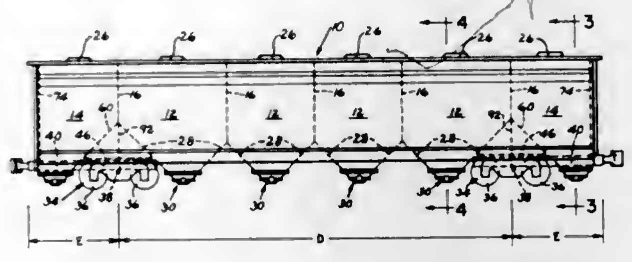
Richard L. Lich, Pasadena Hills, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed May 13, 1966, Ser. No. 549,919
U.S. Cl. 105—199 **10 Claims**
Int. Cl. B61f *5/06*



Railway vehicle truck structure of the type in which a transverse bolster is swivelly mounted on the truck framing and supports the car body by springs seated on the bolster at the sides of the truck. To cushion longitudinal forces between the bolster and car body and to aid in the transmission of such forces therebetween, the axes of the body support springs at each side are oppositely included longitudinally of the truck. For transmitting longitudinal draft forces from the bolster to the underframe and also for cushioning the transmission of such forces the underframe mounts a transversely extending torsion bar having downwardly extending arms at its ends, the arms being connected to the bolster by longitudinally extending anchors at each side of the truck. The torsion bar is journaled in resilient bushings at the sides of the truck which yieldingly oppose its rotation, but its continuity transversely of the truck assures that both ends will rotate substantially in unison and thus avoid swiveling of the bolster relative to the underframe which might occur if the anchor arms at each side were independently connected to the underframe.

3,427,994
COVERED HOPPER CARS

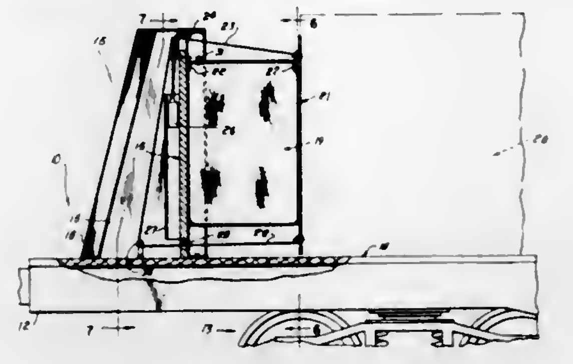
William C. Keene, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 24, 1966, Ser. No. 588,894
U.S. Cl. 105—248 **6 Claims**
Int. Cl. B61d *3/00;* **B61f** *5/16*



A large capacity covered hopper car of around seven thousand (7000) cubic feet or more having an end hopper at each end discharging from a position forwardly of the leading wheels of the adjacent truck. A bottom outlet structure is secured to each end hopper below the adjacent center sill structure forwardly of the leading wheels of the adjacent truck. A vertically extending end bulkhead forms the outer end of each end hopper and lower end portions extend downwardly from the bulkhead along each side of the adjacent center sill structure.

3,427,995
INFLATABLE DUNNAGE BAG FOR RAILWAY CARGOS

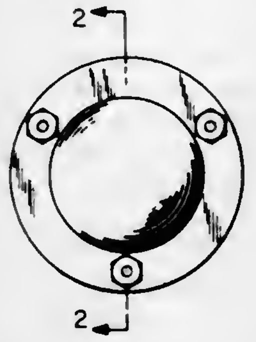
Edwin G. Stafford, Jr., Roscoe, Tex. (P.O. Box 428, Dublin, Tex. 76446)
Filed Oct. 28, 1966, Ser. No. 590,245
U.S. Cl. 105—369 **3 Claims**
Int. Cl. B61d *45/00, 17/00*



A movable bulkhead located at each end of a flat car, in addition to the usual stationary bulkheads, and an inflatable and expandable dunnage bag interposed between the stationary bulkheads and their respective movable bulkheads whereby the latter can be moved longitudinally of the car, away from the stationary bulkheads, and against the cargo. The dunnage bags are normally collapsed and capable of inflation by compressed air to a suitable expanded condition to engage and stabilize the cargo while also providing a cushion therefor.

3,427,996
ROPE HOOK

Matias Alvarados, 5678 Alondra Drive, Goleta, Calif. 93017
Continuation of application Ser. No. 437,607, Mar. 5, 1965. This application Mar. 28, 1967, Ser. No. 626,636
U.S. Cl. 105—369 **1 Claim**
Int. Cl. B60r *27/00;* **B61d** *45/00*

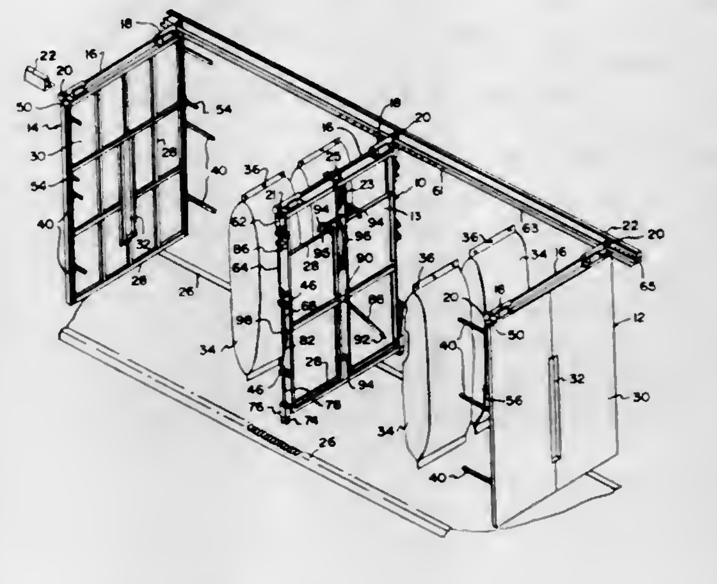


The rope hook comprises a bulged backing member located on one side of an opening in a panel and a hook body located on the opposite side of the panel around the opening. A hook projects from the hook body across the opening to receive the rope. Both the backing member and the hook body are secured to the panel by a plurality of screws passing through the panel.

3,427,997
INFLATABLE BULKHEAD FOR RAILROAD CAR

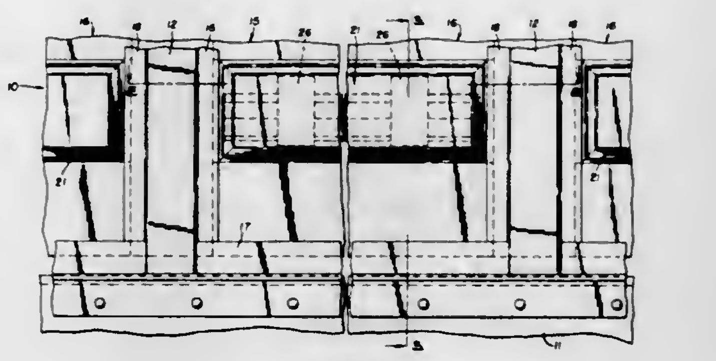
Neuberne H. Brown, Jr., Colts Neck, N.J., David P. Butler, 29 Woodside Drive, New City, N.Y. 10956, Jack M. Carter, 345 Main St., White Plains, N.Y. 10601, Michael Ferik, Metuchen, N.J., and Paul E. Ogle, Elmwood Park, Ill., said Ferik assignor to said Ogle and said Brown
Filed May 19, 1967, Ser. No. 639,696
U.S. Cl. 105—369 **13 Claims**
Int. Cl. B65d *45/00, 15/00*

This specification discloses inflatable cushioning bulkheads for protecting lading in a freight car by locking the lading against the end of the car or against another of the bulkheads. Each bulkhead consists of three rigid panels made from sheet metal, plywood, or the like, mounted on a frame with inflatable rubber bags sandwiched between the center and each of the end panels. The bulkhead may be expanded many times its original thickness by inflating the bags. The end panels are free to move toward and away from the center panel which is fixed to the car. The bags cushion the lading with a resilient resisting force which increases with the load imposed on the outer panel by the inertia of the lading. Links maintain the panels in parallel relation in all positions, from fully closed to fully opened. Means in the form of a pipe accessible through the end panels is provided to actuate latches at the top and bottom of the center panel to lock the center panel to the car. The same pipe is also used to conduct air to the inflatable bags and is accessible at the edge of the center panel. In an alternative form, the center panel is built into the car as a stationary load bearing member.



3,427,998
RAILROAD CAR SIDE WALL

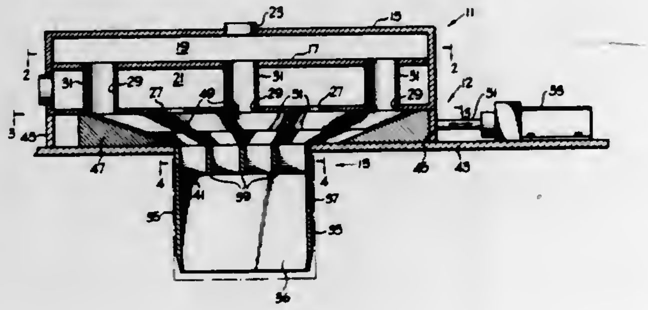
Thomas C. Soddy, Downers Grove, Ill., assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed June 28, 1966, Ser. No. 561,101
U.S. Cl. 105—409 **4 Claims**
Int. Cl. B61d *17/00, 45/00*



A railroad car having a side wall of single thickness of metallic sheathing with exterior side posts extending vertically between top and bottom horizontal frame members at spaced locations along the side of the car. A plurality of groups of depressions in the sheathing with each of the groups located between adjacent posts. Each group including a plurality of depressions in vertically spaced relationship. The depressions being pressed outwardly in the sheathing and having a bottom wall substantially parallel to and spaced from the plane of the car side wall. End walls of the depressions extend substantially transversely to the car side wall at points spaced from the side posts. Each of the depressions having means for securing a length of belt rail therein such that the belt rails are wholly within the depressions.

3,427,999
APPARATUS FOR FORMING AN EDIBLE PRODUCT

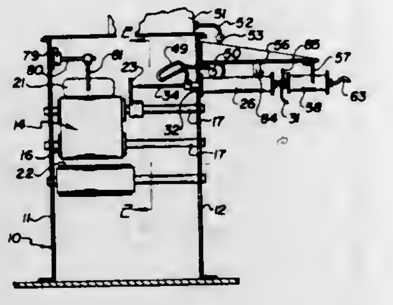
Robert F. Schultz, Mount Prospect, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,221
U.S. Cl. 107—1 **4 Claims**
Int. Cl. A23g *3/00, 5/00*



Apparatus for forming an edible product of different materials with similar sections of the materials arranged in contacting layers and with the sections in each layer arranged in parallel contacting rows, each section in each row in each layer contacting at least one section of a different material in the same row, at least one section of different material in at least one adjacent row, and at least one section of different material in at least one adjacent layer. The different materials are extruded through different orifices of a header with a valve controlling the flow of the materials into one or more forming nozzles.

3,428,000
PASTRY FILLING MACHINE

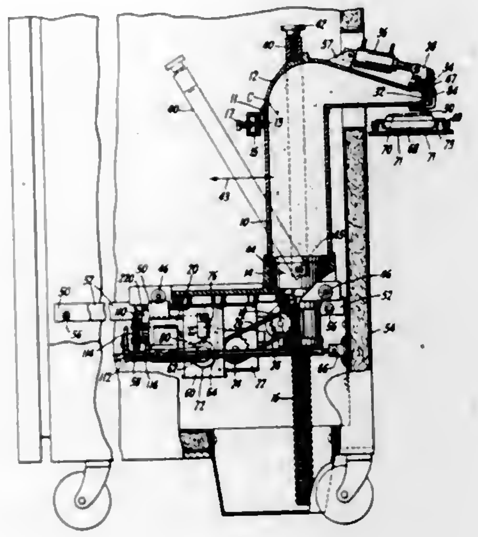
Robert E. Gagnon, 1367 W. 50th Ave., Vancouver, British Columbia, Canada
Filed Dec. 12, 1966, Ser. No. 600,877
U.S. Cl. 107—1 **2 Claims**
Int. Cl. A23g *3/20*



A machine having a conveyor for moving articles past mechanism adapted to impale each article in turn and inject a predetermined amount of filling material into said article. Controlling means for operating the mechanism automatically through an impaling stroke and a retraction stroke with the operation being initiated by the article contacting a starting member of the controlling means.

3,428,001
DISPENSER

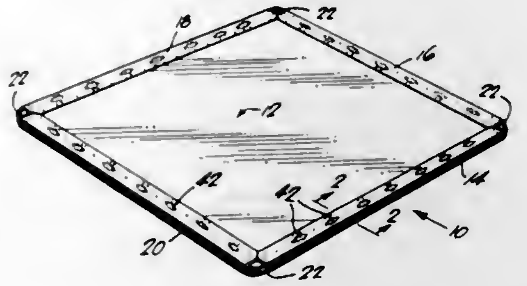
Bernardus Mulder Zwart, Jr., New Canaan, Alfreds Karlis Lukevics, Stamford, and Harold Franklin Wylie, Redding, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 27, 1966, Ser. No. 545,690
U.S. Cl. 107—14 **9 Claims**
Int. Cl. A21c *11/18;* **A01d** *21/02, 25/12*



An apparatus for automatically extruding a measured increment of material and depositing it at a predetermined station comprising in combination: a carriage support; a traversing extrusion cylinder mounted on said support and movable therewith for holding a supply of material to be extruded and an opening provided at one end of said cylinder through which material to be dispensed is extruded; an extrusion piston housed in said cylinder for urging the material to be dispensed toward said opening; a cut-off element positioned contiguous to said opening to sever extruded increments of said material; drive means for moving said carriage support to traverse said cylinder to and from a dispense station, for advancing said piston and for actuating said cut-off element; and means for coordinating said drive means so that as the cylinder is moved contiguous to a dispense station said piston is advanced and said cut off element is actuated to sever a portion of extruded material.

3,428,002
PALLET ASSEMBLY

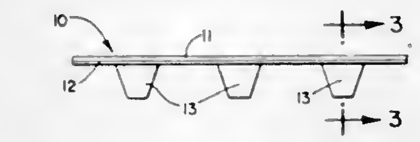
Kenneth D. McIntire, Jr., Norwalk, Calif., and Bruce W. Wallace, Seattle, Wash., assignors to McDonnell Douglas Corporation, a corporation of Maryland
Filed Nov. 1, 1967, Ser. No. 679,855
U.S. Cl. 108—51 **4 Claims**
Int. Cl. B65d *19/00*



A cargo pallet having a resilient edge which includes a load distribution flange and integrally mounted net securing fittings. The entire pallet is held together by removable fastening means to permit ease of replacement.

3,428,003
PALLET

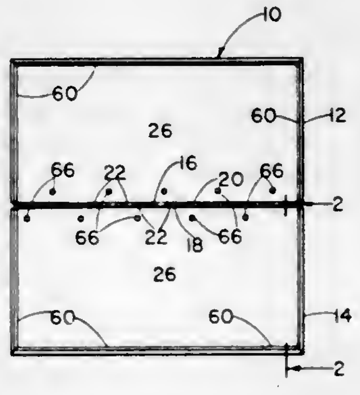
Joseph E. Heffernan, Gladwyne, Pa., assignor to Nest-A-Pal Corporation, Conshohocken, Pa., a corporation of Pennsylvania
Filed Aug. 14, 1967, Ser. No. 660,517
U.S. Cl. 108—53 **7 Claims**
Int. Cl. B65d *19/38*



A pallet structure having a single horizontal support platform and leg support structure whose supporting flanges are connected in the plane of the platform and the legs depend therefrom.

3,428,004
REFUSE BURNING DEVICE

Hermon E. Phillips, R.R. 2, Lake James, Angola, Ind. 46703
Filed Nov. 9, 1966, Ser. No. 593,176
U.S. Cl. 110—19 **3 Claims**
Int. Cl. F23g *9/00;* **F24c** *1/16, 15/10*

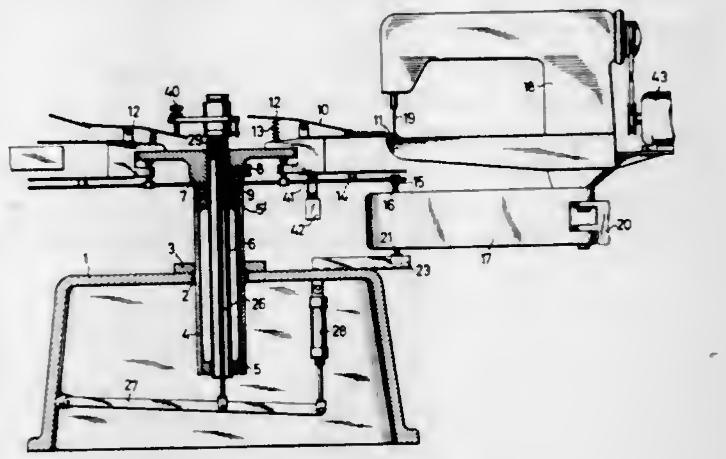


A refuse burning device upon which trash, leaves and the like can be burned without damage to grass, pavement or the like. The device comprises two sheets hingedly connected together so as to be able to be laid flat as a single sheet and to be folded into a size smaller than a single sheet having the same surface area as the two sheets of the device. Each sheet of the device has a fire and heat resistant surface upon which trash and leaves, and the like can be positioned and burned. Each of the sheets also has a ground-engaging surface which is insulated from the first-mentioned sheet surface. The entire device is bounded by a peripheral ridge which upstands from the first-mentioned surface of the device. This ridge will function to help to retain the trash, leaves and the like on the fire and heat resistant surface of the device. The height of the ridge, however, does allow leaves and the like to be raked, swept or the like onto the fire and heat resistant surface of the device during use.

3,428,005
DEVICE FOR THE AUTOMATIC MANIPULATION OF WORKPIECES, IN PARTICULAR OF TEXTILE BLANKS

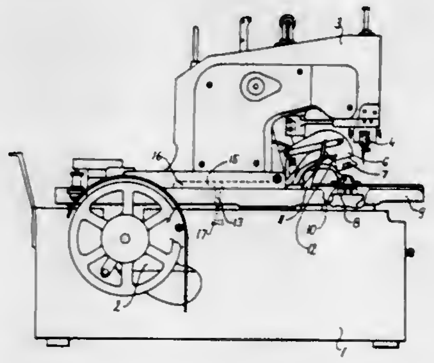
Hans Scholl, Bielefeld, Germany, assignor to Kochs Adlernahmaschinen Werke A.G., Bielefeld, Germany
Filed Dec. 23, 1966, Ser. No. 604,483
U.S. Cl. 112—2 **4 Claims**
Int. Cl. D05b *3/02, 23/00;* **F16h** *58/06*

A device for the automatic manipulation of workpieces, such as textile blanks received on the periphery of a workpiece and pattern holder secured to a rotary table. The blanks and patterns are moved past displaceably mounted manipulating machines, such as sewing machines and trimming machines. The insertion and removal of the workpiece in or out of the workpiece holder may take place during the rotation of the table.



3,428,006
BUTTONHOLE SEWING MACHINE WHICH AUTOMATICALLY FORMS BARRING AND COVERING STITCHES

Emil Jindřich and František Bajer, Prostejov, Czechoslovakia, assignors to Elitex, Zavody textilniho strojirenstvi, generalni reditelstvi, Liberec, Czechoslovakia
Filed Jan. 16, 1967, Ser. No. 609,659
Claims priority, application Czechoslovakia, Jan. 14, 1966, 229/66
U.S. Cl. 112—67 **9 Claims**
Int. Cl. D05b *3/00*



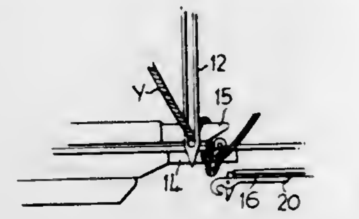
A sewing machine for making a seam of zig-zag stitches about the edges of a keyhole-shaped, elongated buttonhole equipped with cams, linkages, and tripping mechanisms which cause the worktable to move transversely of the buttonhole once back and forth after completion of the keyhole seam and rotate the sewing implements through 90° during the first stroke of the back-and-forth movement, whereby a row of angularly offset zig-zag stitches is formed during the first stroke, and a row of covering stitches during the return stroke of the worktable.

3,428,007
MACHINE FOR FORMING PILE LOOPS AND STITCH FORMATION

Norman Wignall, Blackburn, and John Ridyard, Bradshaw, near Bolton, England, assignors, by mesne assignments, to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware
Original application Dec. 3, 1962, Ser. No. 241,782, now Patent No. 3,230,917, dated Jan. 25, 1966. Divided and this application Oct. 4, 1965, Ser. No. 510,131
U.S. Cl. 112—79 **10 Claims**
Int. Cl. D05c *15/00, 17/02;* **D04b** *23/10*

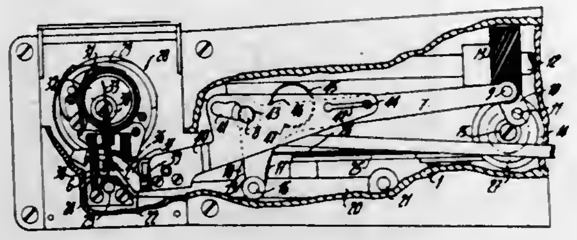
1. A machine for forming pile loops on a base fabric comprising a plain needle, means for moving a sheet of woven fabric step by step along a path of travel beneath said plain needle, means for reciprocating said plain

needle above and below the path of travel of the fabric, thereby adapted to project yarn through said fabric at successive spaced intervals, a looper disposed on the same side of said path as said plain needle and adapted to cooperate with said plain needle to form loops on the face of the fabric and which bridge alternate spaces between adjacent positions of penetration of said plain needle, and a compound needle on the opposite side of said path, means for reciprocating said compound needle in synchronism with said plain needle so as to form a loop at each successive position of penetration of said plain needle, said compound needle comprising a shank having an open hook formation on one end thereof, said shank having a slot therethrough and a latch pivoted in said slot, said latch being adapted to move from a position wherein it closes said hook-like formation, to a generally dependent position wherein said hook-like formation is open, characterized in that said latch protrudes through said slot on the face of said shank opposite said hook-like formation, a latch controller adapted for movement along the surface of said shank opposite said hook-like formation, for cooperation with the protruding end of said latch, whereby movement of said latch may be controlled.



3,428,008
LOCK-STITCH SEWING MACHINE CONVERTIBLE TO A CHAIN STITCH SEWING MACHINE

Ramon Casas-Robert, Geneva, Switzerland, assignor to Mefina S.A. Fribourg, Switzerland, a corporation of Switzerland
Filed Mar. 20, 1967, Ser. No. 624,382
Claims priority, application Switzerland, Apr. 14, 1966, 5,427/66
U.S. Cl. 112—168 **10 Claims**
Int. Cl. D05b *23/00*

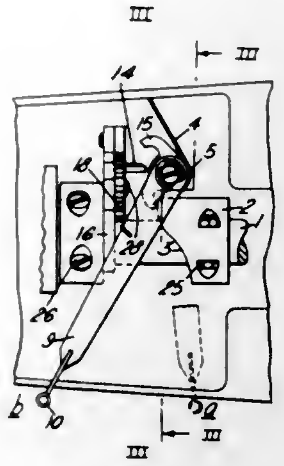


An improved sewing machine includes a loop-guide element arranged so as to enable the machine to be used either for chain-stitch sewing or for normal sewing with two threads. The element may be an arm having a forked end and may be elastically mounted on a support plate adjustably attached to the driving or control lever of the feeding mechanism.

3,428,009
BASTING DEVICE FOR SEWING MACHINE

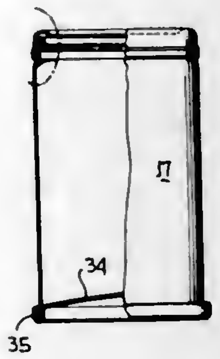
Antonio Moro, Milan, Italy, assignor to Soc. per Azioni Fratelli Borletti, Milan, Italy, an Italian company
Filed Oct. 23, 1965, Ser. No. 502,835
Claims priority, application Italy, Nov. 27, 1964, 53,878/64
U.S. Cl. 112—255 **7 Claims**
Int. Cl. D05b *47/00*

A sewing machine of the type having an upper horizontal hollow arm and a main shaft rotating inside the arm to control the up-and-down motion of a needle has a basting attachment comprising a cam fixed on and rotatable with the main shaft, and a pivotally mounted unit in the hollow arm comprising an oscillating lever and a cam follower and an abutment. The cam follower is spring-urged against the contour of the cam to oscillate the unit, and the lever carries a thread guide which extends through a slot in the wall of the hollow arm and terminates outside the arm. A pawl wheel is turned one notch with each rotation of the main shaft and carries a finger which from time to time contacts the abutment to hold the cam follower off the cam and prevent oscillation of the thread guide. The thread guide tensions the thread each time it oscillates thereby to close what would otherwise be the stitch loop and prevent locking of the stitch. Thus, only an occasional stitch is locked (when the finger contacts the abutment) and the rest of the sewing operation is basting.



3,428,010
METHOD OF MAKING A METALLIC CAN AND COVER

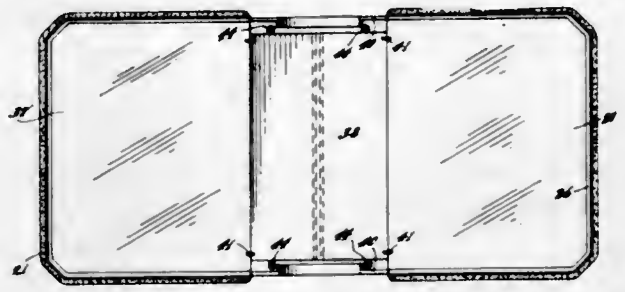
Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 3, 1967, Ser. No. 613,933
U.S. Cl. 113—120 **16 Claims**
Int. Cl. B21d *51/26, 51/44*



This invention relates to a method of making a metallic can and cover from a single metallic blank by drawing, redrawing and wall-ironing the blank to form a hollow member which is trimmed and severed to form a cap-like member and a tubular body. The tubular body is flanged at one end and an opposite end is sequentially necked-in, curled and beaded. The cap-like member is re-formed, panelled, and a peripheral skirt thereof is provided with a curl which snappingly engages with the bead of the tubular body when these components are assembled. An end closure may also be seamed to the flanged end of the body.

3,428,011
DREDGE PIPE PONTOONS

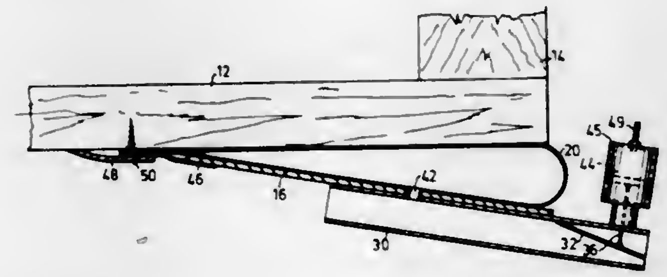
George F. Motter III, R.D. 1, Center Valley, Pa. 18034
Filed Aug. 23, 1966, Ser. No. 574,343
U.S. Cl. 14—43.5 **2 Claims**
Int. Cl. B63b *35/44, 35/38*



The present invention relates to pontoons particularly suitable for supporting dredge pipes, having firm saddle connection and opposed clamping members for anchorage at the dredge pipe, the saddle being supported directly above a deck which is mounted on trusses extending through the pontoon. The dredge pipe pontoons of the invention are capable of being assembled vertically for water navigation by socketing the bottom of the hull of one pontoon into a socket provided on the next lower pontoon, and interconnecting the pontoons vertically.

3,428,012
TRIM ATTACHMENT FOR POWER BOATS

Alf Martin Magnus Ingelman-Sundberg, 5 Smedbackegatan, 11539 Stockholm, Sweden
Filed Oct. 25, 1966, Ser. No. 589,702
Claims priority, application Sweden, Oct. 26, 1965, 13,796/65
U.S. Cl. 114—66.5 **14 Claims**
Int. Cl. B63b *1/22*

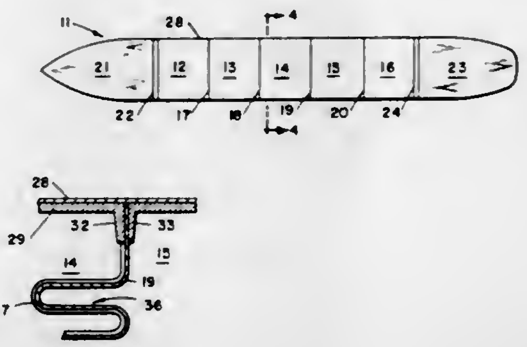


A vehicle is provided with a trim attachment in the form of a tab or flap. In the case of a boat, it may be in one or more portions and extends across the bottom of the stern and has a dimension longitudinally of the boat that is between $1/10$ and $1/200$ of its dimension along the width of the boat. An inflatable and deflatable water bag between the tab and the boat swings the tab relative to the boat; and the liquid in the water bag is pressurized by supplying it from an open-ended tube that moves through the water to generate a velocity pressure head in the tube. An adjustable valve at the rear of this tube controls the velocity pressure in the tube; and the interiors of the water bag and the tube communicate with each other.

3,428,013
APPARATUS FOR TRANSPORTING LIQUEFIED GASES

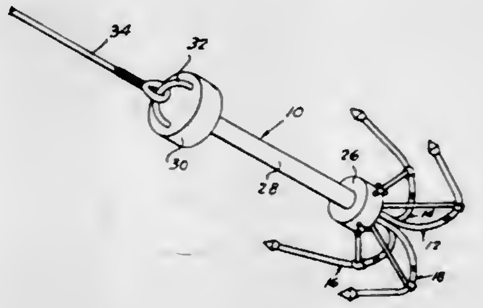
Lionel R. Prew, Edison, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 3, 1967, Ser. No. 680,538
U.S. Cl. 114—74 **7 Claims**
Int. Cl. B63b *25/12*

Apparatus for transporting liquefied gases over a body of water in the form of a vessel having a plurality of adjoining compartments adapted to carry liquefied gases therein. The lateral and bottom walls of the compartments are formed by the shell of the vessel and are internally lined with a heat insulating material. The tops of the compartments are formed by the deck of the vessel and are also internally insulated. The lateral wall separating the successive compartments is formed by a transverse bulkhead of the vessel having a plurality of vertically and horizontally extending undulations and has a stress condition substantially unaffected by changes in temperature of the liquefied gases carried in the compartments. This separation wall may be lined with heat-insulating material at the junction of the separation wall and the inner surfaces of the vessel, if desired.



3,428,014
BOAT ANCHOR

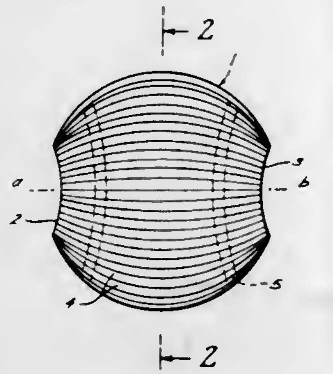
Herbert L. Smith and Ruie N. Smith, both of 1569 Erie Road, Ocala, Fla. 32670
Filed Sept. 12, 1967, Ser. No. 667,164
U.S. Cl. 114—208 **6 Claims**
Int. Cl. B63b *21/34*



A collapsible boat anchor including a plurality of hooks each having a shank and a laterally extending arm portion. The shank portions are held in non-rotative relation relative to each other during use by an encircling collar. The laterally extending arm portion of each hook is pivotable relative to its shank portion for releasing the anchor upon upward movement thereof should the arm become snagged. A rod extends from the shank portion towards the arm portion of each hook, and includes a resilient clip on its end for gripping the arm to prevent it from pivoting during normal movement of the anchor. The collar includes a plurality of spaced slots extending downwardly from a bore therein for receiving the rods on each shank, to maintain the non-rotative relation of the hooks and their spacing. Auxiliary fasteners extend radially through the collar for clamping the hook shanks to the collar. Loosening of the fasteners and downward movement of the hooks relative to each other through the collar, enables them to be rotated and nested in a flat condition for storage.

3,428,015
SPHERICAL VEHICLE

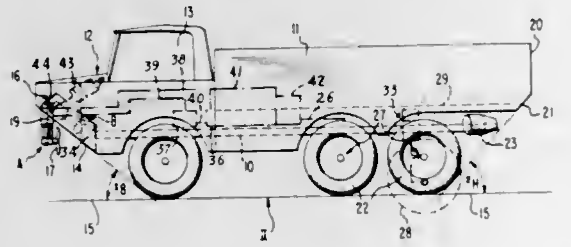
Samuel E. Cloud, 5934 Southcrest, Houston, Tex. 77033
Filed Dec. 29, 1966, Ser. No. 605,732
U.S. Cl. 115—1 **6 Claims**
Int. Cl. B60f *3/00;* **B63h** *1/38*



A generally hollow spherical device of a size convenient for receipt of person or other large object is provided. Included are tubes forming great circles around the device, and at least one tube nonparallel to the tubes which form great circles.

3,428,016
AMPHIBIOUS COMMERCIAL-TYPE MOTOR VEHICLE

Christian Holm, Backnang, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 10, 1967, Ser. No. 615,181
Claims priority, application Germany, Feb. 12, 1966, D 49,352
U.S. Cl. 115—1 **24 Claims**
Int. Cl. B60f *3/00;* **B63h** *5/00, 25/42*

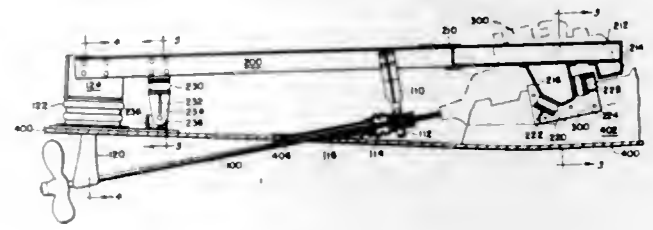


An amphibious commercial-type motor vehicle which, in addition to the normal driven wheels, comprises a floatable body for the payload mounted on the vehicle frame, at least two main water-propulsion devices secured at frame parts near the stern or rear end of the vehicle which are adapted to be selectively engaged and disengaged from their power transmitting connection, and at least one auxiliary water-propulsion device adapted to be pivoted about an essentially vertical axis and arranged near the bow or front end of the vehicle, and in which the bow and stern sections of the vehicle body are inclined so as to form a predetermined free angle of approach with respect to the floor or ground level. The auxiliary propulsion device is additionally adapted to be retracted, when normally driving on ground, into a position, in which it does not impair the over-hang angle or angle of approach between the bow section of the vehicle and the ground level.

3,428,017
PHANTOM DRIVE

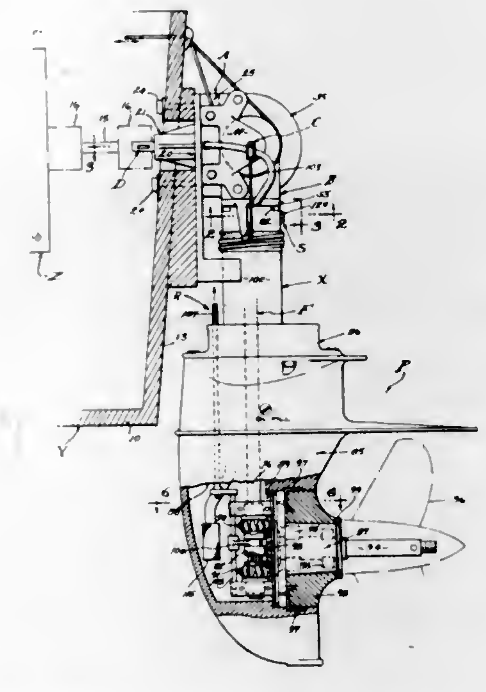
George Altson, 45½ E. Main St., Clifton Springs, N.Y. 14432
Filed Sept. 16, 1966, Ser. No. 579,890
U.S. Cl. 115—34 **9 Claims**
Int. Cl. B63h *5/06, 1/14;* **B63b** *3/00*

Watercraft suspension system controlling vibration of propulsion system, particularly propeller shaft. A frame is resiliently secured to a hull. The propeller shaft is mounted directly on the frame and moves with the frame independently of the hull.



3,428,018
BOAT PROPULSION UNIT AND PROPELLER ASSEMBLY

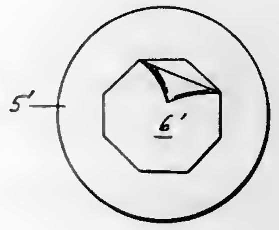
Floyd P. Ellzey, 2301 Marshallfield Lane, Redondo Beach, Calif. 90278
Filed Aug. 6, 1965, Ser. No. 477,764
U.S. Cl. 115—35 **5 Claims**
Int. Cl. B63h *21/24, 25/42*



This invention relates to inboard-outboard drives for boats and is particularly concerned with the propeller assembly therefor as it is related to the articulated angle gearing that characterizes said drives, it being a general object of this invention to provide a steerable and shaft suspended propeller assembly having a self-contained pressure lubrication system which services the entire combination.

3,428,019
DROP MARKER

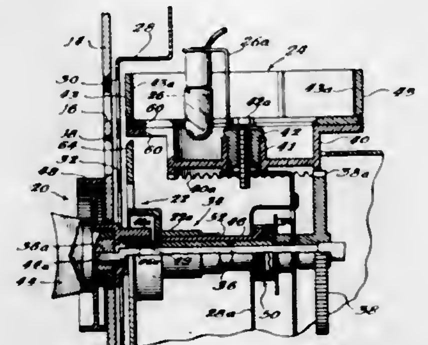
Dale Tillay, Rte. 1, and Marvin O. Blevins, Rte. 4, both of Walla Walla, Wash. 99362
Filed Sept. 19, 1966, Ser. No. 580,316
U.S. Cl. 116—124 **8 Claims**
Int. Cl. G09f *1/04*



A marker is described for dropping from an airplane to mark specified ground areas. The marker includes a stiff flat base member with exposed edge portions that can be used to separate individual markers readily from a stack of them, together with a flexible folded streamer of less area when folded and attached to the base member so as to unfold in the air as a streamer when the marker is discharged into the air from an aircraft and descend rapidly to mark the specified ground area.

3,428,020
ILLUMINATED TUNING DIAL STRUCTURE

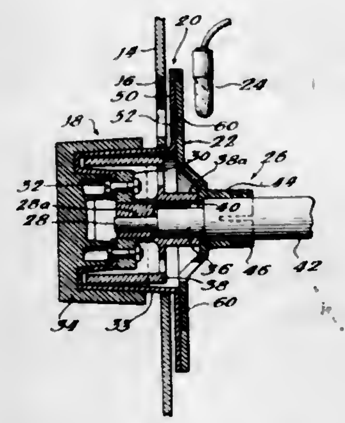
Bernhard R. Kuhl, Mount Prospect, and Stephen H. Morrall, Chicago, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,559
U.S. Cl. 116—124.4 **7 Claims**
Int. Cl. H03j *1/04*



A tuning dial assembly for a multiple mode tuning frequency wave signal receiver having plural drive shafts for changing the frequency and mode of frequency received by the receiver, including a first dial on one shaft having translucent tuning frequency indicia thereon and a second dial on the other shaft having translucent mode and frequency tuning indicia thereon, with the second dial having means associated therewith for masking the first dial from a source of illumination when the frequency tuning indicia of the second dial are adjacent the source of illumination and for permitting the illumination of the first dial when the mode tuning indicia of the second dial is in a position of illumination with respect to the source of illumination.

3,428,021
MULTIPLE HIGH FREQUENCY TUNING DIAL STRUCTURE

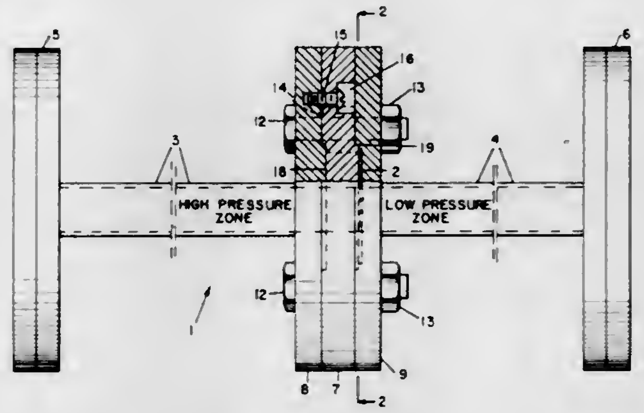
Bernhard R. Kuhl, Mount Prospect, and Donald H. Larson, Arlington Heights, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,560
U.S. Cl. 116—124.4 **7 Claims**
Int. Cl. H03j *1/04*



A tuning dial structure for use in a wave signal receiver having a multiple mode receiving tuning unit located to the interior of a cabinet having an opening wherein first and second tuning shafts extend outwardly from the tuning unit, characterized in that a first tuning dial is provided adjacent the cabinet opening and connected to the first tuning shaft for movement therewith, the first tuning dial having viewable tuning indicia and a masking surface with an interruption defining a viewing portion; and a second tuning dial is positioned behind the first tuning dial connected to the second shaft, the second tuning dial having a light transmitting band in alignment with the viewable indicia on the first dial and light transmitting indicia in alignment with the masking surface of the first dial and with a source of illumination positioned to the rear of the dials for illuminating the indicia of the two dials.

3,428,022
DIAPHRAGM RUPTURING DEVICE

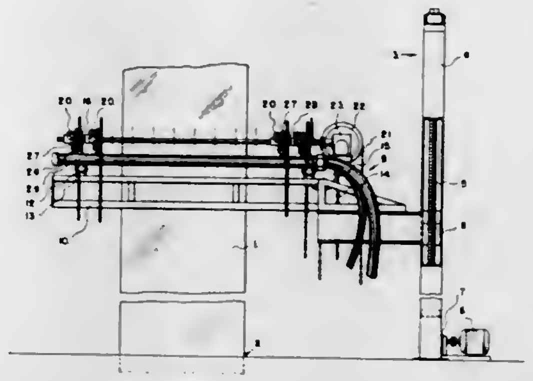
Robert E. Ledley III, Ridley Park, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Sept. 30, 1966, Ser. No. 583,302
U.S. Cl. 116—137 **1 Claim**
Int. Cl. G10k *9/04*



A manually-controlled device for rupturing a frangible diaphragm which separates two regions of different pressures, such as the two chambers of a stationary shock tube. A cutting blade is spring-biased to move toward the diaphragm, and is held away from the diaphragm by means of a locking pin which is manually releasable to allow the blade to move into contact with the diaphragm.

3,428,023
QUENCHING ZINC METAL COATINGS WITH ATOMISED WATER SPRAY

Arthur Cox, Grimsby, Ontario, Carl V. Gladysz, Mount Hope, Ontario, and Arthur G. Linke, Grimsby, Ontaria, Canada, assignors to Dominion Foundries and Steel Limited, Hamilton, Ontario, Canada
Filed July 2, 1964, Ser. No. 379,977
U.S. Cl. 118—68 **8 Claims**
Int. Cl. B05c *9/12;* **C21d** *1/62*



Apparatus for controlling the grain or crystal size of a zinc metal coating on a metal strip quenches the coating with a spray of water atomised and directed by gas under pressure. Uniformity of quenching across the width of the strip is obtained by arranging that the impingement patterns overlap on the strip without being coincident thereon as it moves past the nozzles.

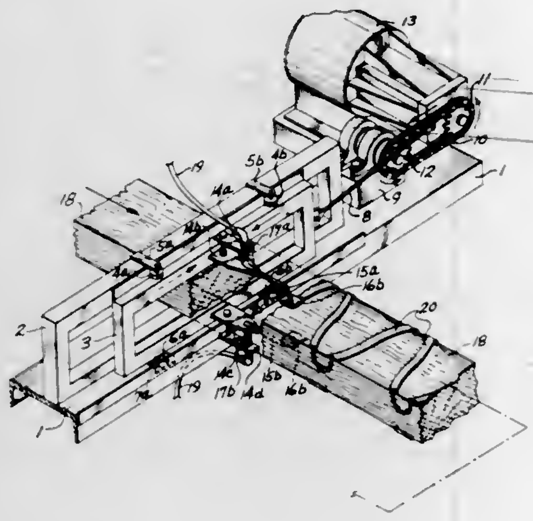
3,428,024
APPARATUS FOR APPLYING AND SPREADING A COATING ON A CORE MATERIAL

Katashi Oita, Seattle, and Darrell E. Pierson, Federal Way, Wash., James N. Ottaway, Saratoga, Calif., and Richard W. Caster, Seattle, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Sept. 27, 1967, Ser. No. 671,068

U.S. Cl. 118—125 **5 Claims**

Int. Cl. B05c *11/02*



An apparatus for uniformly applying a coating composition to a portion of or all of the surfaces of a core material, the apparatus including an oscillating applicator which applies a bead of coating composition on the core material as it travels through the apparatus in a sinusoidal manner and a spreader which smooths the bead of coating and spreads it uniformly over the surface of the core material.

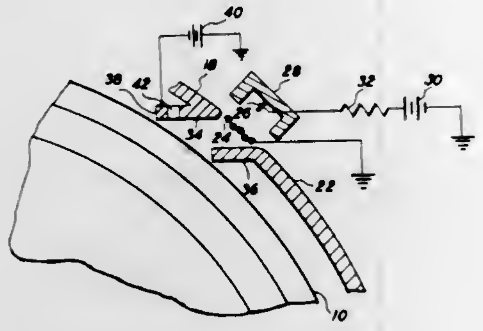
3,428,025
XEROGRAPHIC DEVELOPMENT APPARATUS

William A. Sullivan, Jr., Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 27, 1966, Ser. No. 604,725

U.S. Cl. 118—637 **5 Claims**

Int. Cl. G03g *13/06, 15/08*



Xerographic development apparatus including a grounded screen positioned adjacent a portion of the latent electrostatic image to be developed. The screen is of such mesh that when a two-component developer is cascaded across the screen, carrier granules cannot pass therethrough. A row of pin-type electrodes is positioned above the screen. The electrodes are biased to cause a sustained electrical breakdown between the electrodes and screen for charging toner flowing across the screen. As the toner becomes charged, it is repelled from the electrodes, through the screen and onto the image-bearing xerographic surface thereadjacent for its development.

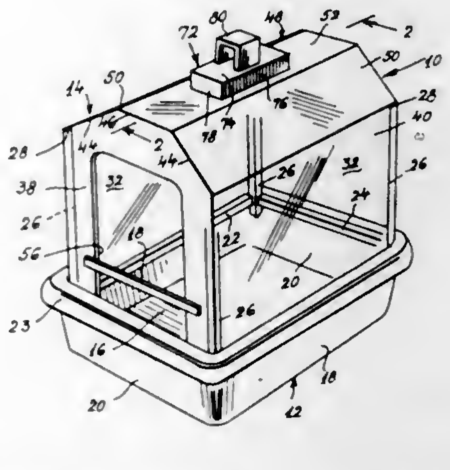
3,428,026
FUMIGATED PET HOUSE

Ralph Sohmers, 2536 Colden Ave., Bronx, N.Y. 10469, and Gary Siegelbaum, 1110 Wyatt St., Bronx, N.Y. 10460

Filed Feb. 14, 1967, Ser. No. 616,038

U.S. Cl. 119—19 **3 Claims**

Int. Cl. A01k *1/02*



A pet house for cats and other pets, rectangular in plan, having a disk-shaped shallow pan-like base or foundation supporting upstanding sides, front and rear walls and a gabled shaped roof. An entrance opening is formed in the front wall, and a deodorant tray is mounted on the roof, communicating with the interior of the house. In a modified form, the walls are collapsible.

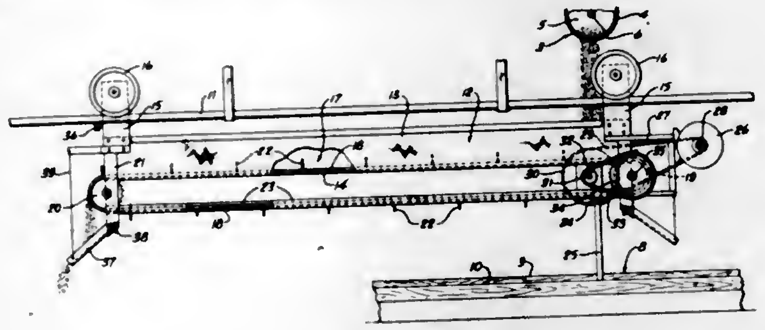
3,428,027
LIVESTOCK FEEDING APPARATUS

Eugene P. Haen, Robert B. Skromme, and Robert W. Smith, Kaukauna, Wis., assignors to Badger Northland Inc., Kaukauna, Wis., a corporation of Delaware

Continuation of application Ser. No. 452,217, Apr. 30, 1965. This application July 24, 1967, Ser. No. 655,671

U.S. Cl. 119—52 **5 Claims**

Int. Cl. A01k *5/00;* **B65g** *47/44, 23/00*



A livestock feeding apparatus for continuously distributing feed material from a relatively fixed continuous flow central delivery point outwardly from said point over an elongated feeding area, comprising a longitudinal track extending over substantially the length of said elongated feeding area, a carriage assembly, suspension means supporting said carriage assembly from said track for free movement along the length of the track, said suspension means including spaced support members extending upwardly from the longitudinal sides of said carriage assembly and carrying rollers that ride on said track, said carriage assembly including material holding means extending substantially along the length of said carriage and being open at each end thereof, reversible conveyor means carried by said carriage assembly independent of said suspension means for moving material from said holding means off one end or the other of the carriage assembly.

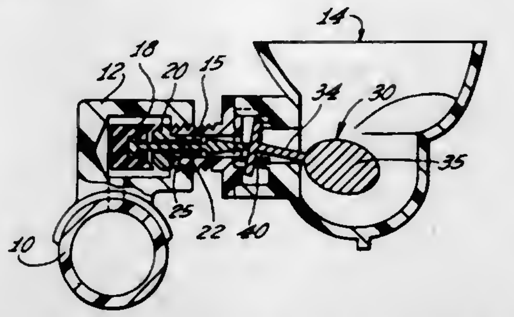
3,428,028
DRINKING CUP FOR FOWLS

Harold W. Hart, Glendale, Calif., assignor to H. W. Hart Mfg. Co., Glendale, Calif., a corporation of California

Filed Jan. 5, 1967, Ser. No. 607,536

U.S. Cl. 119—75 **12 Claims**

Int. Cl. A01k *7/02*



The invention is a drinking cup for fowls wherein the fowls peck a trigger to actuate a valve for supplying water to the cup. The trigger is a buoyant lever that responds to axial force as well as to lateral forces from all radial directions.

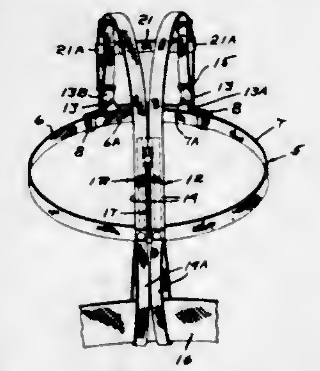
3,428,029
INFANT'S HARNESS FOR USE WITH SEAT BELTS

Maurice E. Klickstein, 38 Varick Road, Newton, Mass. 02158, and Reuben B. Klickstein, 125 Chiswick Road, Brighton, Mass. 02135

Continuation-in-part of application Ser. No. 552,571, May 24, 1966. This application July 25, 1966, Ser. No. 573,145

U.S. Cl. 119—96 **5 Claims**

Int. Cl. A01k *29/00;* **A62b** *1/16, 35/00*



Safety harness for infants in which loops are provided centrally of the back portion to slidably receive a retaining member.

3,428,030
SMALL ANIMAL RESTRAINING BOX

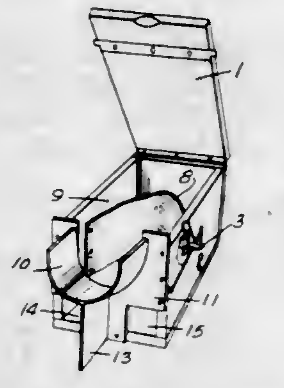
Billy P. Updegraff, Oklahoma City, Okla., assignor to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Agency

Filed Dec. 8, 1966, Ser. No. 600,268

U.S. Cl. 119—96 **3 Claims**

Int. Cl. A01k *29/00*

This invention concerns an improved small animal restraining box with an adjustable flexible wall for varying the size within a confining area of the box, a partition exteriorly of the box to receive on opposite sides the extended forelimbs of the animal and a head guard and support secured with the box and partition to receive the head of an animal.



3,428,031
GUIDE AND SUPPORTING ELEMENTS FOR INDIRECT WATER HEATERS

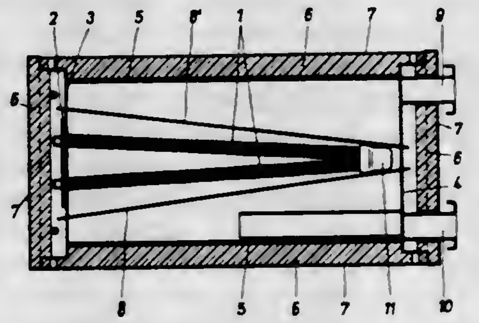
Hans Viessmann, Battenberg (Eder), Germany

Filed Feb. 3, 1967, Ser. No. 613,825

Claims priority, application Germany, Feb. 10, 1966, V 30,354

U.S. Cl. 122—33 **3 Claims**

Int. Cl. F22b *1/02;* **F28f** *7/00*



In an indirect water heater, the heating tubes are guided and supported by bar members which are secured to the end walls of the boiler and which extend in the direction of the heating tubes to support their ends inside the boiler while their other ends are supported by a connecting flange mounted on one of the boiler end walls.

3,428,032
VALVE CONTROL MECHANISM FOR AN INTERNAL COMBUSTION PISTON ENGINE

Wolfgang Rudert, Grunbach Kreis, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

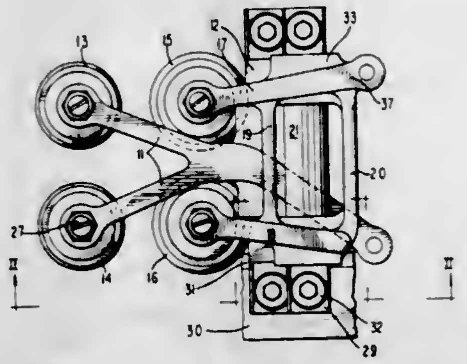
Filed Aug. 17, 1967, Ser. No. 661,284

Claims priority, application Germany, Aug. 20, 1966, D 50,900

U.S. Cl. 123—90 **12 Claims**

Int. Cl. F01l *1/26, 1/18*

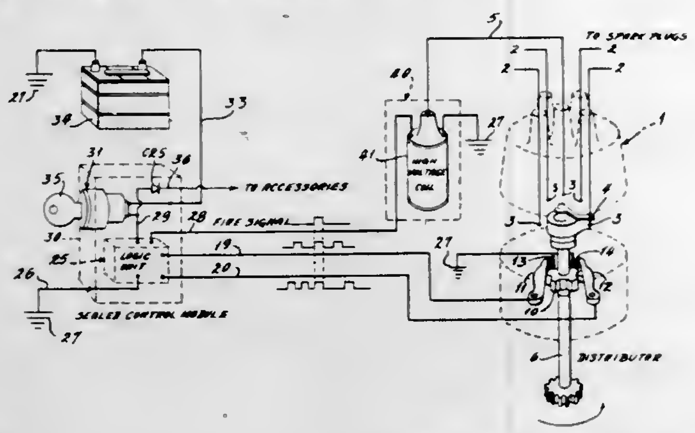
A valve control mechanism for an internal combustion engine having a pair of inlet and a pair of outlet valves actuated by a rocker arm pair, including a pair of rocker arms interconnected by webs, and a forked rocker arm. The webs of the rocker arm pair being positioned on either side of the pivot axis thereof, the axle of said rocker arm pair and the axle of said forked rocker arm



being relatively positioned to effect a mutual axial locking.

3,428,033
PULSE CONTROLLED MECHANISM SECURITY SYSTEM

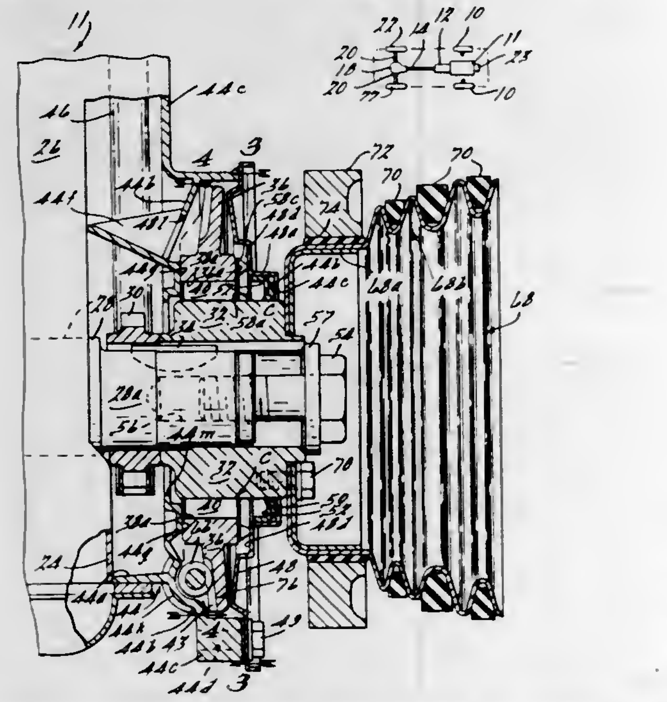
Louis A. Watts, Santa Barbara, Calif., assignor to Emerson Electric Co., St. Louis County, Mo., a corporation of Missouri
Filed June 1, 1967, Ser. No. 642,946
U.S. Cl. 123—146.5 **9 Claims**
Int. Cl. F02p *11/04;* **H01h** *27/00, 47/00*



An ignition system for electrically fired internal combustion engines which includes a decoder key card in place of the conventional key, which, when inserted in a decoder receptacle energizes part of a circuit in an encoding reticle station. The insertion of a wrong key card actuates an alarm. An encoding reticle is mounted for rotation on a distributor shaft to expose detectors to patterned sequential energization. The pulsed energy from the detectors is fed into a logic network, thence through a variable delay to a high voltage coil connected to the distributor. The decoder key card also is arranged to cause the selective actuation of certain of the detector circuits and to prevent the actuation of others of the detector circuits. The pulses to the logic network are translated into a timed "fire" command in turn for each cylinder.

3,428,034
CONSTANT MESH STARTER

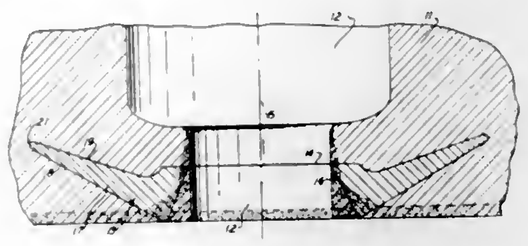
James E. MacAfee, Troy, Robert L. Davis, Birmingham, and Gerald P. Hentschel, St. Clair Shores, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Jan. 17, 1967, Ser. No. 609,891
U.S. Cl. 123—179 **7 Claims**
Int. Cl. F02n *11/00;* **F01l** *1/00;* **G05g** *3/00*



A starter mechanism for a motor vehicle comprising a screw pinion carried by the output shaft of an electric starter motor and meshingly engaging a screw type ring gear mounted forwardly of the engine block on a forward extension of the crankshaft; the ring gear is connected to the forward extension of the crankshaft by an overrunning clutch to allow the screw pinion to remain in constant meshing engagement with the ring gear.

3,428,035
INTERNAL COMBUSTION ENGINE VALVE SEAT

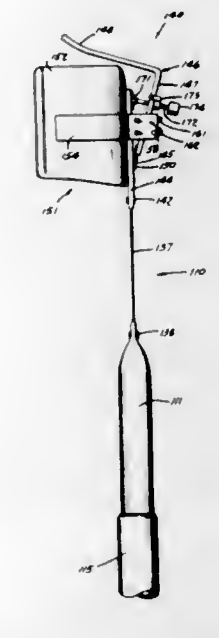
John P. Stefan, Birmingham, and Emmett J. Horton, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,509
U.S. Cl. 123—188 **5 Claims**
Int. Cl. F01l *3/02, 3/22;* **B21k** *1/24*



A method and means for integrally forming a valve seat in an engine component by casting an alloy valve seat insert into the engine component prior to the machining of the valve seat area. The alloy valve seat is retained through controlled diffusion of its perimeter into the cast material.

3,428,036
BALL GRIPPING AND THROWING APPARATUS

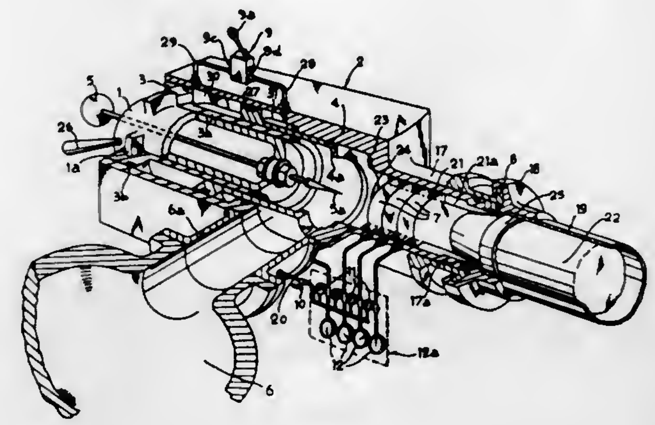
Robert J. Parker, 58 Mosher Ave., Battle Creek, Mich. 49017
Filed Sept. 1, 1965, Ser. No. 484,210
U.S. Cl. 124—5 **1 Claim**
Int. Cl. F41b *3/04;* **F41f** *7/00;* **G01n** *3/08*



This adjustable apparatus resiliently but releasably holds a ball or the like in a side opening flange assembly mounted on the end of a resilient member mounted on the end of an operating handle. The resilient member facilitates the ball throwing by flexing backward at the start of the throwing motion and then flexing forward as the end of the throwing motion is approached to provide an improved throwing action.

3,428,037
HIGH VELOCITY AIR GUN WITH FRANGIBLE VALVE TRIGGER MEANS

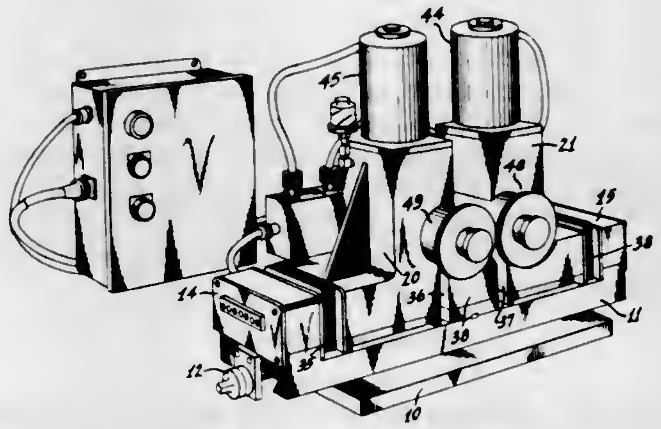
Igino Capriolo and Ugo Sacerdote, Turin, Italy, assignors to Fiat Societa per Azioni, Turin, Italy
Filed June 14, 1966, Ser. No. 557,446
Claims priority, application Italy, June 21, 1965, 29,502
U.S. Cl. 124—11 **2 Claims**
Int. Cl. F41b *11/06;* **F41f** *1/04*



A high velocity gun for shooting birds at airplane windshields includes a barrel, a loading breech, a breech bolt, a reservoir of compressed air, and a frangible valve arrangement between the barrel and the breech. The breech bolt includes a puncturing pin to puncture the frangible valve arrangement. The frangible valve arrangement includes a plurality of spaced parallel frangible discs forming therebetween air tight compartments which are maintained at varying pressures from the compressed gas reservoir. The pressures are in a sequential gradient so that puncturing one disc causes substantially instantaneous breaking of all discs.

3,428,038
APPARATUS FOR FORMING CONTOURS

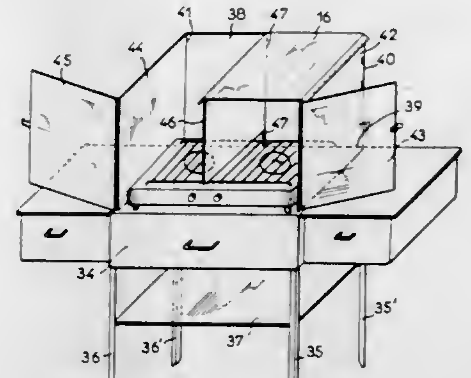
Nils Hoglund, Short Hills, N.J., assignor to Hoglund Engineering and Manufacturing Company, Inc., Berkeley Heights, N.J.
Filed Oct. 18, 1965, Ser. No. 497,240
U.S. Cl. 125—11 **4 Claims**
Int. Cl. B28d *1/16;* **B24b** *9/06*



Apparatus for forming contours on a work piece including a pair of oppositely disposed housing slides mounted on a base and biased toward each other and against a wedge-shaped cam slidably mounted on the base and movable transversely of the movement of the housing slides, the cam being adjusted by micrometer means, each housing supporting a power driven dressing wheel.

3,428,039
FOLDING OVEN FOR PORTABLE STOVE

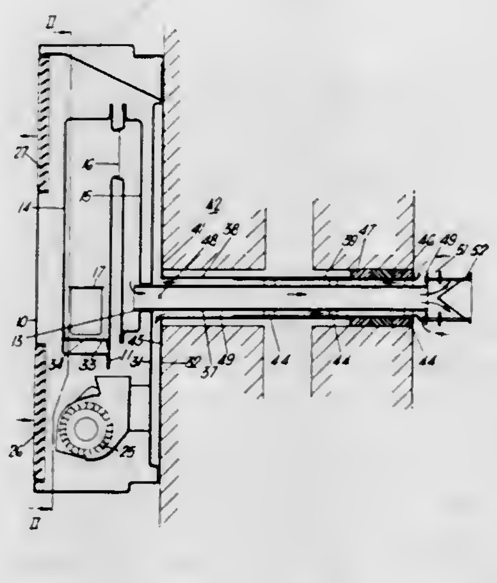
Jean Marie Joseph Desmoulins, 15 rue de la Reine Hortense, St.-Leu-la-Foret, France, and Jean Marie P Becker, 14 Quai du Loing, St.-Mammes, France,
Filed Nov. 29, 1966, Ser. No. 597,595
U.S. Cl. 126—9 **6 Claims**
Int. Cl. F24c *1/16, 5/20;* **F24h** *7/00*



This invention is concerned with an arrangement for portable stoves, more particularly for a camping stove, comprising a folding wind-guard made of removable plates and a part of which forms a compartment enclosing at least one burner of the stove and provided with a cover plate and with a hinged front plate forming a door so as to form a folding oven.

3,428,040
GAS HEATER

Ian P. S. Baker and Kenneth R. Wade, Liverpool, England, assignors to United Gas Industries Limited, London, England, a British company
Filed Sept. 18, 1967, Ser. No. 668,468
U.S. Cl. 126—110 **10 Claims**
Int. Cl. F24h *3/02;* **F23l** *1/00*



The specification describes a balanced flue gas heater, in which the flue pipe is coaxially within the air inlet pipe. The air inlet pipe is provided with an annular seal surrounding its outer end of larger diameter than an exhaust gas deflector assembly on the outer end of the flue pipe. This permits the heater to be installed by simply passing the balanced flue through a hole in a wall from the interior.

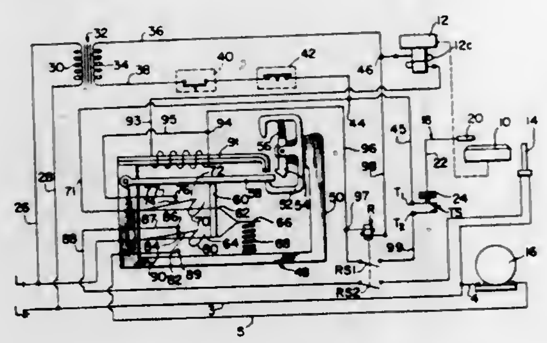
3,428,041
HEATING CONTROL SYSTEM WITH TIME DELAY RELAY

James R. Willson, Garden Grove, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed June 6, 1967, Ser. No. 643,900

U.S. Cl. 126—110 **8 Claims**

Int. Cl. F24h *3/02;* **F23n**



A forced air heating control system including a time delay relay having a bimetal strip and a mechanical latching member which cooperate to open and close circuits to a heater fan and an electric igniter.

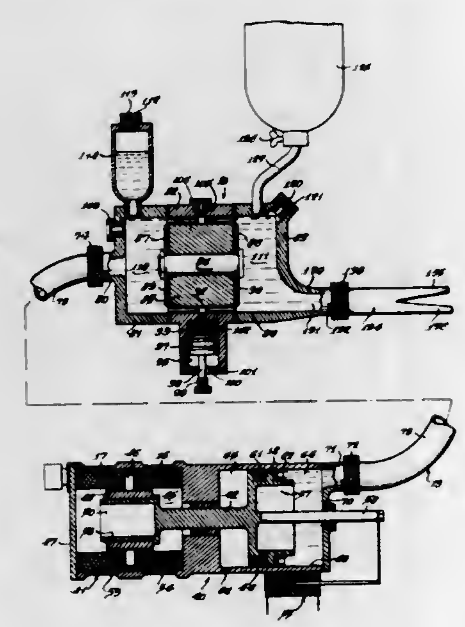
3,428,042
HEART PUMP ACTUATOR

Merrill Gaines Chesnut, Arvada, Colo., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,526

U.S. Cl. 128—1 **10 Claims**

Int. Cl. A61m *5/20;* **A61h** *31/00;* **F04b** *9/10*



A catheter for insertion into a patient's circulatory system communicates blood from one chamber of a bellows pump, the other chamber of the pump driving the pump piston in response to fluid pressure communicated thereto from a positive displacement actuator pump which includes a pump (pressure) coil and a withdrawal (suction) coil mounted in one of two chambers, in magnetic communication with an armature reciprocally mounted in the other of said chambers. The armature has a stroke rate responsive to the magnitude of current in the coils, and is provided with a hollow recess so as to reduce its mass and, therefore, the delay time of the actuator pump. The other chamber has a pump piston reciprocally disposed therein which is rigidly connected to the armature, the piston also having a recess or cavity so as to reduce its inertia. Grooves provided in the housing of the pump adjacent the coils control the flux path between the coils and the armature so as to provide linear operation.

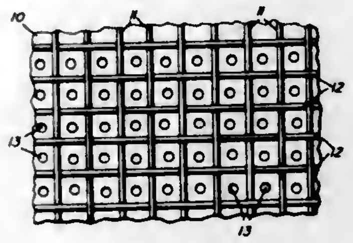
3,428,043
BANDAGE CONTAINING ABSORBED THERAPEUTIC MATERIALS

Thomas H. Shepherd, Princeton, N.J., assignor to National Patent Development Corporation, New York, N.Y., a corporation of New York

Filed June 9, 1966, Ser. No. 556,422

U.S. Cl. 128—268 **5 Claims**

Int. Cl. A61f *7/02;* **A61l** *15/04*



Hyrdophilic hydrogel material compatible with body tissue containing medication absorbed therein is reinforced with a coextensive sheet of fabric to provide a bandage.

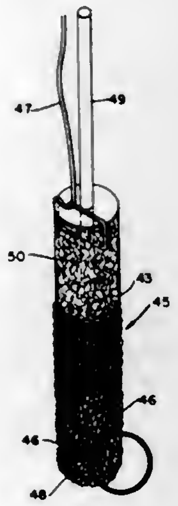
3,428,044
COATED CATAMENIAL TAMPON

Howard A. Whitehead, Appleton, and Edward Rightor, Jr., Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Wisconsin

Filed Oct. 15, 1965, Ser. No. 496,575

U.S. Cl. 128—285 **5 Claims**

Int. Cl. A61f *13/20;* **G03g** *1/20;* **C23d** *5/08*



An absorbent tampon having its forward end coated with a reticulated network of discrete globules of water-soluble lubricating material to aid insertion. Areas of the tampon surface adjacent points of contact between individual globules are substantially free of coating. A number of globules protrude farther from the surface than others. The coating is is applied by reducing the material to a molten state, dividing the material into particles while in such molten state, than partially solidifying the particles and while in the latter condition applying the particles to the tampon surface.

3,428,045
SURGICAL INSTRUMENT FOR SKIN GRAFTING

Harold L. Kratzsch and Gene M. Farling, Warsaw, Ind., assignors to Zimmer Manufacturing Company, Warsaw, Ind., a corporation of Indiana

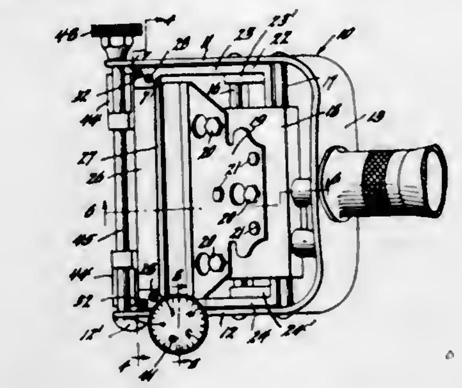
Filed Nov. 1, 1966, Ser. No. 591,272

U.S. Cl. 128—305 **7 Claims**

Int. Cl. A61b *17/32, 17/22*

1. In a dermatome of the type comprising opposite side members connected by a fixed foot plate having a forward edge, a pressure plate mounted between said side members forwardly of said edge of said foot plate for vertical adjustment relative to and in parallelism with said edge, and means presenting an oscillatory cutting element forwardly of said edge and rearwardly of said pressure plate, supporting and adjusting means comprising

(a) a rigid framework pivotally supported on and between said side members rearwardly of said edge of said foot plate,



(b) separate calibrating means adjustably supporting each end of said pressure plate on said framework, and

(c) means for causing pivotal movement of said framework to vary the position of said pressure plate relative to said foot plate edge.

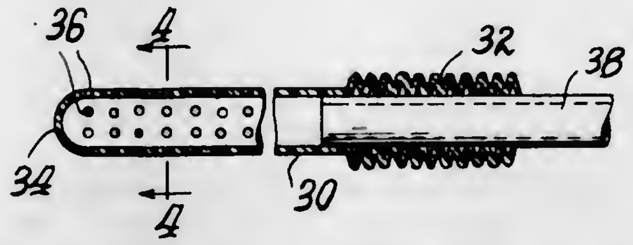
3,428,046
CATHETER

Robert K. Remer, 1500 Central St., Evanston, Ill. 60201, and Harold N. Vagenius, 1634 Elmwood Ave., Berwyn, Ill. 60402

Filed Apr. 6, 1965, Ser. No. 446,124

U.S. Cl. 128—349 **2 Claims**

Int. Cl. A61m *25/00, 29/02, 3/00*



This invention provides a catheter made of self-lubricating plastic material including a finely divided solid lubricant. The catheter comprises an open-ended thin walled flexible tube capable of having its leading end sealed with a urine-soluble adhesive. When thus sealed the catheter is filled with a rigidifying fluid under pressure and the catheter is introduced into the urethra thus filled.

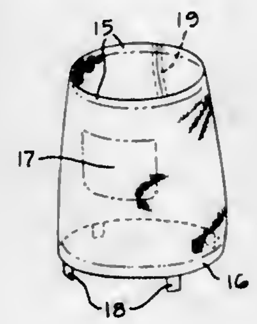
3,428,047
PROCESS FOR TREATING FIGURE CONTROL GARMENTS

Isadore Rosenthal, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

Filed July 13, 1966, Ser. No. 564,797

U.S. Cl. 128—580 **5 Claims**

Int. Cl. A41c *1/00*



A method for preparing figure control garments. More particularly this method deals with a process for controlling the modulus in critical areas of figure control garments without the necessity for varying the denier, knit or fabric construction.

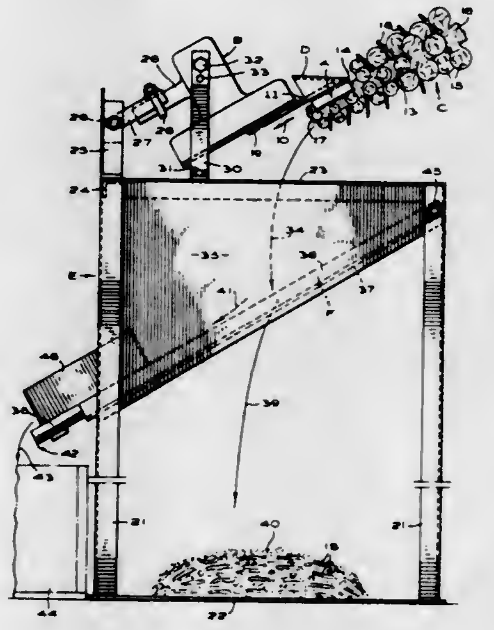
3,428,048
APPARATUS FOR STRIPPING BRUSSELS SPROUTS

Aldo J. Giusti, Rte. 1, Box 301, Half Moon Bay, Calif. 94019

Filed Sept. 21, 1965, Ser. No. 488,909

U.S. Cl. 130—30 **4 Claims**

Int. Cl. A01d; A01f *7/00, 9/00*



An apparatus for stripping Brussels sprouts and being provided with a cutter having a guide surface disposed to have the main stalk of an unimpaled Brussels sprout plant advanced therealong, the cutter having an edge disposed to strip sprouts from the plant, and this cutter being connected to a rapid-speed vibrator that is continuously reciprocated back and forth in short strokes. The cutter is unobstructed from its front so that an operator may hold and freely move the plant into engagement with the cutter during stripping of the sprouts.

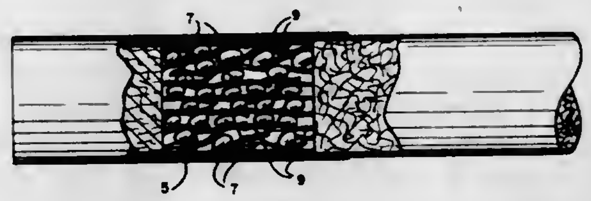
3,428,049
TOBACCO SMOKE FILTER ELEMENT

Preston H. Leake, Midlothian, and Everett C. Cogbill, Richmond, Va., assignors to The American Tobacco Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 21, 1965, Ser. No. 515,363

U.S. Cl. 131—10.1 **1 Claim**

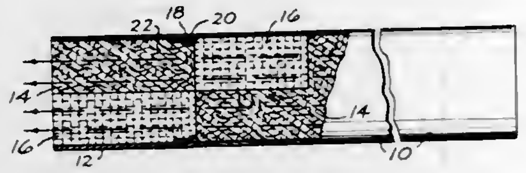
Int. Cl. A24d *1/06;* **A24b** *15/04;* **A24f** *25/02*



A cigarette filter is formed of a mass of compressed absorbent material and at least one frangible capsule containing a smoke-treating liquid. When the filter mass is squeezed by the fingers, the capsule is broken and the released liquid, as it is absorbed, cause the absorbent material to swell and fill the void left by the collapsed capsule.

3,428,050
FILTER CIGARETTE OF ADJUSTABLE FILTER CAPACITY

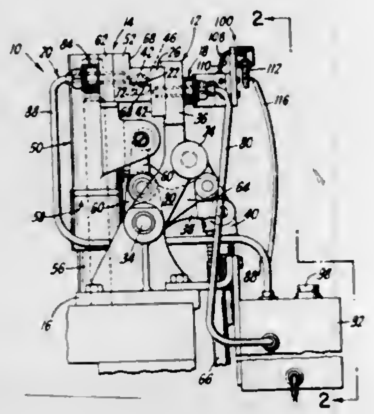
**Walter R. Kandel, 4834 N. Interstate Ave.,
Portland, Oreg. 97217
Filed Feb. 21, 1967, Ser. No. 617,621**
U.S. Cl. 131—10.3 **6 Claims**
Int. Cl. A24d *1/04*



A filter cigarette is divided transversely into tip and body sections rotatably interengaged and having meeting ends divided longitudinally into at least one segment filled with a tobacco smoke filter and another segment without a tobacco smoke filter, the two segments being axially offset from each other. A variable degree of smoke-filtering action thus is afforded, depending upon the relative angular adjustment of the tip and body sections.

3,428,051
CIGAR SHAPER

**Carmine T. Merenda and Adolf F. Reich, Brooklyn, and Sterling T. Gustavson, Rosedale, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed June 20, 1966, Ser. No. 558,807**
U.S. Cl. 131—79 **3 Claims**
Int. Cl. A24c *1/18, 3/00*

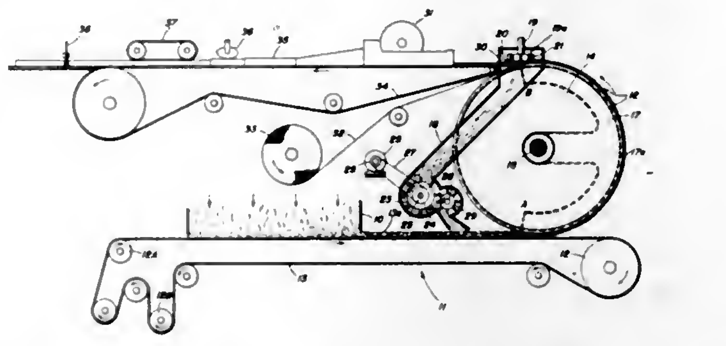


A cigar shaper mechanism comprising a pair of movable shaping members adapted to clamp a cigar therebetween, each of said shaping members including a pair of axially spaced bearing plates contoured to shape the cigar. The bearing plates each have a heating element mounted in a hollow machine screw to simultaneously allow heating and pressing of the cigar.

3,428,052
CIGARETTE MAKING MACHINE

**Morehead Patterson, deceased, late of New York, N.Y., by George S. Hills, executor, New Rochelle, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation-in-part of application Ser. No. 96,226, Mar. 16, 1961. This application Mar. 25, 1963, Ser. No. 287,730**
U.S. Cl. 131—84 **1 Claim**
Int. Cl. A24c *5/18;* **A24b** *7/14, 9/00*

1. In the method of making a continuous cigarette rod, the steps of forming a moving stream of shredded tobacco in excess of that required for the rod, stripping the excess tobacco from the surface of the stream, forming the remaining stream into a rod, storing the stream of stripped excess tobacco, delivering a continuous uniform supply of excess tobacco to the initial moving stream.



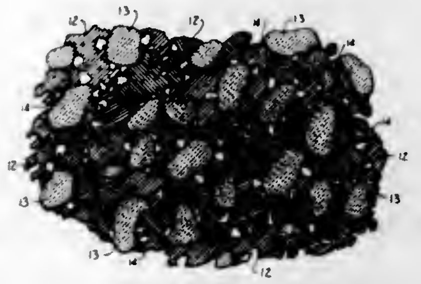
3,428,053
PRODUCTION OF RECONSTITUTED TOBACCO

**Alexander W. Schoenbaum, John T. Ashworth, and John G. Brooks, Richmond, Va., assignors to The American Tobacco Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 7, 1965, Ser. No. 493,913**
U.S. Cl. 131—140 **1 Claim**
Int. Cl. A24b *9/00, 15/00;* **A24f** *47/00*

In the aqueous extraction of tobacco products wherein the fibrous constituents are separated from the resulting aqueous constituents and the aqueous mass is concentrated before returning it to a thin sheet of the fibrous constituent, the characteristic "off" taste of the resulting reconstituted tobacco products is eliminated by separating by centrifuging and then discarding water-insoluble solids from the separated aqueous phase before concentrating this phase for application to the fibrous phase sheet.

3,428,054
FILTER

**Bruno U. Scarabello and Emilio A. Perez, Walnut Creek, Lloyd G. Welty, Beverly Hills, and Simon J. Sluter, Los Angeles, Calif., assignors to Chemway Filters, Inc., Office of Beko and Lemon, County Court House, Nye County, Nev., a corporation of Nevada
Filed Oct. 18, 1965, Ser. No. 496,973**
U.S. Cl. 131—265 **12 Claims**
Int. Cl. A24f *7/04;* **A24d** *1/06;* **A24b** *13/00*



A filter is described which is particularly effective in filtering tobacco smoke. The filter comprises a composite mixture of mineral aggregate particles having highly irregular surfaces which include concavities, and particles of an absorptive material such as of a clay. The particles are bonded together by a suitable bonding agent such as a sugar or dextrin and the composite is disposed within a metal sleeve. The resulting filter is disposed in the path of the tobacco smoke before it reaches the smoker. The tobacco to be smoked can also be coated with clay for more effective filtering, and a cellulose acetate filter can be disposed at the exit end of the mineral-absorptive particle filter to remove acidic components from the smoke.

3,428,055
FILTER ELEMENTS AND ADDITIVE THEREFOR

**Bobby J. Sublett and Cephas H. Sloan, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 9, 1965, Ser. No. 447,093**
U.S. Cl. 131—266 **2 Claims**
Int. Cl. A24d *1/04;* **A24f** *13/06*

A selective tobacco smoke filter element containing a particulate additive coated with a water-soluble, weak-basic inorganic salt which is capable of chemically reacting with and rendering harmless substantially all hydrogen cyanide vapors contained in the tobacco smoke passing through the filter elements. The organic salt is selected from the group consisting of phosphates, phosphites, and carbonates of sodium and potassium.

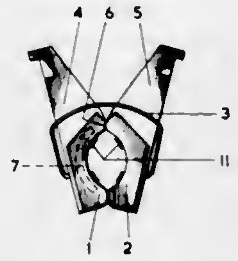
3,428,056
TOBACCO SMOKE FILTER INCORPORATING COATED POLYOLEFIN ADDITIVE

**Bobby Jones Sublett and Cephas H. Sloan, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 447,093, Apr. 9, 1965. This application July 21, 1965, Ser. No. 473,854**
U.S. Cl. 131—267 **7 Claims**
Int. Cl. A24d *1/06;* **A47f** *13/06;* **B01d** *27/00*

The selective removal of hydrogen cyanide (HCN) from tobacco smoke is accomplished in a novel filter which has for a base a rod of synthetic fibers forming a fibrous tow such as a cellulose acetate tow, by the incorporation therein of a polyolefin powder on which inorganic water soluble salts are coated, especially the salts of Group I*a* elements. Preferred salts include sodium carbonate, sodium phosphite, potassium carbonate and potassium phosphite.

3,428,057
HAIR CLAMP

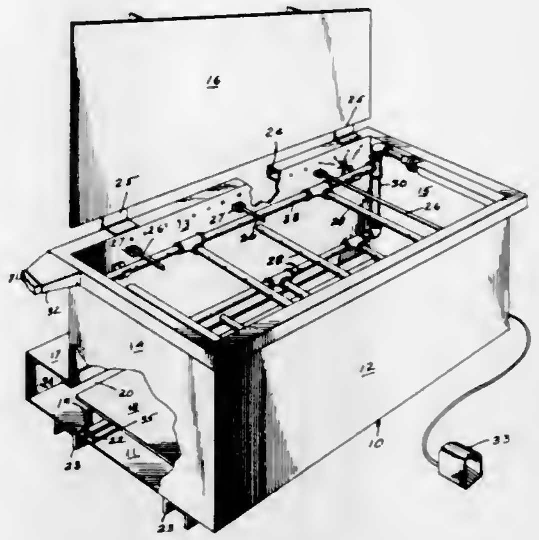
**Willem Hendrik Braskamp, Voorburg, Netherlands, assignor to Indoheem N.V., The Hague, Netherlands
Filed June 22, 1966, Ser. No. 559,528
Claims priority, application Netherlands, June 23, 1965, 6508055**
U.S. Cl. 132—36 **9 Claims**
Int. Cl. A45d *2/36*



A hair clamp adapted for being heated by a source of heat and for being subsequently removed from said source and applied to a member which has hair engaged thereon. The clamp includes first and second hinged elements forming a clamplike structure which is adapted to accommodate said member therebetween. Metal members are supported on the hinged elements and are sandwiched between the hinged elements and cover members which are respectively hinged to said elements. The metal members serve as a heat reservoir to dissipate heat through said elements for application to hair on said member.

3,428,058
MASK WASHER

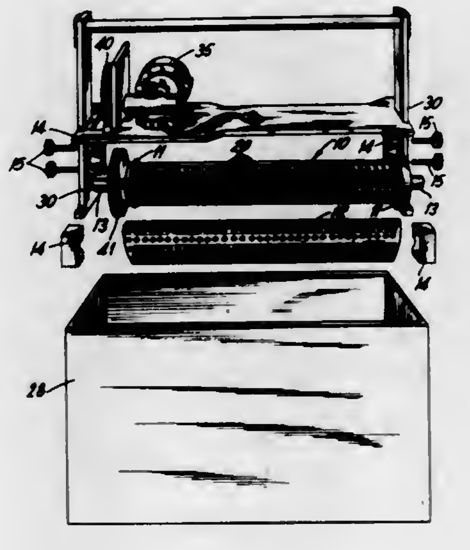
**Albert Niedzielski and Robert F. Noll, Erie, Pa., assignors to Accurate Finishing Tools Co., Inc., Erie, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1966, Ser. No. 586,059**
U.S. Cl. 134—104 **3 Claims**
Int. Cl. B08b *3/00, 3/02, 13/00*



The invention is a mask washer for cleaning residual paint from paint machines wherein the masks are supported above the baffle and paint solvent is sprayed on them. The paint laden solvent falls down on the horizontal baffle and runs off the edge of it into a sump. A partition is supported between the sump and a solvent reservoir. The solvent reservoir is below the baffle. The partition terminates slightly below the baffle so that the solvent can run over the partition into the reservoir. The paint settles out of the solvent into the sump and may be cleaned out from time to time.

3,428,059
ROTARY BASKET PROCESSING APPARATUS

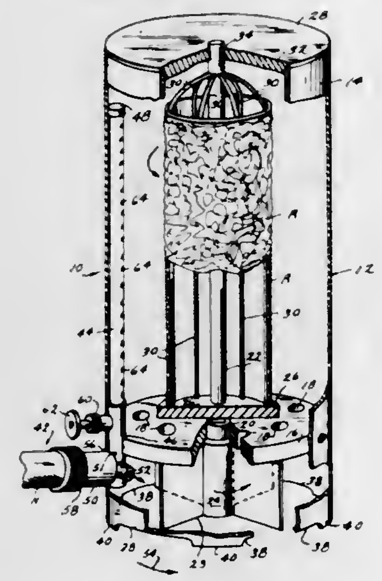
**Charles Wenzel, Forest Hills, N.Y., and Howard K. Friedman, Summit, N.J., assignors to Geoscience Instruments Corporation, Mount Vernon, N.Y., a corporation of New York
Filed Apr. 3, 1967, Ser. No. 627,923**
U.S. Cl. 134—140 **5 Claims**
Int. Cl. B08b *3/06, 9/08, 17/00*



A rotary basket chemical processing arrangement is adapted to batch process subject work pieces in a flexible and uniform manner. The basket includes a removable section for easy accessibility, and a plurality of separators having projections thereon to inhibit a work surface masking surface tension action.

3,428,060
APPARATUS FOR CLEANING PAINT ROLLERS

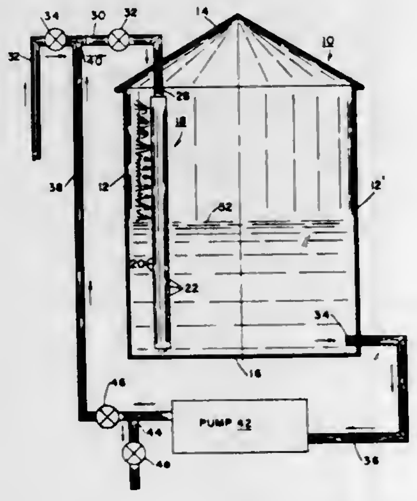
Donald K. Spivey, 3703 55th St., Tampa, Fla. 33619
Filed Sept. 23, 1966, Ser. No. 581,597
U.S. Cl. 134—141 5 Claims
Int. Cl. B08b *3/02, 1/04, 13/00*



The article cleaner housing cover and floor, journal a rotatable mount for an article, for instance a paint roller. The shaft of the article mount extends down through the floor and has an impeller secured to it. An inlet fluid conduit divides and supplies a spray of fluid against the article and a stream of fluid against the impeller to rotate the article.

3,428,061
TANK MIXING BY PUMP CIRCULATION

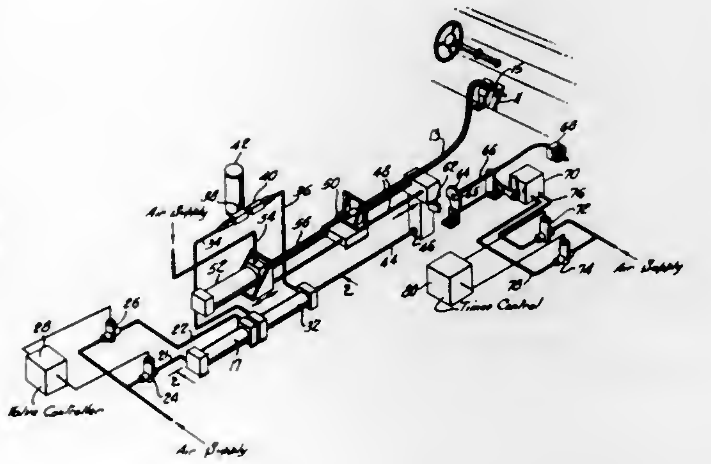
Talford W. Graham, Longview, Tex., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 18, 1966, Ser. No. 551,148
U.S. Cl. 137—1 10 Claims
Int. Cl. B01f *3/08, 5/10;* **H05f** *1/00*



1. An antistatic mixing system for liquids comprising:
(A) liquid container means;
(B) liquid conduit means disposed within said container means for delivering liquids into said container means,
(a) said conduit means having perforations formed on a first side thereof above the minimum liquid level line at which the liquids held in said container means are normally maintained,
(b) said conduit means having further perforations extending downward from approximately the minimum liquid level line of said container means on a side other than the first side of said conduit;
(C) means for delivering to said conduit means the liquids which are to be mixed within said container means; and
(D) baffle means positioned adjacent at least the perforations formed on the first side of said conduit means for preventing the free-fall of the liquids passing through the perforations onto the surface of any liquids that have been previously introduced into said container thereby preventing the build-up of static electricity.

3,428,062
AUTOMATIC ACTUATING AND CONTROL MECHANISM

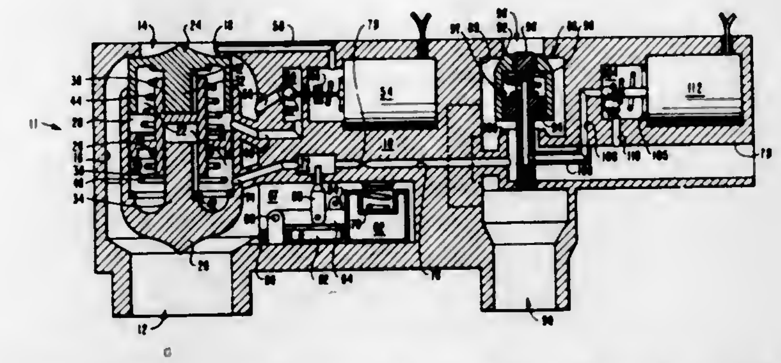
Norman E. Flournoy, Sr., and Vernon M. Barnes, Jr., Richmond, Va., assignors, by mesne assignments, to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 587,646
U.S. Cl. 137—30 7 Claims
Int. Cl. F01b *25/06, 25/12;* **F15b** *13/10*



1. An actuating and control mechanism for positioning an output element in a predetermined sequence of steps comprising a drive train connected to the output element, control means for controlling the operation of said drive train, said drive train comprsing a pneumatic actuator and an hydraulic rate controller connected in tandem, at least one adjustable flow valve connected to said hydraulic rate controller to control the rate of response of said hydraulic rate controller and drive train, at least one projecting member connected in said drive train for movement therewith, at least one stop member adjustable to a stopping position and a non-stopping position with respect to each of said projecting members, said stopping position being in the path of travel of said respective projecting member to stop said drive train and said non-stopping position being out of the path of travel of said respective projecting member to release said drive train, a plurality of stop actuators each providing movement of one of said stop members to its stopping and non-stopping positions, and control timing means for energizing each of said stop actuators in accordance with a predetermined function to provide a timed sequence of movement steps of said output member.

3,428,063
LIQUID TRANSFER VALVE HAVING FLOAT CONTROL AND ACCELERATION RESPONSIVE PILOT VALVE

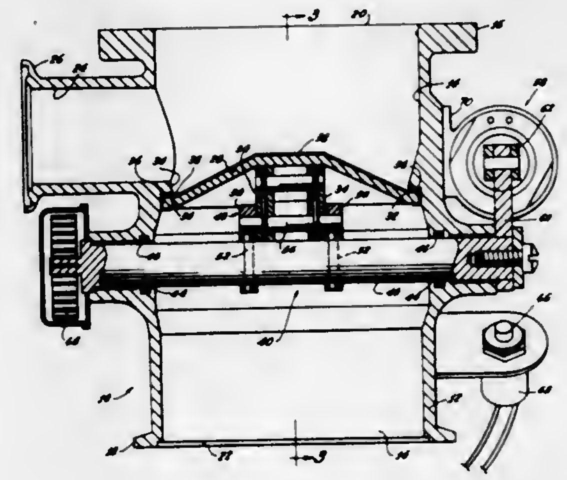
Manuel Plotkin and Malcolm McQueen, Northridge, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Oct. 12, 1966, Ser. No. 586,270
U.S. Cl. 137—45 19 Claims
Int. Cl. B64d *37/14;* **G05b** *9/12;* **B67d** *5/04*



Fluid flow control is provided by a liquid transfer valve by which liquid is passed and any accompanying gas is blocked automatically under conditions of zero or negative G. Control is exercised with regard to direction of flow by means of a solenoid controlled pilot valve which distributes according to its setting pressure differences between inlet and outlet ends of the valve. Automatic blocking of any unwanted gas which may accompany liquid flow is achieved by means of a float operated valve which is buoyed to a closed position, which allows liquid flow, by the liquid when only liquid is present but fails to be buoyed moving downwardly to an open position and cutting off the flow of liquid whenever any gas is present. Automatic blockage of gas flow is achieved for zero or negative G conditions by means of a pivoted weight arrangement which maintains the float operated valve open during such conditions, the open position corresponding to a stoppage of liquid flow.

3,428,064
SWINGAWAY VALVE WITH ELECTRICAL RESPONSIVE RELEASE MEANS

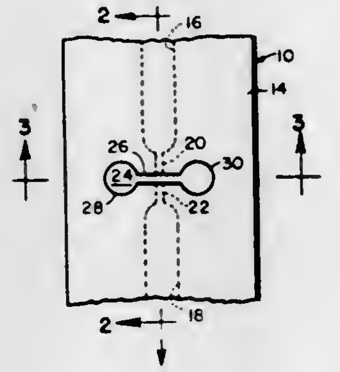
John J. Phillips, Rolling Hills, and Larry L. McCormick, Los Angeles, Calif., assignors, by mesne assignments, to G & H Technology, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,910
U.S. Cl. 137—72 2 Claims
Int. Cl. F16k *1/226, 17/40, 25/00*



The valve disclosed herein is effective to completely open within an extremely short time limit. A valve diaphragm is maintained in the closed position by an over-center toggle linkage restrained by an electrically conductive wire which is loaded in tension. An electric current is circulated through the wire to raise the temperature to a point where the tensile strength falls below the tension whereby the wire instantly breaks, releases the toggle linkage and the diaphragm flies open.

3,428,065
FEEDBACK ISOLATOR

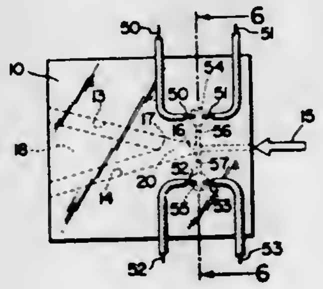
Terence J. Cawley, Eldred, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 16, 1965, Ser. No. 433,096
U.S. Cl. 137—81.5 17 Claims
Int. Cl. F15c *1/14*



A fluid feedback isolator in a fluid passage having an emitter nozzle upstream of a constant pressure chamber and a collector downstream thereof is disclosed. The collector is disposed in a spaced, longitudinally aligned, stream intercepting relationship with said emitter, with the emitter nozzle and collector having a cross section substantially smaller than the passage within which they are located.

3,428,066
ELECTRICALLY CONTROLLED FLUID AMPLIFIER

John A. Herr, Garwood, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 19, 1965, Ser. No. 433,896
U.S. Cl. 137—81.5 2 Claims
Int. Cl. F15c *1/08, 1/14*



A fluid amplifier is described in which spark-gaps are formed by spaced wire pairs positioned in control chambers located on opposite sides of the power stream and these chambers are sealed except for connections to the interaction chamber just downstream of the power stream duct by control ducts having small cross-sectional area. These control ducts have a length at least equal to the maximum dimension of the control chamber. Unusual but consistent operation is observed in that spark discharge in a control chamber located on one side of the power stream causes deflection of the power stream towards the control chamber in which the spark discharge occurs.

3,428,067

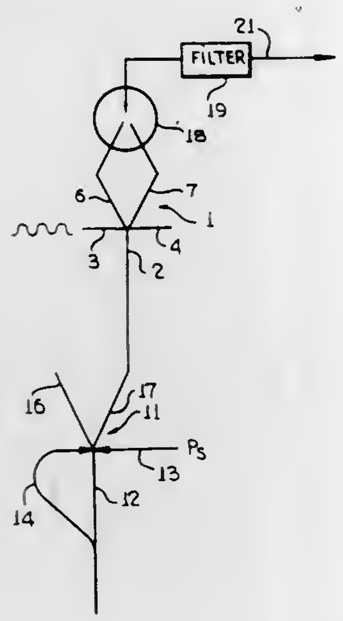
PURE FLUID SYSTEM

Edwin M. Dexter, Silver Spring, Md., and Ronald L. Humphrey, Wyckoff, N.J., assignors to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Nov. 19, 1965, Ser. No. 508,719

U.S. Cl. 137—81.5 **10 Claims**

Int. Cl. F15c *1/08, 1/14*



A pure fluid analog amplifier has a cyclically varying pressure signal applied to its control nozzle and a variable fluid pressure signal applied to its power nozzle whereby the cyclically varying pressure signal is amplitude modulated by the variable pressure signal and the output signal of the amplifier represents a multiplication of the two signals. Alternatively, the variable pressure signal applied to the power nozzle may represent an inverse function of a further signal, as generated by a pure fluid amplifier inverter, whereby the output signal of the first mentioned amplifier represents a division function of the cyclically varying pressure signal and the further signal.

3,428,068

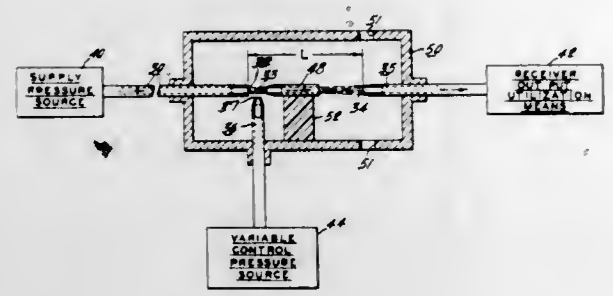
TURBULENCE AMPLIFIER

Kenneth Howie, Jr., Norristown, Pa., assignor to Howie Corporation, Norristown, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 543,688, Apr. 19, 1966. This application Feb. 6, 1967, Ser. No. 614,153

U.S. Cl. 137—81.5 **9 Claims**

Int. Cl. F15c *1/14*


SUPPLY PRESSURE SOURCE
RECEIVER OUTPUT UTILIZATION MEANS
VARIABLE CONTROL PRESSURE SOURCE
L
40
42
44
50
51

A fluid amplifier of the type using changes in the position of the point at which a projected laminar stream becomes turbulent, in which an intermediate conduit having an interior cross-section substantially the same in size and shape as that of the projected laminar stream is disposed between, and spaced from, the usual supply conduit and collector conduit in alignment with the projected laminar stream so that the stream passes through it.

3,428,069

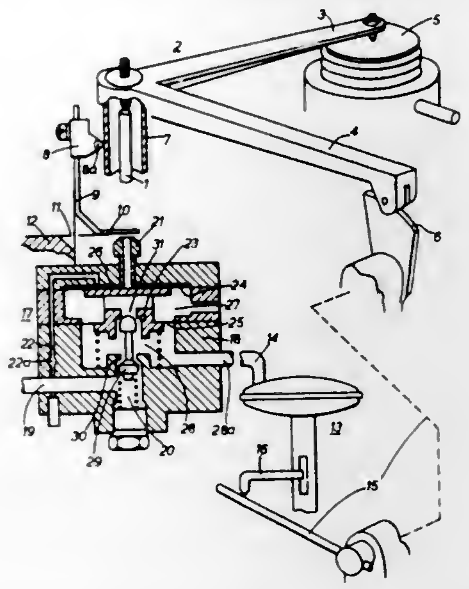
POSITION CONTROLLING MECHANISMS

Denis William Undery, Sawbridgeworth, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Jan. 26, 1967, Ser. No. 611,900

U.S. Cl. 137—85 **9 Claims**

Int. Cl. F15b *9/12, 13/16*



A valve positioner including a pneumatic relay has a mechanism for controlling a nozzle flapper of the relay. The mechanism comprises a structural unit having two arms and a cylindrical deflection part lying on mutually perpendicular axes which intersect at a point. The unit is pivotally mounted adjacent this point and is engaged by a pneumatic bellows at the end of one arm and by a feedback cam of the end of the other. An input signal representative of a desired valve position is applied to the bellows and a feedback signal representative of the actual valve position is applied to the feedback cam. A follower member engages the surface of the cylindrical part and is connected directly to the nozzle flapper. Thus the nozzle flapper is moved in response to the input and feedback signals such that the pneumatic relay controls the air pressure supplied to the valve to position it in accordance with the input signal to the bellows.

3,428,070

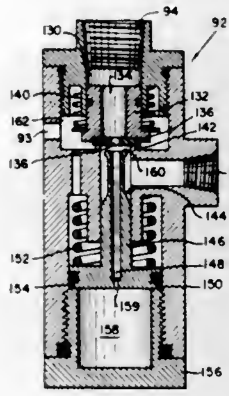
FLUID PRESSURE CONTROL VALVE

Harry McWalter Valentine, 901 Cleveland St., Elyria, Ohio 44035

Original application Apr. 3, 1964, Ser. No. 357,199. Divided and this application Oct. 12, 1966, Ser. No. 586,234

U.S. Cl. 137—102 **7 Claims**

Int. Cl. F15b *1/06;* **F16k** *31/65;* **B60t** *15/02*



1. A pressure limiting valve comprising a body having inlet, outlet and exhaust ports, a normally open inlet valve in said body for controlling communication between said inlet and outlet ports, a normally closed

exhaust valve for controlling communication between said outlet and exhaust ports, a fluid pressure receiving cavity in said body, fluid passage means including flow retarding means communicating said cavity with said inlet port, a fluid pressure responsive element exposed to the pressure in said fluid pressure cavity and normally occupying a first position but being movable to a second position upon build-up of pressure in said cavity to a predetermined level, and means actuated by said movement of said element to its second position to close said inlet valve to disconnect said inlet and outlet ports while simultaneously opening said exhaust valve to connect said outlet port with said exhaust port.

3,428,071

COMPRESSED AIRBRAKE ASSEMBLY

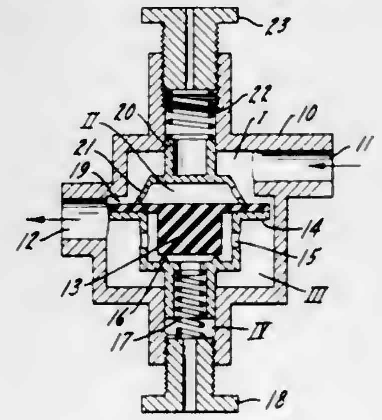
Werner Köbnick, Leimen, near Heidelberg, Germany, assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois

Filed Oct. 31, 1966, Ser. No. 590,616

Claims priority, application Germany, Oct. 3, 1966, B 84,549

U.S. Cl. 137—102 **6 Claims**

Int. Cl. F16k *17/10, 51/44;* **B60t** *15/12*



1. For use in a vehicle airbrake system, a valve including a housing, an air pressure inlet in said housing, an air pressure outlet in said housing, a valve seat in said housing between said inlet and said outlet, a valve member movable in said housing toward and away from said seat, said valve member being movable away from said seat in response to pressure entering said inlet, a first yielding means positioned in said housing to urge said valve member toward said seat, a valve actuator movable in said housing toward and away from said valve member, a second yielding means positioned in said housing to urge said actuator toward said valve member to unseat said valve member.

3,428,072

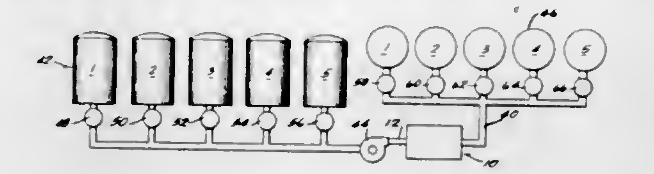
LIQUID PROCESSING SYSTEM

Elmer Scott Welch, Mequon, Wis., assignor to G & H Products Corporation, Kenosha, Wis., a corporation of Wisconsin

Filed Mar. 18, 1966, Ser. No. 535,603

U.S. Cl. 137—113 **9 Claims**

Int. Cl. G05d *7/06;* **F16k** *21/18;* **E03b** *1/00*



A liquid processing system including a liquid processor having a raw product supply line, a finished product line and a balanced tank in the supply line. A plurality of raw product supply tanks are connected to the supply line and a plurality of finished product tanks are connected to the finished product line. A pump means is provided for pumping the liquid through the system and a control means is provided for transferring the system between pre-selected pairs of supply and finished product tanks. The control means includes a supply valve arrangement operative to selectively connect each supply tank independently to the supply line, and also includes a finished product valve arrangement operative to selectively connect each finished product tank independently to the finished product line. The control further includes a first and second level sensor means in the balance tank and an infeed control valve in the supply line upstream of the balance tank. A master controller and a timer control are provided to control the proper sequence and time of operation.

3,428,073

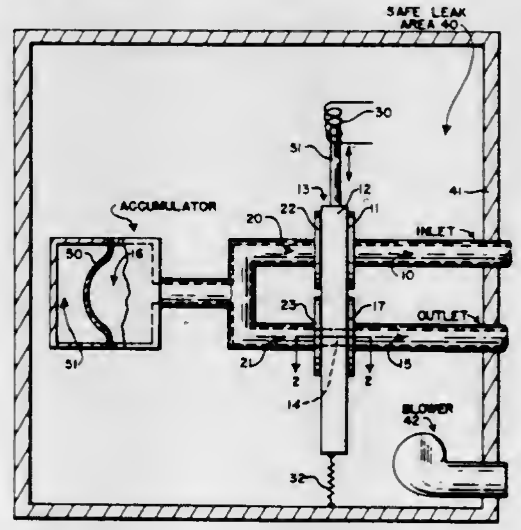
SAFE LEAK VALVE

Loren L. Krueger, Minnetonka, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 21, 1966, Ser. No. 566,907

U.S. Cl. 137—312 **2 Claims**

Int. Cl. F16k *27/00, 51/00*



A safe leak valve having a continuously reciprocating valving member which connects an inlet conduit to an accumulator, and then disconnects the accumulator from the inlet conduit while connecting the accumulator to an outlet conduit, and continuously repeats this operation only so long as the valving member continues to reciprocate, with all possible leakage paths being away from the inlet-outlet flow path.

3,428,074

LIQUID DETECTOR

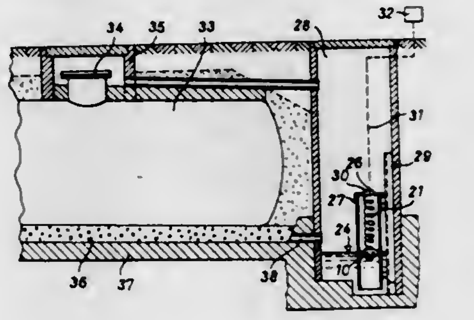
Benno Perren, Wettingen, Switzerland, assignor to Hectronic A.G., Aarau, Switzerland, a joint-stock company

Filed Aug. 25, 1966, Ser. No. 575,174

Claims priority, application Austria, Aug. 31, 1965, A 8,002/65

U.S. Cl. 137—312 **10 Claims**

Int. Cl. F16k *23/00;* **G01n** *9/18;* **H01h** *35/18*

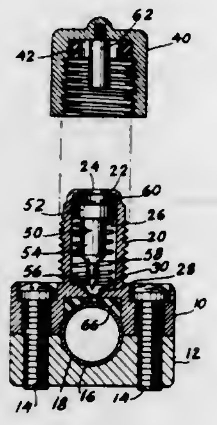


1. Apparatus for ascertaining the presence of a certain liquid to be controlled, particularly at a point which cannot be observed, characterized by a liquid detector which

comprises a float, and a feeler mounted on said float, which feeler responds to the wetting effect of a liquid and which float has a specific weight that is adjustable whereby the feeler sinks in the liquid which is to be controlled but is maintained above the level of liquids which have higher specific weights.

3,428,075
SPRING RETRACTABLE LINE PIERCING VALVE

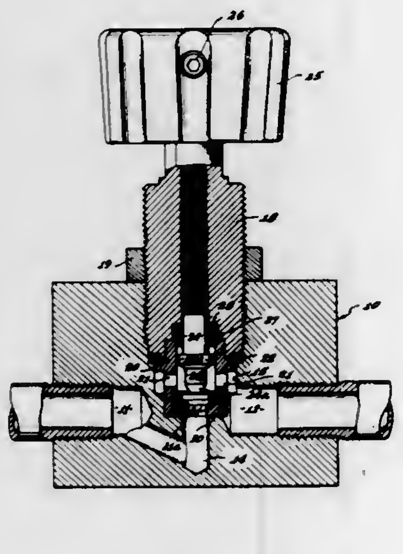
William Wagner, Miami, Fla., assignor to
Watsco, Inc., Hialeah, Fla.
Filed Aug. 8, 1966, Ser. No. 570,911
U.S. Cl. 137—318 **6 Claims**
Int. Cl. F16l *41/04*



A line tube piercing valve assembly having a single enclosure for the piercing needle and for flow communication with the tapped line in which the piercing needle is spring-urged away from the line into sealing contact with a gasket. A depressor pin is removably inserted into the top of the enclosure in sealing engagement with the same gasket for depressing the needle and piercing line. The depressor pin is removable both from the enclosure and from a threaded cap which provides piercing advancement. The depressor pin is removably threaded to the cap.

3,428,076
HIGH PRESSURE VALVE

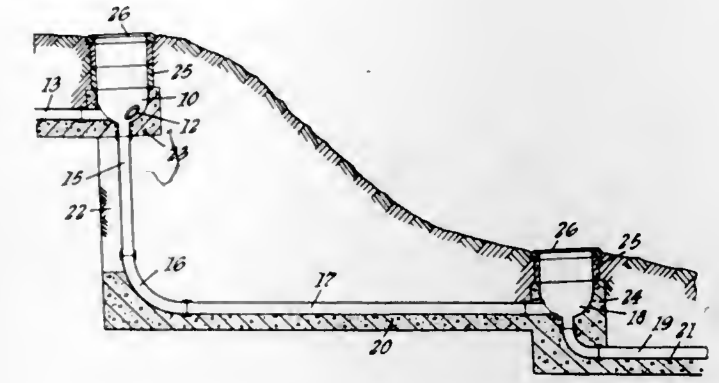
Edwin C. Lowe, Van Nuys, Calif., assignor to Robbins Aviation, Inc., Vernon, Calif., a corporation of California
Filed Jan. 9, 1967, Ser. No. 608,123
U.S. Cl. 137—329.05 **4 Claims**
Int. Cl. F16k *1/36, 1/02, 51/00*



A valve for very high pressure fluid lines has a seat of high tensile strength plastics material and a tapered metal spindle seating against it. The seat is deformable, but the material is elastic to a degree and returns, at least to some extent, to its original shape after pressure on the seat is released.

3,428,077
SOIL AND SURFACE WATER DISPOSAL SYSTEM

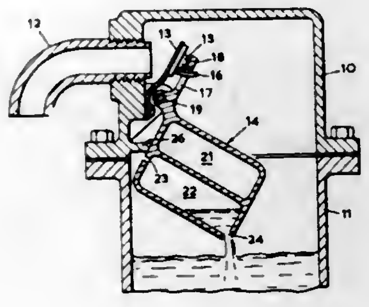
Peter Noel Henry Scarfe, Bramley, England, assignor to Marscar Limited, London, England, a British company
Filed June 8, 1966, Ser. No. 556,232
Claims priority, application Great Britain, June 9, 1965, 24,462/65; July 26, 1965, 31,836/65
U.S. Cl. 137—363 **5 Claims**
Int. Cl. F16l *5/00;* **E02b** *11/50;* **E02d** *27/38*



A soil or surface water disposal system in which access for rodding purposes is afforded by means of an access pit having connected to it one or more inflow pipes and an outflow pipe, the access pit having a part-spherical portion which co-operates with end portion means on the inflow pipe to permit the inflow pipe to be secured to the pit at any desired angle of approach, an aperture being formed in the pit at the region of connection to the inflow pipe.

3,428,078
FLOAT VALVES

Peter James Christopher, Rugby, England, assignor to The English Electric Company Limited, London, England, a company of Great Britain
Filed June 9, 1966, Ser. No. 556,450
Claims priority, application Great Britain, June 10, 1965, 24,630/65
U.S. Cl. 137—416 **6 Claims**
Int. Cl. F16k *31/22, 33/00, 1/54*

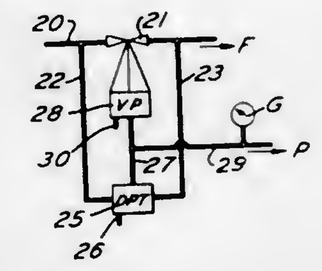


In a float valve for a fluid chamber which may be subjected to changes in fluid level, the chamber having an air vent associated therewith, the float therefor is in the form of a first enclosed chamber providing an initial buoyancy to the float and a second chamber having a first lower opening and a second upper vent opening. These openings permit the second chamber to be filled as the fluid level in said chamber rises, hence increasing the weight of the float ready for a next fall in fluid level, and permit fluid to drain from the second chamber as the fluid level in said chamber falls, hence increasing the

buoyancy of the float ready for the next rise in fluid level. The float carries a valve member which moves between open and closed positions with respect to the air vent in response to movement of the float.

3,428,079
FLOW MEASUREMENT AND CONTROL SYSTEMS

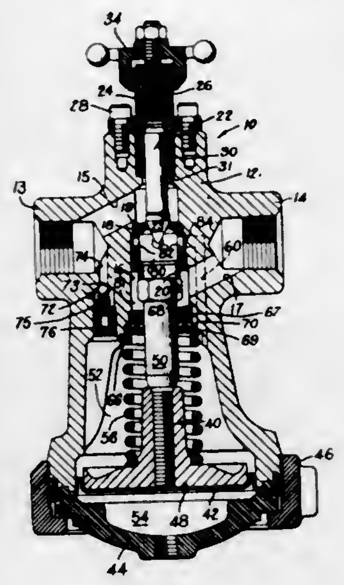
William J. Wylupek, Pennsauken, N.J., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1966, Ser. No. 524,442
U.S. Cl. 137—486 **13 Claims**
Int. Cl. G05d *7/06*



Flow measurement and control systems in which the flow is measured as a function of the pressure differential across a variable orifice and means is provided for increasing the size of the orifice for increasing values of the flow to obtain a more nearly straight line relationship between flow and differential pressure than would be obtained with a fixed size of orifice, the variable orifice being a motor operated valve, and a differential pressure responsive transducer providing an output signal for the motor operated valve.

3,428,080
FLOW CONTROL DEVICE

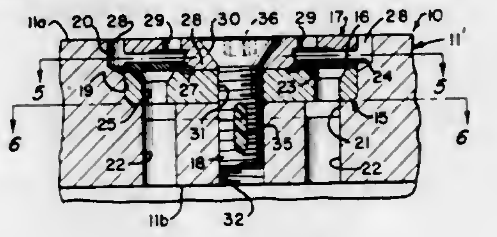
Lewis E. Brown, Marshalltown, Iowa, assignor to Fisher Governor Company, a corporation of Iowa
Filed Feb. 21, 1966, Ser. No. 528,980
U.S. Cl. 137—501 **7 Claims**
Int. Cl. G05d *7/01;* **F16k** *31/12, 31/36*



A flow control device to control a preselected flow rate to a constant value regardless of pressure variations in the upstream or downstream flow lines. The flow control device includes an orifice across which a constant pressure drop is maintained in use. The orifice may be adjustable to provide a range of preselected flow rates. Also included in the flow control device is a seat ring member which functions to provide better balancing across the meter pin orifice by minimizing adverse effects of turbulence of the fluid.

3,428,081
COMPRESSOR VALVE

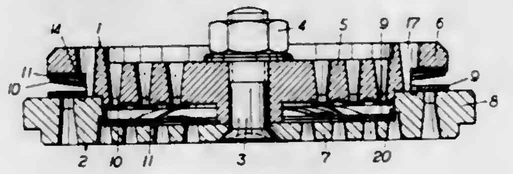
Harry G. Kauffman, 515 W. Main St., and Hallet D. Jones, 702 Clayton Ave., both of Waynesboro, Pa. 17268
Filed Dec. 8, 1966, Ser. No. 600,254
U.S. Cl. 137—516.21 **10 Claims**
Int. Cl. F16k *15/02*



Apparatus for controlling the flow of fluid in a reciprocating compressor by means of a slidable valve member which is movable from seated to unseated positions to permit flow of fluid in one direction and movable to a seated position to prevent flow of fluid in a reverse direction.

3,428,082
ANNULAR NON-RETURN VALVE

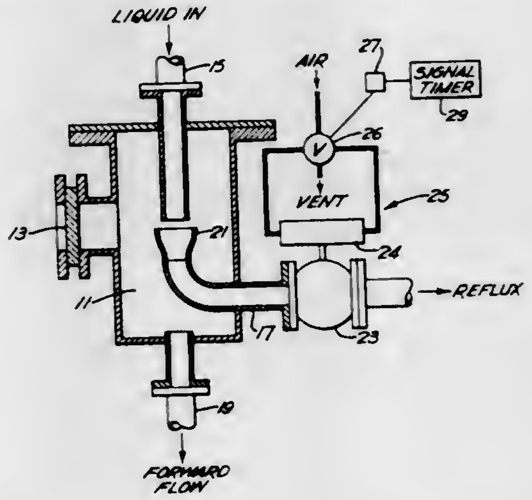
Robert Köhler, Schongau (Lech), Upper Bavaria, Germany, assignor to Hoerriger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Mar. 12, 1965, Ser. No. 439,262
Claims priority, application Austria, Mar. 20, 1964, 2,446
U.S. Cl. 137—516.23 **11 Claims**
Int. Cl. F01l *3/20;* **F16k** *15/12*



An annular non-return valve having a valve seat and a valve guard spaced from each other with passageways therein for the flow of fluid therethrough. A valve plate between the valve seat and the valve guard with a guide plate for the frictionless guidance of the valve plate and spring means between the valve plate and the guide plate to load the valve plate against the valve seat and to press the guide plate permanently against the valve guard.

3,428,083
PROPORTIONING DEVICE

George L. Fish, 750 N. Main St.,
New Martinsville, W. Va. 26155
Filed Dec. 20, 1965, Ser. No. 515,085
U.S. Cl. 137—590 **5 Claims**
Int. Cl. E03b *11/00;* **F17d** *1/00*



A flow-proportioning device comprising an enclosed chamber, said chamber having an inlet, a first outlet and a second outlet disposed therein, said first outlet having a valve disposed therein and said valve being disposed without the enclosed chamber, said second outlet being disposed to receive the flow from said inlet when said valve is closed.

3,428,084

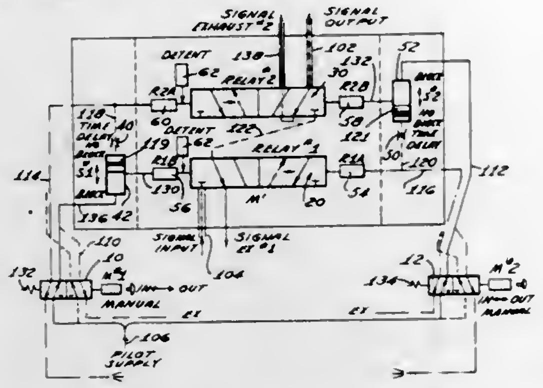
SAFETY VALVE SYSTEM

William Carls, Highland, Mich., assignor to Numatics, Incorporated, Highland, Mich., a corporation of Michigan

Filed Apr. 4, 1967, Ser. No. 628,472

U.S. Cl. 137—596.14 14 Claims

Int. Cl. F16p *3/04;* **F15b** *11/20*



A fail safe fluid control system for pressurizing an output line for actuation of a fluid motor designed to protect an operator by requiring both hands for manual operation of two spaced valves simultaneously. The system and apparatus is so designed that a delayed action of any manual valve beyond a certain predetermined time limit will block the entire action of the system and must be recycled in order to become actuated. Thus, the operator cannot depress or tie down one valve with one hand and subsequently depress the other one to obtain actuation. The system is also designed such that, in the event of power failure, the system cannot be operated, there being a single source of pressure for both the pilot control and the power control.

3,428,085

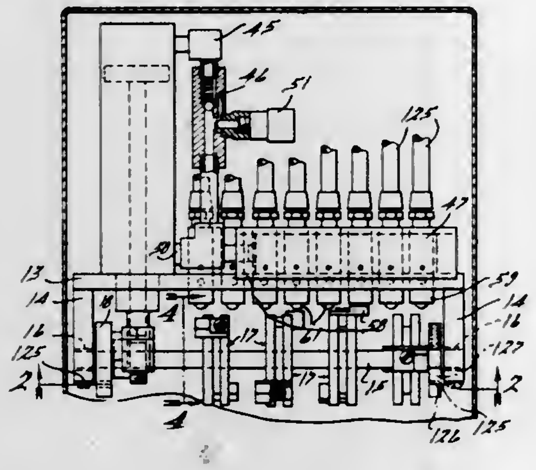
FLUID CONTROLLED AIR ACTUATED SEQUENCE DEVICE

Alfred H. Haberstump, 15125 Piedmont Ave., Detroit, Mich. 48223

Filed Oct. 23, 1965, Ser. No. 503,641

U.S. Cl. 137—624.2 6 Claims

Int. Cl. G05b *19/06;* **F15b** *21/02;* **G05g** *21/00*



Various machine operations are controlled in sequence by the device of the present invention. A shaft with adjustable cams thereon is rotated exactly 360° by a reversible air motor which also drives a liquid motor, the flow of fluid from which is controlled to regulate the speed of operation of the air motor in one direction of operation. The motors are returned to their initial position while the shaft and cam are retained stationary.

3,428,086

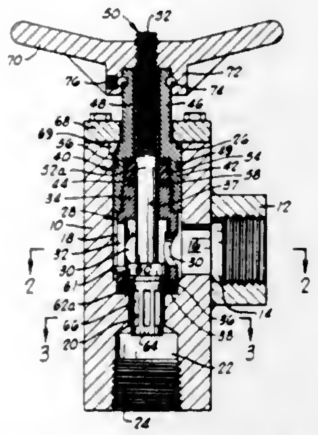
THROTTLING VALVE

Clarence O. Glasgow, 2620 S. Yorktown, Tulsa, Okla. 74114

Filed May 16, 1966, Ser. No. 550,524

U.S. Cl. 137—625.3 14 Claims

Int. Cl. F16k *1/06, 1/26*



A throttling valve including a valve body having a central chamber, a stem opening into the central chamber, an inlet port and an outlet port. The outlet port is aligned with the stem opening and extends at 90° to the direction that the inlet port opens into the central chamber. A stationary cage is positioned in the central chamber and has a stem aperture aligned with the stem opening in the body, a discharge aperture aligned with the outlet port in the body, and fluid flow passageways in the wall of the cage. A valve seat is positioned in the body adjacent the cage and aligned with the outlet port. A valve stem extends through the stem opening into the stationary cage and carries at its end inside the valve body, a valve closure member positioned to sealingly cooperate with the seat as the stem is reciprocated in the valve body. Secured to the valve closure member on the opposite side thereof from the stem is a hollow, cylindrical movable cage having a discharge opening in one end thereof aligned with the discharge port in the valve body, and having a plurality of circumferentially spaced radial ports in the side thereof. The movable cage is contacted around its outer periphery by the valve seat during operation of the valve.

3,428,087

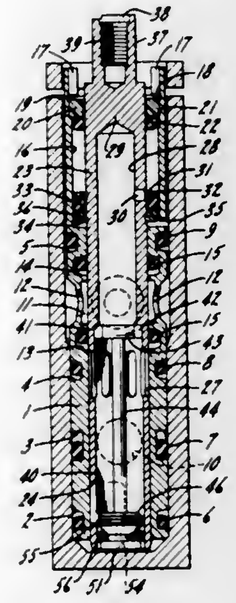
ANTI-HAMMER FAUCET DEVICE

Alfred M. Moen, 25 Lakeview Drive, Grafton, Ohio 44044

Filed June 8, 1966, Ser. No. 556,001

U.S. Cl. 137—625.17 5 Claims

Int. Cl. F16k *47/02, 3/34, 11/02*



A mixing valve having means to slow the closing of the faucet stem to prevent what is known as "water hammer." At the end of the open stem a plug is positioned to substantially close the stem. The plug has a restricted passage which is in communication with the interior of the hollow stem and with a confined chamber below the stem. In normal operation the confined chamber will fill up with water, which has come through the restricted passage. During closing, the water in the confined chamber must escape before the stem can be completely closed. In the event of rapid closing of the stem, a seal ring positioned in the plug will expand into the restricted passage, further reducing its size so as to prevent rapid closing of the valve stem.

3,428,088

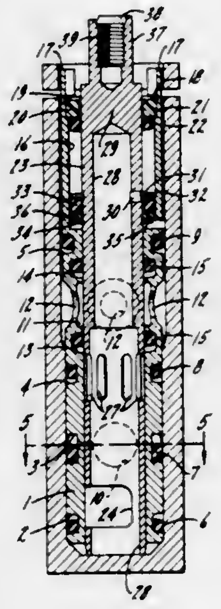
FAUCET VALVE MIXING NOTCH

Frank W. Bell, Avon, Ohio, assignor to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey

Filed June 13, 1966, Ser. No. 557,174

U.S. Cl. 137—625.17 4 Claims

Int. Cl. F16k *11/06*



A mixing valve which includes a housing having two spaced inlet ports and discharge port means. Within the housing there is a hollow mixing valve stem which is both rotatable and reciprocal. Rotation of the valve stem controls water temperature, whereas reciprocation of the valve stem controls water volume. The valve stem has an inlet opening which is so shaped, relative to the positions of the housing hot and cold water ports that, upon rotation of the stem, the quantity of cold water entering the stem decreases at a slower rate than the rate at which the hot water increases.

3,428,089

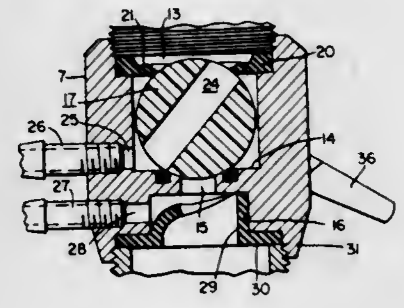
DIVERTER VALVE ASSEMBLY

Henry J. Kachergis, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Mar. 9, 1967, Ser. No. 621,956

U.S. Cl. 137—625.29 8 Claims

Int. Cl. E03b *7/07*



A compact valve assembly for attachment to a water faucet normally allows direct flow of tap water, but may be easily operated to divert the flow through a filter or water purifier to the same outlet. The valve is shaped like a ball with an off-center passage, the inlet end of which is always in communication with a relatively large inlet passage, while the outlet end of the valve passage shifts from a primary outlet port into communication with a flow space around the ball shaped valve, which space is connected by a tube to a filter. The return flow from the filter enters the valve body on the downstream side of the main outlet port through a passage normally covered by a flexible rubber sleeve which acts as a check valve to prevent back flow to the filter when tap water is flowing directly to the outlet.

3,428,090

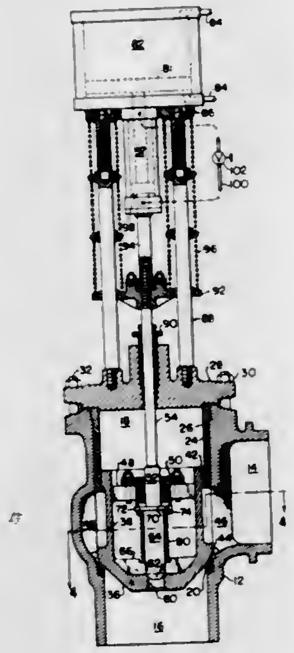
SHUT-OFF VALVE

Alexander V. Hose, Marblehead, and Norman F. Prescott, Wenham, Mass., assignors to Atwood & Morrill Co., Salem, Mass., a corporation of Massachusetts

Filed June 7, 1966, Ser. No. 555,742

U.S. Cl. 137—630.14 5 Claims

Int. Cl. F16k *31/363, 31/383*

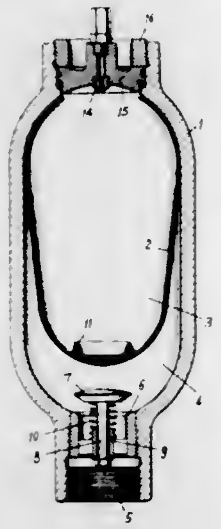


1. A valve comprising a valve body having inlet and outlet passages and a circular valve seat intermediate said passages, a cylindrical chamber in the valve body coaxial with and spaced from the valve seat on the upstream side thereof, a valve piston having head and skirt portions, the skirt portion being slideably disposed within said chamber, the head portion of the piston having a seating surface which engages the circular seat in the valve body when the piston is in closed position, the head portion of the piston having a pilot passage therethrough and a valve seat at the inner end of the pilot passage, actuating means for the piston comprising a stem to which the piston is connected for limited relative sliding movement, said stem extending through the valve body to the exterior thereof, means outwardly of the body for reciprocating the stem within the body in non-rotating relation thereto, the skirt portion of the piston having a central support portion through which the stem passes in sliding relation, a pilot valve at the end of the stem within the piston in rigid non-rotating relation to said stem, said pilot valve engaging the pilot valve seat to close the pilot passage when the stem is displaced to the limit of its movement relative to the piston in the direction of the piston head, a collar rigidly connected to the stem between the head of the piston and the support within the piston skirt, a compression spring intermediate the collar on the stem and the head end of the piston urging the piston along the stem in a

direction toward the valve seat in the body, and guide means within the head portion of the piston spaced around the pilot valve seat therein, said means being slideably engaged by the valve stem adjacent its pilot valve portion.

3,428,091
ACCUMULATOR

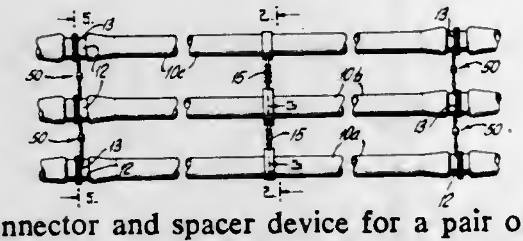
Kazuo Sugimura and Nobuyuki Sugimura, both of 1416 Sodeshi-cho, Shimizu-shi, Shizuoka-ken, Japan
Filed Nov. 10, 1966, Ser. No. 593,444
Claims priority, application Japan, Dec. 28, 1965, 40/81,431
U.S. Cl. 138—30 **4 Claims**
Int. Cl. F16l *55/04*



An elastic gas bag accumulator is provided having at its bottom hemispherical end an inwardly projecting integral circular ridge for preventing the gas bag from suffering a sharp reverse bend when it collapses.

3,428,092
MARINE HOSE CONNECTOR AND SPACER DEVICE

Clayton H. Skinner and Paul J. Kolarik, Buffalo, N.Y., assignors to Hewitt-Robins Incorporated, Stamford, Conn.
Filed Nov. 2, 1966, Ser. No. 591,502
U.S. Cl. 138—110 **19 Claims**
Int. Cl. F16l *3/22, 57/00*

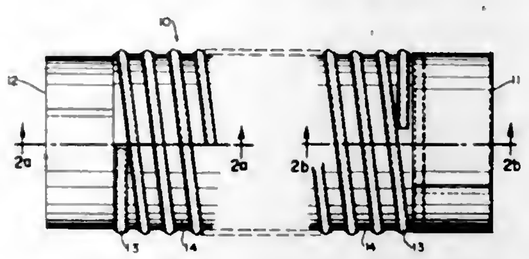


1. A connector and spacer device for a pair of marine hose extending substantially parallel, to maintain said hose against excessive relative displacement against the action of marine waves and currents, comprising means for interconnecting said hose and having joints permitting relative universal movements of the interconnected hose substantially lengthwise and also relatively angularly about axes extending along said hose.

3,428,093
FLEXIBLE CONDUIT

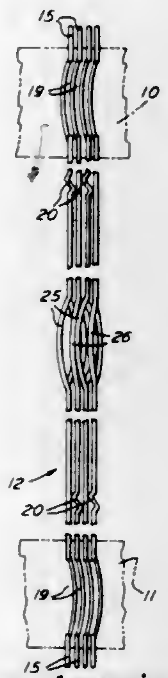
Wesley L. Guiles, Guilford, Conn., assignor, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Dec. 23, 1966, Ser. No. 604,228
U.S. Cl. 138—132 **8 Claims**
Int. Cl. F16l *11/16, 9/16, 57/00*

A helically fabricated wire reinforced flexible conduit having a cover and an abrasion-resistant helically wound liner strip wherein the liner strip is secured to the cover at its first marginal edge and the second marginal edge loosely overlaps the joint between the first marginal edge of the succeeding convolution and the cover.



3,428,094
LOOM HARNESS

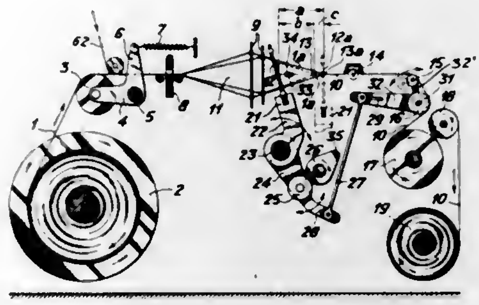
Frank H. Kaufmann, Huntingdon Valley, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 5, 1967, Ser. No. 643,510
U.S. Cl. 139—91 **4 Claims**
Int. Cl. D03c *9/06;* **D02h** *13/16;* **D01h** *11/04*



Heddles for the harness of weaving looms with separating provisions at the warp controlling eyes of the heddles preventing nesting of the heddles.

3,428,095
CLOTH MOTION IN LOOMS

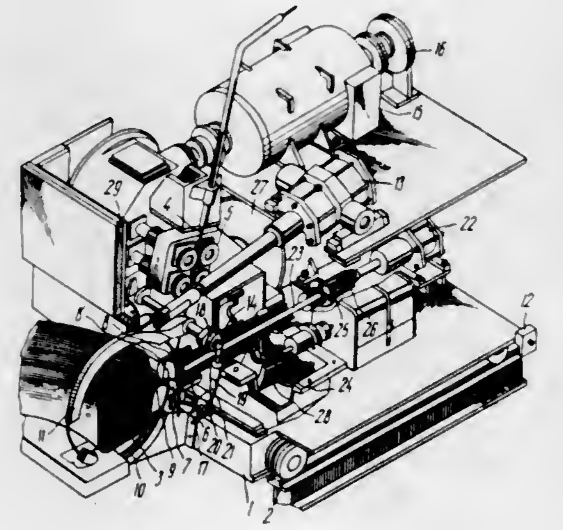
Erwin Pfarrwaller, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Oct. 17, 1966, Ser. No. 587,046
Claims priority, application Switzerland, Oct. 29, 1965, 14,973/65
U.S. Cl. 139—304 **6 Claims**
Int. Cl. D03d *39/22, 49/20, 49/06*



There is disclosed a loom in which the back rest is resiliently supported to apply a substantially constant tension to the warp threads passing over it and in which there are provided means, coupled by a cam-operated linkage to the drive for the reed, to superpose a reciprocating motion on the normal advance of the cloth. In certain embodiments these means comprise the breast-beam of the loom, coupled to the drive for the reed by the cam-operated linkage. In other embodiments these means comprise a draw-off roll for the cloth, and the linkage superposes a reciprocating arcuate oscillation on the advance of the draw-off roll, by axial reciprocation of a worm engaging a worm wheel on the draw-off roll, or via a differential in the drive to the draw-off roll.

3,428,096
MACHINE FOR TYING COILS AND PACKS OF IRON FOR INSTANCE OF ROLLED IRON WITH WIRE

Nikolai Ivanovich Krylov and Boris Vasilievich Popov, Moscow, Pavel Ivanovich Sidorov, Mytischi, and Alexandr Teodorovich Saksagansky, Isaak Iosifovich Levitsky, and Tatyana Borisovna Golovkina, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky i Proektno-Konstruktorshy Institut Metallurgicheskogo Mashinostroenia, Moscow, U.S.S.R.
Filed June 15, 1965, Ser. No. 464,104
U.S. Cl. 140—93.6 **1 Claim**
Int. Cl. B21b *15/06, 17/00;* **B65b** *27/10*

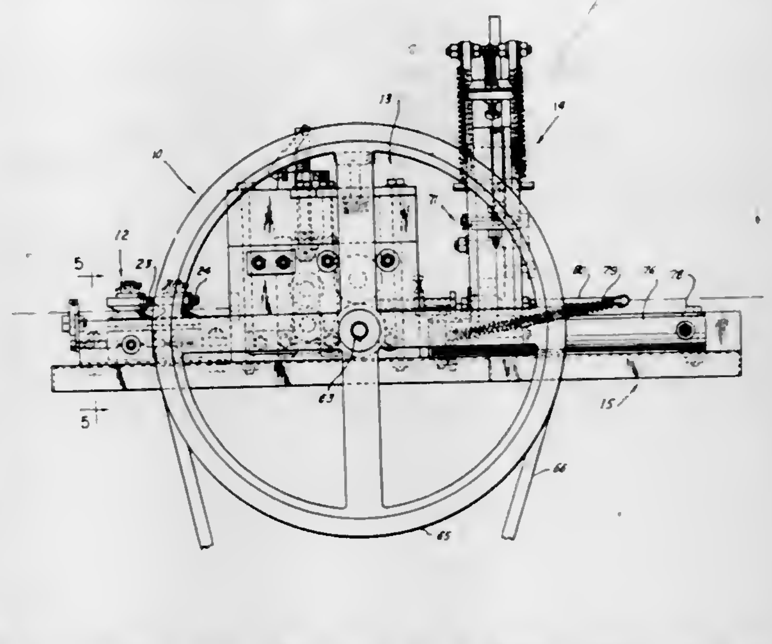


A machine for tying coils or packs of rolled iron with wire which includes a frame carrying wire delivering or feeding rollers, tongs type guides to pass the wire around the pack to be tied at a tying station and a head for producing a twist joint and cutting off the wire after the twist joint is produced, and in which inclined beams extend downwardly away from the tying station and one of the frame or beams is provided with rolling contact members so that the machine can freely roll by gravity to a rear position after the wire that has been twist jointed is severed and which likewise permits the frame to roll to the tying station when a pack is enveloped by wire.

3,428,097
WIRE STRAIGHTENING AND CUTTING MECHANISM

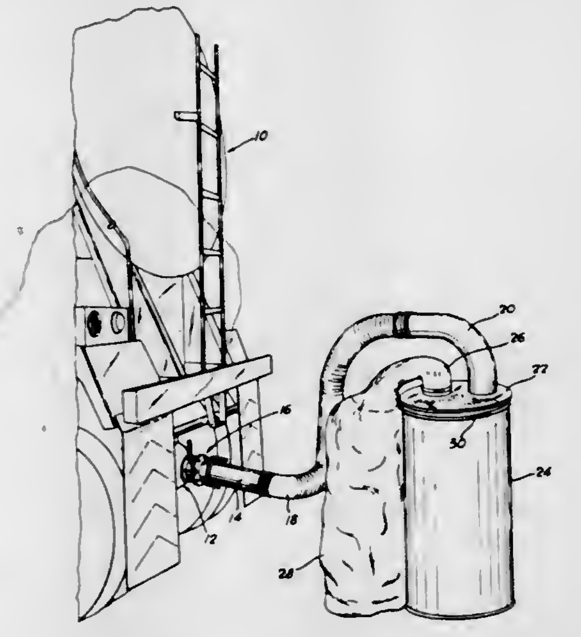
Otto W. Schaefer, Dallas Tex.
(2838 Alan-A-Dale, Irving, Tex. 75060)
Filed July 20, 1966, Ser. No. 566,664
U.S. Cl. 140—140 **3 Claims**
Int. Cl. B21f *1/02, 11/00*

A mechanism for straightening and cutting heavy gauge wire generally packaged in coils of relatively large diameter and which is straightened before cutting into predetermined lengths. The device includes a frame on which is mounted a first set of peripherally grooved rollers on vertical axes in offset planes for lateral pressures on the wire, and a second set of rollers, also having peripheral grooves, mounted on horizontal axes for pressures in a vertical plane. The wire is impelled through the respective sets of rollers by a driven roller and an idler roller mounted on horizontal axes in operative relation to the first and second sets of rollers. A manually actuated knife assembly is provided for cutting the wire into desired lengths.



3,428,098
MEANS FOR TRANSFERRING BULK SUBSTANCES FROM ONE CONTAINER TO ANOTHER

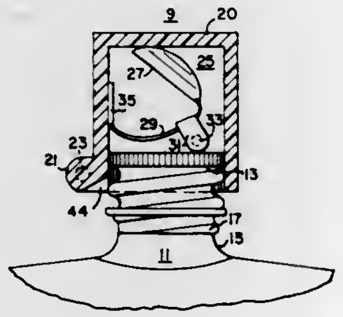
Eugene P. Slay, St. Louis, Mo., assignor to Slay Transportation Company, Incorporated, St. Louis, Mo., a corporation of Missouri
Filed Feb. 17, 1966, Ser. No. 528,257
U.S. Cl. 141—67 **11 Claims**
Int. Cl. B65b *3/14, 1/16*



An apparatus to facilitate the filling of containers such as storage drums from larger bulk storage devices such as tank trucks, tank cars, tankers, and other like devices and to make the receipt, handling and storage of bulk shipments easier and more convenient and to permit the ordering in larger quantities with the resultant saving even by those having relatively limited storage facilities for materials in bulk form. The present apparatus includes means by which bulk substances such as substances in powder and granular form shipped or contained in large storage devices can be quickly and efficiently transferred to more manageable containers such as storage drums.

3,428,099
DISPENSER

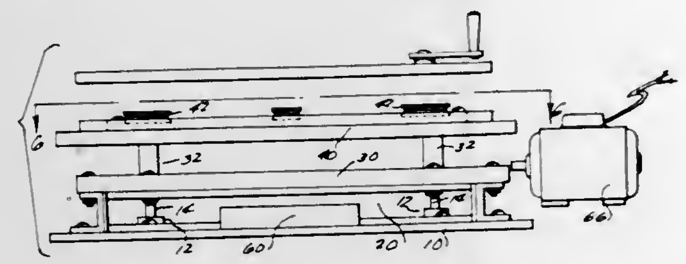
Louis A. Tenenouser, 6321 Ebdy St.,
Pittsburgh, Pa. 15217
Filed Sept. 6, 1966, Ser. No. 577,218
U.S. Cl. 141—380 **5 Claims**
Int. Cl. B65b *1/04;* **A47j** *43/28;* **B25f** *1/00*



A dispenser for a pharmaceutical product is disclosed which includes a container having a dispensing device including a dispensing bowl on a flexible arm. The bowl can be flexed from a position wholly within the container to dispensing position.

3,428,100
WOODEN COLLAR MAKER

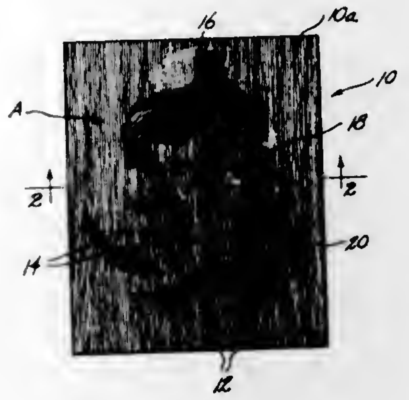
John Melpolder, P.O. Box 1140,
Grand Rapids, Mich. 49506
Filed Dec. 22, 1966, Ser. No. 603,868
U.S. Cl. 143—85 **3 Claims**
Int. Cl. B27b *5/12;* **B27g** *15/00*



1. A wooden collar maker comprising a base having bars for supporting vertically extending shafts therein, said shafts being threadedly engaged and secured to said bars,
 wall members mounted on said base to support a center cover member,
 said center cover member receiving said shafts through apertures extending through said cover member,
 a top cover having shaft holes to mate with the shafts of said base,
 a tunnel passing through said wall members between said base and said center cover,
 a block holder disposed to be received within said tunnel for holding a wooden block by a bolt as a work piece onto which a collar is to be cut,
 a ball bearing mounting centrally positioned in the cover member,
 a curved saw wheel holder mounted in said ball bearing mounting,
 and a curved saw wheel moved downwardly by turning the threaded shafts by a crank handle,
 said curved saw wheel having curved saw blades mounted thereon for cutting said collars.

3,428,101
METHOD OF PREPARING A PATTERN ON THE SURFACE OF A CHARABLE PRODUCT

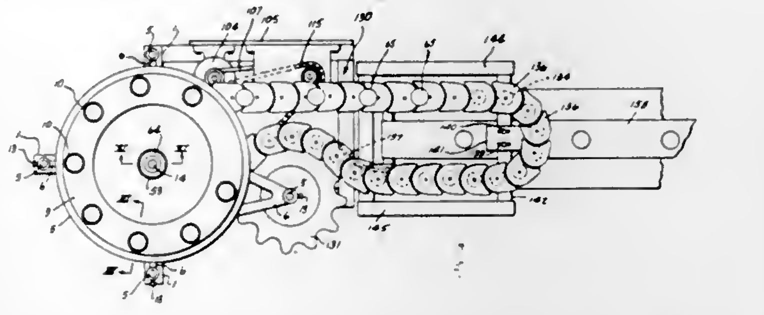
Lindy E. Lindberg, 18428 SE. Pine,
Portland, Oreg. 97233
Filed Feb. 13, 1967, Ser. No. 615,457
U.S. Cl. 144—327 **8 Claims**
Int. Cl. B27k *5/00*



Preparing a pattern by mixing a resin with a pigment, applying the mixture to cover portions only of the surface of a charable product with such mixture, and then scorching the applied mixture and remaining exposed surface portions to fix the applied mixture and char the exposed surface portions.

3,428,102
SLICING MACHINE WITH SLICE ARRANGER

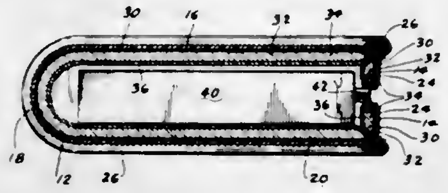
Bernath L. Knecht and Bernath J. Knecht, Worthington, Ohio, assignors to Worthington Foods, Inc., Worthington, Ohio, a corporation of Ohio
Filed Oct. 13, 1965, Ser. No. 495,515
U.S. Cl. 146—101 **13 Claims**
Int. Cl. A01d *55/00;* **B02c** *13/00;* **B23d** *45/22*



This slicing machine not only slices foods, et cetera, of substantially rectangular or round section cylindrical form but also stacks the slices on a conveyor for transporting to a packaging point. The machine has a cage form of member holding the material to be sliced, and has a rotary disc which slidably supports the lower end of the material to be sliced. This disc has a hole through same in which is fitted a slicing knife assembly. An adjusting means is utilized to vary the thickness of the slices to be cut, so that a definite number of slices will weigh a prescribed amount ready for packaging and marketing. Said adjusting means being exposed so that adjustments can be made without stopping the machine. The slicing machine also has two motors with one rotating the cutting knife assembly and the other the separate disc which comes under the cage and is movable relative to the cutting assembly to vary the thickness of the slices. An adjusting means is used for moving said disc endwise at any time without stopping the machine to control the thickness of the slices, and a second adjusting means serves to vary the speed of the conveyor relative to the speed of rotation of the disc carrying the rotary slicing knife so that the slices may be stacked up coaxially on the conveyor or laid shingle pattern for display purposes.

3,428,103
INSULATED CONTAINER FOR PIZZA PIES

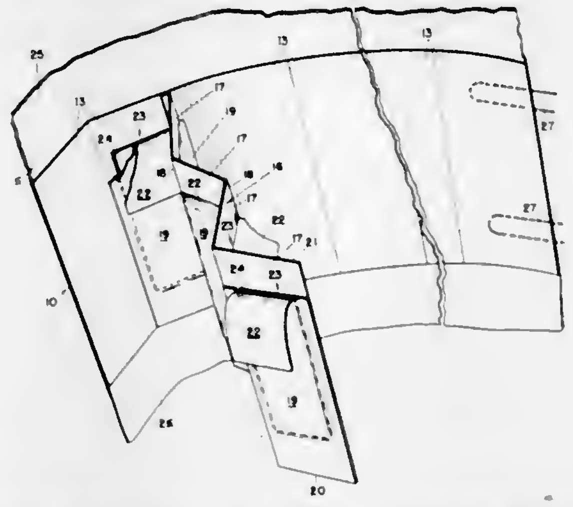
Jean L. Walsh, 94–26 Van Wyck Expressway,
Richmond Hill, N.Y. 11418
Filed May 29, 1967, Ser. No. 643,802
U.S. Cl. 150—2.2 **4 Claims**
Int. Cl. B65d *5/56;* **A61f** *7/00*



A fully enclosed flexible insulated container having an end closure extending part way down each side, said container having a single continuous welted sewn seam, said container having a substantially rectangular interior in frontal cross-section, said container further having washable interior and exterior surfaces, and said container being insulated with thermal and reflective insulations so as to retain both conducting and radiating heat.

3,428,104
FIREPROOF ENVELOPE

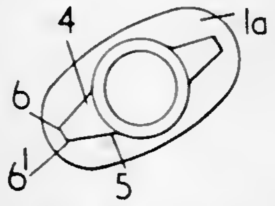
Dalmas R. Ary, E. 5503 Parkwater,
Spokane, Wash. 99206
Filed Dec. 27, 1966, Ser. No. 604,832
U.S. Cl. 150—28 **8 Claims**
Int. Cl. A48c *11/26;* **B65d** *65/22*



A fire protective container for valuable papers and the like, formed from foldable, incombustible, heat retarding material which facilitates continued wrapping to provide plural layers of protective material encasing its enclosures.

3,428,105
PNEUMATIC TIRES FOR VEHICLES WITH NON-SKID MEMBERS

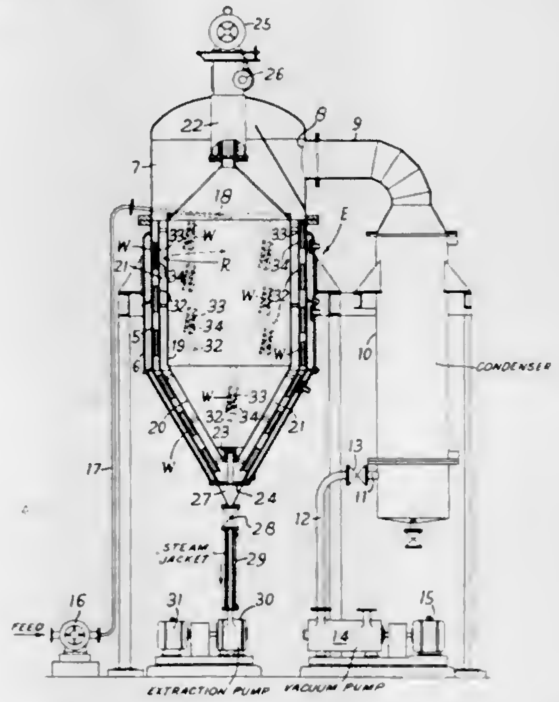
Georg Grötsch, Bad Kohlgrub, Germany, assignor of one-half to Richard Bergner, Schwabach, near Nuremberg, Germany, a firm
Filed June 27, 1966, Ser. No. 560,591
Claims priority, application Germany, June 28, 1965, G 44,004; Oct. 16, 1965, G 44,964
U.S. Cl. 152—210 **8 Claims**
Int. Cl. B60c *11/16*



An anti-skid spike for insertion in a suitable hole in the tread of a pneumatic tire so as to protrude radially therefrom, the stud being either of hard metal or having a hard metal insert, and having a generally radial shank having longitudinal fins protruding therefrom so as to limit movement of spikes relative to the tire.

3,428,106
FILM MOLECULAR STILLS AND EVAPORATORS

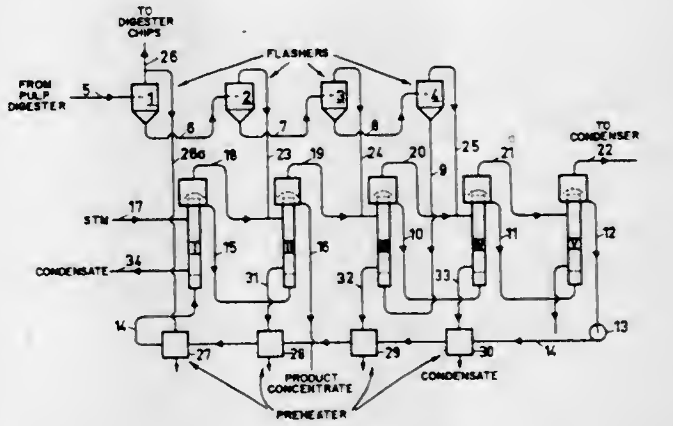
James S. Johnston, Kirkcaldy, Fife, Scotland, assignor to Henry Balfour and Company Limited, Leven, Fife, Scotland, a Scottish company
Filed Oct. 26, 1966, Ser. No. 589,621
Claims priority, application Great Britain, Oct. 27, 1965, 45,413/65
U.S. Cl. 159—6 **12 Claims**
Int. Cl. B01d *1/22*



The evaporator includes an upright circular chamber having a rotor mounted therein carrying wiper elements. The wiper elements have curvilinear profile and make substantially tangential line contact with the wall of the chamber. The operative face of each of the elements is recessed with a plurality of spiral like grooves which extend across the face from the leading edge to the trailing edge and at an angle thereto.

3,428,107
METHOD IN EVAPORATION OF WASTE LIQUOR DISCHARGED FROM CONTINUOUSLY OPERATING CELLULOSE DIGESTER OR BOILER

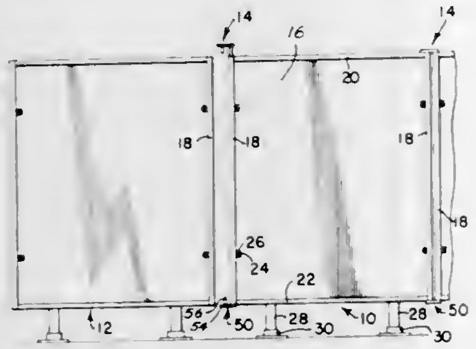
Erik Hugo Backteman, Stockholm, Sweden, assignor to AB Rosenblads Patenter, Stockholm, Sweden, a Swedish company
Filed Aug. 9, 1966, Ser. No. 571,313
Claims priority, application Sweden, Aug. 19, 1965, 10,851/65
U.S. Cl. 159—47 **1 Claim**
Int. Cl. B01d *1/26*



The method relates to evaporation of waste liquor or lye discharged from a continuously operating cellulose digester or boiler which operates at high pressure and at high temperature, i.e. the liquor being in the state in which it leaves the digester after completion of the pulping process. More particularly the method relates to the case, in which the liquor after pre-evaporation according to the flash-expansion principle will be evaporated further in an indirect evaporator of multiple effect type.

3,428,108
PANEL CONNECTOR

Isadore Singer, Chicago, Ill., assignor to Singer Partitions, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 20, 1967, Ser. No. 692,199
U.S. Cl. 160—135 **7 Claims**
Int. Cl. E06b *3/92, 9/00*

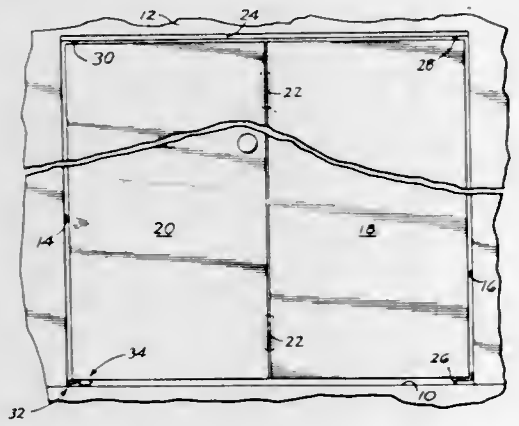


A combination panel and connector unit for connection to a similar panel, comprising a panel center section, frame means supporting the center section, the frame means including vertically disposed frame members in the form of hollow tubes, and a connector unit for connecting such panel to a correspondingly formed adjacent panel, wherein the connector means comprises at least one generally U-shaped connector means in which a shaft is provided for vertical movement inside the tube, spring retaining collar means are fixed inside the tube and on an axially inner portion of the shaft, and wherein a spring is disposed inside the tube and outside the shaft, between the two retaining means, and which also includes an arm extending outwardly sleeve attached to the arm for reception in an adjacent panel.

The shafts and sleeves may be sized and shaped to provide a hinge action, or permit limited movement of connected panels, or no relative movement, as desired.

3,428,109
FOLDING DOOR GUIDE, STOP AND RETAINER

Charles A. Kirby, Rte. 2, Box 2242, Gig Harbor, Wash. 98335
Filed Feb. 13, 1967, Ser. No. 615,627
U.S. Cl. 160—206 **3 Claims**
Int. Cl. E06b *3/48;* **E05c** *19/02*



A folding panel arrangement having a stop means on the leading panel which cooperates with a retainer to maintain the panels positively secured when subjected to shock and stress in the closed position.

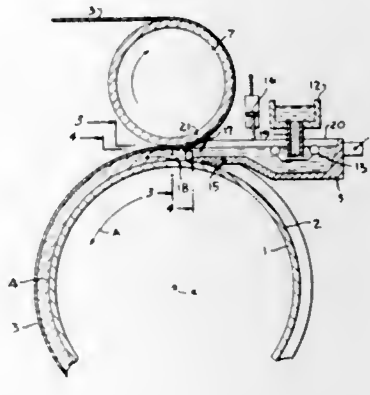
3,428,110
PROCESS FOR THE PRODUCTION OF FOUNDRY CORES AND MOLDS

James Walker, Lower Gornal, near Dudley, and Geoffrey W. Westwood, Walsall, England, assignors to Foseco Fordath A.G., Zug, Switzerland, a corporation of Switzerland
No Drawing. Filed May 27, 1968, Ser. No. 732,071
Claims priority, application Great Britain, Feb. 14, 1968, 7,211/68
U.S. Cl. 164—43 **9 Claims**
Int. Cl. B22c *1/22, 9/12, 15/20*

A process for the preparation of foundry cores and molds having the advantage of a rapid cure of the binder employed is achieved by providing a mixture of sand, a curable binder, and a polyisocyanate, and after introducing the such mixture into a core box, mold, or pattern to form a "green" core or mold passing a volatile amine therethrough.

3,428,111
CONTINUOUS CASTING METHOD USING A ROTATING WHEEL

Ivan Gyöngyös, Rikon, Tosstal, Switzerland, and Helmut Kotthaus, Singen am Hohentwiel, Germany, assignors to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland
Filed Apr. 13, 1965, Ser. No. 447,651
Claims priority, application Switzerland, Apr. 20, 1964, 5,077/64
U.S. Cl. 164—87 **5 Claims**
Int. Cl. B22d *11/06*



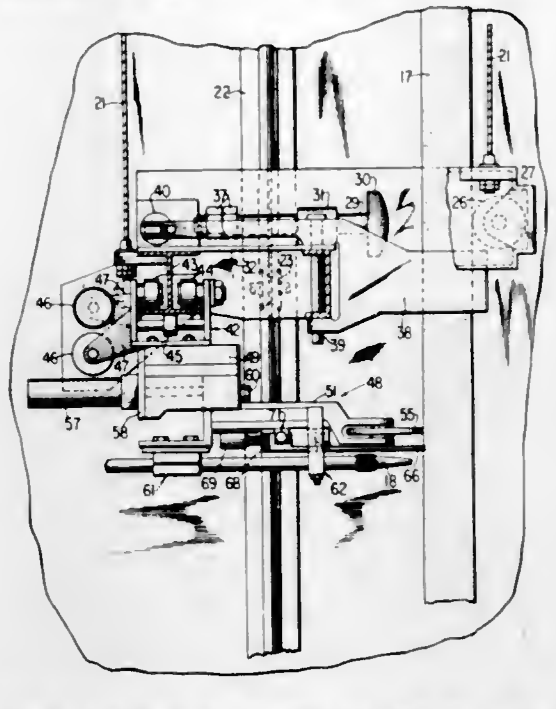
A method of continuously casting metal into a casting groove of a cooled rotating wheel that has a cover band defining a mold, feeding molten metal into the mold at a point close to the top of the wheel, and correlating the feeding of the molten metal with the rotation of the wheel so as to maintain molten metal above the highest point of the base of the mold.

A continuous casting machine that comprises a cooled wheel rotatable about its axis and has an annular groove and a cover defining with the groove a continuous casting mold, and a tundish supplying molten metal to the mold that includes a spout fitting for sealing the mold.

3,428,112
VERTICAL CONTINUOUS CASTING ASSEMBLY HAVING A TORCH CUT-OFF APPARATUS

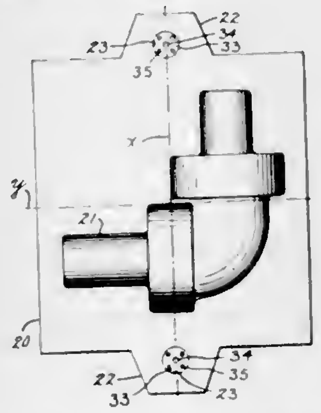
Thomas A. Cuscino, Baldwin Borough, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 21, 1965, Ser. No. 488,938
U.S. Cl. 164—154 **2 Claims**
Int. Cl. B22d *31/00;* **B23k** *1/20*

Apparatus for cutting a continuously cast slab into lengths comprises a frame through which the slab descends, mounted to travel with it during cutting. Clamp means on the frame engage the slab faces and edges. Torch-mounting carriages travel on the frame across the slab width. A gaging wheel retractably mounted on each carriage rolls on the slab face and positions the torch tip relative thereto. A "feeler" arm pivoted on each carriage engages the slab edge before the torch comes into line therewith and starts a preheating flame which is subsequently altered to a cutting flame as alinement of the torch with the slab edge occurs.



3,428,113
PATTERN PLATES WITH PROVISION FOR SHIFT CORRECTION

Samuel Kluth, N.85 W.160 75 Donald Court, Menomonee Falls, Wis. 53051
Filed June 17, 1966, Ser. No. 558,385
U.S. Cl. 164—241 **7 Claims**
Int. Cl. B22c *7/04, 21/08;* **F16b** *7/04*

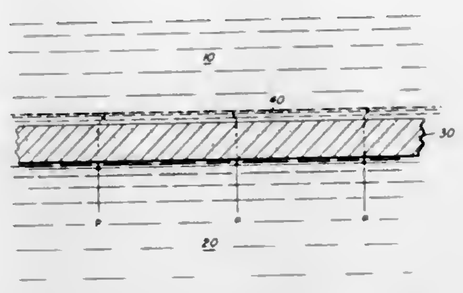


A shift correcting pattern plate having end projections each with a circular recess, a circular pin or bushing fitting in each recess, each fitting having a pin or bushing hole which is slightly eccentric with respect to the circular recess, and removable connection members extending through selected connection member holes of the fitting and recess connecting the fittings in a predetermined position of rotation in the recesses to bring the eccentric holes of the fittings in a predetermined position with respect to the pattern plate to correct a particular pattern shift.

3,428,114
METHOD AND APPARATUS FOR PREVENTING SCALE FORMATION IN HEAT EXCHANGERS

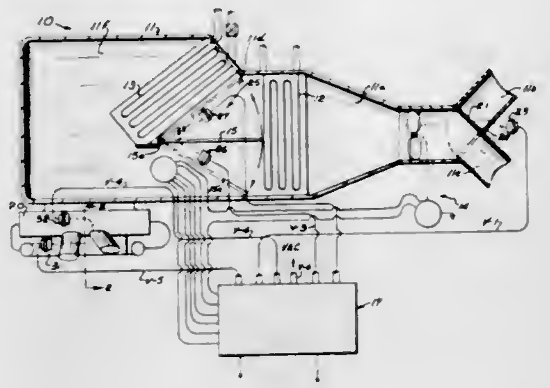
Edgar A. Cadwallader, Silver Spring, Md., and Joseph F. Revilock, Scarsdale, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Interior
Filed Mar. 27, 1967, Ser. No. 626,676
U.S. Cl. 165—1 **7 Claims**
Int. Cl. F28d *21/00, 13/00*

The depositing of heat insulating materials on heat exchange surfaces from fluids containing the same is prevented by using porous heat exchange walls and forcing a liquid under pressure through the heat exchange wall to form a protective laminar sublayer between the wall and the liquid containing the heat insulating materials.



3,428,115
AUTOMOTIVE TEMPERATURE CONTROL

Roland B. Caldwell, Worthington, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Jan. 26, 1967, Ser. No. 612,043
U.S. Cl. 165—23 **21 Claims**
Int. Cl. B60h *3/04;* **G05d** *23/13*

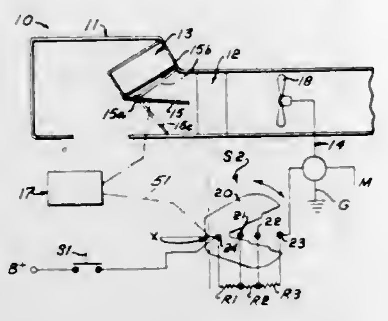


A comfort temperature control system for an automotive vehicle including duct means having air heating and cooling heat exchangers for directing tempered air into the passenger compartment of the vehicle. A movable vane in the duct means proportions the flow of air through the heat exchangers to provide a variable-controlled amount of heat or cooling. Dampers control the flow path of air through the duct means and an apparatus controls the position of the vane-like member and the dampers and the speed of a blower so as to control the temperature and direction of air entering the compartment and which apparatus comprises a servo-unit having a pair of fluid motors individually operated to move the vane-like member and thereby vary the air flow across one of the heat exchangers.

3,428,116
TEMPERATURE CONTROL SYSTEM

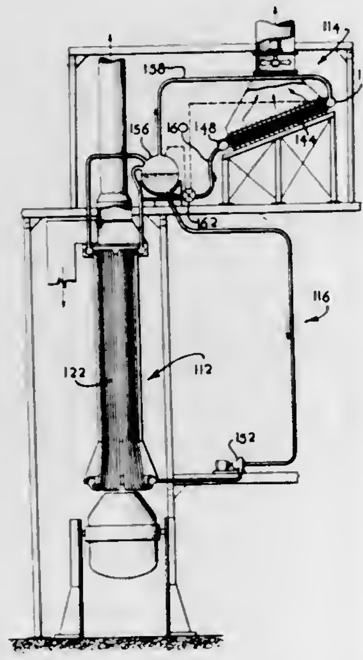
Arnold T. Lybrook, Lancaster, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Jan. 26, 1967, Ser. No. 611,968
U.S. Cl. 165—26 **12 Claims**
Int. Cl. F25b *29/00;* **F24d** *3/00*

A temperature control system includes duct means, air chilling means, air heating means, electrically powered blower means for directing air through the duct means to the heating and chilling means, a vane-like blend door supported for pivotal movement in the duct means and moved angularly between limit positions to control the temperature of air exhausted from the duct means, a rotary switch having a contact moved to effect changes in speed of the blower means, with the extent of angular movement of the rotary switch contact being greater than the angular movement of the blend door, and means for driving the blend door and switch contact including a linkage operable to positively drive the blend door between its limits of angular movement and permitting continued driving of the rotary switch when the blend door is in a limit position.



3,428,117
APPARATUS FOR COOLING HOT WASTE GASES

Frederick A. Woodhead, Bramhall, England, assignor to Simon-Carves Limited, Stockport, England, a British company
Filed Dec. 12, 1966, Ser. No. 601,050
Claims priority, application Great Britain, Dec. 22, 1965, 54,378/65
U.S. Cl. 165—105 **2 Claims**
Int. Cl. F28d *15/00*

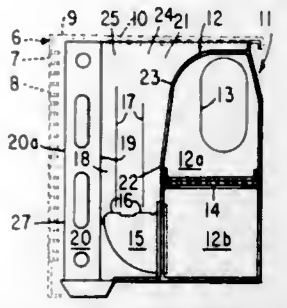


Apparatus for cooling hot waste gases from steel-making equipment comprising a first heat exchanger positioned above an efflux of hot gas from steel-making equipment, the heat exchanger being cooled by aqueous fluid which after cooling of the gas is passed to a second heat exchanger in which the fluid is cooled before being recycled to the first heat exchanger. The waste gases after being cooled are emitted from the apparatus without recovery of waste heat.

3,428,118
AIR CONDITIONING UNITS

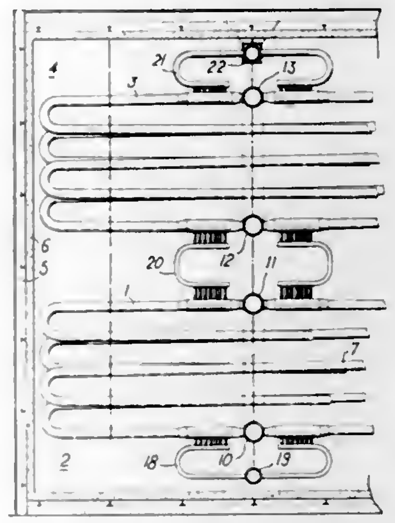
Fred V. Honnold, Jr., North Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Continuation of application Ser. No. 512,509, Dec. 10, 1965. This application Feb. 21, 1968, Ser. No. 707,174
U.S. Cl. 165—123 **5 Claims**
Int. Cl. F28f *13/12;* **F24f** *3/04*

An induction type room terminal provided with a passageway therethrough for a mixture of conditioned air and room air, the room air being induced therethrough by a plurality of conditioned air streams adapted to prevent flow separation from the sides of the passageway thereby increasing the efficiency of the terminal.



3,428,119
HEAT EXCHANGER

Pierre Pouderoux, Paris, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Apr. 25, 1967, Ser. No. 633,557
Claims priority, application France, May 5, 1966, 60,478
U.S. Cl. 165—154 **3 Claims**
Int. Cl. F28d *7/10;* **F22b** *25/00*



A heat exchanger comprising a plurality of outer tubes disposed in parallel planes and each comprising straight sections joined to each other by bends so as to form snaked coils, said outer tubes being connected in parallel to inlet and outlet headers through which a first heat-transfer fluid is admitted and discharged. Each of said outer tubes is designed to contain a plurality of inner tubes for the circulation of a second heat-transfer fluid, the ends of said inner tubes being designed to pass individually through the lateral wall of the corresponding outer tube at each end of it and being connected in parallel externally of said outer tubes to inlet and outlet headers for the admission and discharge of said second fluid.

ERRATUM

For Class 165—170 see:
Patent No. 3,428,126

3,428,120
AQUEOUS FLUID FLOODING METHOD FOR RECOVERING OIL

Alvin V. Metler, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,721
U.S. Cl. 166—250 **6 Claims**
Int. Cl. E21b *47/00, 43/20*

The recovery of oil from a subterranean formation by passage therethrough of an aqueous flooding fluid. More

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particularly, there are described procedures in such method wherein the injectivity index of an injection well, through which well an aqueous fluid is introduced into a formation, is maintained relatively constant during the injection of such flooding fluid. In one aspect, there is described in this method the use of a water-soluble hydrosulfite salt, e.g., sodium hydrosulfite, in the aqueous fluid entering the formation from which oil is produced.

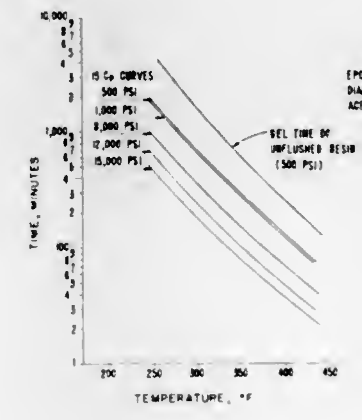
3,428,121
PERMEABLE CEMENTING COMPOSITION AND METHOD

Bobby G. Harnsberger, Houston, Tex., assignor to Texaco Inc., and Texaco Development Corporation, New York, N.Y., both corporations of Delaware
No Drawing. Filed Nov. 29, 1966, Ser. No. 597,521
U.S. Cl. 166—276 **9 Claims**
Int. Cl. E21b *43/02, 33/13;* **C04b** *7/02*

The invention relates to a method of and composition for the treatment of an incompetent formation penetrated by a well bore to prevent the movement of sand particles from the formation to the well bore during recovery of the formation fluids by forming a slurry of sand, cement and water in a hydrocarbon carrier oil, injecting the slurry into the formation under pressure, permitting the cement to set and form a permeable barrier film between the formation and well bore and recovering fluids from the formation through the formed permeable cement barrier.

3,428,122
PRODUCTION OF FLUIDS BY CONSOLIDATION OF EARTH FRACTURES

Norbert E. Methven and Edwin A. Richardson, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,084
U.S. Cl. 166—295 **7 Claims**
Int. Cl. E21b *33/138*

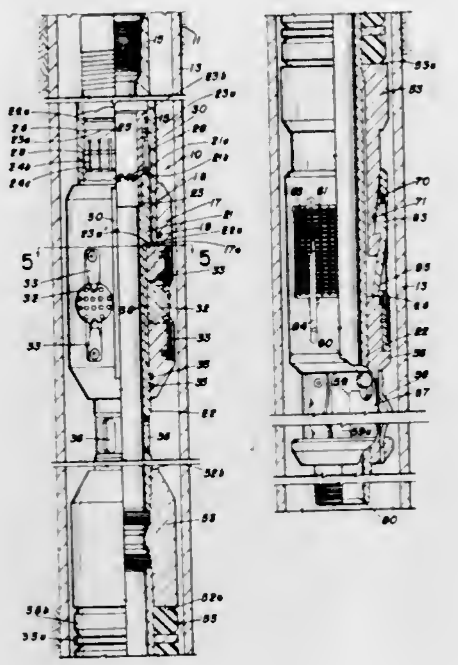


A process of stabilizing fractures in soft rock formations under great depths and high temperature and pressure by injecting into said fracture a polymerizing resin capable of preventing the fracture from closing and causing embedment of the propping agents present therein.

3,428,123
PACKER TOOL SETTING AND HOLD-DOWN ARRANGEMENT

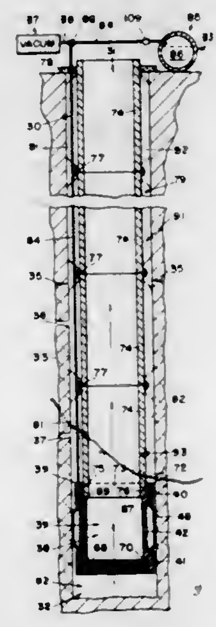
Philip E. Davis, Jr., P.O. Box 227, Houston, Tex. 77001
Filed Oct. 5, 1967, Ser. No. 673,101
U.S. Cl. 166—120 **10 Claims**
Int. Cl. E21b *23/06, 33/12*

A packer tool setting and hold-down arrangement for lowering on a well string into a tubular member in a well bore which has port means arranged therein to enable the packer tool setting and hold-down arrangement to be moved through the tubular member with a minimum of fluid restriction, and thereafter to position the packer tool so that it seals against the tubular member with fluid pressure internally of the packer tool being utilized to aid in maintaining the packer tool in its set position in the tubular member.



3,428,124
APPARATUS AND METHOD FOR SEALING DEEP WELLS

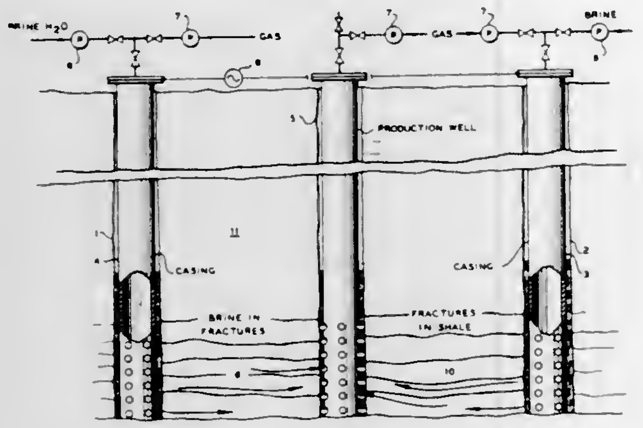
Robert Armstrong, Range Road, P.O. Box 274, Windham, N.H. 03087
Filed Feb. 3, 1967, Ser. No. 613,817
U.S. Cl. 166—187 **9 Claims**
Int. Cl. E21b *33/127*



An artesian well testing, or sealing, apparatus, suspended at a desired depth at the end of a chain, rod, pipe, or the like and expanded to seal off the portion of the well above the seal. The elongated, rigid side wall of the hollow tubular seal is grooved to define an inflation chamber and the upper, inner end is recessed to firmly secure either a large diameter hollow pipe leading to the top of the well, or to firmly seat a tapped, plugged, insert disc which in turn receives a plurality of small diameter pipes leading to the top of the well. A check valve is mounted on the insert to equalize pressures and vacuum is used to release the seal.

3,428,125
HYDRO-ELECTROPYROLYSIS OF OIL SHALE IN SITU

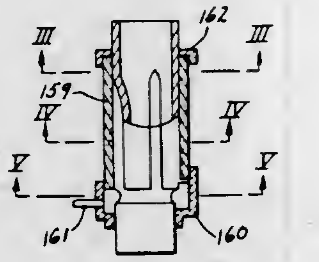
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,530
U.S. Cl. 166—248 **7 Claims**
Int. Cl. E21b *43/24, 43/26*



Hydrocarbons are recovered from an oil shale formation in situ by injecting an electrolyte into the formation through two or more wells and imposing a potential drop across the formation between the wells to pass electrical current therethrough and heat the same, to a temperature sufficiently high to pyrolize the hydrocarbons therein, while maintaining sufficient pressure on the formation to prevent vaporization of the electrolyte. The wells may be linked together through the formation by fracturing or directional drilling, or a combination of both.

3,428,126
HEATING UNIT

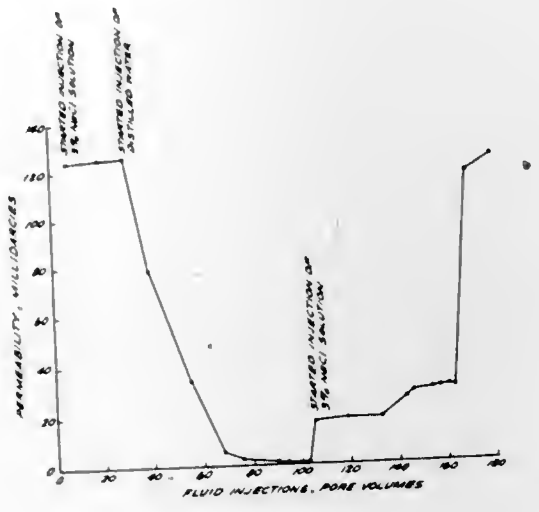
Emery I. Valyi, Riverdale, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Continuation-in-part of application Ser. No. 495,744, Aug. 30, 1965, which is a division of application Ser. No. 398,128, Sept. 21, 1964, which in turn is a division of application Ser. No. 202,612, June 14, 1962, which in turn is a continuation-in-part of application Ser. No. 732,663, May 2, 1958, which in turn is a continuation-in-part of application Ser. No. 586,259, May 21, 1956. This application Feb. 15, 1967, Ser. No. 616,336
U.S. Cl. 165—170 **10 Claims**
Int. Cl. F28f *3/14;* **F23d** *13/12;* **F28c** *1/00*



The present disclosure teaches a heating unit adapted to be used as either a burner or a fluid heater. The heating unit comprises: a tubular structure adapted to contain a first fluid, fluid inlet and outlets connected to opposite ends of the tubular structure, a sheet-like porous body metallurgically bonded to the external wall of the tubular structure and channel means between the confronting faces of the porous body and the tubular structure.

3,428,127
METHOD FOR INCREASING THE RECOVERY OF OIL FROM WATER-SENSITIVE FORMATIONS

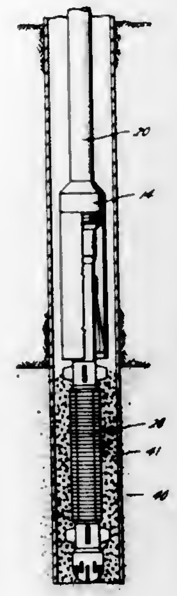
Earle R. Atkins, Jr., Whittier, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 28, 1966, Ser. No. 605,268
U.S. Cl. 166—274 **9 Claims**
Int. Cl. E21b *43/20*



A method of recovering oil from a water-sensitive petroleum reservoir by water flooding which comprises injecting low-salinity water through an injection well and into the oil-bearing formation until the clays and other water-sensitive constituents of the formation are sufficiently hydrated to effect a substantial reduction in the permeability of the reservoir, and thereafter injecting saline water into the formation to drive the bank of low-salinity water and hydrated earth particles through the formation so as to displace oil toward a spaced production well. Still further quantities of oil can be recovered by periodically interrupting the injection of saline water and injecting additional volumes of low-salinity water.

3,428,128
METHOD AND APPARATUS FOR USE IN GRAVEL PACKING WELLS

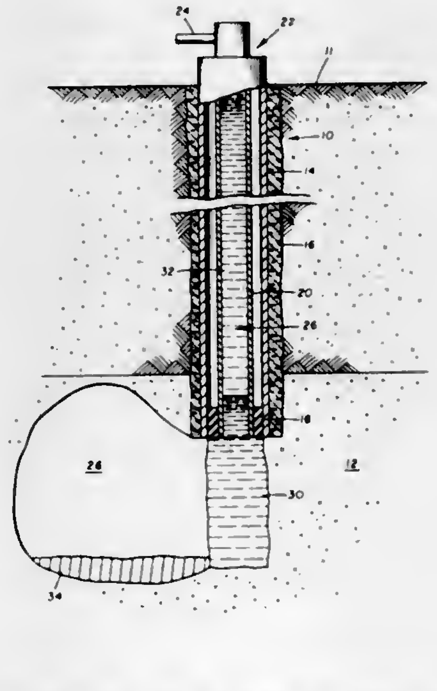
Byford A. Jones, Houston, Tex., assignor to Layne & Bowler, Inc., Houston, Tex., a corporation of Maryland
Filed Jan. 12, 1967, Ser. No. 609,283
U.S. Cl. 166—278 **9 Claims**
Int. Cl. E21b *43/04, 33/12, 23/06*



For use in gravel packing a well, a gas pervious basket is provided which is placed in inverted position above the producing formation. The basket is expansible so that the lower portion thereof will contact the borehole or casing adjacent the producing formation. Gravel is thus retained beneath the basket, while formation gases are free to pass through the basket.

3,428,129
VERTICAL FRACTURE CONTROL

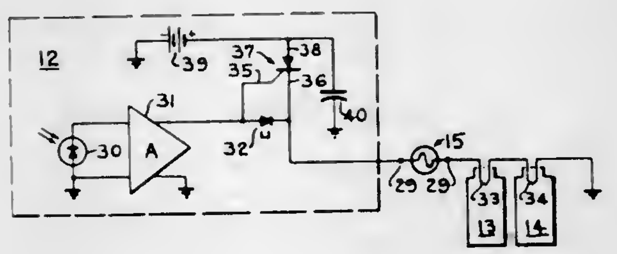
Evin L. Cook, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 27, 1966, Ser. No. 604,902
U.S. Cl. 166—292 **11 Claims**
Int. Cl. E21b *33/13, 43/22, 43/26*



The specification discloses a method of fracturing a subterranean formation with a fracturing fluid which includes a material responsive within the formation to form a precipitate of a greater density than the fracturing fluid so that the precipitate tends to settle to the lower part of the fracture; e.g., a fracturing fluid comprising sulfuric acid is injected into a calcareous formation wherein a precipitate of calcium sulfate is formed which in turn settles to the lower part of the fracture.

3,428,130
CONTROL AND INDICATION SYSTEM FOR EXPLOSION SUPPRESSORS

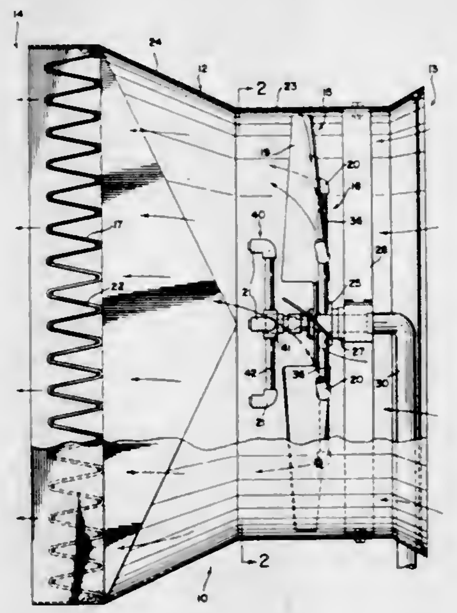
Charles F. Rockwell, Sherborn, Mass., assignor to Fenwal, Incorporated, Ashland, Mass., a corporation of Massachusetts
Filed Apr. 5, 1966, Ser. No. 540,301
U.S. Cl. 169—2 **6 Claims**
Int. Cl. A62c *3/08, 39/02*



The specification describes an explosion suppression system particularly useful in airplanes. A radiation sensitive device such as a photovoltaic cell is mounted in the vent conduit leading between a fuel surge tank in the aircraft wing and the fuel system vent. It is shielded from external radiation by the vent conduit shape. The cell is connected to supply an input signal to an amplifier whose output signal is applied across a tunnel diode. The tunnel diode in turn is connected between the gate and cathode terminals of a silicon controlled rectifier. A source of voltage is connected directly to the anode of the silicon controlled rectifier and the cathode is connected directly in series with the actuating circuit of the explosion suppressors. When a sufficiently large signal is applied to the tunnel diode to switch it across its "valley" region, it fires the silicon-controlled rectifier, thereby supplying current to the explosion suppressors. When the suppressor fires, its actuating circuit opens thereby opening the circuit of the silicon controlled rectifier and thus causes it to cease conducting; thereby arcing across the open ends of the wires of the explosion suppressor actuating circuit is prevented.

3,428,131
METHOD AND APPARATUS FOR GENERATING FIRE-FIGHTING FOAM

Joseph R. Winslow, Westboro, Mass., assignor to E. W. Bliss Company, Canton, Ohio
Filed Aug. 16, 1966, Ser. No. 572,851
U.S. Cl. 169—15 **7 Claims**
Int. Cl. A62c *35/46, 35/18;* **B05b** *3/06*

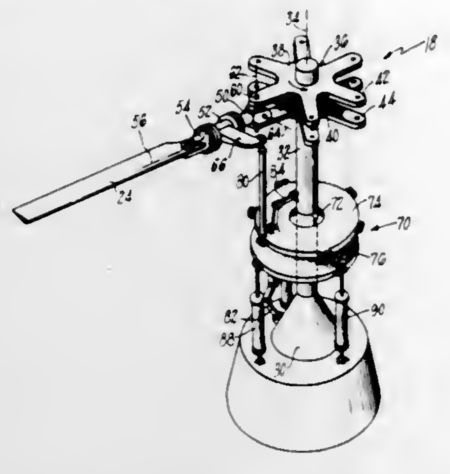


A fire protection method and apparatus for generating high expansion foam. The disclosed apparatus includes an elongated housing having an inlet and an outlet and a perforated member extending across its free passage area. A fan is positioned in the housing and drivingly rotated by impulse nozzles supplied with pressurized liquid foam solution. The nozzles are arranged to provide a relatively uniform wetting of the perforated means while driving the fan in a direction to provide air flow through the housing and against the perforated means at a pressure sufficient to produce high expansion foam bubbles on the downstream side of the perforated means.

3,428,132
HELICOPTER ROTOR WITH FOLDABLE BLADE

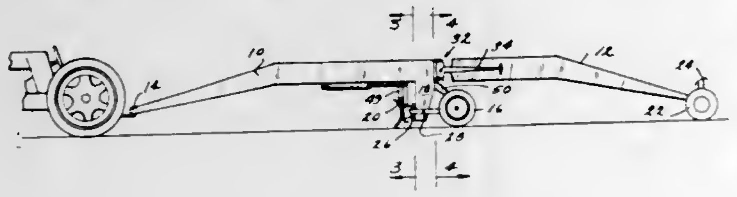
Luigi Vacca, Milford, and Robert Zincone, Stamford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 18, 1967, Ser. No. 668,592
U.S. Cl. 170—160.12 **22 Claims**
Int. Cl. B64c *27/50*

Helicopter rotor with foldable blades wherein the fold mechanism is completely recessed within the blade and rotor hub and includes a telescoping foldable joint which permits the blade to be detached from, telescopically spaced from, and then folded with respect to the rotor hub assembly.



3,428,133
LAND LEVELER

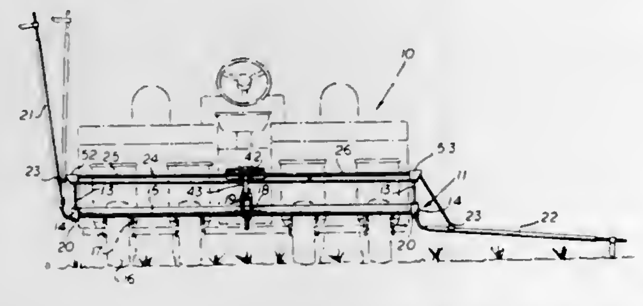
Thomas J. Young, Rte. 1, Meridian, Idaho 83642, and Charles F. Leonard, 7219 Swift Lane 83704, and Claude H. Leonard, 8206 Fairview Ave. 83702, both of Boise, Idaho
Filed Aug. 18, 1965, Ser. No. 480,747
U.S. Cl. 172—4.5 **13 Claims**
Int. Cl. E02f *3/76;* **A01b** *63/22*



An earth working device is provided with a frame and wheels for supporting the frame. Connecting arms are provided between the wheels and the frame for banking the wheels in proportion to a working angle of an earth working blade. Also, the width of track of supporting wheels of such a vehicle can be adjusted relative to the angle of cut of an earth working blade.

3,428,134
MARKER ALTERNATOR

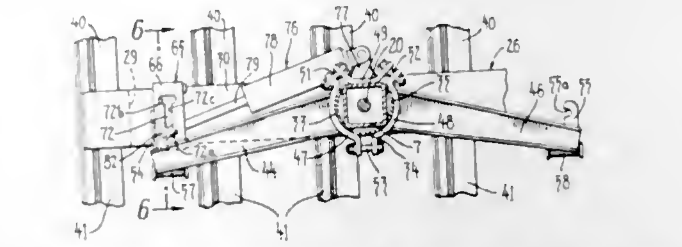
Jack L. Bauman, Naperville, and John A. Walker, Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,341
U.S. Cl. 172—130 **3 Claims**
Int. Cl. A01b *39/28*



A pair of markers mounted at the ends of an implement are alternately raised and lowered when raising and lowering the frame, by a chain connecting the markers having a central portion passing over spaced pulleys and reciprocated by the hydraulic lifting cylinder. Automatic alternation is achieved by an overcenter trip arrangement between the pulleys including an actuator alternately engaged by balls affixed to the chain sections leading to the markers and a latch swingable from one position to another to engage one of the balls and hold one marker in raised position.

3,428,135
TURNOVER PLOW

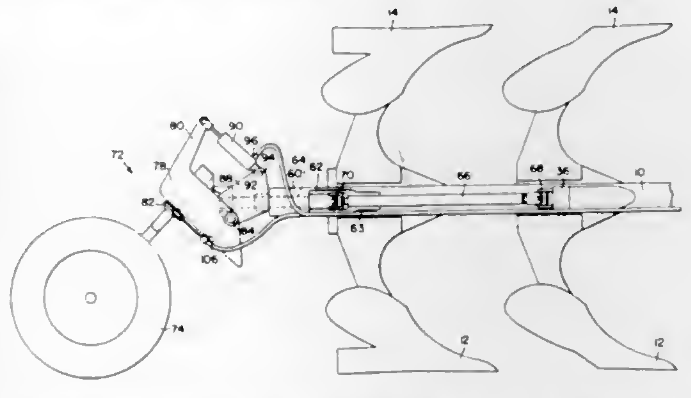
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Mar. 4, 1966, Ser. No. 531,876
U.S. Cl. 172—225 **11 Claims**
Int. Cl. A01b *3/40, 3/28*



A reversible multi-bottom plow has a plow carrier oscillatable through a half revolution about a fore-and-aft axis. The carrier is turned by a hydraulic cylinder having a lost motion connection to the carrier which serves to control engagement and release of latching mechanisms for the carrier.

3,428,136
TWO-WAY PLOW

Bruno B. Johannsen, Moline, and John C. Thompson, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 1, 1965, Ser. No. 468,823
U.S. Cl. 172—285 **4 Claims**
Int. Cl. A01b *69/08, 3/34, 5/08*

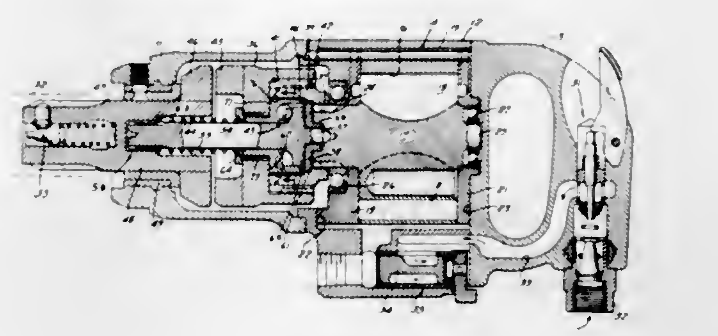


A semi-mounted roll-over plow with a steerable rear furrow wheel. A push-pull cable controls a hydraulic cylinder which causes the rear wheel to turn. The cable is moved in response to turning of the propelling tractor relative to the frame of the plow.

3,428,137
IMPACT WRENCH

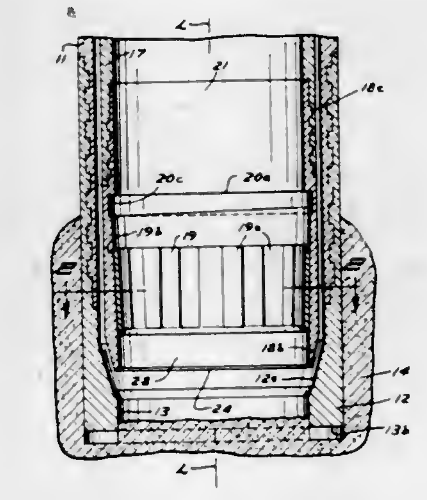
Raymond J. Schaedler, Utica, and William K. Wallace, Barneveld, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 12, 1967, Ser. No. 674,829
U.S. Cl. 173—93.6 **14 Claims**
Int. Cl. B25d *15/00;* **F16d** *7/02*

A reversible impact wrench having a high ratio of power output relative to its size and weight. The driving shaft of the rotor of the wrench is coupled to a dog-hammer having a recess in its rear in which the coupling is compactly telescoped. The dog-hammer is movable axially relative to the coupling against a return spring by ball cam means into rotary impacting relation with an anvil carrying a wrench socket. This is unlike conventional impact wrenches in which a conventional dog is movable into such impact relation relative to a driving hammer frame of heavy mass. The dog-hammer carries a symmetrical cam as a means of driving selectively in either direction a ball follower about a track relative to a symmetrical cam tooth associated with the anvil. The arrangement is such that the dog-hammer and its cam are cooperable with the ball and cam tooth so that it is axially accelerated clear of the ball during camming action. Because of the nature of the track and cam elements, the ball cannot possibly become trapped between the cam elements upon return of the dog-hammer following impact. If it were to become trapped, the jaws of the dog-hammer and anvil would be subject to possible interlocking and malfunctioning. The wrench also includes means for diverting reactionary thrusts of tool operation from the rotor to the general housing.



3,428,138
OFFSET CORE LIFTER APPARATUS

Ray K. Casper and Leonard A. Lindelof, Minneapolis, Minn., assignors to E. J. Longyear Company, Minneapolis, Minn., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,125
U.S. Cl. 175—255 **8 Claims**
Int. Cl. E21b *9/20, 25/00*

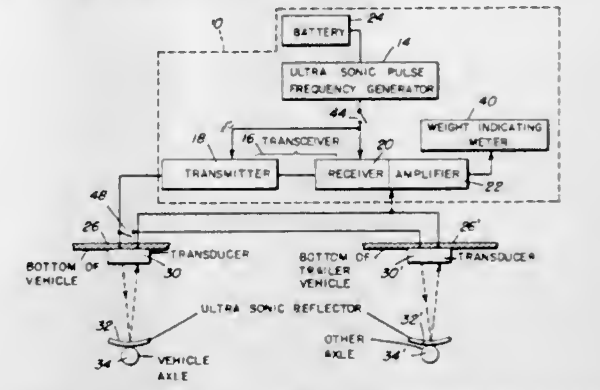


Core barrel apparatus for drilling core from an earth formation, for receiving core as it is drilled, breaking the drilled core from the earth formation, and retaining the core as the core is retracted through the drill hole.

3,428,139
ULTRASONIC TYPE NET WEIGHT LOAD INDICATOR FOR VEHICLES

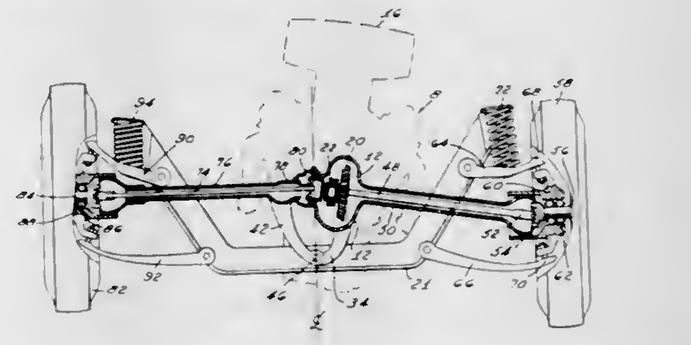
Earl C. Nolan, 208 Kensington Drive, Biloxi, Miss. 39530
Filed June 10, 1968, Ser. No. 735,824
U.S. Cl. 177—137 **8 Claims**
Int. Cl. G01g *19/08*

This invention is a weight load indicator for vehicles and measures the net weight of the load of a vehicle or the weight on each axle, on a meter weight indicator located in the cab of the vehicle. It includes an ultrasonic pulse generator which is operated, when desired, to send a burst of sound through a transceiver to a transducer. The transducer is located on the underside of the vehicle and a sonic reflector is mounted on the vehicle axle, there being springs on the axle supporting the vehicle body. The reflector is in the sonic path of the transducer. A meter, calibrated in weight, is connected to the transceiver, and the meter is thus actuated to reflect the time it takes for the sound to echo back from the sonic reflector to the transducer, which varies in proportion to the compression of the vehicle springs under the weight of the load thereon. One or more trailer vehicles may have their loads indicated in the tractor vehicle cab by having a second transducer and a second sonic reflector similarly mounted on the trailer vehicle underside and axle through a selective switch to the same transceiver and ultasonic pulse generator, and to the same meter.



3,428,140
AUTOMOTIVE FRONT WHEEL DRIVE ARRANGEMENT

Homer S. Tolan, Jr., Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 25, 1967, Ser. No. 641,179
U.S. Cl. 180—42 **10 Claims**
Int. Cl. B62d *7/00;* **B60k** *1/00, 17/00*

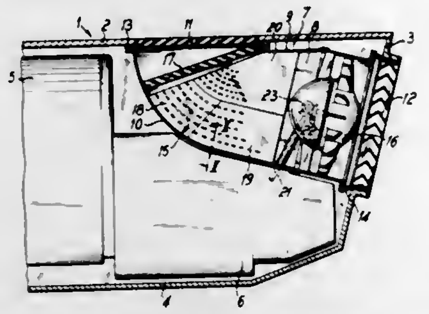


A front wheel drive arrangement for an automobile having a pivotally mounted power plant that delivers power through left and right half shafts to the front wheels. The power plant is pivotally mounted to swing with one of the half shafts and, thereby eliminates one of the inner universal joints usually associated with front wheel drive powertrain arrangements.

3,428,141
ENGINE COOLING SYSTEM FOR ARMORED VEHICLES, PARTICULARLY TANKS

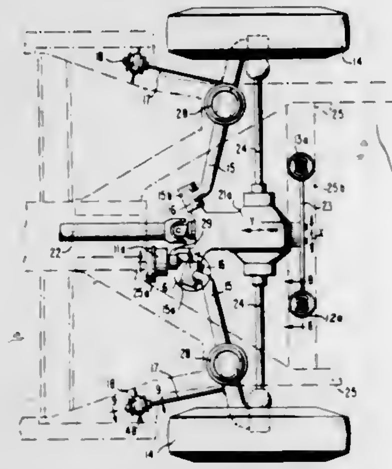
Egon Forstner, Stuttgart, and Robert Binder, Schwieberdingen, Germany, assignors to Firma Dr. Ing. H.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Dec. 9, 1966, Ser. No. 600,610
Claims priority, application Germany, Dec. 23, 1965, P 38,417
U.S. Cl. 180—54 **10 Claims**
Int. Cl. B60k *5/00;* **F28f** *3/00*

An armored vehicle with a liquid-cooled internal combustion engine in the rear of the vehicle that is provided with a heat exchanger located in a duct extending between an inlet opening in a top wall of the rear body portion and an outlet opening in the end wall of the rear body portion. The duct is arranged so that all of the air entering the inlet travels through the heat exchanger and a suction blower in series to be finally discharged from the outlet opening. The heat exchanger fills the central curved portion of the duct and is provided with passages for the air to guide the air in a duct conforming curve. The heat exchanger fills the major portion of the duct and is constructed of a plurality of separate pre-assembled heat exchangers subsequently assembled in the duct.



3,428,142
WHEEL SUSPENSION SYSTEM FOR MOTOR VEHICLES

Ludwig Kraus, Wettstetten, near Ingolstadt, and Friedrich H. van Winsen, Kirchheim-Teck, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Continuation of application Ser. No. 367,770, May 15, 1964. This application July 11, 1966, Ser. No. 564,434
U.S. Cl. 180—73 **25 Claims**
Int. Cl. B60k *17/00, 23/00*

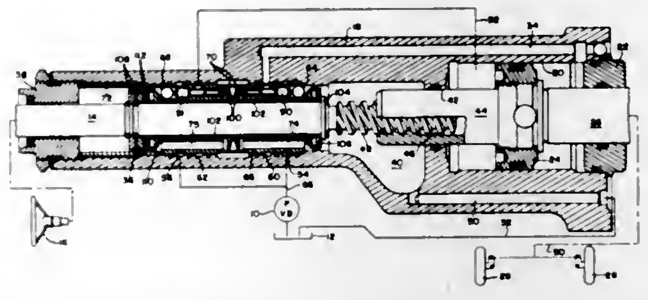


An indepedent swinging half-axle-type wheel suspension for the driven wheels of a motor vehicle utilizing pivoted guide arm structures carrying the wheels. An axial carrier is provided with a forward longitudinally resilient mounting the vehicle superstructure and rearward transversely resilient mountings to the vehicle superstructure. The wheel guide means are provided with forward thrust arms and obliquely arranged inclined guide arms mounted on pins attached to the axle carrier and having axes extending through oppositely disposed wheels and thrust arm superstructure mountings.

3,428,143
POWER STEERING SYSTEM

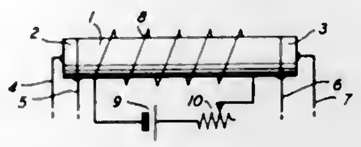
Donald Ray King, James Robert Allen, and Richard Arthur Wittren, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 686,972
U.S. Cl. 180—79.2 **7 Claims**
Int. Cl. B62d *5/08;* **F15b** *9/00*

A closed-center hydraulic steering system for a vehicle having a variable delivery hydraulic pump and including a double acting hydraulic cylinder mechanically connected to the steerable wheels, a rotatable steering shaft provided with a steering wheel at one end and coaxially connected to the cylinder piston through a helical thread so that rotation of the shaft also axially shifts the shaft, and a pair of poppet valves respectively responsive to movement of the shaft in opposite directions from a neutral position to supply pressurized fluid to the opposite ends of the cylinder.



3,428,144
ELASTIC WAVE ELEMENTS

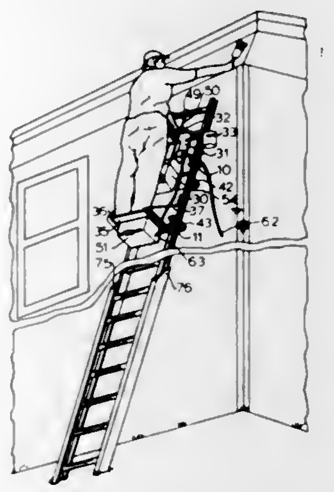
Ernst M. Gyorgy and Roy Conway Le Craw, Madison, and Le Grand G. Van Uitert, Morris Township, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed July 7, 1966, Ser. No. 563,569
U.S. Cl. 181—.5 **13 Claims**
Int. Cl. G10k *10/00*



The use as solute of small quantities of manganese in magnetic garnet compositions such as YIG results in sharply enhanced dependence of elastic wave velocity on applied magnetic field. Devices advantageously including such compositions include variable delay time delay lines and variable frequency elastic wave resonators.

3,428,145
ELEVATOR FOR EXTENSION LADDERS

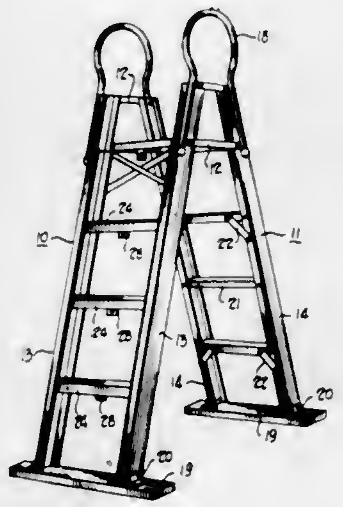
Harry C. Lyon, 3712 Buffaloe Road, Raleigh, N.C. 27604
Filed Oct. 2, 1967, Ser. No. 672,134
U.S. Cl. 182—103 **6 Claims**
Int. Cl. E06c *7/16*



A removable self-powered elevator attaches to extension or fixed section ladders and adapts to tapered or uniform width ladders and includes a control which can be operated while standing on the elevator or removed for remote control.

3,428,146
LADDER HAVING TELESCOPING SECTION

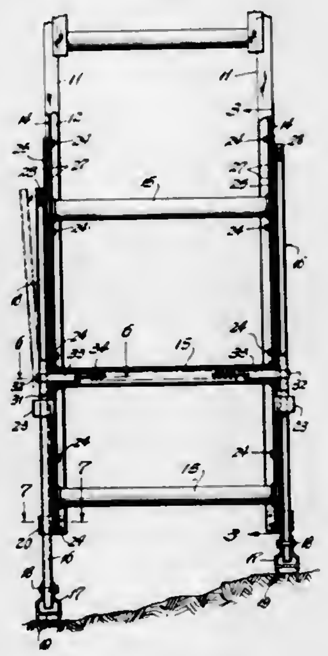
Roger I. Bair, 2 Park Drive, Larchmont, Baltimore County, Md. 21207
Filed May 16, 1967, Ser. No. 638,979
U.S. Cl. 182—118 **3 Claims**
Int. Cl. E06c *1/12*



A ladder comprising two sections connected to one another, each section having step means to enable that section to be ascended and descended, the step means of one section being mounted therewith to afford movement of the step means from a position of use to a position of non-use or inaccessibility, thereby to render that section unusable. Preferably, the movement of the movable step means is a sliding action longitudinally of the section with respect to which the step means is mounted.

3,428,147
LADDER EXTENSIONS

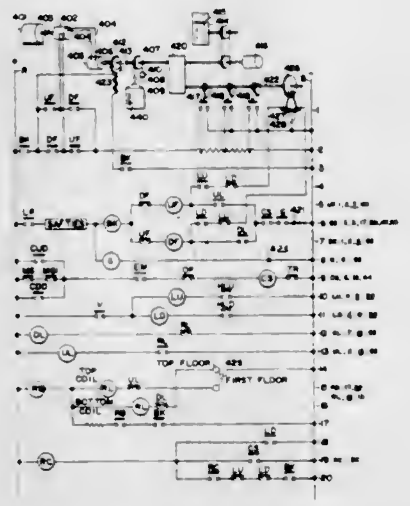
Travis C. Gordon, East Norwalk, Conn.; Elizabeth G. Gordon, executrix of the estate of said Travis C. Gordon, deceased, assignor to Elizabeth G. Gordon, Norwalk, Conn.
Filed Nov. 13, 1967, Ser. No. 682,015
U.S. Cl. 182—204 **5 Claims**
Int. Cl. E06c *1/12, 7/42, 7/50*



Ladder rail extension which has a longitudinally adjustable rail slidably mounted on the ladder rail and carrying a dog engageable with one of a longitudinal series of apertures in a bar fastened to the latter rail, the foot carrying rail being bodily movable toward and away from the bar to cause the dog to engage a selected aperture in the ladder and hold the foot spaced from the bottom of the ladder rail the desired distance and to disengage the aperture when readjusting the position of the foot-carrying rail.

3,428,148
CONVENTIONAL ELEVATOR CONTROL WITH ADDITIONAL MEANS TO SELECTIVELY LOCK OUT FLOORS

George W. Jacobs, New Hyde Park, N.Y., assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 4, 1965, Ser. No. 430,442
U.S. Cl. 187—29 **11 Claims**
Int. Cl. B66b *1/44, 3/02*



A control for an elevator which is actuated when the elevator is effectively at a given position in its travel and the conventional position responsive controls have been altered for said given position. In one embodiment a car is prevented from stopping at a floor and cancels calls for the floor as it passes when a lockout control for the floor is established through the circuits of the floor selector machine of the car which normally control the car's position indicator. The impedance of the position indicator circuit for a floor is altered to provide the lockout by energizing a lockout control relay which is insensitive to the completion of the normal position indicator circuits and responsive to the completion of the circuit with the altered impedance.

3,428,149
CONTROL APPARATUS FOR MATERIAL-UNIT STACKER

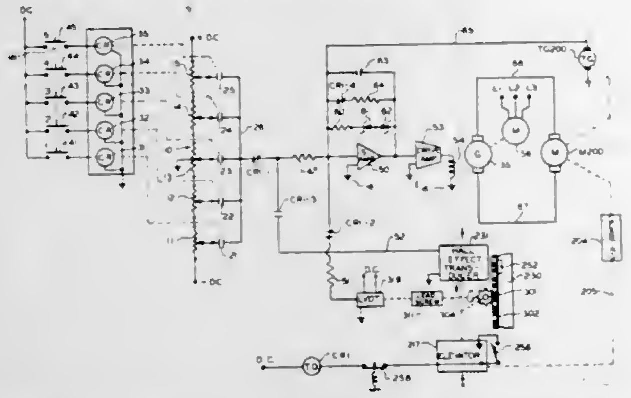
Arthur R. Burch, Wayzata, Minn., assignor to Declark, Inc., a corporation of Delaware
Filed Sept. 19, 1966, Ser. No. 580,536
U.S. Cl. 187—29 **13 Claims**
Int. Cl. B66b *1/36, 3/02*

1. Apparatus for the control of a material handling vehicle comprising:
   - (a) a vehicle adapted to travel over a predetermined path of travel and carry material-units, said path of travel having a plurality of stations along said path of travel;
   - (b) driving means operably connected to said vehicle for causing movement thereof along said predetermined path of travel;
   - (c) signal summing means operably connected to said driving means;
   - (d) voltage divider means having taps to provide voltages of different magnitude with respect to a common reference, said taps being representative of different stations along said predetermined path of travel;

(e) control means controllable by an operator for selectively determining one of said taps;

(f) linear voltage signal generator means providing a voltage having a polarity opposite that of said voltage divider means and being connected to said driving means to produce a linear voltage of magnitude equal to that of said voltage divider means and also representative of the position of said vehicle along said predetermined path of travel;

(g) proximity sensing means sensing the proximity of said vehicle with respect to the station selected by one of said taps and generating an error signal representative of the position difference;

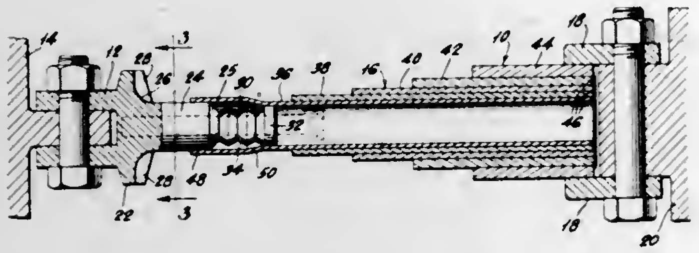


(h) integrator means for integrating said position error signal and providing an output signal representative of said integrated signal, said integrator means being connected to the output of said signal summing means;

(i) and station identifying means including switching means energized upon identifying each of said stations, said switching means connecting said voltage divider and said linear voltage signal generator means to the input of said signal summing means when in a first state of operation, and connecting said position sensing means and said integrator means to the input of said signal summing means when in a second state of operation in place of said means connected thereto when in said first state of operation.

3,428,150
METHOD AND APPARATUS FOR GRADUAL ABSORPTION OF MOMENTUM

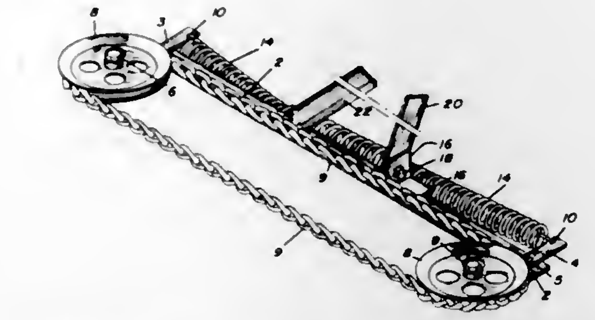
Paul M. Muspratt, 302 S. Main St., Jersey Shore, Pa. 17740; E. Claire Muspratt, executrix of said Paul M. Muspratt, deceased
Filed Dec. 28, 1966, Ser. No. 605,328
U.S. Cl. 188—1 **4 Claims**
Int. Cl. F16d *63/00*



The invention includes a pair of elongated members arranged for telescoping action upon impact. The first member includes a plunger mounted on a base having a rejection slope and not less than two or more shear blades. The second member is axially aligned with the plunger and has an inner dimension slightly less than the outer plunger dimension. Upon an impact with a force greater than a predetermined one, the plunger enters the second member spreading the same preferably up to the tensile-stress yield point thereof or possibly just above and upon further penetration, the second member is sheared by the shear blades which dissipates additional amounts of kinetic energy. As the members continue to close, the sheared parts of the second member are turned outward by the rejection slope and continuous expansion, shearing, and turning outward take place while dissipating increasing amounts of energy. Thus, the shock forces and kinetic energy are damped and dissipated by the action of continuously expanding the second member and continuously shearing the expanded parts thereof at the increasing expense of the kinetic energy.

3,428,151
TRACTION DEVICE FOR AUTOMOTIVE VEHICLES

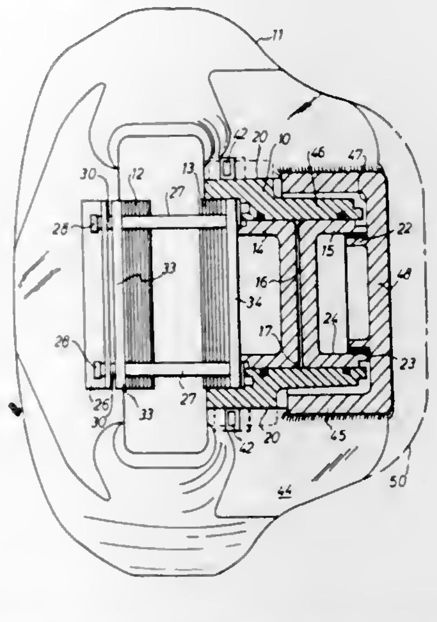
Theodore P. Franklin, 203 3rd St., Towanda, Pa. 18848
Continuation-in-part of application Ser. No. 496,544, Oct. 15, 1965. This application Oct. 26, 1967, Ser. No. 683,076
U.S. Cl. 188—4 **5 Claims**
Int. Cl. B60t *1/00, 1/14*



The present invention provides a frame extending in substantial parallelism with the longitudinal centerline of the vehicle and carrying a pair of grooved pulleys with an anti-skid chain trained therearound, together with means for so positioning the frame that the anti-skid chain will underlie the vehicle wheel and extend in the direction of movement of the vehicle when in operation, and means for retracting the frame and its associated elements into a position where it can in no way interfere with the operation of the vehicle.

3,428,152
CLOSED LOOP DISC BRAKE

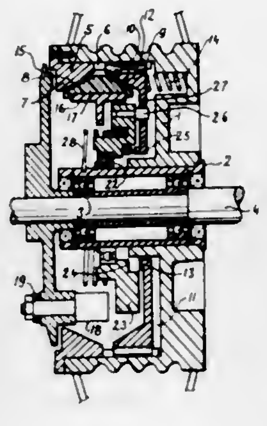
Hermann Hans Hoenick, Immendorf, Germany, assignor to Girling Limited, Birmingham, England
Filed Nov. 18, 1966, Ser. No. 595,475
Claims priority, application Great Britain, Nov. 20, 1965, 49,392/65
U.S. Cl. 188—73 **2 Claims**
Int. Cl. F16d *55/00*



The invention provides a spot type disc brake in which a yoke is slidably received in longitudinal grooves at opposite sides of a body member containing a hydraulic actuator. The yoke has a cup-like portion formed integrally therewith. The actuator is at least partially received in the cup-like portion and includes a movable member, e.g. a piston, which bears against the base of the cup-like portion for actuating an indirectly operated pad supported on the yoke. Another part of the actuator, such as another piston, acts against a directly operated pad.

3,428,153
ANTISKID BRAKE FOR A VEHICLE WHEEL

Evžen Ritschl and Jirí Kubínek, Prague, Czechoslovakia, assignors to JAWA, narodni podnik, Tynec nad Sazavon, Czechoslovakia
Filed Nov. 17, 1966, Ser. No. 595,077
Claims priority, application Czechoslovakia, Nov. 18, 1965, 6,890/65
U.S. Cl. 188—181 **8 Claims**
Int. Cl. B60t *8/12, 7/12*

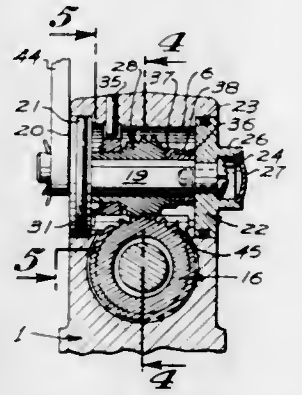


An antiskid brake for a vehicle wheel. Within a brake drum there is a freely rotatable flywheel whose rotation is limited to a fraction of a revolution. The flywheel is resiliently biased toward a given angular position relative to the brake drum. A first brake member which has a conically flaring face extending around the drum axis can move along the latter axis but cannot rotate with respect thereto, while a second brake member is provided with a conically tapering face extending around the drum axis to coact with the first brake member. The second brake member is radially displaced so that when the second brake member engages the first brake member the latter is axially displaced. The latter axial displacement of the first brake member takes place in opposition to a resilient means. A motion transmission between the flywheel and the first brake member moves the latter away from engagement with the second brake member in opposition to the resilient means in response to rotary movement of the flywheel relative to the drum.

3,428,154
AUTOMATIC BRAKE SLACK ADJUSTER

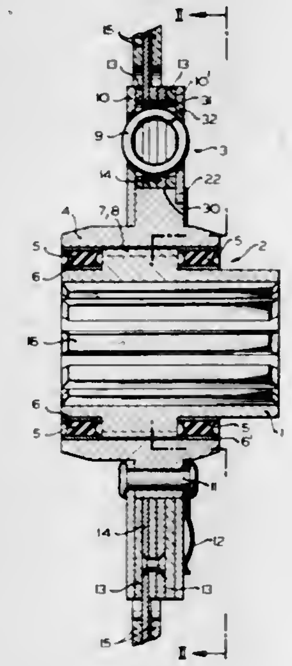
Carl L. Lodjic, Long Beach, and Donald T. McGregor, La Crescenta, Calif., assignors to Carlodge Corporation, Torrance, Calif., a corporation of California
Filed Oct. 23, 1967, Ser. No. 677,182
U.S. Cl. 188—196 **4 Claims**
Int. Cl. F16d *65/38, 51/00*

A brake adjuster contained in a housing and lever arm interposed between a brake operating shaft and an actuating rod and containing an initial and a final worm and worm gear unit tandem connected through a clutch. The initial unit is contained in part within a bore closed by end seals, one of which is provided with a crank pin linked to the actuating rod, the end seals being interchangeable so that the actuator may be located on the right or left side of a vehicle. The other of the end seals is provided with fingers which operate to disengage the unit connecting clutch to permit relative adjustment of the units. The initial unit is provided with an overriding clutch to lock the adjustment of the adjuster should its connection with the actuating rod fail.



3,428,155
CLUTCH PLATE WITH VIBRATION DAMPENERS IN SERIES

Richard Binder and Kurt Faedler, Schweinfurt am Main, Germany, assignors to Fichtel & Sachs A.G., Schweinfurt am Main, Germany
Filed Nov. 21, 1966, Ser. No. 595,859
Claims priority, application Germany, Dec. 1, 1965, F 47,799
U.S. Cl. 192—106.1 **7 Claims**
Int. Cl. F16d *3/14, 47/02*

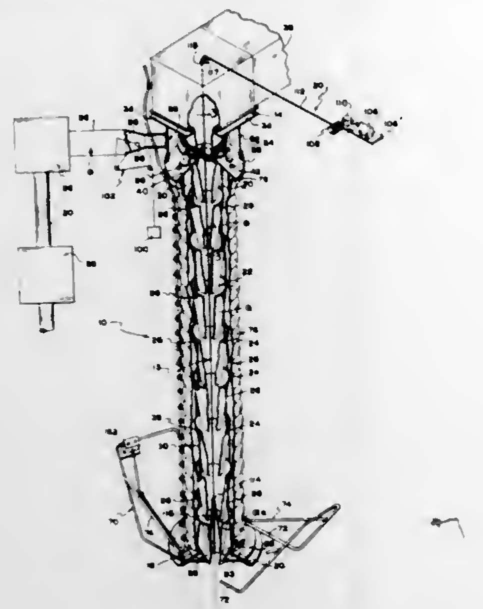


A driven clutch member with vibration absorbing flexible center has an inner and an outer hub capable of limited angular displacement relative to each other, and a rubber ring connecting the hubs. Circumferentially distributed helical compression springs impede relative angular displacement of the outer hub and of the clutch disc carrying friction facings. The springs are stiff enough not to be significantly deformed until torsional deformation of the rubber ring is limited by abutting engagement of the two hubs.

3,428,156
EXPANDABLE CHUTE DEVICE

Fred P. Charyn and Hoke M. Garrett, Oakland, Calif., assignors to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed Jan. 23, 1967, Ser. No. 610,909
U.S. Cl. 193—22 **12 Claims**
Int. Cl. B65g *11/10, 11/12, 11/18*

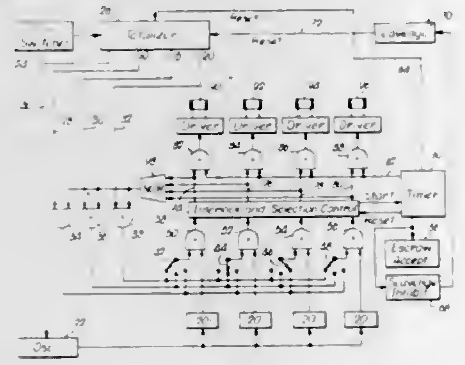
An expandable spout or chute for flowable materials made up of a plurality of loosely interconnected and telescopingly arranged tubular sections. One tubular section is loosely and hingedly interconnected to an adjacent tubular section such that each section is individually freely pivotal primarily about a single axis, which axis is disposed generally parallel to but offset by about 90°



relative to the equivalent spaced pivotal axis of an adjacent section whereby the overall chute made up of such sections can be readily accommodated to various environments and discharge conditions.

3,428,157
PROXIMITY CONTROL FOR A VENDING MACHINE

Robert E. Patterson, Raytown, and James F. Ptacek, Kansas City, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Feb. 16, 1967, Ser. No. 616,508
U.S. Cl. 194—2 **10 Claims**
Int. Cl. G07f *7/00, 11/00*



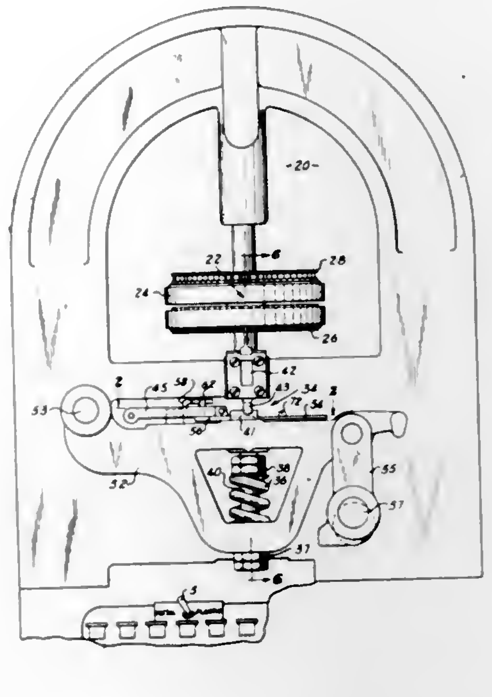
A customer of a multiple selection vending machine accomplishes the selection of a desired article by moving his hand into close proximity to a conductive plate representing the desired article. The presence of the customer's hand is sensed and, if proper coinage has been deposited, the vend cycle commences and the article is dispensed. A capacity controlled sensing circuit is connected to the selector plate, the increase in capacitance between the plate and the machine chassis resulting from the presence of the customer's body adjacent the plate being utilized to cause the circuit to initiate the selective vend.

3,428,158
PRINT PRESSURE CONTROL MEANS IN CHARACTER EMBOSSING MACHINES

George W. Brown, Willoughby, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Continuation of application Ser. No. 346,234, Feb. 20, 1964. This application Sept. 22, 1966, Ser. No. 581,301
U.S. Cl. 197—6.6 **5 Claims**
Int. Cl. B41j *11/20;* **B41c** *1/08*

1. In a machine for embossing distinctly different sheet materials, each requiring its own predetermined level of embossing pressure, which includes pairs of coacting die members for squeezing a piece of sheet material between them to effect embossment:

(a) movable ram means for forcing one of the die members of each pair towards the other, said ram means having spreadable portions;

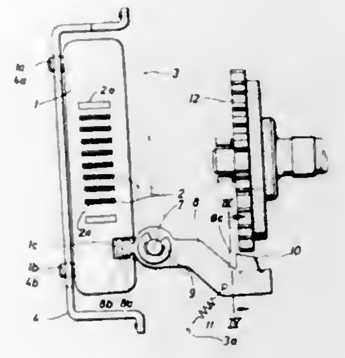


(b) said ram means including a unitary stepped interposer member having sections of different thickness each having parallel faces, said sections being selectively positionable between the spreadable portions of said ram means to control the pressure exerted thereby; and

(c) means for controlling the position of the interposer to effect placement of the selected section thereof in the interposed position.

3,428,159
TABULATING APPARATUS FOR DIRECTLY LOCKING AN ESCAPEMENT GEAR

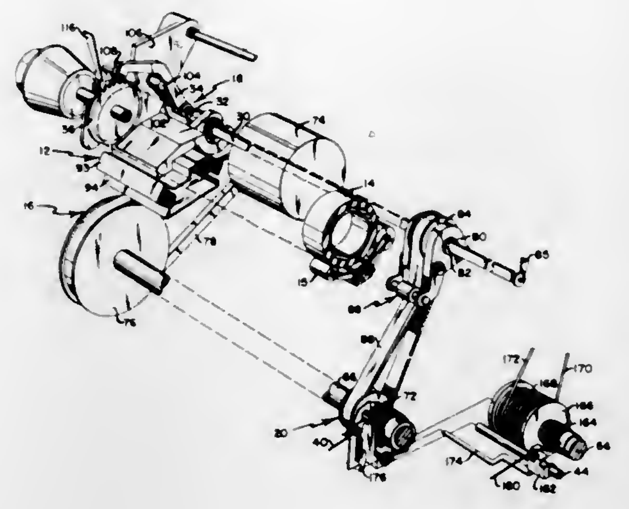
Wolfgang Klingner, Grafschaft, and Arthur Kittel, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany
Filed July 11, 1966, Ser. No. 564,283
Claims priority, application Germany, July 10, 1965, O 8,282
U.S. Cl. 197—64 **10 Claims**
Int. Cl. B41j *19/02, 19/66*



A control member carrying tabulator stops is shifted by a tabulator tab set on the paper carriage of a typewriter, and displaces a locking lever so that the same directly locks an escapement gear and thereby the paper carriage, independently of escapement pawls.

3,428,160
TYPEWRITER LINE SPACE MECHANISM

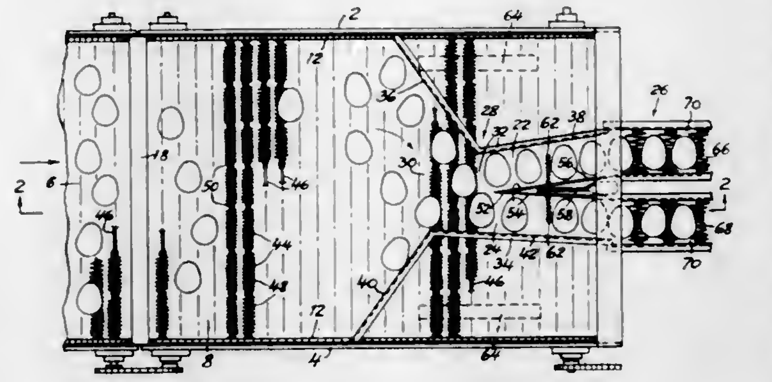
Joseph P. Barkdoll, Sun City Center, Fla., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,807
U.S. Cl. 197—114 **3 Claims**
Int. Cl. B41j *19/94, 19/68, 19/90*



A typewriter line space mechanism for vertically spacing the platen which is operable independent of the carriage return function. The mechanism includes a shaft supported on the carriage rotatable by a power source, an actuator rotatable by the shaft and a line space member operated by the rotatable actuator and engageable with a platen ratchet for imparting acceleration and deceleration motion to the platen.

3,428,161
EGG FEEDING MEANS

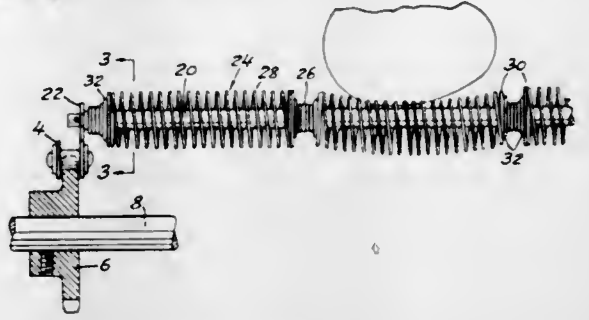
Otto C. Niederer, Bear Tavern Road, Titusville, N.J. 08560
Filed Oct. 17, 1966, Ser. No. 587,267
U.S. Cl. 198—30 **5 Claims**
Int. Cl. B65g *47/26*



Equipment for arranging eggs supplied in random fashion into a plurality of orderly rows of eggs wherein the eggs are supported on a conveyor provided with rotatable members over which the eggs may roll freely into and out of engagement with deflecting members located at different points lengthwise of the conveyor. The deflecting members tend to cause the eggs to move in a circular path when they accumulate adjacent the entrance to the channels in which they are to assume an orderly arrangement. Dividers are located between the channels adjacent the entrances thereof and yieldable means are mounted on the dividers to prevent any eggs which may ride up on the eggs entering the channels from remaining in a raised position.

3,428,162
EGG HANDLING EQUIPMENT

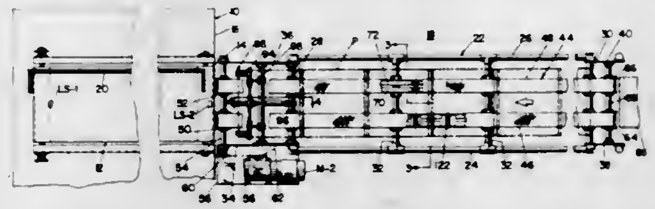
Otto C. Niederer, Bear Tavern Road, Titusville, N.J. 08560
Filed Oct. 5, 1966, Ser. No. 584,581
U.S. Cl. 198—33 **5 Claims**
Int. Cl. B65g *17/30, 39/06*



A support and conveyor for use in egg handling equipment wherein coiled spring elements surround parallel rods with the coiled spring elements being provided with bearing portions of relatively small diameter engaging the rods and egg engaging portions which are substantially larger in diameter, the egg engaging portions of the coiled spring elements being connected to the bearing portions thereof by yieldable means in the form of spaced turns of wire located in planes extending substantially normal to the axes of said rods and bearing portions of the coiled spring elements.

3,428,163
VARIABLE TRACTION CONVEYOR

Howard S. Hershey, Jr., Brodbecks, Pa., assignor, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware
Filed May 24, 1967, Ser. No. 641,025
U.S. Cl. 198—41 **6 Claims**
Int. Cl. B65g *17/46*

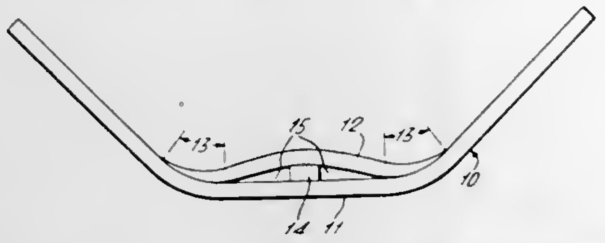


A non-magnetic endless continuously operating conveyor advances a file of randomly spaced pans and accumulates them in a consolidated file against a stop member, the stop member being periodically moved between pan arresting and pan releasing position in timed relation with operation of a further instrumentality to accumulate and release successive groups of consolidated pans. A plurality of longitudinally spaced, transversely extending electromagnets are disposed beneath the conveyor arranged to be energized upon withdrawal of the stop to create a magnetic field to substantially increase the pressure of the pans against the conveyor above their normal weight to provide rapid acceleration from rest to the speed of the conveyor to insure proper orientation of the groups of pans with such further instrumentality; and arranged to be de-energized upon return of the stop means to pan arresting position to permit the conveyor to freely slide beneath the pans as they are accumulated.

3,428,164
CONVEYOR BELTS

Alan T. Lovegreen, 16 Church Lane, Wallingford, Berkshire, England
Filed Apr. 26, 1967, Ser. No. 633,853
Claims priority, application Great Britain, Apr. 28, 1966, 18,619/66
U.S. Cl. 198—193 **7 Claims**
Int. Cl. B65g *15/30;* **B01d** *33/04*

A conveyor which also serves to remove excess moisture from a granular or particulate load consists of a belt which is normally troughed on its working flight and which is pierced by drainage holes at intervals along the length of the central zone. Over this central zone is superimposed a perforated strip running the full length of the belt and bonded thereto along the side margins of the strip, the perforations serving to retain particles of a



given minimum size whilst allowing the passage of liquid. Between its bonded margins, the strip is raised above the surface of the central zone of the belt to provide a longitudinal drainage duct. Gullies traverse the bonded zone to convey liquid from the surface of the belt beyond the perforated strip to the longitudinal duct.

3,428,165
SCREW CONVEYOR

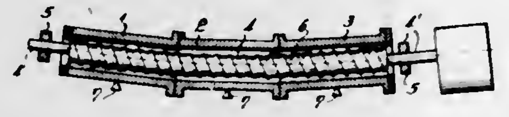
Max J. Hellmut Boden, Korb, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a corporation of Germany

Filed Jan. 30, 1967, Ser. No. 612,612

Claims priority, application Germany, Feb. 3, 1966, W 41,059

U.S. Cl. 198—213 **7 Claims**

Int. Cl. B65g *33/24*



A material treating installation comprising a screw slowly revolving with clearance within a single or multiple housing the bore of which is larger in cross-section than the screw which is journalled at both ends in non-rotatable bearings and provided to convey material to be treated through the housing, the housing bore, at least in its lower portion, being formed of arcuate sections or straight sections arranged arcuately in series, so as to follow the deflection of the screw caused by the operation thereof.

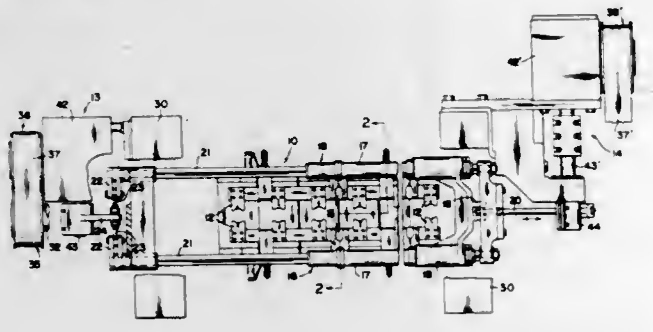
3,428,166
TRANSFER FEED PRESS

Harry T. Burke and Ralph Lowye Andrews, Hastings, Mich., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Feb. 24, 1967, Ser. No. 618,427

U.S. Cl. 198—218 **4 Claims**

Int. Cl. B65g *25/04*



This disclosure relates to a transfer feed mechanism and drive providing longitudinal feed—forward and return—and transverse clamping—separate and close—of a part held by transfer feed fingers while in motion from one station to the next. The transfer feed mechanism is driven by separate continuous rotary-to-rotary/oscillatory drives for each motion—longitudinal and transverse—each of which is coordinated for movement permitting high speed precision part feeding wherein each drive is separately timed and driven from a common drive shaft by means of a pair of timing belts.

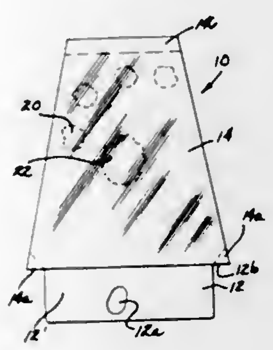
3,428,167
ARTIST'S PALETTE

Hung Tao Sheng, 3010 Thornapple River Drive, Grand Rapids, Mich. 49506

Filed Mar. 1, 1967, Ser. No. 619,854

U.S. Cl. 206—1.7 **11 Claims**

Int. Cl. B44d *3/02;* **B65d** *65/02;* **B65b** *11/00*



An artist's palette assembly formed of a tapered self-supporting palette plate having a correspondingly tapered enveloping sheath tightly fitted thereon, preferably also having brush holding means and a combination spring-release handle and sheath gripping element attached thereto.

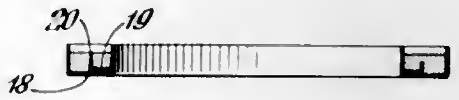
3,428,168
GETTER CONSTRUCTION

Clair W. Reash, Fairview Park, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Feb. 2, 1967, Ser. No. 613,539

U.S. Cl. 206—.4 **12 Claims**

Int. Cl. H01j *19/70*



A wide channel ring getter having higher capacity of vaporizable getter material for use particularly in large color television picture tubes. A reinforcing means can be positioned in the channel to prevent cracking of the getter material during heating of the assembly flashing of the getter material.

3,428,169
FASTENER AND PACKAGE THEREFOR

Martin Hilti, Schaan, im Neugut, Liechtenstein, assignor to Anstalt für Montage—Technik, Vaduz, Liechtenstein

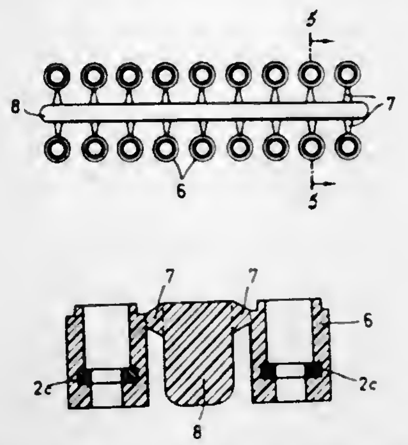
Filed Oct. 12, 1964, Ser. No. 403,312

U.S. Cl. 206—56 **8 Claims**

Int. Cl. B65d *83/00;* **B23p** *19/00*

A fastening apparatus comprising a stud and a shearing ring for insertion into and through a fibrous material such as wood. The stud comprises an axially elongated shank portion and a pointed outwardly curved front end portion. The shearing ring is an annular-shaped member which fits onto the stud at its front end portion. When the stud is driven into a fibrous material, the shearing ring re-

tains its position on its front end and shears through the fibrous material, however, when the stud strikes a hard



material backing the fibrous material, it will be forced onto the shank portion of the stud and will burst.

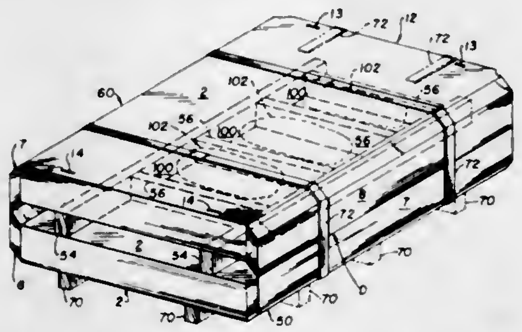
3,428,170
PACKAGED ASSEMBLY OF MODULAR WALL ELEMENTS

Robert N. Nyborg, Riverside, Calif., assignor to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada

Filed Oct. 24, 1967, Ser. No. 677,712

U.S. Cl. 206—60 **12 Claims**

Int. Cl. B65d *85/00, 71/00, 57/00*



A packaged assembly of modular wall elements, wherein the wall elements themselves when assembled comprise the various sides and the top and bottom of the package and wherein a spacer element interposed between certain of the wall elements serves to compartmentize the interior of the package for receiving panel fastening elements, etc., and at the same time form, if desired, a module of a modular ladder.

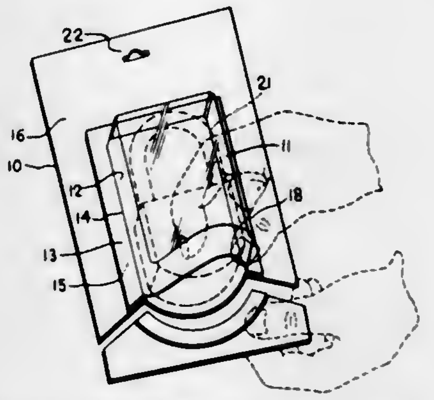
3,428,171
CARD SUPPORTED PACKAGE

Matthew B. Blish, Box 151, Oak Park, Ill. 60303

Filed Jan. 13, 1966, Ser. No. 521,244

U.S. Cl. 206—78 **3 Claims**

Int. Cl. B65d *73/00, 75/62*



1. In a card supported package adapted for packaging a unit of product, comprising a supporting card having a front face side and an opposing back face side, a weakened line provided on the supporting card terminating substantially contiguous to the peripheral edge of said supporting card, a covering of relatively thin walled formable plastic material disposed at said front face side of the supporting card and having a body comprising a unit containing cavity, said unit containing cavity provided with an open base having a flange disposed contiguous to the peripheral edge of the base defining a base flange extending outward of the peripheral edge of said base, said base flange having a back face side secured substantially flush to the supporting card front face side; the base flange provided with a weakened line disposed longitudinally of the base flange and a portion of the weakened line extending substantially to the outer peripheral edge of said base flange, the supporting card provided with a weakened line extending outward beyond the outer peripheral edge of the base flange terminating substantially contiguous to the peripheral edge of said supporting card and a portion of the weakened line disposed underlying the weakened line of the base flange, whereby severance of the base flange weakened line is induced upon severance of a portion of the supporting card weakened line underlying the weakened line of the base flange, thereby detaching a portion of the base flange from a portion of the body of plastic material and facilitating opening of the unit containing cavity for removal of contents packaged within said unit containing cavity.

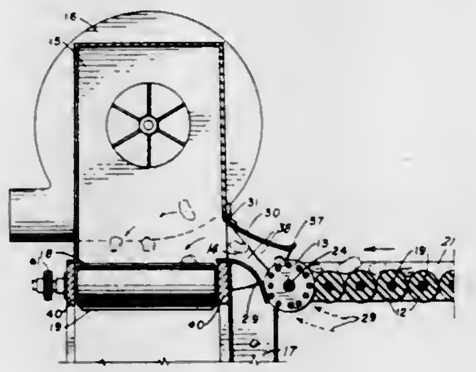
3,428,172
PNEUMATIC POTATO SEPARATOR

Carl C. Hoffman, Box 547, Monte Vista, Colo. 81144

Filed Aug. 22, 1966, Ser. No. 574,164

U.S. Cl. 209—3 **6 Claims**

Int. Cl. B03b *1/00*



A pneumatic separator has a suction box with an air intake extending therefrom and in close proximity to the discharge end of a roller conveyor carrying potatoes and rocks. The potatoes are entrained and conveyed by the air stream in generally the same direction of travel as that of the roller conveyor.

3,428,173
RECEIVING, CLASSIFYING AND PROPELLING DEVICE

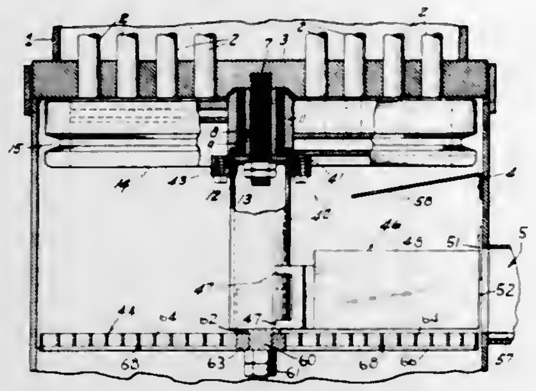
Henry V. Heuser, Louisville, Ky., assignor to Henry Vogt Machine Company, Incorporated, Louisville, Ky., a corporation of Kentucky

Filed Nov. 21, 1966, Ser. No. 595,963

U.S. Cl. 209—3 **2 Claims**

Int. Cl. B02c *18/00*

Discloses a rotating receiving, classifying and propelling member for use with an icemaking machine of the type having vertically extending tubes for conducting downwardly flowing water to be frozen into ice under the influence of a refrigerant surrounding the tubes so as to form solid or hollow ice rods inside the tubes. The rotating receiving, classifying and propelling member receives sized pieces of ice cut from the rods by a revolving knife and consists of a series of radiating ribs each of which extend outwardly and rearwardly to the periphery of the member. In combination therewith is a deflector member extending across said receiving member in proximity to a discharge port, said deflector coacting with the revolving member to produce a reaction force which is exerted on the cut ice cylinders to propel them through a curved path defined by said ribs selectively to a discharge port at the periphery of the rotating circular member.



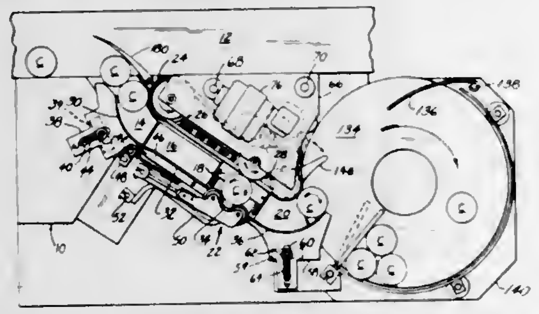
3,428,174
APPARATUS AND METHOD FOR HANDLING GLASSWARE FOR INSPECTION OR THE LIKE

Constantine W. Kulig, Windsor, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Sept. 26, 1966, Ser. No. 581,886

U.S. Cl. 209—73 **15 Claims**

Int. Cl. B07c *5/342;* **B65g** *47/24*



An apparatus comprising a base for moving glassware diverted from a conveyor to an inspection station, the ware being moved along the base by engagement of driven side belts and a resilient guide, and the ware being rotated at the inspection station on its own axis. The apparatus also including a driven disk residing in a horizontal plane to move satisfactory ware from the base back onto the conveyor, a fence being provided to assist in guiding the ware over the disk, and a reject gate being provided to move unsatisfactory ware toward a central opening in the disk.

3,428,175
PROCESS AND APPARATUS FOR FROTH FLOTATION

Risto Tapani Hukki, Otakallio, Otaniemi, Finland, assignor to Outokumpu Oy, Helsinki, Finland, a corporation of Finland

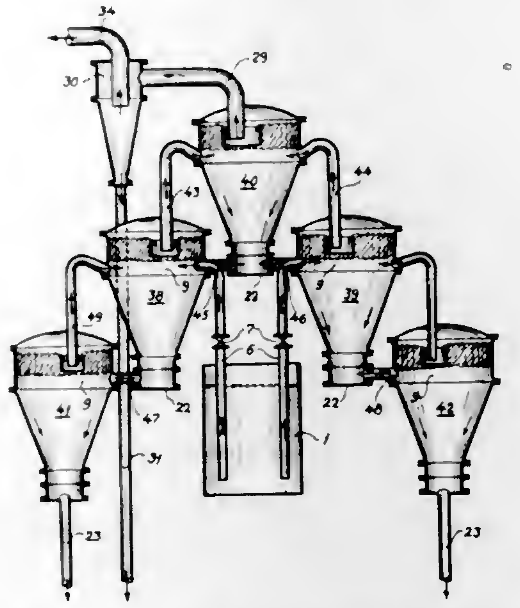
Filed May 27, 1966, Ser. No. 553,330

Claims priority, application Great Britain, June 14, 1965, 25,097/65

U.S. Cl. 209—164 **4 Claims**

Int. Cl. B03d *1/06*

A froth flotation method and apparatus having unit froth flotation elements with closed flotation chambers operating under sub-atmospheric pressure into which feed slurry is introduced to create and maintain a pulp pool having a substantially constant top level within the chamber. Gas medium from an outside source under pressure higher than the sub-atmospheric pressure is introduced into the lower part of the pulp pool and dispersed into fine bubbles. In each unit the pulp flow is directed downward substantially centrally with respect to the rising stream of bubbles. The floating component is collected above the level of the feed inlet and is discharged therefrom while the non-floating component with liquid medium is discharged at a level below that of the gas introduction. A plurality of such units formed into a closed circuit grouping under common sub-atmospheric pressure is arranged in such a way that the froth produced in a given step is transferred with evacuated gas medium to a separate flotation step performed in a similar unit on a higher elevation to upgrade the concentrate. The tailing product from such re-treatment step is returned by gravity to the former flotation step performed in a unit on a lower elevation.



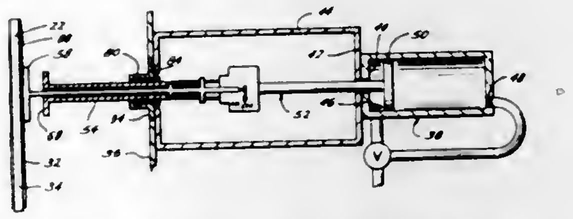
3,428,176
MEANS FOR DETECTING FILTER CAKE BUILDUP

James T. Reneau, Jr., Conroe, Tex., assignor to Sparkler Manufacturing Company, Conroe, Tex., a corporation of Illinois

Filed Apr. 25, 1967, Ser. No. 633,577

U.S. Cl. 210—86 **15 Claims**

Int. Cl. B01d *35/14*



A filter vessel having a filter plate therein, and a probe through the wall of the vessel generally perpendicular to the filter plate. A flat member on the end of the probe generally parallel to the plate, the flat member being spring-biased to a first position with respect to the probe toward said plate, but being capable of moving to a second position with respect to the probe, away from said plate, upon meeting sufficient resistance. Motive means for gradually moving said probe and flat member toward and away from said plate, so that when sufficient filter cake builds up on the filter plate, the flat area will be moved to its second position relative to the probe, thereby actuating a switch or the like.

3,428,177
FLUID CONTROL MEANS FOR FILTER BACKWASHING AND AIR SCOURING

Joseph H. Duff, Basking Ridge, N.J., assignor to Union Tank Car Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,732

U.S. Cl. 210—108 **6 Claims**

Int. Cl. B01d *23/24*

The invention provides fluid control means incorporated into a self-backwashing filter of the type providing

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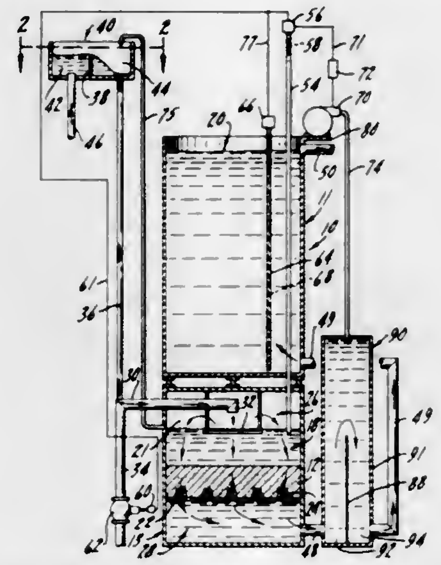
a service cycle, a gas scouring cycle, and a backwash cycle, and including a filter tank, a backwash storage tank and means for providing a pressurized scouring gas. The filter tank has an upper inlet side and a lower outlet side with a filter bed between them. The invention provides flow control means which prevent the flow of backwash water during the gas scouring cycle without requiring a valve. Basically, a first embodiment of the flow control means includes a closed tank having a weir therein forming a first and second compartments. A first pipe is connected between the first compartment and the lower outlet side of the filter tank, and a second pipe is connected between the second compartment to the backwash storage tank. Means for providing a scouring gas under pressure also communicate with the control tank. The weir is of a height low enough to permit flow of the backwash liquid, but high enough to provide a pressure head equal to the pressure head of the backwash liquid in the storage tank minus the pressure of the gas during the scouring cycle. In a second embodiment, an inverted U-shaped pipe is substituted for the control tank, so that the uppermost portion of the U-shaped section in effect forms two compartments, and performs the same function as the aforementioned weir means.



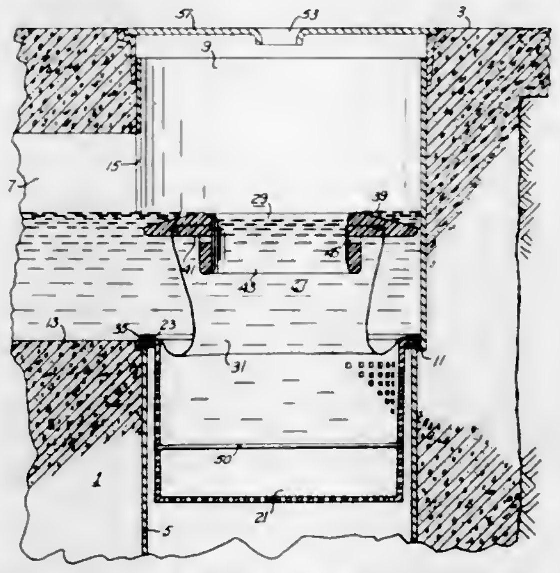
3,428,178
SKIMMER ASSEMBLY AND INCLUDED WEIR ASSEMBLY

Floyd M. Nash, Little Rock, Ark., assignor to Jacuzzi Bros., Incorporated, a corporation of California

Filed Aug. 30, 1967, Ser. No. 664,532

U.S. Cl. 210—121 **4 Claims**

Int. Cl. B01d *43/00*



A skimmer assembly including a circular weir in the skimmer tank, the weir involving an annular float having a depending water impermeable collapsible wall.

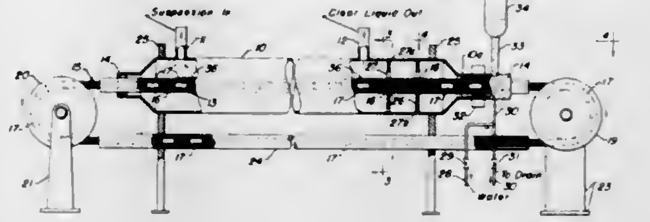
3,428,179
IN-LINE MAGNETIC PARTICLE COLLECTOR

David M. Boyd, Jr., Clarendon Hills, and Kenneth O. Rockey, Evanston, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed June 21, 1965, Ser. No. 465,404

U.S. Cl. 210—222 **15 Claims**

Int. Cl. B01d *35/06;* **B03c** *1/10*



A particle collector for removing magnetic particles from a fluid stream comprising an outer casing and an inner non-magnetic open-ended conduit extending through the casing. A train of permanent magnets is moved through the conduit, and the fluid stream is passed through the annular space between casing and conduit. The particles are attracted to the outer surface of the conduit and are swept therealong by the traveling magnetic field to a particle collecting chamber which is periodically emptied of stored particles.

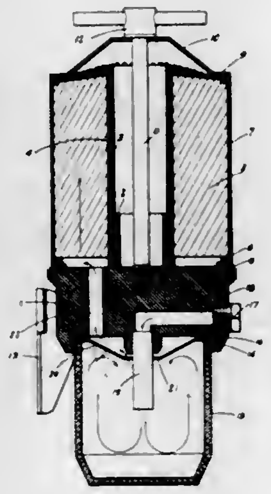
3,428,180
FILTER UNIT

Wendal A. Rogers, Stockton, Calif.
(304 Greenwich Lane, Modesto, Calif. 95350)

Filed Apr. 11, 1966, Ser. No. 541,606

U.S. Cl. 210—311 **3 Claims**

Int. Cl. B01d *21/00*



A filter, for the liquid fuel of an internal combustion engine, adapted to be interposed in the fuel line and including a filter cartridge and a separate sediment-trapping bowl; either one being optionally removable without disturbing the other.

3,428,181
YIELDABLE FILTER ELEMENT CLEANING

Cyril R. Levis, 1 Pope's Road, Cork, Ireland

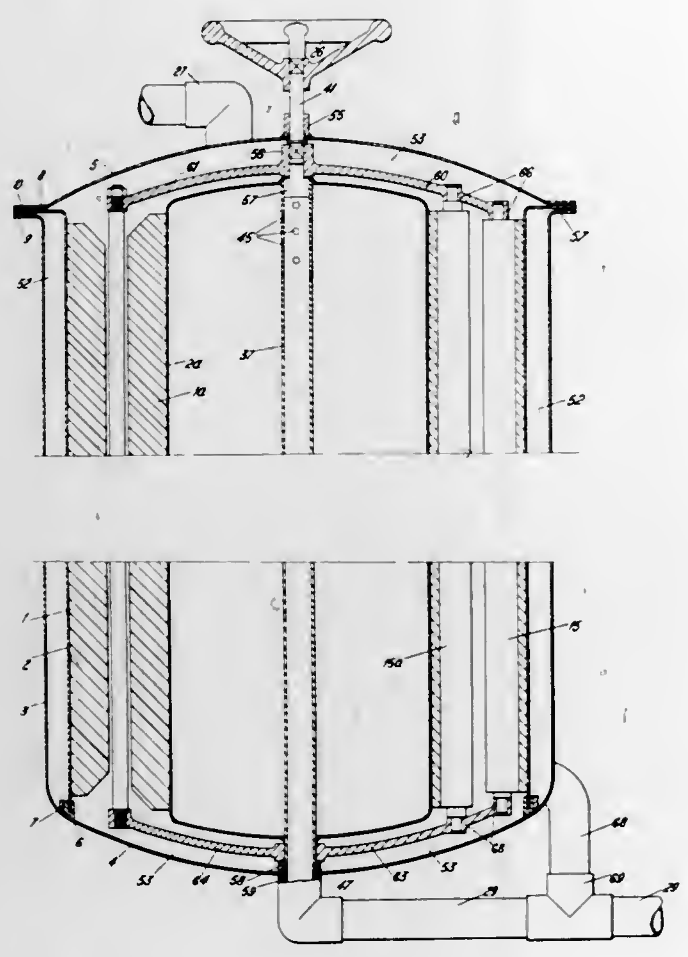
Filed Jan. 28, 1966, Ser. No. 523,721

Claims priority, application Ireland, Feb. 2, 1965, 123/65; June 24, 1965, 644/65

U.S. Cl. 210—333 **8 Claims**

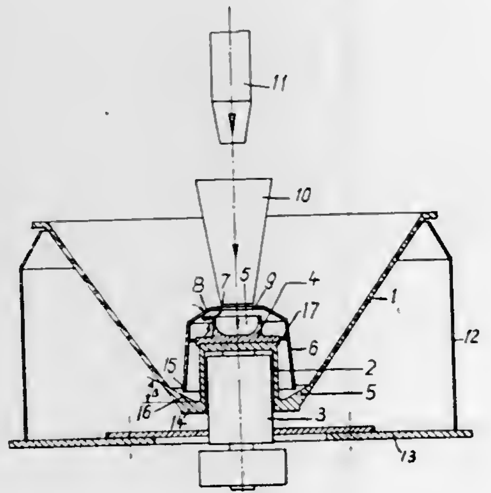
Int. Cl. B01d *25/38, 27/12*

A fluid filter comprises a casing in which is mounted a cylindrical foraminous screen lined with yieldable filter material. Means, such as a roller, are provided to compress the filter material against the screen so as to facilitate removal of impurities when backwashing.



3,428,182
CENTRIFUGAL MACHINE

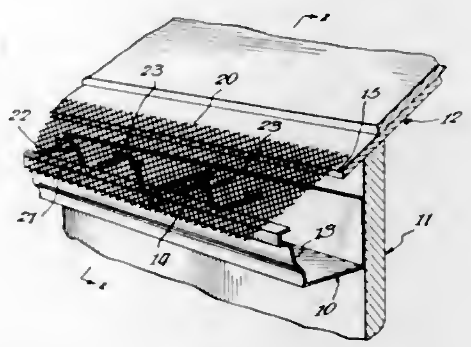
Henrich Hillebrand, Braunschweig, Germany, assignor to Braunschweigische Maschinenbauanstalt, Braunschweig, Germany
Filed Apr. 4, 1967, Ser. No. 628,316
Claims priority, application Germany, Apr. 7, 1966, B 86,582
U.S. Cl. 210—369 **7 Claims**
Int. Cl. B01d *33/02*



A centrifugal machine with a rotating frusto-conical basket overlaid by a screen has inside the basket a distributor disc enclosed by an accelerator cone which both rotate with the basket. This disc receives the material and transfers it to the cone, from which it is in turn transferred to the basket for the purpose to deposit on the screen the material in uniform thickness at approximately the peripheral speed of the screen. To assist this effect, the disc is formed as a trough and the impinged surface of the cone is less inclined to the horizontal plane than the other cone surfaces.

3,428,183
GUTTER GUARD

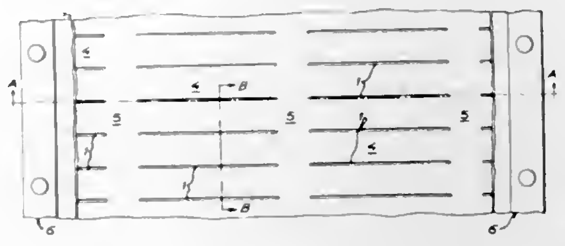
Joseph J. Bristow, 88 N. Edgewood Ave., La Grange, Ill. 60525
Filed Jan. 18, 1968, Ser. No. 698,822
U.S. Cl. 210—474 **3 Claims**
Int. Cl. B01d *23/02, 23/00*



A screen adapted to be placed on a gutter to prevent accumulation of leaves or other foreign matter in the gutter. Attached to the underside of the screen along the lower edge and depending therefrom is a sinusoidal-like element dispersed so as to retain the screen in place on the gutter.

3,428,184
SCREENS FOR REMOVAL OF LIQUID FROM SLUDGE MATERIALS

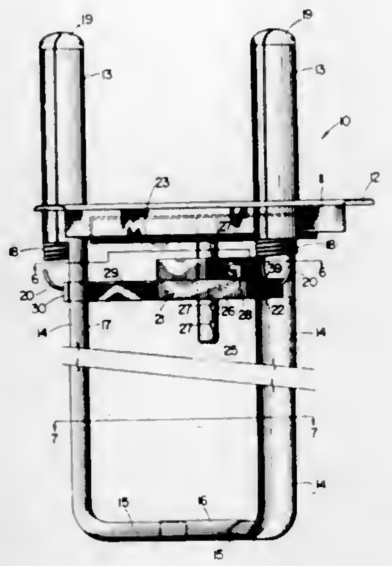
Walter Küper, Bochum-Stiepel, Germany, assignor to Trelleborgs Gummifabriks Aktiebolag, Trelleborg, Sweden
Filed Jan. 9, 1967, Ser. No. 608,004
Claims priority, application Germany, Jan. 10, 1966, K 58,103; Jan. 14, 1966 (utility model), K 53,320
U.S. Cl. 210—489 **3 Claims**
Int. Cl. B01d *25/04*



A screen for removal of liquid from sludge materials having two interconnected webs of resilient material each having narrow holes therein arranged in rows across the screen. One of the webs is prestressed in relation to the other, the prestressing being in the direction across the screen and along the rows of holes. The prestressing serves to make the screen self-cleaning so as to prevent clogging as far as possible. The resilient material may be natural or synthetic rubber or a rubber-like material. The holes may be in form of slits or square holes. The holes in the prestressed web are preferably narrower than the holes in the other web. The holes may have the same width through the thickness of the webs or may taper towards the top of the webs.

3,428,185
APPARATUS FOR STORING AND DISPENSING STACKED ARTICLES

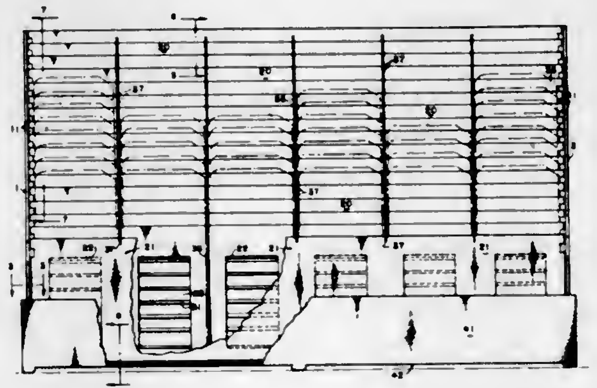
Gerald F. Vorndran, R.R. 4, Hartford City, Ind. 47348
Filed Nov. 10, 1966, Ser. No. 593,391
U.S. Cl. 211—49 **14 Claims**
Int. Cl. B65g *1/06;* **A47f** *3/022;* **A47b** *9/02*



Apparatus for storing and dispensing stacked articles, such as dishes, including a plurality of vertically standing, hollow, post members arranged around the inner edge of a closed frame and secured thereto. Each of the post members has a transversely cut-away portion extending downwardly from the frame which terminates in a horizontally and radially inwardly extending base portion, the base portions of all of the post members being connected together to provide a rigid structure. Springs are disposed inside of each of the hollow post members with its lowermost portion extending into the respective cut-away portion, the uppermost portion of each of the springs being connected to the uppermost portion of the respective post member. The lowermost portions of the springs are connected to a bracket which is disposed between the post members. A platform is arranged for vertical movement in the space defined between the post members, the platform being vertically adjustably mounted on the bracket.

3,428,186
OFFICE UNITS FOR ORGANIZING REFERENCE CARDS AND SUPPLIES

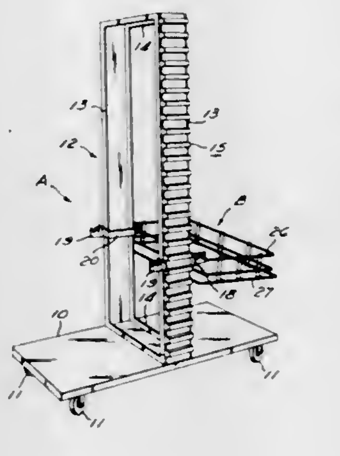
Raymond S. Michel, Portland, Oreg., assignor to United Medical Laboratories, Inc., Portland, Oreg., a corporation of Oregon
Filed Dec. 19, 1966, Ser. No. 602,674
U.S. Cl. 211—55 **2 Claims**
Int. Cl. A47f *7/00, 3/14*



A combination card file and tray-like container wherein the file is adapted for holding and displaying, for example, I.B.M. cards containing medical records, and the like, for general use by the medical profession in doctors' offices, medical clinics and similar facilities, and wherein the tray-like container is compartmented into readily accessible receptacles for holding various accessories such as vacuum tubes and other medical supplies.

3,428,187
BASKET RACK

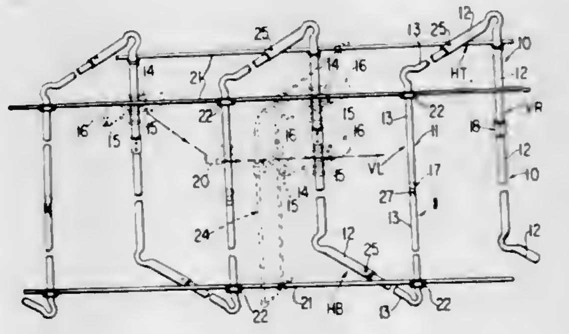
George T. Baggott, Cleveland, Ohio, assignor to Crescent Metal Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 3, 1967, Ser. No. 606,606
U.S. Cl. 211—71 **4 Claims**
Int. Cl. A47g *29/00, 29/02;* **A47j** *47/16*



This disclosure relates to a rack for supporting stacks of loaded baskets and the like such as baskets having a skeletal frame of rigid wire or rods for carrying dishes and utensils to be washed, dried and stored. The baskets are cantilevered from vertically adjustable brackets secured to a vertical stand mounted on a platform which is preferably portable such as by means of rollers or casters.

3,428,188
YARN SUPPLY CREEL FRAME

Frank Boudreau, Kinnelon, Paul O. Huston, Bloomfield, and Donald R. Rasmusson, Upper Montclair, N.J., assignors, by mesne assignments, to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of New York
Filed Nov. 7, 1967, Ser. No. 621,170
U.S. Cl. 211—175 **5 Claims**
Int. Cl. A47f *5/14;* **D02h** *1/00;* **D03j** *5/08*



A creel frame composed of a plurality of L-shaped members connected in series to provide alternate horizontal top and bottom sections following a zig-zag course and alternate right and left side sections. The members are slidably and pivotally connected to enable the creel frame to be expanded and contracted.

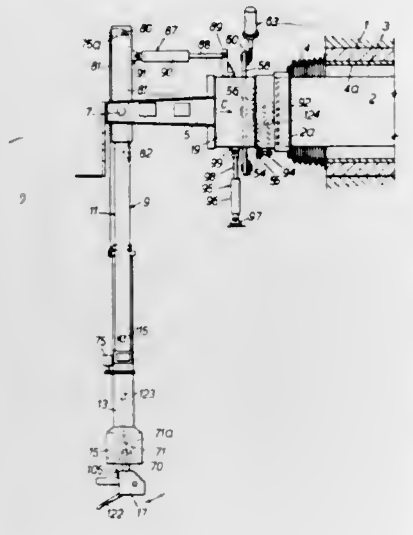
3,428,189
REMOTE-CONTROL MANIPULATOR

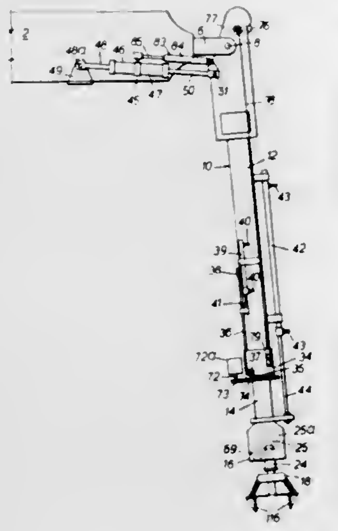
Alan Ainsworth, Thurso, Caithness, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England

Filed June 10, 1966, Ser. No. 556,692

Claims priority, application Great Britain, June 22, 1965, 26,444/65

U.S. Cl. 214—1 **9 Claims**
Int. Cl. B25j *3/00*





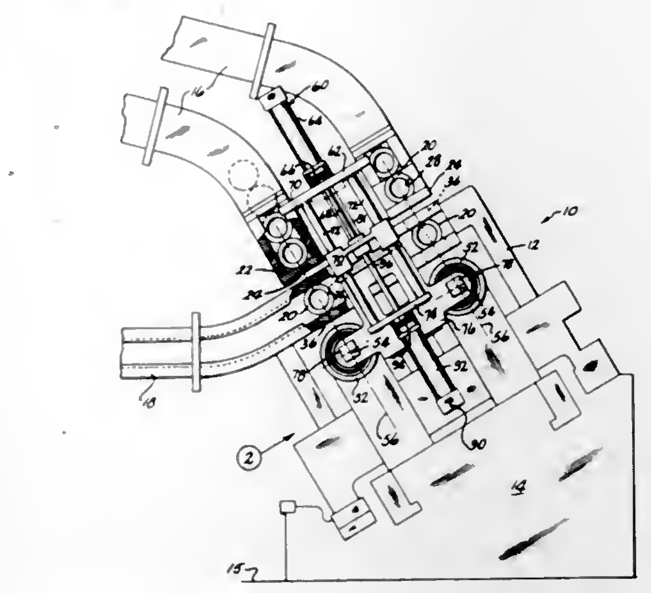
1. A remote-control manipulator having spaced master and slave arms, wherein means to cause movements of the master arm to be reproduced by the slave arm comprise related pairs of transducers, the transducers of each pair being associated with the master and slave arms respectively so that electrical characteristics of a related pair of transducers are varied by related movements of the two arms, comparators to compare the electrical characteristics of related transducers, fluid pressure operated motors operatively associated with the slave arm to effect the movements of the slave arm, fluid pressure control units linked with the motors and the comparators to energise the motors in a manner so as to balance the electrical characteristics of related transducers, and including at least one linkage to be actuated by fluid pressure operatively associated with the slave arm to effect displacement of the slave arm relative to, and without movement of, the master arm.

3,428,190
AUTOMATIC LOAD AND UNLOAD APPARATUS

Lloyd H. Jolchi, Warren, Mich., assignor to La Salle Machine Tool, Inc., Warren, Mich., a corporation of Michigan

Filed July 7, 1966, Ser. No. 563,484

U.S. Cl. 214—1 **4 Claims**
Int. Cl. B65g *57/06, 60/00*



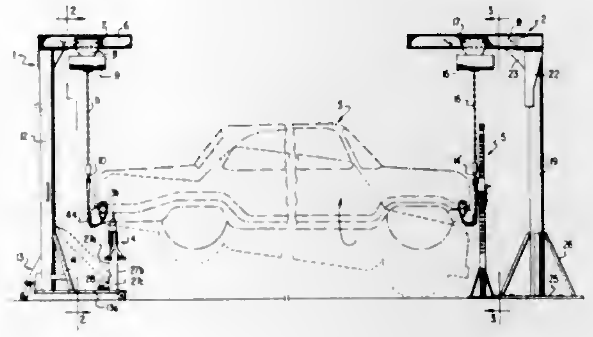
Automation equipment for automatically moving workpieces between "supply," "unload," and "work" stations comprising a pair of aligned fluid actuated clyinder assemblies, a work holding fixture connected to the cylinder assemblies so that on actuation of the assemblies, the fixture is movable sequentially between the stations, and means on the fixture for moving the workpieces to and from the fixture at the stations.

3,428,191
VEHICLE HOIST ASSEMBLY

Paul S. Newswanger, 1608 Oak Lane, Lancaster, Pa. 17601

Filed Apr. 24, 1967, Ser. No. 633,226

U.S. Cl. 214—1 **7 Claims**
Int. Cl. B25j *3/00*



This invention relates to a vehicle hoist assembly and more particularly to a vehicle hoist assembly adapted to lift, and to tilt the lifted vehicle about its longitudinal axis and to maintain the vehicle in its hoisted tilted position, whereby the vehicle running gear will be readily accessible to a service mechanic.

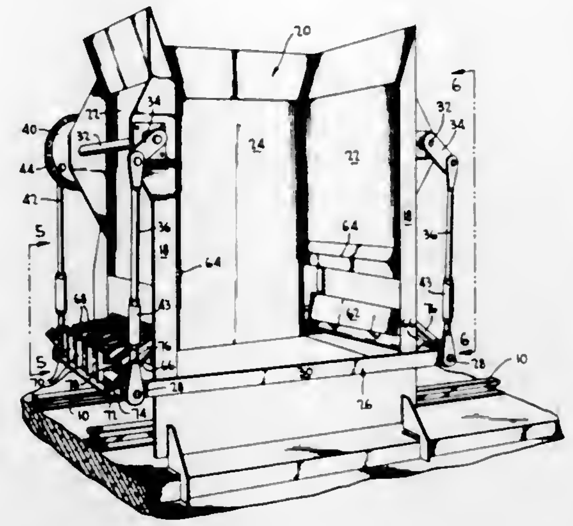
3,428,192
BLOCK BOTTOM DISPENSER

Paul E. Witmer, New Holland, Pa., assignor to New Holland Concrete Products, Inc., New Holland, Pa., a corporation of Pennsylvania

Filed Sept. 12, 1967, Ser. No. 667,292

U.S. Cl. 214—8.5 **6 Claims**
Int. Cl. B65g *57/00, 59/06*

Apparatus triggered by the movement of a cart beneath a stack of building blocks supported by the apparatus commences an automatic cycle of operation in which the apparatus deposits a layer of blocks from the bottom of the stack onto the cart, then raises the remainder of the stack clear of the deposited layer to permit removal of the cart and its replacement by another cart for a new cycle.

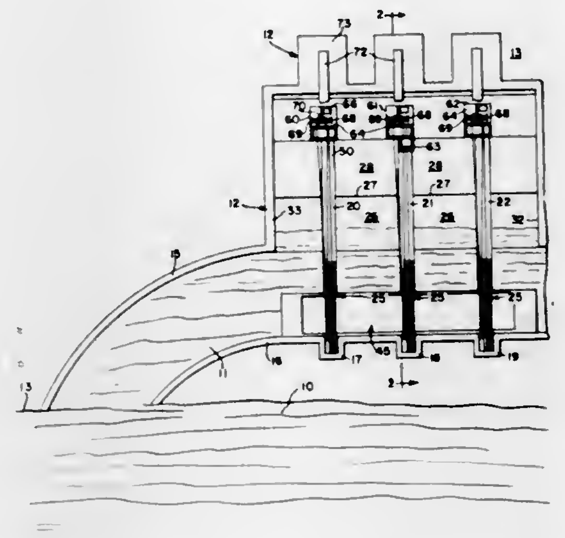


3,428,193
BOAT UNLOADING ASSEMBLY

Russell A. Miller, 1412 W. Woodside Drive, Lake of Woods Estates, Dunlap, Ill. 61525

Filed July 5, 1966, Ser. No. 562,652

U.S. Cl. 214—12 **6 Claims**
Int. Cl. B63b *27/02;* **B65g** *63/00, 67/50*



A boat unloading structure that includes base structure having a plurality of parallel upwardly opening grooves that extend from the water toward and onto the shore, and a plurality of large wheels, each of which supports a part of a boat resting internally thereof, with each wheel being adapted to roll in the grooves for carrying the boat onto and off of the shore.

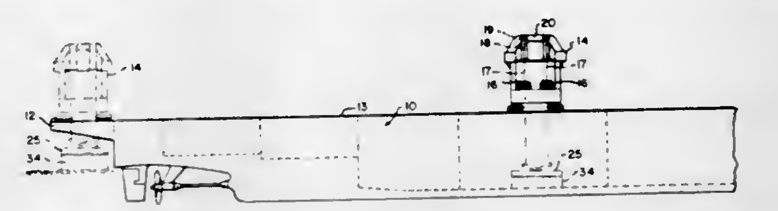
3,428,194
SHIP BARGE HANDLING CRANES AND BEAMS

Francis C. Weiss, Alliance, Ohio, assignor to The Alliance Machine Company, a corporation of Ohio

Filed Dec. 26, 1967, Ser. No. 693,321

U.S. Cl. 214—15 **6 Claims**
Int. Cl. B63b *27/04;* **B66c** *1/36*

The improvement in seagoing vessels having a hull and hatches adapted to receive loaded barges or lighters consisting in providing a pair of cantilever arms at the stern of the vessel carrying trackway which continues along the deck on each side of the ship, a gantry crane and hoisting means on the trackway, a lifting beam for engaging in barge to be lifted, a pair of lift arms adjacent each end of the beam, one end pivoted on the lift beam and the other end engaged by the hoist means and stop means on the beam engaging the lift means at a point spaced from the beam to define a path of vertical movement for the end of the lift arm engaged by the hoist.



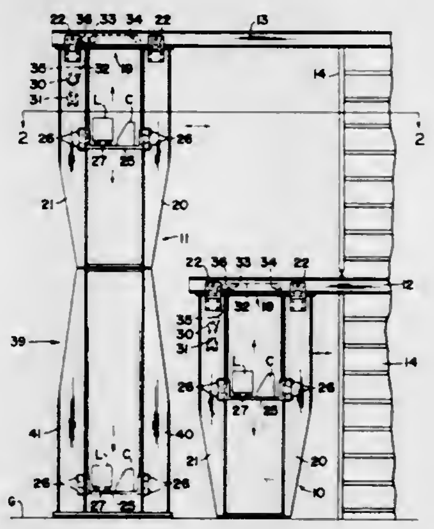
3,428,195
STORAGE SYSTEM WITH MULTI-LEVEL LOAD HANDLING MEANS WITH A COMMON LOADING AND UNLOADING LEVEL

Karl A. Pamer, Chagrin Falls, Ohio, assignor to McNeil Corporation, a corporation of Ohio

Filed Apr. 25, 1967, Ser. No. 633,559

Claims priority, application Luxembourg, May 3, 1966, 51,022

U.S. Cl. 214—16.4 **1 Claim**
Int. Cl. E04h *6/00;* **B66c** *17/00, 19/00*



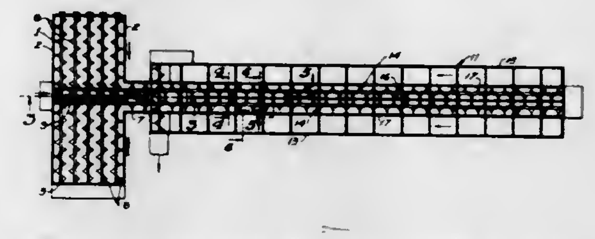
A warehousing system including a movable load transfer unit for storing and retrieving goods from storage areas, and vertical guide structure for permitting the elevator of the transfer unit to be lowered to a loading and unloading station below the level of the storage areas.

3,428,196
CONVEYOR SYSTEM

Raymond O. Eaves, Brawley, Calif., assignor to Batley-Janss Enterprises, Brawley, Calif., a corporation of California

Filed Mar. 13, 1967, Ser. No. 622,556

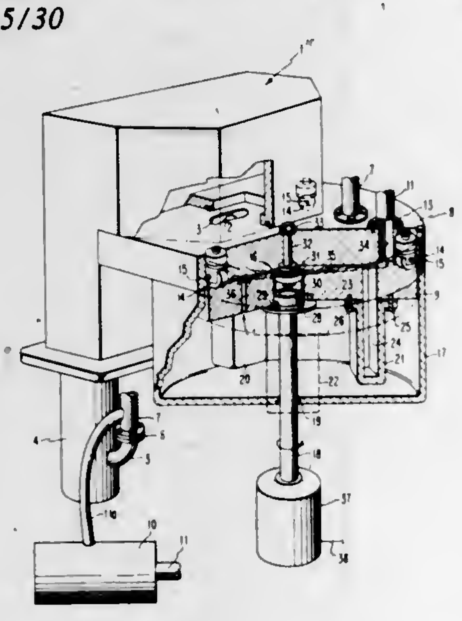
U.S. Cl. 214—17 **5 Claims**
Int. Cl. B65g *65/32, 65/46;* **A01f** *25/00*



A conveyor system wherein bulk material is transferred from a receiving bin to a feeding bin by a screw conveyor extending transversely under the receiving bin and longitudinally over the feeding bin. The receiving bin having bottom screw conveyors which direct the material to a point of discharge over the transfer conveyor, and dividing screw conveyors extending transversely over the bottom conveyors and longitudinally over the transfer conveyors to prevent packing of the material. The transfer conveyor discharges along its length into the feeding bin in such a manner that the material itself tends to support the transfer conveyor; the transfer conveyor being otherwise resting on sets of rollers. The feeding bin has a slow moving bottom conveyor which moves in the opposite direction to the transfer conveyor so that the first material received by the feeding bin is the first material out.

3,428,197
VACUUM ENTRY MECHANISM

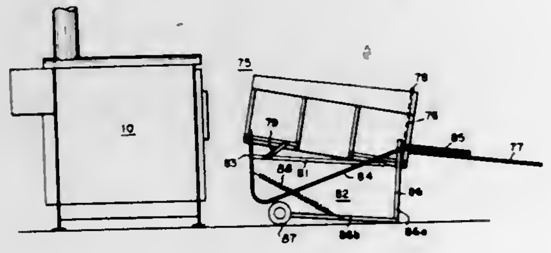
Christopher L. Fischer, Sunnyvale, and Kenneth E. Haughton, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 13, 1966, Ser. No. 542,379
U.S. Cl. 214—17 **4 Claims**
Int. Cl. B65g *65/30*



A vacuum entry device wherein two metal plates having extremely flat working surfaces are utilized to provide sealing, valving and transport of articles from atmospheric through an intermediate pressure stage to a high vacuum environment. The plates are maintained .0005 inch apart by three equally spaced bearings to provide ease of rotation while providing an effective seal.

3,428,198
TRASH BURNER CHARGING APPARATUS

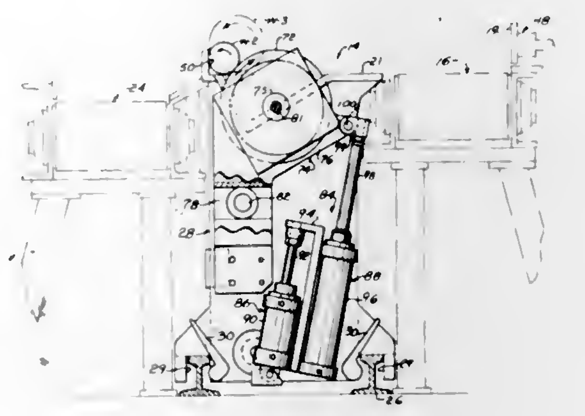
Gordon Hillis Hoskinson, Floral Park, N.Y., assignor to Cornell-Hoskinson Mfg. Corp., Long Island City, N.Y., a corporation of New York
Original application Nov. 7, 1963, Ser. No. 322,578, now Patent No. 3,215,101, dated Nov. 2, 1965. Divided and this application Nov. 1, 1965, Ser. No. 534,553
U.S. Cl. 214—29 **2 Claims**
Int. Cl. B66c *17/08;* **B60p** *1/00, 1/02*



The cart construction forming the basis of the present invention is one that is to be employed in transporting waste material for feeding to a burner. The cart construction embodies a refuse receiving casing which is shiftable back and forth within wheeled frames. The cart further includes a pusher board construction which enables the refuse to be pushed forwardly from an open end of the casing into the burner.

3,428,199
APPARATUS FOR MANIPULATING BILLETS AND THE LIKE

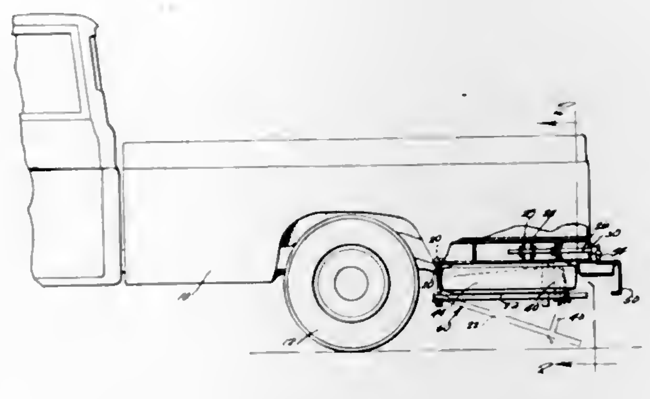
Edwin E. Rhoads, Solon, Ohio, assignor, by mesne assignments, to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 585,799
U.S. Cl. 214—340 **14 Claims**
Int. Cl. B65g *7/00;* **B25j** *3/00*



A workpiece positioning apparatus for grinding machines or the like wherein means are provided for repeatedly tilting a rectangular or polygonal workpiece so that it will present fresh grinding surfaces to a grinding wheel or, alternatively, for repeatedly rotating a cylindrical workpiece throughout a limited extent for the same purpose.

3,428,200
SPARE TIRE CARRIER

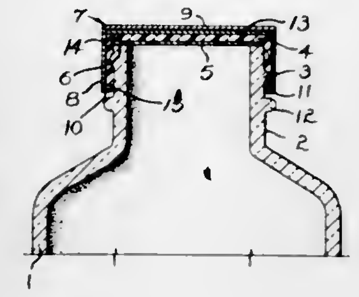
Carl S. Graves and Earl D. Graves, both of P.O. Box 217, San Simon, Ariz. 85632
Continuation of application Ser. No. 533,988, Mar. 14, 1966. This application Dec. 13, 1967, Ser. No. 697,545
U.S. Cl. 214—454 **1 Claim**
Int. Cl. B62d *43/04*



A spare tire carrier having a bottom rack for carrying a spare tire, a T-shaped rack, a set of mounting bolts to secure the T-shaped rack to the vehicle, a turn shaft mounted for rotation on the vehicle frame, a link arm fixedly mounted on the shaft for rotation therewith, the crank arm of L-shaped configuration mounted from the link arm at one end thereof by a pin, a lift yoke frame having a pin connection to the crank arm and engagingly coupled to the free end of the T-rack and adapted to be raised and lowered by the crank arm upon rotation of the turn shaft.

3,428,201
SAFETY CAP FOR BOTTLES

Thomas M. A. Boys, Adelaide, South Australia, Australia, assignor to Leonard William George Grove-Jones and Kathleen Lucy Grove-Jones
Filed Dec. 20, 1966, Ser. No. 603,185
Claims priority, application Australia, Dec. 22, 1965, 68,204/65
U.S. Cl. 215—9 **3 Claims**
Int. Cl. B65d *55/08*



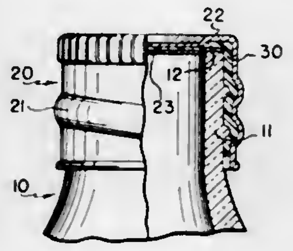
1. A safety cap for bottles having a screw cap on a threaded neck, characterized by a loose sleeve over the said cap which frictionally drives the said cap only when pressure is applied to the said sleeve to force it toward the said cap,

said sleeve comprising a rim closed at one end by a closure member and having at the other end an inturned annular rim and being formed of a distortable material whereby the sleeve can be pushed over an existing bottle cap to be axially confined thereon by the annular rim but to be free to rotate on the bottle cap excepting when a force is applied to the sleeve to frictionaly force it on to the cap to rotate the cap, and

a friction pad interposed between the under surface of the top of the sleeve and the outer surface of the top of the cap whereby when axial pressure is applied to the sleeve to force the sleeve on to the friction pad and the friction pad on to the cap the required drive for rotating the cap is applied between the sleeve and the cap through the friction pad.

3,428,202
CONTAINER CLOSURE AND SEAL

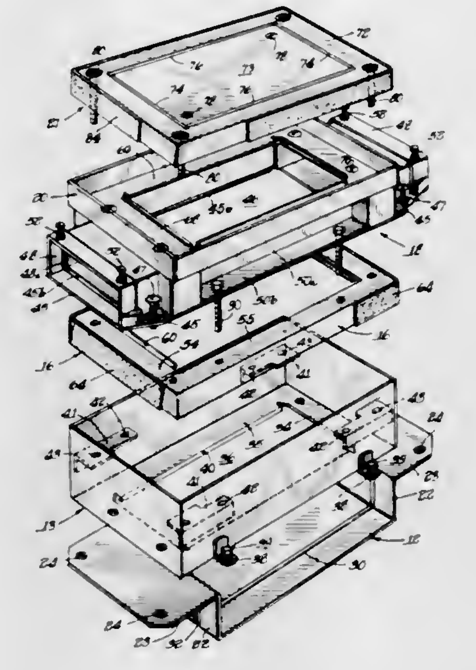
Richard W. Asmus, 3628 W. 48th St., and Andrew E. Jecker, 3610 W. 49th St., both of Cleveland, Ohio 44102
Filed Sept. 14, 1966, Ser. No. 579,416
U.S. Cl. 215—40 **8 Claims**
Int. Cl. B65d *53/06*



A container closure has a seal made of an overplasticized plastisol. When the closure is tightened the plasticizer bleeds from the plastisol and wets the interface between the closure and container.

3,428,203
CONVERTIBLE SINGLE-LEVEL TO TWO-LEVEL JUNCTION BOX FOR UNDERFLOOR WIRING DUCT

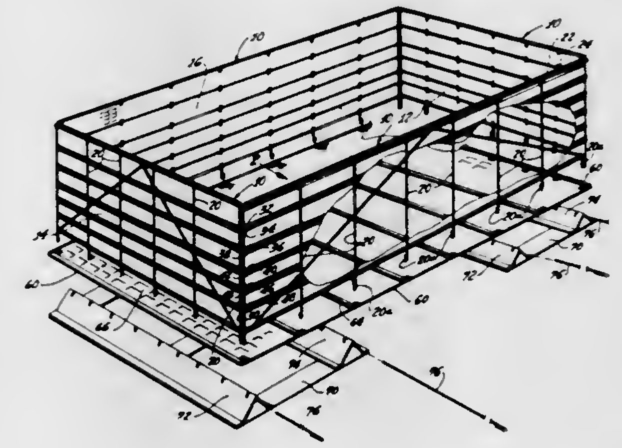
Franklyn D. King and De Forest D. Butler, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 21, 1967, Ser. No. 669,529
U.S. Cl. 220—3.7 **9 Claims**
Int. Cl. H02g *3/08*



A relatively deep access member forming the top of a lower level duct-receiving unit of a convertible underfloor junction box can receive selectively either an upper level duct-receiving unit or a cover plate assembly normally received by an access member of the upper level unit when the upper level unit is received in the access member of the lower level unit.

3,428,204
RECEPTACLE

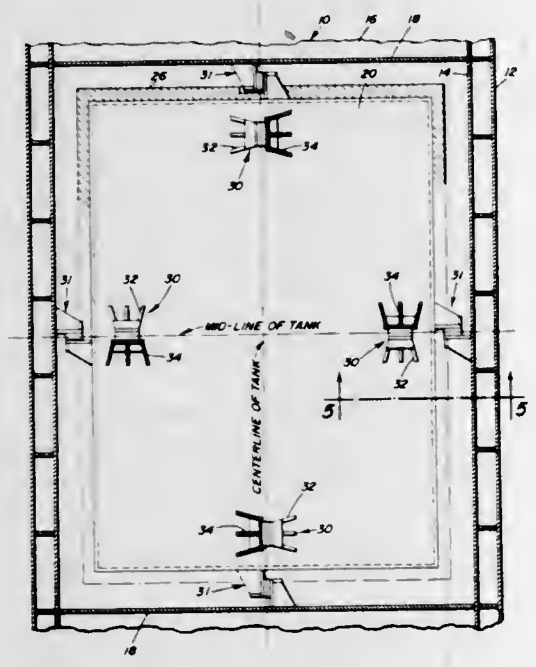
James D. Wilson, Long Beach, Calif., assignor to Banner Metals, Inc., Compton, Calif., a corporation of Ohio
Filed Oct. 11, 1967, Ser. No. 674,431
U.S. Cl. 220—4 **5 Claims**
Int. Cl. B65d *7/00, 7/42*



An improved receptacle is described in the following specification which is composed of a metal frame and replaceable plastic panels. The receptacle is intended for a variety of uses, including, for example, use as a container for citrus fruits; as a receptacle for machine parts, and the like as such parts are dipped, for example, in a corrosive fluid for cleaning purposes; for use in automatic warehouses; and for a variety of other uses which require a sturdy and strong receptacle capable of withstanding rough handling.

3,428,205
ARRANGEMENT FOR MAINTAINING ALIGNMENT OF COLD TANKS WITHIN A SHIP OR THE LIKE

Norman K. Basile, Bronx, and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen, Montclair, N.J.
Filed Sept. 16, 1966, Ser. No. 579,868
U.S. Cl. 220—15 **8 Claims**
Int. Cl. B65d *25/24;* **B63b** *25/08*

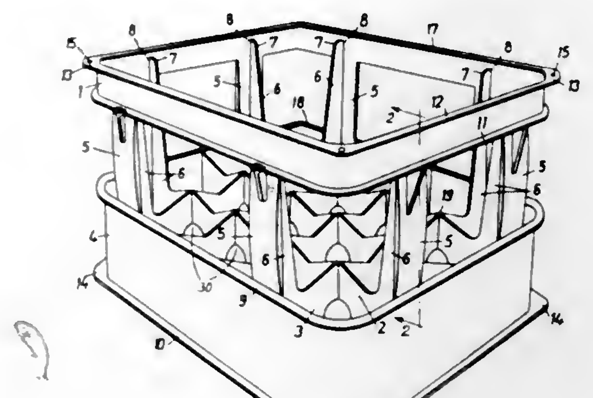


An arrangement for maintaining a liquefied gas storage tank orientation within a ship's hull comprising buffer means connected to the tank and supporting ship structure for maintaining the alignment and orientation of the tank within the ship but permitting thermal expansion and contraction of the tank, each of said buffer means including a first member formed on the tank and a second member formed on ship structure, said members having overlapping surfaces and being aligned such that the members are free to move relative to each other in any direction except toward each other when the surfaces are in effective mutual contact, and wherein the buffer means comprises a plurality of such cooperating first and second members spaced from the others and arranged relative to one another such that each adjacent pairs thereof develop appropriately directed reaction forces so that said pairs act as a guide to confine the direction of thermal growth for the particular part of the tank with which the first member is formed.

3,428,206
BOTTLE CRATE OF SYNTHETIC MATERIAL

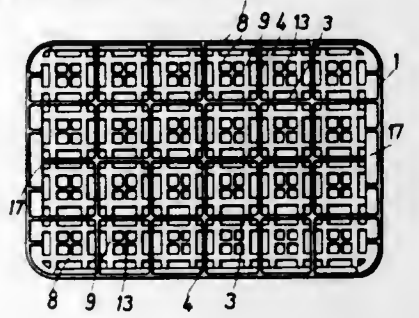
Alexander Schoeller, Gottingen, Germany, assignor to Firma Alexander Schoeller & Co., Flaschenkastenwerk, Gottingen, Germany, a corporation of Germany
Filed Apr. 26, 1965, Ser. No. 450,635
Claims priority, application Germany, Apr. 25, 1964, Sch 35,043, Sch 35,045; Jan. 16, 1965, Sch 36,392
U.S. Cl. 220—21 **6 Claims**
Int. Cl. B65d *1/24, 21/02, 57/00*

A molded plastic bottle transport crate having an upper and lower frame spaced vertically apart and rigidly connected via supporting wall portions at positions intermediate the corners of the crate defining corner spaces and central spaces therebetween and including reinforcing ribs on said wall portions projecting inwardly into the crate and leading into the partitions within the lower frame forming the compartments.



3,428,207
LOW BOTTLE CRATES OF SYNTHETIC MATERIAL

Alexander Schoeller, Industriegelande, Gottingen, Germany
Filed Sept. 8, 1966, Ser. No. 577,862
U.S. Cl. 220—21 **7 Claims**
Int. Cl. B65d *1/24, 21/02, 57/00*

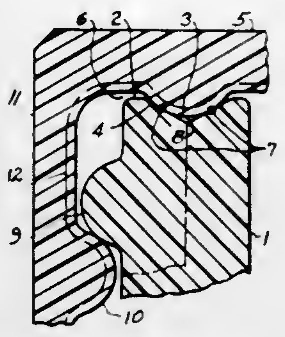


A low bottle crate of synthetic material which comprises a plurality of outer walls and a bottom connected with the outer walls and including bottom bars disposed parallel to the outer walls and crossing each other. A framework is adapted to receive bottles and including disposed parallel to the outer walls of the crate and connected with the bottom bars to define pockets for receiving the bottles. The number of the bottom bars in longitudinal and crosswise directions in each of the pockets is doubled compared with the number of pockets in each of the directions. The bottom bars are disposed such that their crossing points define squares arranged symmetrically in the bottom of each of the pockets. The open distance of the squares from each other is smaller than the diameter of the bottle heads. Limiting means for the penetration of the head of a bottle are disposed in a lower crate of superposed crates, and the framework walls have recesses within the range of their crossings and upwardly leading in their center from the bottom.

3,428,208
DIRECT SEALS BETWEEN RECEPTACLES AND CLOSURES THEREFOR

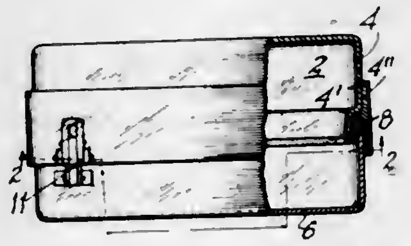
John Kosar, % Anchor Engineering Co., 29—09 Bridge Plaza N., Long Island City, N.Y. 11101
Continuation of application Ser. No. 423,950, Jan. 7, 1965. This application Apr. 10, 1967, Ser. No. 629,834
U.S. Cl. 220—39 **18 Claims**
Int. Cl. B65d *41/04*

1. A device for effecting a direct seal between two opposing walls, comprising an annular side wall and a transverse top wall over said side wall, a container having an opening defined by said side wall terminating in a top surface forming a pair of corner portions, a closure cap having said top wall and a peripheral skirt depending therefrom, said skirt surrounding the uppermost portion of said side wall, and said top wall covering said opening and said top surface, the inner face of said top wall being provided with an annular recess forming a pair of flank portions for sealing engagement with said corner portions, at least one of said opposing walls being resiliently deformable by the other, and thread means within said skirt and said side wall for urging said walls toward each other to thereby effect a seal between said corner portions and said blank portions.



3,428,209
GASKETED CLOSURE

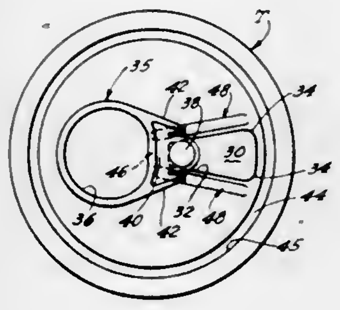
Henry J. Brucker, Summit, and Bernard M. Jenkins, Chatham, N.J., assignors to American Aluminum Company, Mountainside, N.J., a corporation of New Jersey
Filed Mar. 21, 1968, Ser. No. 714,872
U.S. Cl. 220—46 **6 Claims**
Int. Cl. B65d *45/20, 53/02;* **F16j** *15/48*



A closure apparatus utilizes a gasket retained in a U-shaped member wherein an arcuate portion of the gasket provides an immediate seal with a second member when the members are moved toward each other. Further movement of the members causes the gasket material to roll in against the side of the second member to provide a secure seal.

3,428,210
CAN END WITH OFF CENTER RIVET

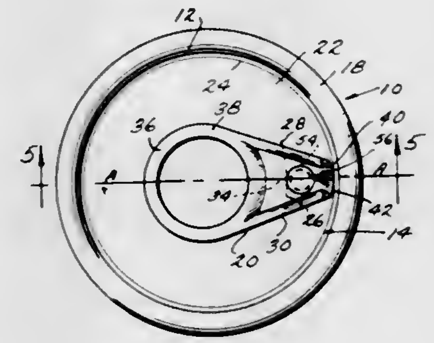
Omar L. Brown, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed July 15, 1966, Ser. No. 565,538
U.S. Cl. 220—54 **12 Claims**
Int. Cl. B65d *17/20, 7/04, 17/24*



This disclosure describes an easy-opening container wall having a tab secured to a tear strip. In one form of the invention the tab has two fulcrum end portions which are adapted to bear against ribs formed integrally with the container wall. In another form, the residual web defining the tear strip is of maximum thickness along nonlinear portions of the score line adjacent the trailing end of the tear strip to thereby prevent spontaneous removal of the tear strip.

3,428,211
CONTAINER CLOSURE HAVING PULL-TAB OPENING MEANS

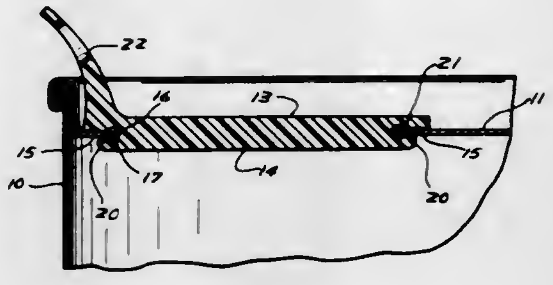
Jerry F. Scharf, Havertown, and William J. Lohr, Philadelphia, Pa., and Vinson S. Potts, Camden, N.J., assignors to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York
Filed Oct. 24, 1966, Ser. No. 589,018
U.S. Cl. 220—54 **12 Claims**
Int. Cl. B65d *17/20, 17/24, 7/04*



A container closure having a tear strip opener wherein the removable panel which is defined by a primary score line includes a secondary score line and a pull tab which is secured to the removable panel at the collar portion formed by the primary and secondary score lines. The pull tab extends transversely with respect to the primary and secondary score lines and a lifting of the free end of the tab will rupture the secondary score line and initiate rupture of the primary score line and twist the collar portion to facilitate subsequent rupture of the primary score line.

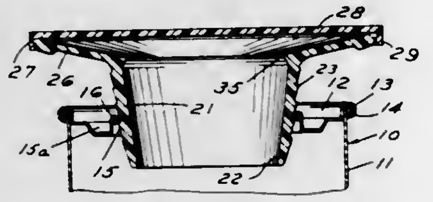
3,428,212
CLOSURE FOR EASY OPENING CANS

Myles A. Rohrlick, 5 Maume Circle, Hampton, Va. 23366
Filed Apr. 20, 1967, Ser. No. 632,332
U.S. Cl. 220—60 **1 Claim**
Int. Cl. B65d *43/10, 39/00, 17/24*



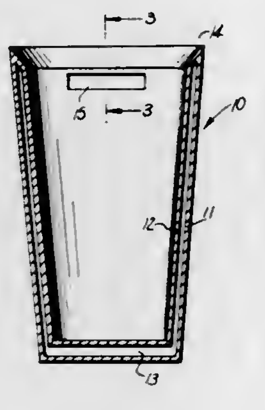
The present disclosure is directed toward a cover or stopper that will fit into the generally triangularly shaped (interpreted to include keyhole shaped) opening now common in the easy opening cans used for soft drinks and beer. The cover is made of an elastomeric material and has a peripheral groove which is of size to receive the edges defining the opening in the can. The groove itself is formed to grip tightly onto these edges to give a tight seal when in place to prevent flavor or the fizz from going out of the drink in the can. In addition, the cover has a stop lip or shoulder that prevents it from being pushed through the opening into the inside of the can and a tab that permits easy removal when the can is again to be drunk out of.

3,428,213
PAINT TYPE CAN AND ATTACHMENT
Robert William Stephens, 17330 Braile,
Detroit, Mich. 48219
Filed Jan. 11, 1967, Ser. No. 608,549
U.S. Cl. 220—90 **2 Claims**
Int. Cl. B65d *25/20, 43/04;* **B65b** *39/00*



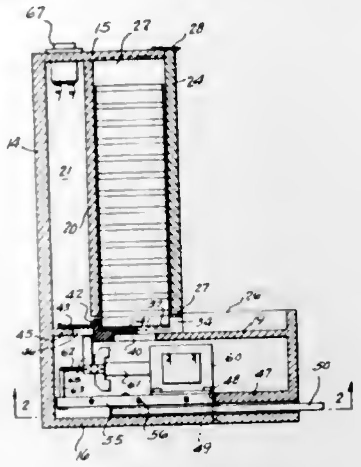
There is disclosed herein an attachment which is adapted to fit into an opening in the top wall of a paint container. The attachment is preferably made of organic plastic material and has an annular wall with a plurality of vertically spaced, wedge shaped, annular rings on the outer surface thereof. The diameter of the rings increases progressively upwardly along the wall to produce a plurality of shoulders of increasing diameter. When the attachment is placed within an opening in the top wall of the container, one of the shoulders engages the side of the opening in the container depending upon the diameter of the opening in the container. The attachment includes an integral annular lip that extends outwardly and upwardly from the outer periphery of the annular wall, the diameter of the lip being greater than the diameter of the side wall of the container. The attachment further includes a cover which produces an airtight seal with the annular lip so that the attachment need not be removed from the container.

3,428,214
SPILL-PROOF DRINKING CUP
Vernon C. De Leon, R.F.D. 2,
East Chatham, N.Y. 12060
Filed Sept. 27, 1967, Ser. No. 670,857
U.S. Cl. 220—90.4 **1 Claim**
Int. Cl. A47g *19/22;* **B65d** *5/40, 11/16*



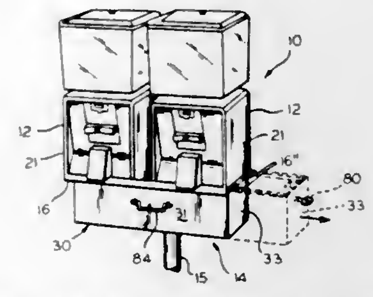
A vessel for drinking liquids from having an inner reservoir chamber with an opening through the inwall near its upper extremity for the ingression of fluids when the container or vessel is shaken. This vessel prevents a person while walking across a room from spilling the contents from the top area of the vessel.

3,428,215
DISPENSER HAVING MEANS TO DISPENSE ARTICLES ALTERNATELY FROM A PLURALITY OF SOURCES
James E. Wells, 607 Pleasant Oaks Drive,
Dallas, Tex. 75217
Filed Aug. 18, 1967, Ser. No. 661,685
U.S. Cl. 221—116 **9 Claims**
Int. Cl. A47f *1/10*



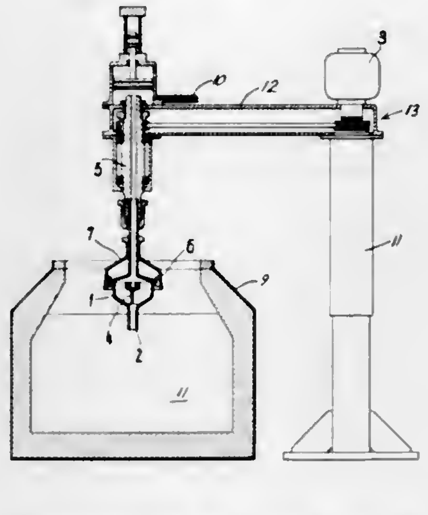
A matchbook dispenser consisting of a vertical housing with a bottom extension having a top wall serving as a delivery surface. The housing has a storage space for vertically-stacking two piles of book matches with a removable vertical partition therebetween. The housing has a removable front wall providing access to the storage space. A transversely-slidable block is provided in the bottom extension with a horizontal actuating lever projecting forwardly through a slot in the front wall of the bottom extension. Forwardly-slidable pusher plates are provided beneath each stack of book matches, engageable with the lowermost matchbook to push it out through a delivery slot leading to the delivery surface. A solenoid is carried by the slidable block, the plunger of the solenoid having an upstanding arm engageable with either pusher plate to push it forwardly responsive to the energization of the solenoid. A control switch for energizing the solenoid is provided on top of the vertical housing. In a modification the pusher plates are pushed forwardly mechanically responsive to operation of the actuating lever.

3,428,216
VENDING MACHINE AUTOMATIC LOCKING CASH BOX
Richard K. Bolen, Morris, Ill., assignor to The Northwestern Corporation, Morris, Ill., a corporation of Illinois
Filed July 18, 1967, Ser. No. 654,132
U.S. Cl. 221—154 **9 Claims**
Int. Cl. G07f *9/06*



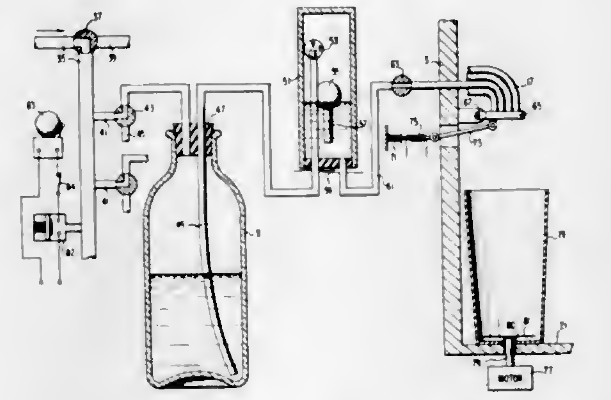
An automatic locking cash box for bulk vending machines and vending machine stands is provided with a cover having coin slots through which coins from the coin chutes of the vending machines may drop into the box. The cover is provided with means for closing said coin slots and actuating means responsive to tripping mechanisms for moving said coin slot closing means into operative positions automatically when said coin box is removed from the vending machine or from the vending machine stand.

3,428,217
METHOD AND APPARATUS FOR SCOOPING UP MOLTEN METALS
Adolf Diez, Heilbronn, Germany, assignor to Karl Schmidt G.m.b.H., Neckarsulm, Wurttemberg, Germany, a corporation of Germany
Filed May 31, 1967, Ser. No. 642,540
Claims priority, application Germany, June 3, 1966, Sch 39,067
U.S. Cl. 222—1 **12 Claims**
Int. Cl. G01f *11/10;* **B67d** *3/00*



A method for scooping up liquids and to an apparatus for the practice of this method. A scooping vessel, after immersion into the molten metal bath is set in rotation, so that, by the utilization of centrifugal force, the metal can be kept in the scooping vessel for as long as desired.

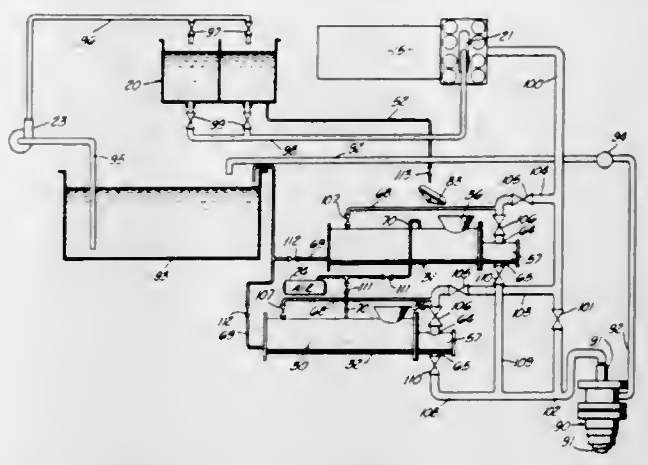
3,428,218
LIQUID DISPENSER
Felix V. Coja, 1523 22nd St., NW.,
Washington, D.C. 20037
Continuation-in-part of application Ser. No. 444,080, Mar. 30, 1965, now Patent No. 3,305,132. This application May 12, 1966, Ser. No. 549,706
U.S. Cl. 222—23 **11 Claims**
Int. Cl. B67d *5/10, 5/38*



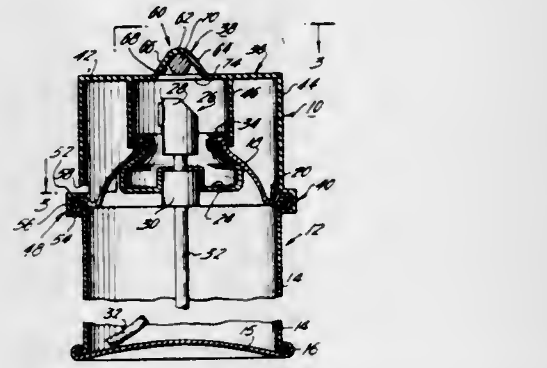
A dispenser for plural, mixed, alcoholic or non-alcoholic beverages, from the original bottles. A plurality of push buttons controls the sequence and amount of each ingredient. A separate push bottom controls a motorized mixer. A means to ensure a full serving of each ingredient is also provided.

3,428,219
WELL GRAVEL PACKING APPARATUS
James R. Solum, Huntington Beach, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Filed May 8, 1967, Ser. No. 636,857
U.S. Cl. 222—134 **18 Claims**
Int. Cl. B67d *5/60;* **G01f** *11/20, 11/14*

An apparatus for continuously packing gravel in a well at elevated pressures having a fluid pump and a pair of pressure vessels for containing and injecting the gravel into the flowing fluid with the fluid flow being alternated between the vessels for continuous operation to allow filling of the inactive vessel with gravel while injecting gravel from the other vessel. The vessels include an end portion through which the fluid flows and an internal feed mechanism for positively injecting gravel into the fluid flowing through the end portion at a predetermined rate which may be varied to produce any desired gravel-fluid ratio.



3,428,220
PRESSURIZED CONTAINER WITH CAP HAVING SUSPENSION MEANS FOR DISPLAY PURPOSES
Harold Osrow, Mineola, N.Y., assignor to Osrow Products Company, Inc., Glen Cove, N.Y.
Filed Nov. 17, 1966, Ser. No. 595,111
U.S. Cl. 222—153 **11 Claims**
Int. Cl. B67d *5/32, 5/64;* **B67b** *5/00*



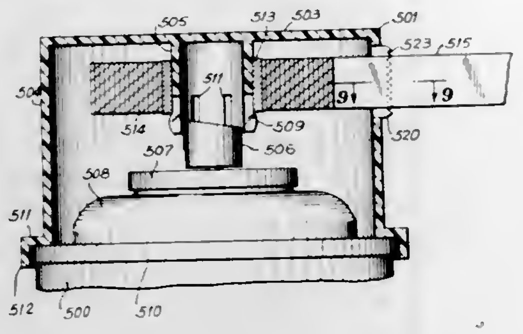
The combination of a pressurized container of substantial weight and a closure cap for the container, which closure is adapted to be hung from a horizontally elongated display hanger. The closure is an overcap having an open bottom which is removably engageable with the top of the container. Tamper-proof means securely affixes the closure to the container. The closure further includes a bail-type suspension integral with and extending upwardly from the top wall of the closure. The force required to separate the closure from the container is greater than the weight of the container.

3,428,221
INSECTICIDAL TAPES AND METHODS OF USING THE SAME
Irving Landsman, 3530 Henry Hudson Parkway E., and Emanuel Landsman, 2727 Palisade Ave., both of Bronx, N.Y. 10463
Filed Jan. 3, 1967, Ser. No. 607,033
U.S. Cl. 222—182 **5 Claims**
Int. Cl. B65d *83/14;* **B26f** *3/02*

The present disclosure sets forth an absorbent tape carrying a pressure sensitive covering which may be applied to shelving around baseboards, sinks, floors and basements and other places of entry for insects which will carry or to which has been applied a liquid dispersion of a residual insecticide.

The absorbent material, which may desirably consist of matted or less desirably woven or other fibrous material, will be designed to absorb and store up the residual insecticidal material for long periods of time; for example, for a week to several months or longer. The tape may be removed from the container and then cut at intervals by the person applying the tape, so that it will fit the area and length of flooring or shelving desired. The spray can may then be used to spray the tape with the specific insecticide having the residual effect.

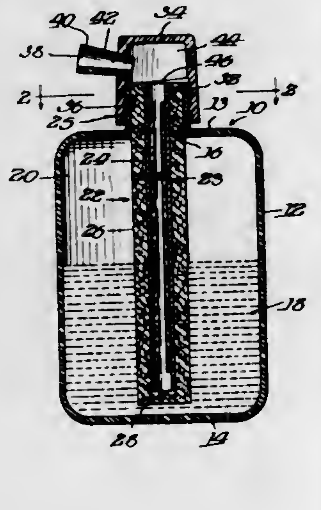
The tape if woven has readily frangible or breakable warp threads or threads extending longitudinally of the tape, so that it can be readily cut or ruptured without an additional cutting instrument by the edge of the holder or by saw teeth molded into the cap. Where the absorbent material consists of matted fibers or felted material which is readily breakable or shearable, there may be applied between such matted or breakable material and the pressure sensitive adhesive coating a readily breakable plastic or paper strip material.



The association of the tape with the spray can is desirably accomplished by inserting the coiled tape in the cap of the spray can, with the cap being desirably molded of plastic and having a slot with a serrated cutter edge so as to break the tape in desired lengths. The tape may also be mounted on the side of the can or otherwise clipped onto the can so that the housewife or other applicator may first clip the tape and then spray the tape with the insecticidal composition.

3,428,222
FOAM DISPENSING DEVICE

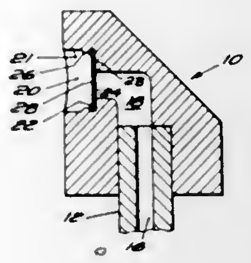
Hershel Earl Wright, 18 8th Drive, Decatur, Ill. 62525
Filed Nov. 7, 1966, Ser. No. 592,516
U.S. Cl. 222—187 **10 Claims**
Int. Cl. B65d *3/00;* **B67d** *5/58*



A device for producing and dispensing foam including a compressible reservoir containing foamable liquid and air and having a discharge orifice releasably secured to the upper portion thereof. A hollow foam producing element capable of wicking or capillary action with the foamable liquid is inserted into the reservoir so as to contact the air and depend into the foamable liquid with its central cavity in communication with the discharge orifice. Compression of the reservoir forces air inwardly through the wall of the element to produce foam within the element cavity from the foamable liquid within the element wall due to capillary action and effects discharge of the foam so produced from the discharge orifice.

3,428,223
AEROSOL DISPENSERS AND ACTUATOR BUTTONS THEREFOR

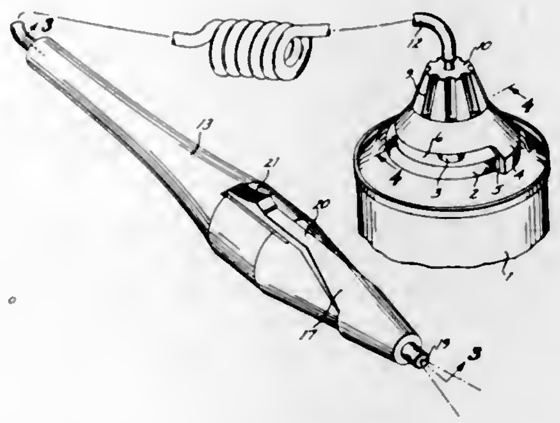
Edward M. Lewiecki, Hingham, and Meyer J. Shnitzler, Brookline, Mass., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,108
U.S. Cl. 222—398 **4 Claims**
Int. Cl. B65d *83/14*



The present invention is concerned with aerosol dispensers having anti-clog means therein and more particularly with aerosol dispensers in which the discharge passage is sealed off during non-use by an expandable, resilient diaphragm having an expandable discharge orifice therein.

3,428,224
AEROSOL COATINGS APPLICATOR

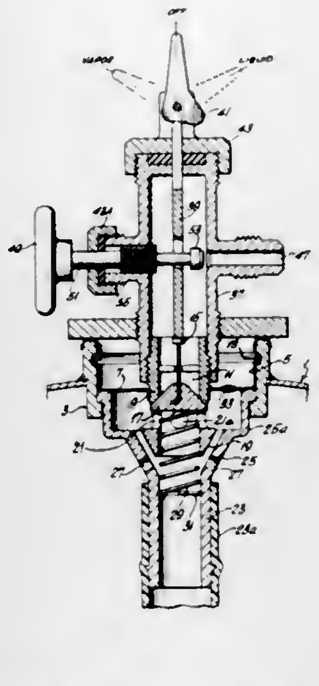
Roland C. Eberhardt, 2716 S. Barbara St., and George B. Douglas, 550 40th St., both of San Pedro, Calif. 90731
Filed Nov. 3, 1966, Ser. No. 591,863
U.S. Cl. 222—402.13 **5 Claims**
Int. Cl. B65d *83/14, 47/08, 47/20*



In order that the material within a pressurized container may be effectively delivered to the desired surface, a flexible tube is used which extends from the pressurized container to a valve which is carried in the hand of the user. This flexible tube must be easily attachable to the pressurized container by a removable cap, and also the valve in the nozzle must be readily operable by the fingers of the user. Also the applicator must be reuseable on a pressurized can so that the same applicator can be used for a considerable period of time.

3,428,225
VAPOR-LIQUID WITHDRAWAL SELECTOR VALVE

Gary G. Winters, Kendall Park, N.J., and William J. Hamel, St. Albans, and Richard O. Spencer, Dunbar, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed May 11, 1967, Ser. No. 637,761
U.S. Cl. 222—402.17 **3 Claims**
Int. Cl. B65d *83/00;* **F16k** *45/00*

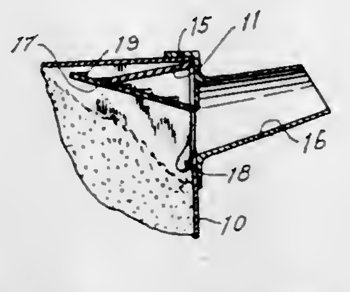


A valve device has been provided for attachment to the opening on top of a pressurized container and adapted for the selective withdrawal of liquid or vapor therefrom. It comprises a closure cap such as a standard aerosol valve cap securely fitted within a spud in the opening of the container. The closure cap has a closed bottom end with a central opening adapted to threadedly receive a hollow externally threaded body. Inside the container, there is a funnel-shaped structure defined by a lower tubular member and an upper truncated conical section securely engaged into the closure cap. The conical section contains at least one, but preferably several perforations circumferentially spaced for the passage of vapor. A depressible pin extends centrally through the hollow externally threaded body. The pin is integrally attached at its lower end to a unitary structure consisting of an upper seat, a lower seat and means for connecting the two seats. A hollow valve body with internally threaded lower end is threadedly engaged onto the hollow externally threaded body. An elongated member extends centrally through the valve body having a lower end which terminates adjacently above the upper end of the pin. The upper end of the elongated member is connected to a selector lever which is adapted to lower the elongated member so as to depress the pin and thereby lower the two seats so as to withdraw either liquid or vapor depending on the relative positions of the seat and the vapor passages. The valve body is also provided with an outlet for the discharge of liquid or vapor.

3,428,226
POURING SPOUT FOR DRY PRODUCT CONTAINERS

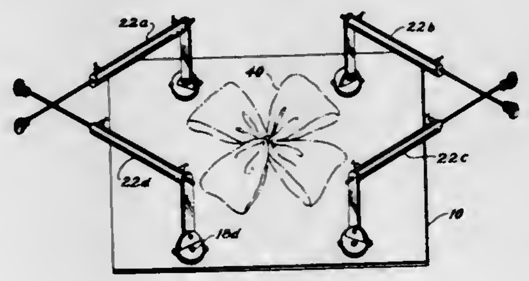
Arthur L. Lanahan, 1894 17th Ave., San Francisco, Calif. 94122
Filed Aug. 11, 1966, Ser. No. 571,867
U.S. Cl. 222—569 **4 Claims**
Int. Cl. B65d *5/74, 25/40*

This device is a spout forming attachment for cartons which serves the dual function of providing means for displacing a scored push-in portion of detergent cartons and the like having a pouring opening defined by a push-in flap along an upper edge thereof and also provides an extending spout through which the contents of the carton is directed to a point of use. A novel feature being that when the spout forming attachment is applied to a carton the inturned pushed in flap of the carton will co-operate with the spout forming device to hold the spout firmly upon the carton.



3,428,227
BOW FRAME

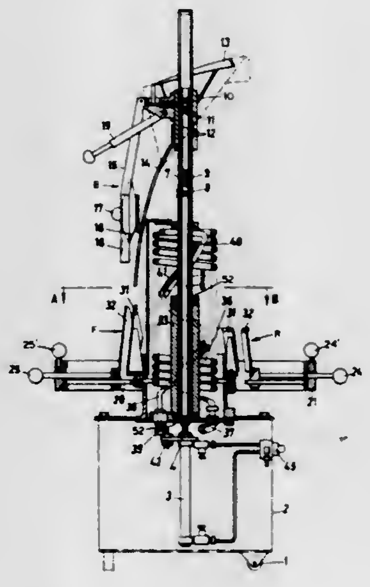
Joseph W. Cavoli, Brooklyn, N.Y., assignor to Artistic Packaging, Inc., Brooklyn, N.Y.
Filed Jan. 8, 1968, Ser. No. 696,384
U.S. Cl. 223—46 **1 Claim**
Int. Cl. A41h *43/00;* **D04g** *5/00*



A device utilizing four pneumatic cylinders to hold a ribbon bow under tension during tying, and then release it rapidly.

3,428,228
GARMENT-TREATING MACHINE FOR OUTER COATS AND JACKETS

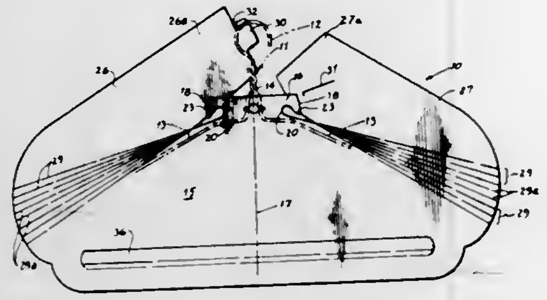
Manfred Frauendorf, Lortzingstr. 1, Nuremberg, Germany
Filed Nov. 15, 1966, Ser. No. 594,556
Claims priority, application Germany, Mar. 26, 1966, N 28,274
U.S. Cl. 223—70 **9 Claims**
Int. Cl. A41h *5/00*



Garment-treating machine for shaping outer coats and jackets, comprising a shoulder supporting portion for freely suspending the garments, clamping means for the bottom hems, breast and revers or lapel supported by the shoulder supporting unit which is mounted on a lift bar supported by a pneumatic or hydraulic piston for upward and downward movement to adjust the vertical height of the shoulder supporting unit and thereby stretch the garment, a heating coil and a steaming coil for steam treating the garment and an air supply source.

3,428,229
GARMENT HANGER DEVICE

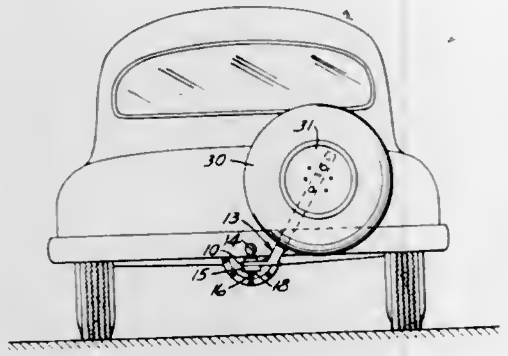
Irving David Tiss, 2 Archbridge Lane, Springfield, N.J. 07081
Filed Nov. 1, 1967, Ser. No. 679,820
U.S. Cl. 223—87 **4 Claims**
Int. Cl. A47j *51/08*



This device, adapted to be placed over a triangular garment hanger, consists of a flat blank of stiff material having a front panel, two flaps at the upper portion of the panel and a collar spreader between the flaps across the top of the vertical center line of the panel. The flaps are adapted to be folded down along fold lines that diverge outward and down from the ends of the collar spreader. The fold lines thus form a half-conical portion at each side of the panel, sloping down and adapted to rest on the shoulder supports of a garment hanger to provide wider curved shoulder supports than the hanger. The collar spreader is adapted to hold open the collar of a garment hung on the device.

3,428,230
SPARE WHEEL HOLDER

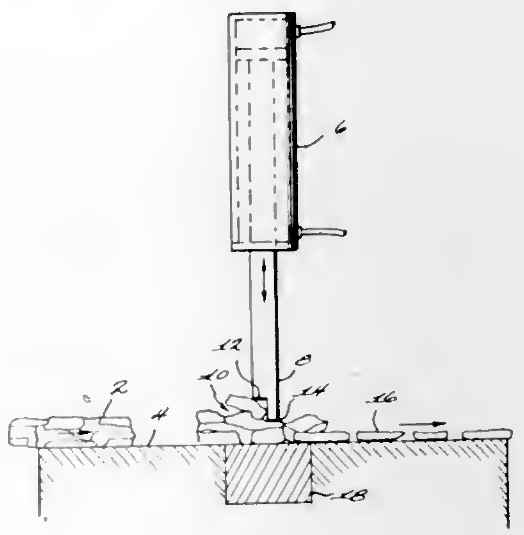
Walter O. Korf, 1074 Euclid Ave., and Kenneth A. Roth, 1201 E. Ross Ave., both of St. Paul, Minn. 55106
Filed Nov. 16, 1967, Ser. No. 683,726
U.S. Cl. 224—42.06 **9 Claims**
Int. Cl. B62d *43/02, 43/08*



The spare wheel holder consists essentially of simplified attachment means plus a single metal bar held by the attachment means in an upwardly projecting direction when the spare wheel holder is operably affixed to a vehicle. The holder is preferably attached at the rear of a vehicle to a trailer hitch of the ball-type, but can be attached to a bumper or other bar-like part anywhere on the vehicle. The single metal bar is characterized by having an essentially flat vertically-oriented rim mounting plate section as its uppermost part, a sloping shift section connected to that rim mounting plate section through a bend of the metal bar, a tire recess plate section, and preferably a horizontally-projecting tire rest plate. The rim mounting plate section has a fixed bolt position at one end thereof and at least two alternative bolt positions at measured predetermined increments from the other end thereof. These bolt positions are used in mounting the rim of the spare wheel to the spare wheel holder.

3,428,231
SEPARATION OF FROZEN HOG SKINS

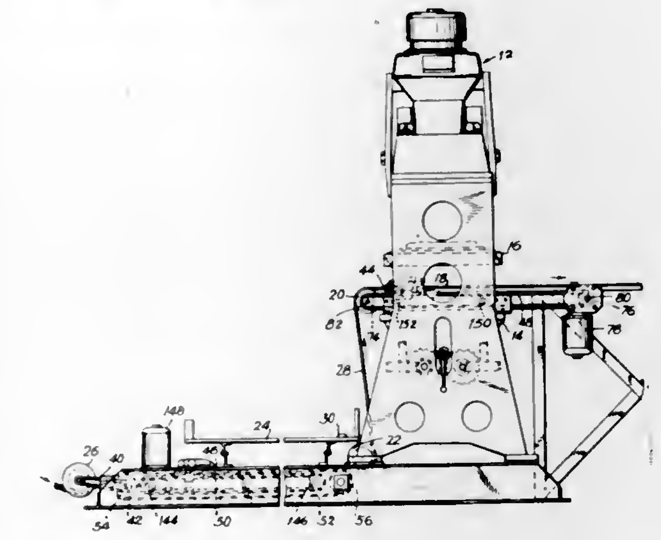
Robert H. Bundus, Riverside, Ill., assignor to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
Filed Apr. 12, 1967, Ser. No. 630,392
U.S. Cl. 225—1 **4 Claims**
Int. Cl. B26f *3/00, 3/02;* **B02c** *1/00*



Frozen hog rinds are separated by the use of a hydraulic ram which shatters the ice crystals without damage to the rinds. Preferably a two step ram is employed to first reduce the thickness of the frozen rinds to 4 to 6 inches and then to two inches.

3,428,232
FEED SYSTEM FOR DIE CUTTING PRESS

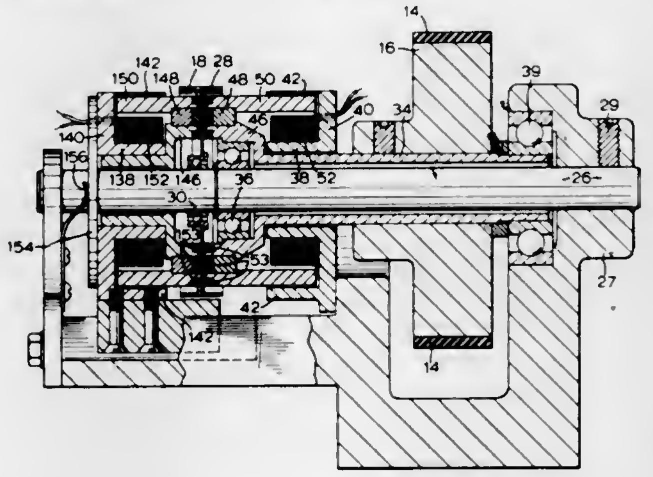
Edgar Haas, New York, N.Y., and Edward Kottsieper, Dresden Mills, Maine, assignors to Herman Schwabe Inc., Brooklyn, N.Y., a corporation of New York
Filed Nov. 21, 1966, Ser. No. 595,939
U.S. Cl. 226—115 **30 Claims**
Int. Cl. B65h *23/04;* **B26f** *1/38*



1. A feed system for use with a die-cutting press having a cutting block and a platen movable thereover to operate on a die which is manually moved over a section of flexible material resting on the cutting block, said feed system comprising an upper roll in front of the block, a lower roll near the floor at the press, a platform for the operator located in front of the press and somewhat raised from the floor, means to guide the material beneath the platform to the lower roll and thence upward to the upper roll and thence rearward through the press, intermittently operable feed mechanism to feed the material through the press from front to rear, and control means whereby the operator, after cutting the desired pieces in the section of material in the press, may start the feed mechanism to feed a new uncut section of material into the press, the cut section simultaneously moving out of the rear of the press.

3,428,233
DRIVE MEANS FOR TAPE OR RIBBONLIKE MATERIAL

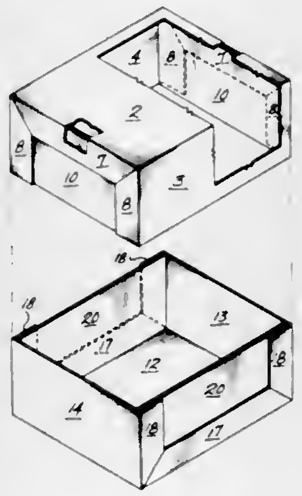
Paul K. Hokkinen, Toronto, Ontario, Canada, assignor to Ferranti-Packard Electric Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed May 9, 1966, Ser. No. 548,764
U.S. Cl. 226—178 **3 Claims**
Int. Cl. B65h *17/22, 17/44;* **F16d** *67/02*



A tape drive member is located between and in continuous frictional contact with two differentially rotating members. Selectable forces determine whether the tape drive member rotates at the speed of one or the other differentially rotating members. Heat dissipation is improved and inertia reduced by locating the power take-off surface of the tape drive member radially outwardly of the frictional contact areas.

3,428,234
REINFORCED TELESCOPIC CONTAINER

Adrian P. Du Barry, Jr., Alameda, Calif., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Jan. 19, 1967, Ser. No. 610,317
U.S. Cl. 229—23 **1 Claim**
Int. Cl. B65d *13/00*



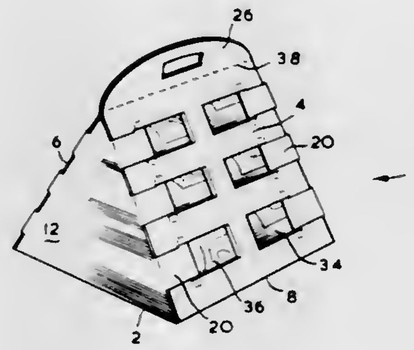
A container for shipping commodities having a bottom panel and side panels integrally connected to the bottom panel and extending at right angles. A double thickness end panel adhered to each end of the bottom and side panels. A cover construction having a top panel and end panels integrally connected to the top panel and extending at right angles. A double thickness side panel adhered to each end of the top and end panels.

3,428,235
CAN CARRIERS

Pasquale Randazzo, 283 Livingstone Road, Scarborough, Ontario, Canada

Filed Sept. 22, 1967, Ser. No. 669,752

U.S. Cl. 229—40 **3 Claims**
Int. Cl. B65d *5/12, 5/06*



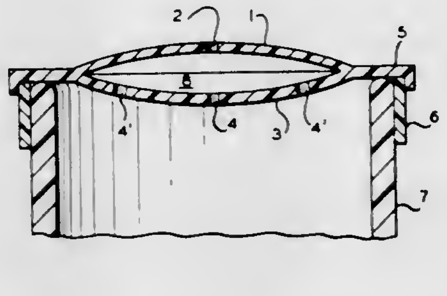
A can carrying carton including a base and interlocking side and end walls having in each of its sides a plurality of vertically spaced horizontal rows of slots, each of said slots of generally rectangular shape and each of said rows consisting of two slots in endwise spaced relation, providing windows at each side of the carton adjacent the respective edges of said sides thereof through which the contents of the carrier can be readily observed.

3,428,236
CONTAINER COVER

Raymond E. Bidwell, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 11, 1966, Ser. No. 564,157

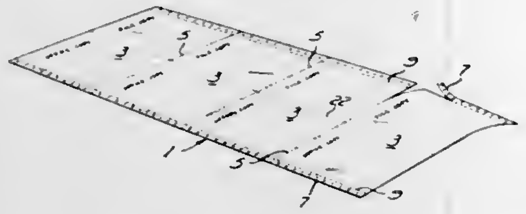
U.S. Cl. 229—43 **6 Claims**
Int. Cl. B65d *51/16*



A container cover comprising spaced apart inner and outer apertured cover members, the inner member curving towards the interior of the container and the outer member curving away from the interior of the container, the juncture of said members defining a peripheral flange which terminates in a downwardly extending lip, and a downwardly extending cylindrical member connected to the interior side of said lip.

3,428,237
COMBINED MESSAGE AND REPLY ENVELOPES

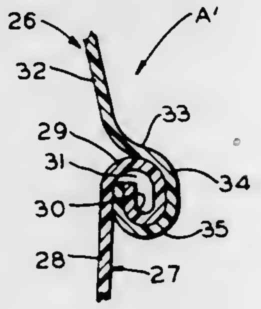
James A. Dowen, Shelby, Ohio, assignor to Shelby Business Forms, Inc.
Filed July 18, 1967, Ser. No. 654,221
U.S. Cl. 229—69 **4 Claims**
Int. Cl. B65d *27/10, 27/06*



A business form comprising a combined mailable envelope carrying a concealed message and a return envelope for a response.

3,428,238
PLASTIC CONTAINERS

Richard K. Shelby, Chicago, and Jay W. Rapp, Park Ridge, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,990
U.S. Cl. 229—5.6 **25 Claims**
Int. Cl. B65d *3/10, 11/20*

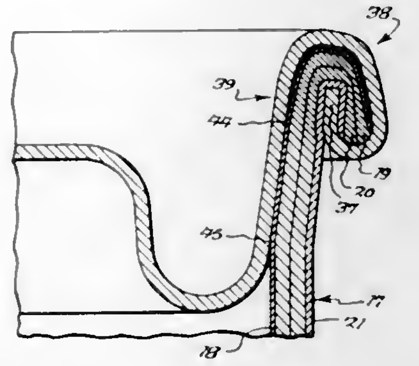


A two-piece plastic container which comprises a receptacle portion and a cover member. Each of these sections has outwardly flaring rims and downwardly extending flanges. In one embodiment of the invention the flange of the cover member frictionally engages the flange of the receptacle and is provided with an upwardly struck member which is fitted into a groove on the receptacle. In one embodiment, the flange on the cover member is spaced from the wall of the receptacle. In another embodiment, both the flanges on the receptacle and cover member have upwardly struck portions which are fitted into the groove on the receptacle. In this embodiment, the upwardly struck portions engage the wall of the receptacle. In a third embodiment, the reversely bent portions are curled so they become horizontally disposed. The present invention covers both containers which are circular in horizontal cross section and which are rectangular in horizontal cross section. The rectangular containers are provided with a U-shaped reinforcing groove.

3,428,239
SPIRAL WOUND CAN FOR PACKAGING BEVERAGES UNDER SUBSTANTIAL PRESSURE

Thomas M. Wannamaker, Bastrop, La., and Charles I. Carter and Rupert O. Rogers, Mobile, Ala., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 7, 1966, Ser. No. 585,174
U.S. Cl. 229—5.6 **34 Claims**
Int. Cl. B65d *3/22, 3/14*

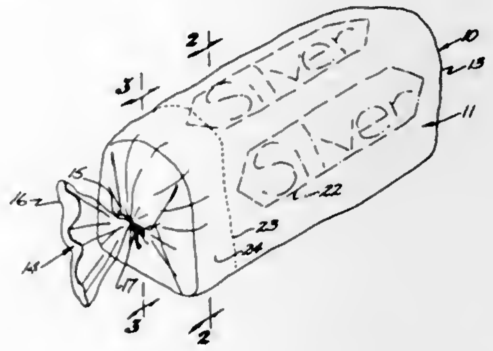
A can for packaging fluid products such as malt beverages which msut be maintained under substantial pressure. The can is formed from a series of concentric, spirally wound plies including an inner barrier ply, a body ply and a label ply. The inner barrier ply is formed as a laminate of a self-supporting, substantially pinhole free, gas pressure tight film and a thin, continuous layer of a slip and sanitary coating. The body ply comprises one or more paper can stock layers. The inner surface of the can stock layer, the outer surface of the barrier ply film, or both such surfaces have a continuous coating of a heat sealable thermoplastic, e.g., polyethylene. The label ply has a heat sealable thermoplastic layer heat sealed to the outer surface of the body ply, a paper layer overlying the inner layer, an intermediate thermoplastic layer and a thin metal foil layer.



The can end closure has a central circular panel section, an annular panel draw section, an annular shoulder section disposed at a relatively small angle to the vertical and having a maximum diameter greater than the internal diameter of the can body, an annular skirt section and an annular flat section joining the skirt and shoulder sections. The width of the flat and height of the skirt are relatively great to accommodate a substantial quantity of can body material in the end seam. The height of the chime and the shoulder angle to the vertical are selected to provide a substantial annular area of contact between the shoulder and the inner surface of the can body axially inwardly of the can end seam.

3,428,240
PACKAGE FOR SLICED BREAD

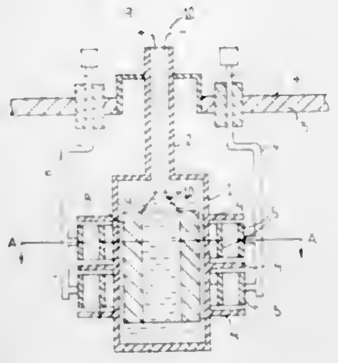
Robert R. Morris, Dearborn, Mich., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 5, 1968, Ser. No. 703,034
U.S. Cl. 229—87 **4 Claims**
Int. Cl. B65d *65/00, 75/00, 33/02*



A package for a sliced loaf of bread. The package comprises an outer plastic bag and an inner wrap of waxed paper. The inner wrap is printed and includes sealed end flaps which completely enclose the bread. The inner wrap is provided with a peripheral line of perforations adjacent one end to permit the end of this inner wrap to be completely removed. Other longitudinally spaced peripheral perforation bands can be provided. The outer wrap is a plain polyethylene bag having an open end adjacent to the perforated end of the inner wrapping, the polyethylene bag being releasably closed by a conventional tie formed of a strip of plastic, wire or the like.

3,428,241
HIGH VACUUM PUMP

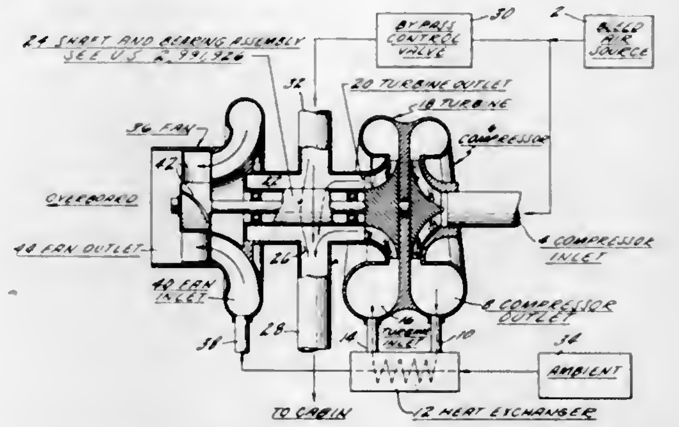
Franz X. Eder, Munich, Germany, assignor to The Bendix Corporation, Rochester, N.Y., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,801
Claims priority, application Switzerland, May 18, 1966, 7,362/66
U.S. Cl. 230—69 **3 Claims**
Int. Cl. F04b *39/00;* **F04f** *11/00*



The invention relates to a high vacuum pump capable of producing ultra-high vacuums combining known pumping principles associated with ion, getter and cryo type pumps in a manner to enhance and improve the net pumping capability and self sufficiency. The pump is comprised of a pair of electrodes having a high voltage impressed thereacross, producing a glow discharge, ionizing the gas to be pumped. An associated magnetic coil produces a field suitably aimed, forcing the electrons to a longer mean free path, producing a high ionization probability. The invention is particularly characterized by supercooling one electrode as by a liquified gas and forming the surface of the other electrode with a getter material. The magnetic coil is also immersed in liquified gas and thus has superconducting properties.

3,428,242
UNITARY SIMPLE/BOOTSTRAP AIR CYCLE SYSTEM

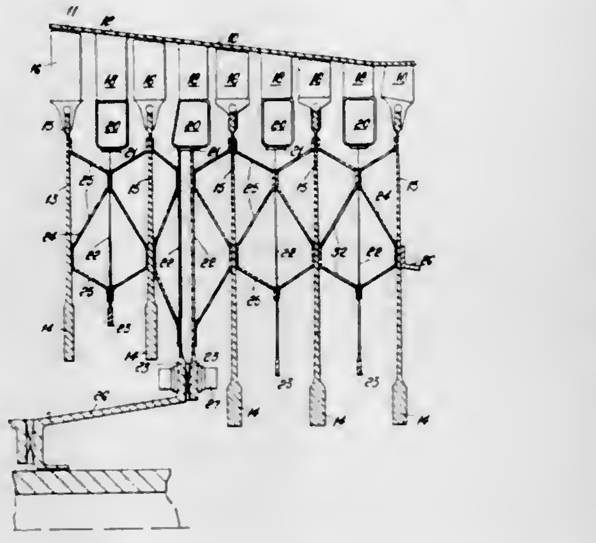
George C. Rannenberg, East Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,081
U.S. Cl. 230—116 **3 Claims**
Int. Cl. F01d *25/14;* **F04d** *13/04*



A single shaft, three-wheel machine includes a turbine which drives a compressor, the compressor receiving high pressure bleed air and passing it through a heat exchanger for driving the turbine, the air output of which is conditioned air for the cabin on an aircraft. Ram or ambient air used as a coolant is forced through the heat exchanger by a fan which is also driven by the turbine shaft. The single shaft design includes passing the cool, conditioned air over the bearings of the machine so as to operate at temperatures compatible with shaft lubrication, and deicing air for maintaining the turbine output slightly above freezing temperatures is supplied by a symmetrical cowl directly from the high pressure bleed air.

3,428,243
COMPRESSORS OR TURBINES FOR GAS TURBINE ENGINES

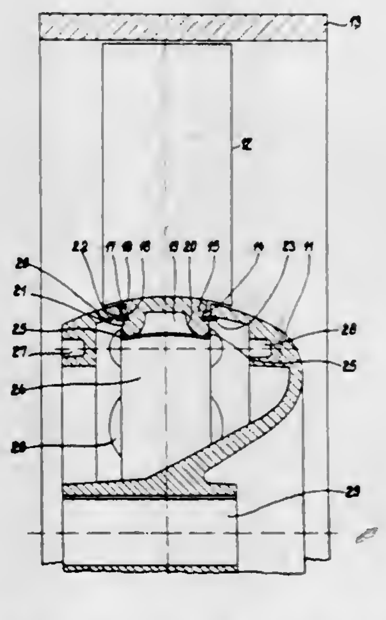
Jack Britt, Ambergate, and Francis Alan Swain, Burton-on-Trent, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Aug. 28, 1967, Ser. No. 663,892
Claims priority, application Great Britain, Oct. 20, 1966, 46,881/66; May 18, 1967, 23,120/67
U.S. Cl. 230—122 **3 Claims**
Int. Cl. F04d *19/02, 29/40*



A turbomachine such as a compressor or turbine for a gas turbine engine is provided with separate thin sealcarrying discs on which are mounted sealing means so that the weight of the rotor discs may be reduced.

3,428,244
BLADED WHEELS

Michael Palmer, Berlin, Germany, assignor to Turbon Ventilatoren- und Apparatebau Gesellschaft mit beschrankter Haftung, Berlin, Germany, a company of Germany
Filed Oct. 21, 1966, Ser. No. 588,619
Claims priority, application Germany, Oct. 22, 1965, T 29,646; July 15, 1966, T 31,687; July 29, 1966, T 31,728
U.S. Cl. 230—134 **19 Claims**
Int. Cl. F04d *29/34, 29/40*

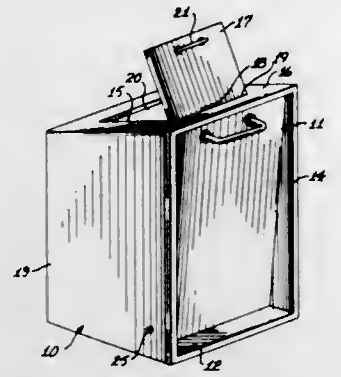


A bladed wheel assembly for fans having a hub and an outer ring and wherein a spring clamp is arranged within the assembly and engages with feet on a plurality of blades and clamps the blades in position therewith.

3,428,245

TRASH CAN CONTAINER

Harold D. Burdett, 3802 S. Grandview, Tempe, Ariz. 85281
Filed Feb. 20, 1967, Ser. No. 617,161
U.S. Cl. 232—43.2 **2 Claims**
Int. Cl. B65d *91/00;* **A47b** *88/00;* **A47f** *5/12*

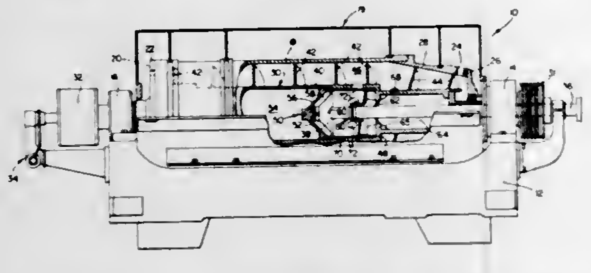


A trash can container having an L-shaped tilting door to support the trash can and to facilitate easy handling in removing and dumping the trash including a closure cover through which the trash is deposited.

3,428,246

CENTRIFUGE APPARATUS

Robert J. Finkelston, Hatboro, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1967, Ser. No. 692,590
U.S. Cl. 233—7 **10 Claims**
Int. Cl. B04b *1/20*

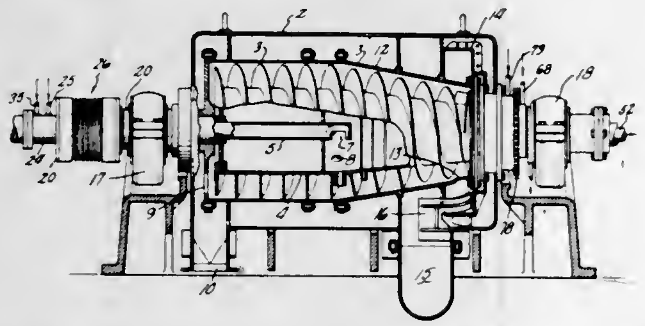


In a continuously discharging centrifuge with a screw conveyor and having a stationary feed tube for delivering feed to a feed chamber within the hub of the screw conveyor, solids are prevented from accumulating in the feed chamber by means of an inclined baffle plate which is disposed in the feed chamber to deflect the solids through passages in the hub leading outwardly to the separating chamber, thereby avoiding erosion or other damage of the feed tube by accumulated solids.

3,428,247

CENTRIFUGE LUBRICATING AND SEAL SYSTEM

Lorenz J. Andresen, Chicago, and John J. Halloran, Jr., Lombard, Ill., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,548
U.S. Cl. 233—7 **5 Claims**
Int. Cl. B04b *1/12, 3/04, 5/00*

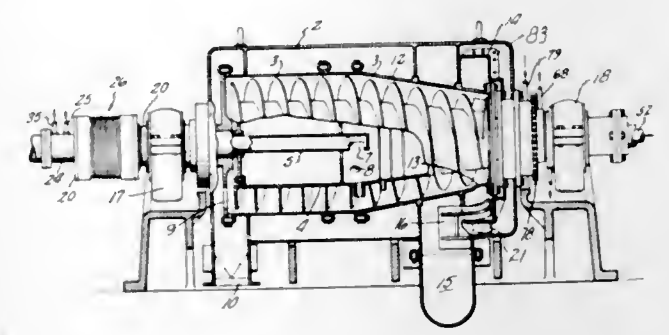


A centrifuge for pressurized high temperature operation on a continuous basis and having a bowl and conveyor, each rotating at different speeds. A continuous flow lubricating system providing lubrication of the bearings between the two differently rotating parts and a seal air system for protecting the oil seals and clearances from the hot dirty air inside the centrifuge.

3,428,248

CONTINUOUS CENTRIFUGE APPARATUS

Lorenz J. Andresen, Chicago, and John J. Halloran, Jr., Lombard, Ill., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,549
U.S. Cl. 233—7 **10 Claims**
Int. Cl. B04b *1/12, 3/04, 5/00*

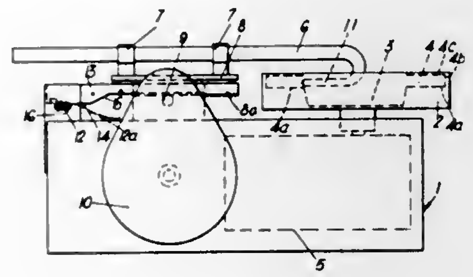


An apparatus for a centrifuge in which dewatered coal is slung into a gutter which is rotating within the surrounding casing. A plow located on the outside diameter of the rotating gutter is in close proximity with the surrounding casing, and positioned at an angle approximately 45° from the direction of motion so that the plow will urge sludge buildup inside the casing axially to a discharge opening.

3,428,249

CENTRIFUGE

David Bent Wheelock, Newbury, and Robert Buckley, Abingdon, England, assignors to Quickfit & Quartz Limited, Stone, Staffordshire, England, a corporation of Great Britain
Filed May 9, 1967, Ser. No. 637,198
Claims priority, application Great Britain, May 17, 1966, 21,939/66
U.S. Cl. 233—22 **7 Claims**
Int. Cl. B04b *11/08, 1/10, 3/00*



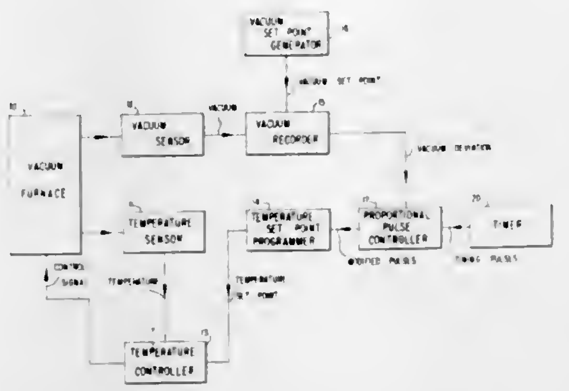
Apparatus for separating the components of a mixture of substances in a fluid state by centrifugal force comprising a circular basin for receiving a sample mixture to be tested, means for rapidly rotating the basin, said basin including a central well and a surrounding chamber opening into and merging with the well, said chamber comprising a floor extending outwardly from the rim of the basin, a circular end wall along the outer periphery of the floor defining the outer limit of the chamber, and a roof extending inwardly from the defining wall over the floor, a tubular scoop, having an end opening facing against the direction of rotation of the mixture, mounted to laterally traverse the chamber in a direction outwardly from said well, means for regulating

the rate of said outward movement of the scoop to permit decanting of a selected phase into a respective receiver and a rigid duct leading away from the scoop for decanting a selected phase gathered by the scoop, and a suction system connectable to the scoop for use after a separation operation.

3,428,250

FURNACE CONTROL SYSTEM

Lee H. Holthausen, San Jose, Calif., assignor to General Electric Company, a corporation of New York
Filed May 23, 1967, Ser. No. 640,546
U.S. Cl. 236—15 **9 Claims**
Int. Cl. H05b *1/02;* **H03k** *3/53;* **G05d** *23/00*

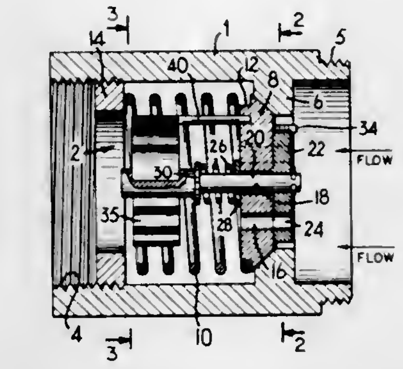


A furnace temperature control system responsive to a second diverse furnace condition. Means sense deviation of the second condition from a preselected condition to control energization of a proportional pulse controller. The proportional pulse controller, connected to a temperature set point programmer, modifies the temperature program during adverse deviation periods of the second condition.

3,428,251

TEMPERATURE AND PRESSURE RESPONSIVE VALVE

Robert I. Gross, Roslyn Heights, and Roydon C. Cooper, Locust Valley, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Feb. 7, 1967, Ser. No. 614,512
U.S. Cl. 236—92 **13 Claims**
Int. Cl. G05d *16/14;* **F16k** *15/00*

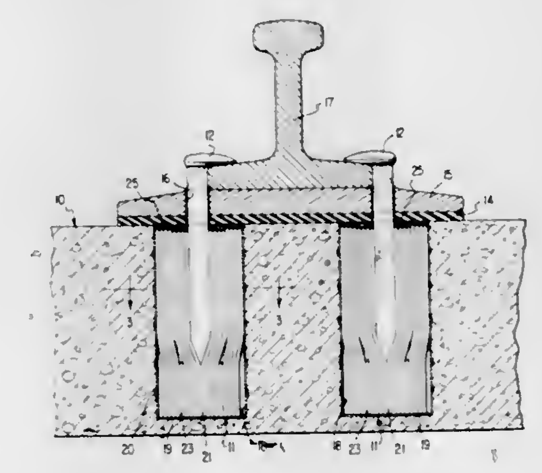


A pressure and temperature responsive valve is provided. The valve comprises a ported poppet that is normally biased against a valve seat and is movable away from the valve seat when a predetermined pressure differential across the valve occurs. A rotatable disk is mounted in a confronting relationship to the poppet. The disk is also ported and is adapted to close off the ports of the poppet at selected rotational positions relative to the poppet. At other relative rotational positions, however, the ports in the disk register with the ports in the poppet and permit flow to pass through the valve. A bimetallic coil is operatively connected to the disk and adapted to rotate the disk relative to the poppet according to the temperature such that at selected temperatures the ports in the poppet register with the ports in the disk and permit flow to proceed through the valve and at other temperatures the disk closes off the ports in the poppet. The rotation of the disk relative to the ported poppet is independent of the pressure differential across the valve and thus, whenever a predetermined temperature is reached, the ports in the poppet are opened to permit flow therethrough independently of the pressure differential across the valve.

3,428,252

RAILROAD CROSS-TIE AND NOVEL UNIT AND INSERT THEREFOR

Curtis R. Austin, % Austin and Austin, Inc., Moselle, Miss. 39459
Filed Aug. 21, 1967, Ser. No. 662,164
U.S. Cl. 238—30 **18 Claims**
Int. Cl. E01b *3/00, 9/14, 21/04*

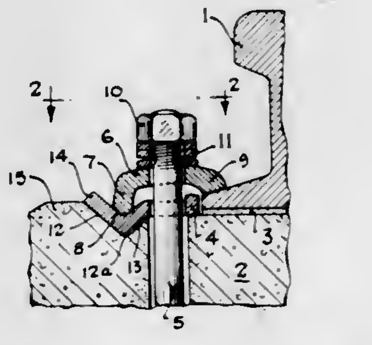


An improved railroad cross-tie is provided. The cross-tie has embedded therein novel units and inserts therefor which are capable of securely retaining rail spikes and thereby anchoring rails in place.

3,428,253

RAIL ATTACHMENT

Hermann Oskar Meier, Munich, Germany, assignor of one-fourth each to Helen Joan Mary Meier, Eva Marianne Meier, Wolfgang Alexander Meier and Manfred Julian Meier, all of Munich, Germany, heirs of said Hermann Oskar Meier, deceased
Filed Nov. 16, 1966, Ser. No. 594,736
Claims priority, application Germany, Nov. 25, 1965, M 67,411
U.S. Cl. 238—349 **16 Claims**
Int. Cl. E01b *9/00, 13/00, 21/04*



A rail fastening attachment for fastening rails on concrete ties and the like employing an angular depression having a straight wall portion for accommodating a base plate which contacts the rail laterally and a clamp member which is secured on the base plate and also contacts a lateral flange of the rail.

3,428,254

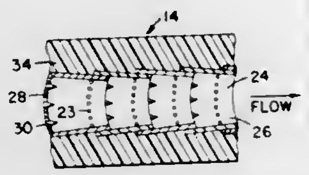
COOLED INJECTANT GAS DUCT FOR THRUST VECTOR CONTROL APPARATUS

Bernard Steverding, Guntersville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 19, 1966, Ser. No. 588,678

U.S. Cl. 239—127.3 **10 Claims**

Int. Cl. B64d *33/04, 33/08*



A cooled injectant gas duct for transferring hot gases from the combustion chamber of a rocket motor into the exhaust stream emanating the motor exhaust. The duct combines heat sink for cooling purposes with injection means for cooling the internal surface of the duct. The heat from the combustion gases is conducted to the heat sink to gradually decompose the plastic causing tangential injection of the gaseous decomposition products through the indentations and radially through perforations into the duct. These gaseous decomposition products thus form a protective layer of barrier on the interior wall of the duct.

3,428,255

MANUALLY-CONTROLLED SPRAYING APPARATUS TO BE CARRIED ON THE BACK

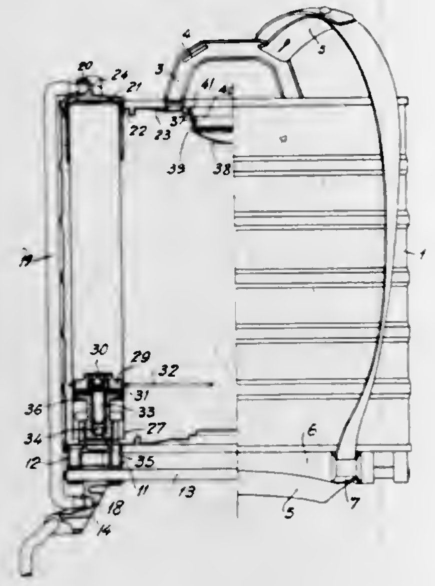
Vincent P. M. Ballu, Epernay, Marne, France, assignor to TECNOMA, Epernay, Marne, France, a French body corporate

Filed July 5, 1967, Ser. No. 651,192

Claims priority, application France, July 11, 1966, 69,011

U.S. Cl. 239—154 **9 Claims**

Int. Cl. B05b *9/08;* **A62c** *15/00*



The specification discloses a form of spraying apparatus designed to be carried on the operator's back and principally characterised in that it can be adapted for use by left-handed and right-handed bearers without structural modification. For this purpose, the spray liquid reservoir has alternative attachment points for a lower back bar and shoulder straps extend to the bar from a pivoted upper mounting. Furthermore, the spray pump is operated by a reciprocatory handle offset laterally on the reservoir and which is pivoted on an axis perpendicular to its axis of reciprocation so that it can be swung to project to opposite sides of the reservoir, this in conjunction with the adjustability of the shoulder straps' mounting, locating it at either side of the bearer.

3,428,256

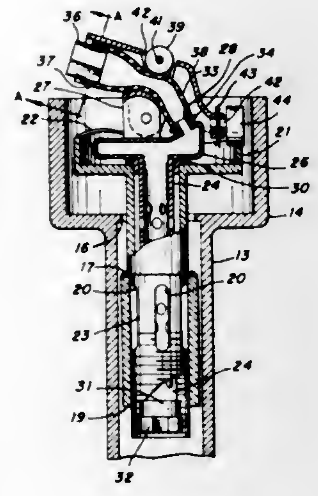
ROTARY POP-UP SPRINKLER

William L. Painter, 3981 Bledsoe Ave., Los Angeles, Calif. 90066

Filed Mar. 20, 1967, Ser. No. 624,475

U.S. Cl. 239—206 **3 Claims**

Int. Cl. B05b *15/10, 15/08;* **F16k** *5/12*



A rotary pop-up sprinkler having a fixed cam for dispersing water over an area, the contour of which is determined by the shape of the cam while varying the volume of water dispersed directly with the instantaneous elevation of the nozzle and having a figure-eight cross-section nozzle for dispersement of water in a vertical plane at an equal volume along any radial line from the nozzle

3,428,257

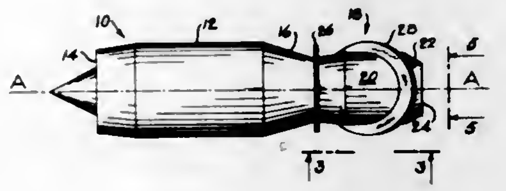
THRUST VECTORING EXHAUST NOZZLE WITH FLOW GUIDE FOR MINIMIZING SEPARATION OF THE JET STREAM

John A. Kentfield, Hasbrouck Heights, and Raymond F. Schaefer, North Caldwell, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed June 3, 1966, Ser. No 555,097

U.S. Cl. 239—265.35 **10 Claims**

Int. Cl. B64c *15/08;* **F02k** *1/20;* **B05b** *1/34*



A jet engine exhaust nozzle (for VTOL aircraft) having elliptical sections that are relatively angularly movable in a single plane is provided with guide vanes at the minor axis of the end elliptical section of the nozzle and additional guide vanes on the major axis of said section extending from the end guide vanes to a circular joint between nozzle sections. Turbulence is thereby prevented and a constant effective nozzle throat area provided for during transition of the nozzle from cruise to a fully vectored position.

3,428,258

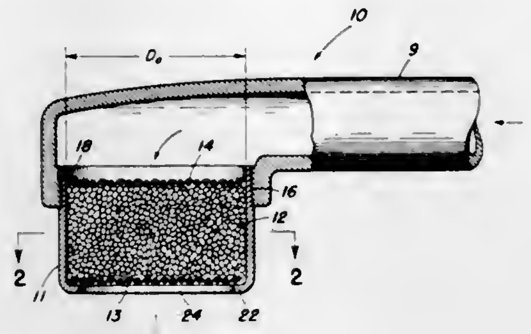
OPEN PORE FOAM FAUCET INSERT

Robert B. Duggan, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 414,686, Nov. 30, 1964. This application Mar. 23, 1966, Ser. No. 543,459

U.S. Cl. 239—590.3 **6 Claims**

Int. Cl. B05b *1/22;* **E03c** *1/108*



For use in a faucet, a means for transforming the turbulent flow of water through a faucet into a smooth, silent laminar flow to form a well defined stream discharging therefrom consisting of a nozzle connected to the discharge end of the faucet and a layer of open pore foam disposed within the nozzle, the foam having a pore size within the range of from 10 to 25 pores per lineal inch, whereby the water flowing through the faucet is caused to flow through the foam in discharging therefrom.

3,428,259

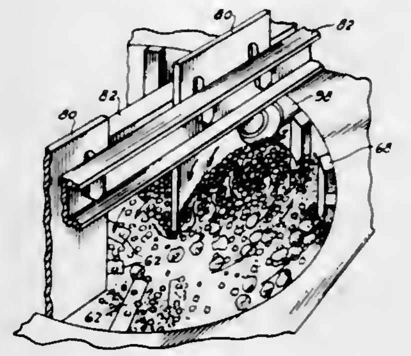
PROCESS FOR PULVERIZING MATERIAL

Lothar Robert Zifferer, R.D. 3, Glen Rock, Pa. 17327

Original application Jan. 9, 1964, Ser. No. 336,771, now Patent No. 3,300,151, dated Jan. 24, 1967. Divided and this application Sept. 26, 1966, Ser. No. 582,058

U.S. Cl. 241—5 **1 Claim**

Int. Cl. B02c *19/00, 17/00*



A process of pulverizing raw friable material by effecting frictional engagement between different portions of a layer of said material moving in a horizontal plane in a circular path about a vertical axis, changing the direction of said layer by having a portion of the material in said layer contact a stationary barrier during said circular movement thereof to cause a piling of a portion of the material to effect rubbing pressure upon a lower portion of said layer of material as it continues to move therebeneath in said circular path, continuously moving said piling material radially toward said axis, followed by radially accelerating the movement of said piling material outwardly against a relatively static layer of material adjacent the periphery of the pulverizing zone to cause additional reduction in size of said material, and continuously removing fine material of a desired size range from said mass being pulverized.

3,428,260

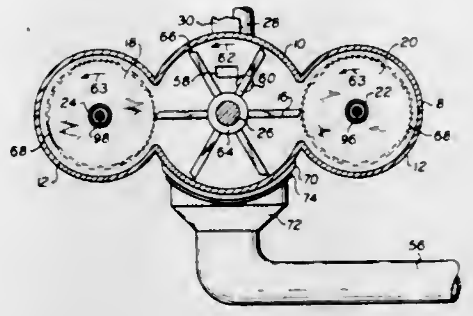
SIZE REDUCTION OF HEAT SENSITIVE MATERIAL

Friedhelm R. Feder, North Plainfield, N.J., assignor to Wedco, Inc., Garwood, N.J.

Filed Oct. 24, 1966, Ser. No. 588,819

U.S. Cl. 241—15 **21 Claims**

Int. Cl. B02c *19/06, 21/00, 18/24*



1. Process for size reducing heat sensitive plastic particles from a relatively large size to a relatively small size which comprises:

(a) depositing the large particles in the path of a rotating impeller and impelling the particles with the impeller outwardly from the impeller path in dispersed condition,

(b) cutting the particles impelled from the path of the impeller with a cutter disposed with a cutting edge thereof adjacent the outer periphery of the impeller path for cutting of particles impelled by the impeller, providing the cut particles in dispersed condition,

(c) removing cut particles from the vicinity of the impeller and cutter as said small size particles,

(d) simultaneously with (a), (b) and (c) passing air into the vicinity of the impeller and cutter for containing the dispersed particles and maintaining the dispersed conditions, and cooling the particles, with the air and removing air from the vicinity of the impeller and cutter.

3,428,261

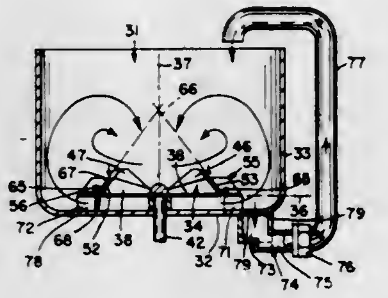
METHOD AND APPARATUS FOR PULPING AND DEFIBERING

William R. Moulton, Andover, Mass., assignor to Bolton-Emerson, Inc., Lawrence, Mass., a corporation of Massachusetts

Filed Oct. 6, 1965, Ser. No. 493,355

U.S. Cl. 241—21 **14 Claims**

Int. Cl. B02c *1/00, 11/08, 21/00*



The vortical circulation impeller inside a bottom, or side, drive pulper is at least partially encircled by an imperforate member, the member and the vanes of the impeller defining a truncated conical bladed and channelled attrition interface with the small end facing the contents of the pulper and the large end facing the wall of the pulper. The interface thus directs stock treated therein away from the vortical circulation of the pulper toward an extraction chamber for discharge or recycling.

3,428,262

APPARATUS AND PROCESS FOR REFINING PAPER STOCK

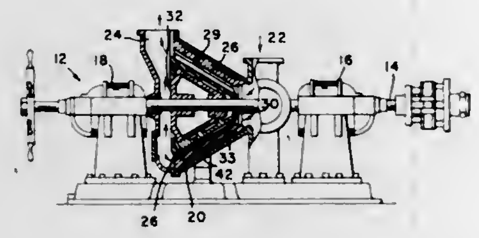
Donald W. Danforth, Andover, Mass., assignor to Bolton-Emerson, Inc., Lawrence, Mass., a corporation of Massachusetts

Filed May 4, 1966, Ser. No. 547,511

U.S. Cl. 241—28 **8 Claims**

Int. Cl. B27j; B27k *7/00, 9/00*

A truncated, conical type paper refiner is provided with plug fillings or shell linings in which the working face is pitted with a multiplicity of small diameter holes, the sum of the hole area being equal to, or greater than, the sum of the non-hole area and the ratio of the hole edge length to the area of the face associated with each hole comprises a predetermined ratio consisting a K factor of from about 3.6 to about 3.8.



3,428,263

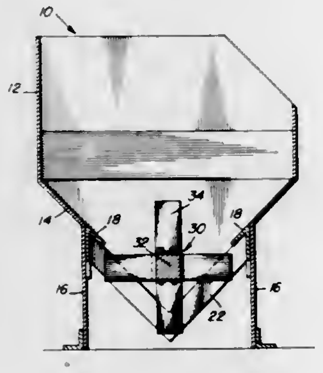
MATERIALS CONDITIONER

Walter J. Sackett, Sr., Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland

Filed Dec. 20, 1965, Ser. No. 514,917

U.S. Cl. 241—88 **3 Claims**

Int. Cl. B02c *13/00;* **B07b** *13/00*



A hopper is provided with a bottom outlet and a lump breaking mechanism positioned in the outlet, the lump breaking mechanism comprising a grating of V-shaped members positioned across the outlet, a rotatable shaft running along the V of the V-shaped members, and a plurality of blade elements mounted to the shaft and interdigitized with the V-shaped members and which force granular material through the grating upon rotation of the shaft.

3,428,264

APPARATUS FOR PREPARING GRANULATES

Max Weber, 118 Panoramastrasse, 69 Heidelberg, Germany

Filed May 11, 1966, Ser. No. 549,365

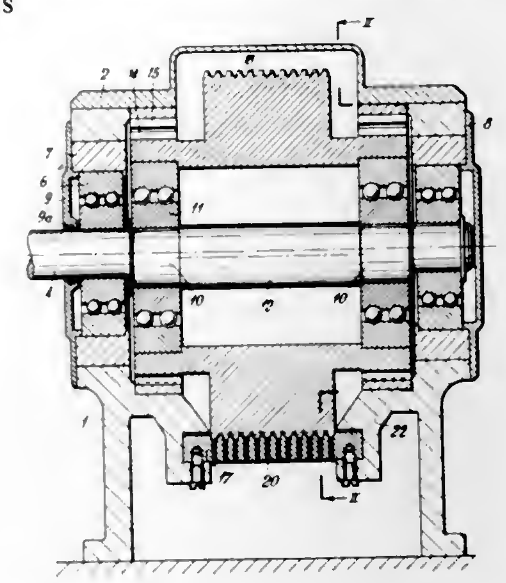
U.S. Cl. 241—90 **4 Claims**

Int. Cl. B02c *17/02, 13/00;* **B07b** *13/00*

The apparatus for preparing granulates from powdery, finely grained, doughy, or similar materials comprises:

(a) A stationary trough with recesses extending into outwardly extending tapering bores through which the material to be granulated is pressed, and

(b) A roller mounted on an eccentric part of a drive shaft and rolling, on rotation of the drive shaft, in said trough so that conical projections provided on the cylindrical periphery of said roller engage in corresponding recesses of the trough. The roller may be provided at its axial ends



(c) With gear wheels meshing planet wheel-like with gearing means firmly mounted in

(d) The housing provided for the roller and the trough.

The apparatus has the advantage over known granulating devices that heat generation and air entrainment are considerably reduced.

3,428,265

APPARATUS FOR DRESSING CRUDE ASBESTOS SEPARATED FROM THE SOURCE ROCK

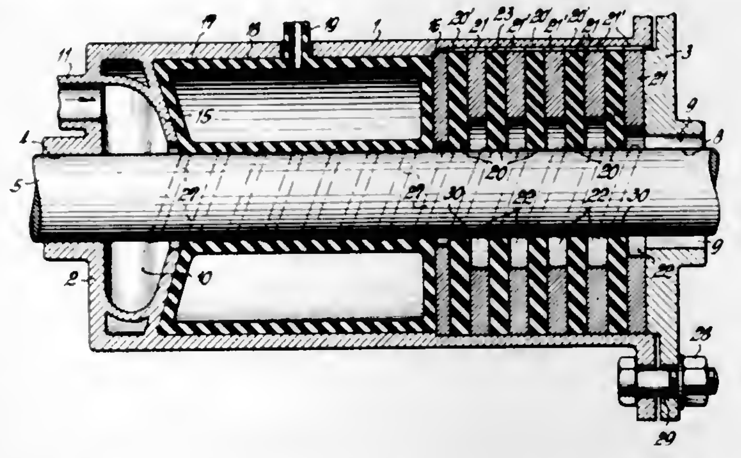
Karl Adolf Oesterheld, Luthe, near Wunstorf, Hannover, Germany

Continuation-in-part of application Ser. No. 413,665, Sept. 9, 1964. This application Aug. 23, 1966, Ser. No. 574,425

Claims priority, application Germany, July 20, 1960, O 7,532

U.S. Cl. 241—259 **9 Claims**

Int. Cl. B02c *13/26, 25/00*



1. An apparatus for dressing crude asbestos separated from the source rock and being in the form of fibrous bundles suspended in a liquid, comprising a housing, an inlet on said housing for admitting the fiber-liquid mixture into said housing, an outlet on said housing for discharging the fiber-liquid mixture from said housing, a motor-driven shaft rotatably mounted within said housing, a rigid working surface on said shaft, a lining of elastically yielding material inflatable with compressed air in said housing fixedly held on the wall of said housing and closely engaging said working surface on said shaft when in fully inflated condition, a regulable feed pump for forcing with a controllable hydraulic pressure the fiber-liquid mixture admitted through said inlet into said housing in a circulating flow between said rigid working surface on said shaft and a counterfriction surface of said lining while subjecting the fibers to friction and continuously bending them in constantly varying directions, and for conveying the fiber-liquid mixture to said outlet on said housing, a compressed-air pipe for subjecting said lining to the action of compressed air, and a regulating member fitted in said compressed-air pipe and permitting, when operated, the bearing pressure of said lining surrounding said working surface on said shaft to be adjusted to the frictional effect and the intensity of bending the fibers which result in completely opening up the fibers.

3,428,266

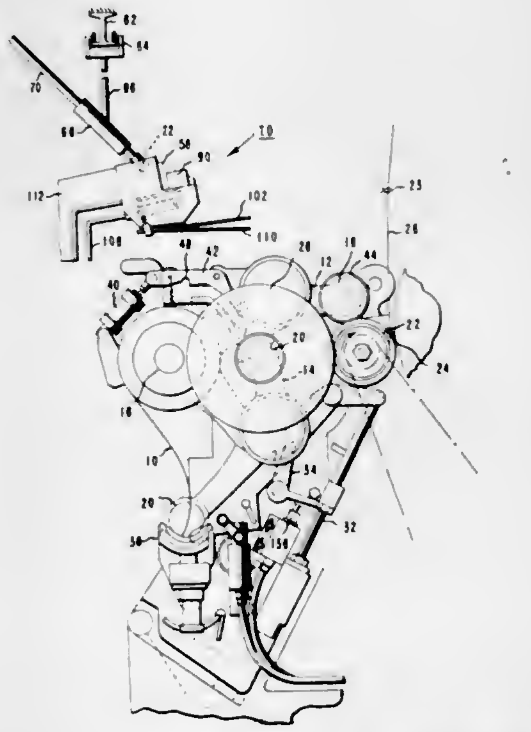
YARN WINDING APPARATUS

Michael Burgin Emery, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 25, 1967, Ser. No. 633,511

U.S. Cl. 242—18 **8 Claims**

Int. Cl. B65h *54/34*



A portable yarn transfer device, in combination with a yarn windup, for transferring yarn from a full package to a driven empty support and forming a transfer tail during initiation of a new package. The device is entirely separate from and can be transported to and performs its functions sequentially on a plurality of similar windups.

3,428,267

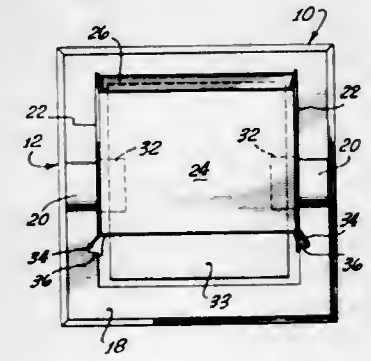
TOILET PAPER DISPENSER

Franklin S. Briles, 6 Middleridge Lane N., Rolling Hills, Calif. 90274

Filed Oct. 17, 1966, Ser. No. 587,237

U.S. Cl. 242—55.53 **4 Claims**

Int. Cl. B65h *19/02*



A toilet paper roll dispenser employed in combination with a conventional toilet paper wall bracket of the type having a portion recessed into the wall and a pair of spaced, parallel support arms projecting outwardly from the wall with opposed recesses therein. The dispenser is generally U-shaped, with a transverse base portion and a pair of generally flat, diverging sides which are resiliently bendable for mounting on the wall bracket, the sides having inwardly projecting bosses for supporting a toilet paper roll and outwardly projecting studs for engagement into the recesses of the arms of the wall bracket, with a pair of ears projecting laterally outwardly from the respective sides and engageable with the wall bracket for positioning the dispenser fixedly relative to the wall bracket.

3,428,268

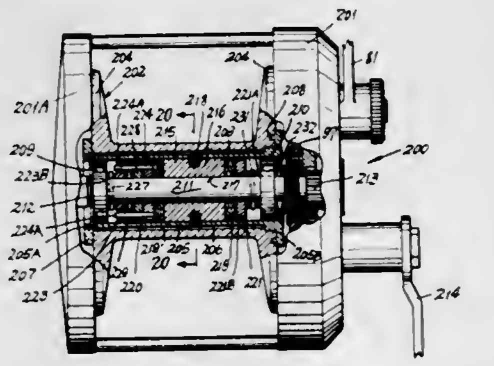
BRAKE FOR FISHING REEL

Oscar Fleischer, 2610 SW. 21st St., Miami, Fla. 33145

Continuation-in-part of application Ser. No. 187,157, Apr. 11, 1962. This application July 7, 1966, Ser. No. 563,444

U.S. Cl. 242—84.45 **5 Claims**

Int. Cl. A01k *89/02*



A fishing reel is provided with a shaft for rotatably supporting a spool having a hollow hub with a braking assembly disposed within the hub for connecting the spool into driving relationship with the shaft. The braking assembly includes a sleeve concentrically disposed within said hub and having a cylindrical portion in spaced relationship thereto. The sleeve has a radially extending end flange with axially directed pin means adapted to cooperate with an aperture means in the end flange to fix the sleeve to the spool. Braking means mounted for free rotation about the shaft engage pressure means disposed along the shaft. Means are provided for effecting relative axial movement between the pressure means and the braking means.

3,428,269

METHOD OF UNWINDING YARN FROM PACKAGES ARRAYED IN SERIES

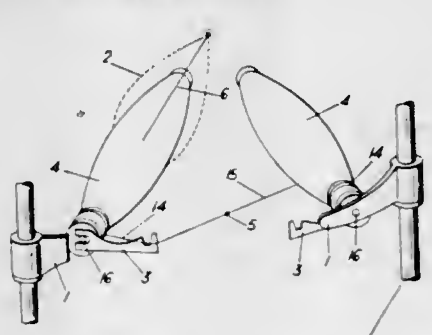
John Maurice Horwood, Llanyravon, Cwmbran, England, Allen Gunter, Gilwern, Wales, and Albert John Fry, Abersychan, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed July 11, 1966, Ser. No. 564,241

Claims priority, application Great Britain, July 16, 1965, 30,271/65

U.S. Cl. 242—128 **3 Claims**

Int. Cl. B65h *49/20;* **D01h** *13/04*



A resilient yarn guide is associated with the static length of yarn which is formed by the joining of the yarn transfer tail of one bobbin to the leading end of the yarn on an adjacent bobbin, in an unwinding system of the type wherein the axes of the bobbins intersect at a common yarn guide orifice. The resilient yarn guide maintains the static length of yarn remote from the balloon formed by the yarn from the first bobbin, and upon full unwinding of the latter the guide pivots to allow the length to slide out of contact therewith.

3,428,270
LIGHTNING CONDUCTORS IN AIRCRAFT

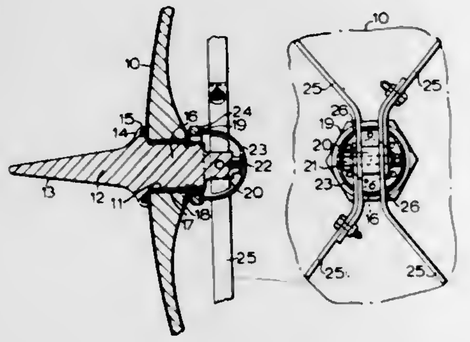
John R. Knight, Byfleet, Surrey, and John Leworthy, Bristol, England, assignors to British Aircraft Corporation (Operating) Limited, London, England, a British company

Filed June 13, 1966, Ser. No. 557,243

Claims priority, application Great Britain, June 17, 1965, 25,700/65

U.S. Cl. 244—1 **6 Claims**

Int. Cl. B64d *45/02;* **G01c** *21/00*



A lightning conductor for a non-metallic section of an aircraft fuselage such as a radome. The lightning conductor includes a metal spike projecting through the apex of the non-metallic section of the fuselage and metal conductors are connected to the spike and extend back to the base of the non-metallic section following generally, the internal contour of the radome. At the base of the non-metallic section, conductors are connected to the main metal part of the fuselage. The conductors may take the form of strips extending in planes, radial to the axis of the non-metallic section. Alternatively, where the spike is in the form of a Pitot tube, the conductors may be tubes which connect the Pitot tubes to an aircraft speed indicator as well as to the metal part of the fuselage.

3,428,271
ATMOSPHERIC ENTRY VEHICLE WITH STOWED ROTOR

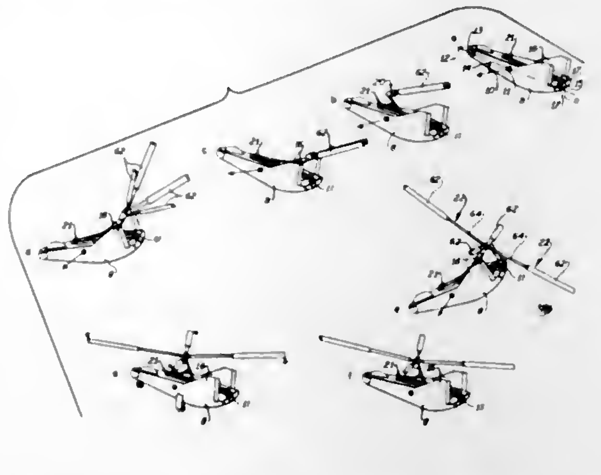
Richard Hollrock, Simsbury, and Justin J. Barzda, Windsor, Conn., assignors to Kaman Corporation, a corporation of Connecticut

Filed June 3, 1966, Ser. No. 555,107

U.S. Cl. 244—17.13 **10 Claims**

Int. Cl. B64c *27/50, 27/52;* **B64d** *19/02*

The entry vehicle has a folded helicopter type rotor stowed therein with the rotor blades telescoped. The rotor hub is pivotally mounted at one end of a mast, which mast is pivotally mounted in the vehicle. An actuator is connected to the mast for rotating it rearwardly while the folded rotor is trailed aft from the free end of the mast. In the trailing position of the rotor, the collective pitch mechanism can be used to skew the folded blades in opposite directions so that the rotor tends to autorotate. Centrifugal force then causes the blades to unfold and to telescope out, after which the mast is moved forwardly to an intermediate position while the rotor hub central axis is kept in line with the vehicle's center of gravity. In the intermediate position collective and cyclic pitch changes achieve conventional control of the rotor blades for low speed approach and landing maneuvers of the vehicle.



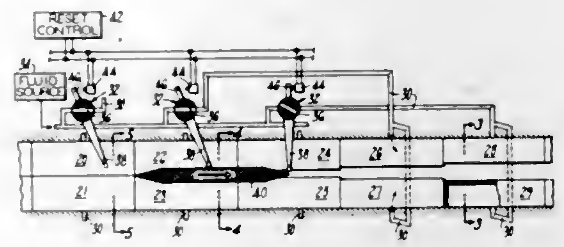
3,428,272
MODULAR SEAL FOR AIRCRAFT LAUNCHING CYLINDER

Ernest Feder, Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 18, 1967, Ser. No. 610,131

U.S. Cl. 244—63 **6 Claims**

Int. Cl. B64f *1/06, 1/26;* **F01b** *29/10*



A pneumatic cylinder for launching aircraft (similar to a catapult) having an elongated longitudinal slot extending the length thereof is provided with a plurality of modular pneumatic closures, in end-abutting relationship, for sealing the slot. Inflation of individual modular sections of the closure so as to effect a sealing of the longitudinal slot is sequentially programmed so that closure sections which are ahead of the advancing cylinder and launching device are open, thereby permitting escape of fluid within the cylinder resulting from the decrease in volume caused by the advancing of the cylinder. As the cylinder approaches each section, it actuates valve operating mechanisms so as to introduce fluid pressure into a section of the seal which it is approaching; a structural member which connects the cylinder through the slot with a launching device presses between opposing faces of the seal as it passes each section, the pressure within the sections of seal becoming maximum as the member is passing therethrough, whereby the seal sections each close after the member passes between them so that the cylinder is completely sealed in all sections behind the advancing cylinder.

3,428,273
AIRCRAFT LAUNCHING

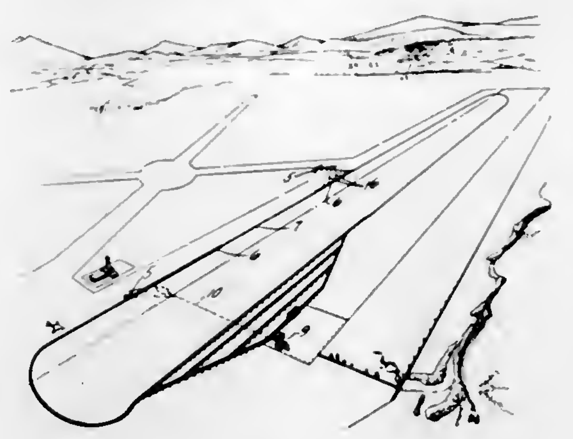
John M. Tyler, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 18, 1967, Ser. No. 610,132

U.S. Cl. 244—63 **1 Claim**

Int. Cl. B64f *1/06, 1/26;* **B64d** *3/00*

With its engines idling, an aircraft is towed by a catapult-like device to a speed in excess of liftoff speed and is continued to be towed, while in flight, until sufficient kinetic energy is imparted thereto so as to permit the aircraft, after the tow cable is released, to climb several thousand feet in the air before advancing the aircraft-mounted engines to full thrust, thereby achieving a substantial reduction in aircraft takeoff noise.



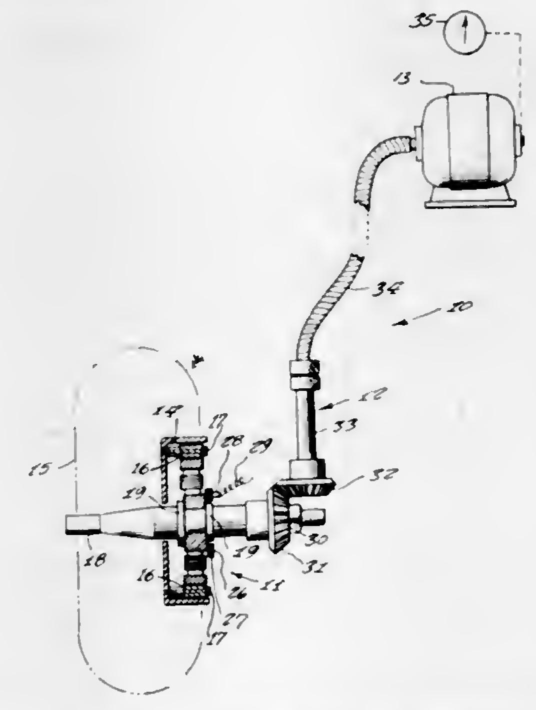
3,428,274
AIRCRAFT TOUCHDOWN WHEEL SYNCHRONIZER

Wally Ellis, 1422 SE. Henry St. 97202, and Elmer W. Arthur, 6415 NE. 34th Ave. 97211, both of Portland, Oreg.

Filed Sept. 19, 1966, Ser. No. 580,449

U.S. Cl. 244—103 **1 Claim**

Int. Cl. B64c *25/40*



A device for synchronizing the circumferential speed of airplane wheels, prior to landing, with the speed of the airplane above the ground, thereby preventing stress on the wheel structure and possible tire blowout, the device comprising a tachometer coupled with a rotating electromagnet which influences a pair of poleshoes on the wheel drum.

3,428,275
SUPPORT APPARATUS FOR ARRESTING GEAR CABLE

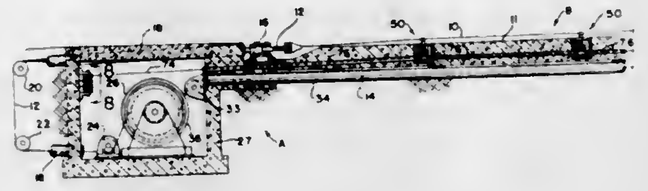
Arthur C. Condodina, Philadelphia, Pa., Ignatius J. Niemkiewicz, Wilmington, Del., and Marvin S. Shinbaum, Springfield, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Mar. 28, 1967, Ser. No. 626,561

U.S. Cl. 244—110 **8 Claims**

Int. Cl. B64c *25/68;* **B64f** *1/02*

A support system for supporting an arresting gear cable transversely of a runway and at a desired distance thereabove. The system includes a plurality of individual support units positioned at spaced locations transversely of the runway. Each unit includes a cable support member spring biased to a "cable raised" position. The units are interconnected by a mechanical drive train which functions to selectively move all the support members simultaneously to a "cable lowered" position. The drive train comprises a first sheave carried on each support member and a pair of sheaves fixedly positioned therebelow. A drive cable passes successively through each unit and around the sheaves therein. One end of the drive cable is anchored and the other end is connected to the piston of an air cylinder. Actuation of the cylinder to pull in the drive cable causes the support members to be moved to the "cable lowered" position against the bias of the springs.



3,428,276
AIRBORNE SPRAYING DEVICE

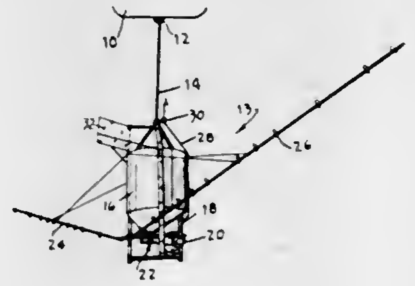
Albert W. Hubbard, Langley, British Columbia, Canada, assignor to Okanagan Copter Sprays Ltd., Richmond, British Columbia, Canada

Filed Sept. 25, 1967, Ser. No. 670,149

Claims priority, application Canada, June 6, 1967, 992,320

U.S. Cl. 244—136 **2 Claims**

Int. Cl. B64d *1/18;* **B05b** *17/02;* **A62c** *3/02*



A spraying device adapted for releasable connection to aircraft and in particular to helicopters. The device includes a graduated tank, booms extending outwardly from the tank and having wide angle spray nozzles thereon and a gasoline engine for pumping the spraying liquid from the tank into the booms and out through the nozzles. The engine, pump and other controls are governed from the aircraft through a control cable provided with a pull-out connection for quick detachment.

3,428,277
GLIDING PARACHUTE

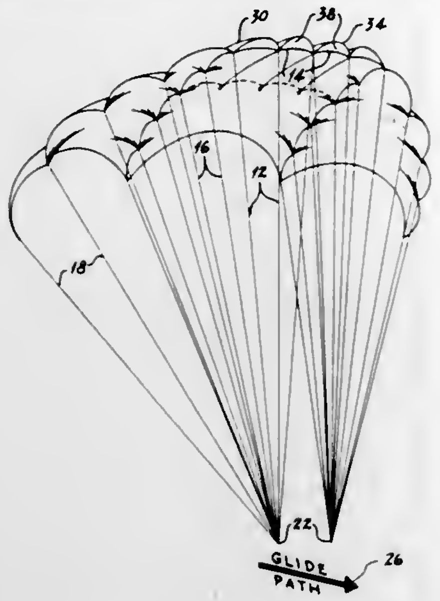
William J. Everett, Jr., Vernon, Conn., assignor to Pioneer Parachute Company, Inc., Manchester, Conn., a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,487

U.S. Cl. 244—142 **9 Claims**

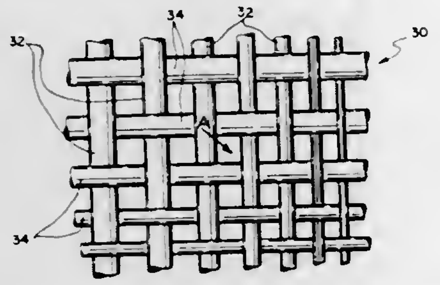
Int. Cl. B64d *17/00, 19/00*

A gliding parachute having a canopy which is narrower adjacent the leading edge than at the trailing edge thereof and provided with at least one forwardly facing ram air receiving scoop adjacent the leading edge of the canopy for maintaining the leading edge extended when the parachute is in flight.



3,428,278
PERMEABLE AIRFOIL SKIN

Ardelle Glaze, Fort Wayne, Ind., assignor to Fort Wayne Metals, Inc., a corporation of Indiana
Continuation-in-part of application Ser. No. 499,747, Oct. 21, 1965. This application June 1, 1966, Ser. No. 554,455
U.S. Cl. 245—8 **5 Claims**
Int. Cl. B21f *27/10;* **B64c** *3/26*

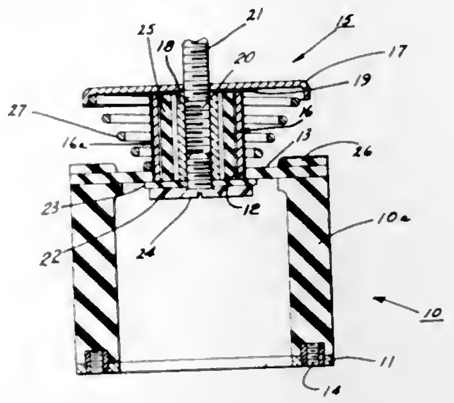


A permeable fabric material adapted for use as part of an airfoil which consists of a woven stainless steel wire fabric sheet having a first series of spaced apart generally parallel wires defining the warp of said material and a second series of similarly spaced apart generally parallel wires defining the weft of said material. The weft and warp are disposed in interlacing relationship. The diameter and spacings of these wires are varied in such manner that the interstices between adjacent and intersecting wires vary progressively in size to provide a material of locally variable permeability.

3,428,279
SHOCK AND VIBRATION MOUNT

Kenneth W. Johnson, Jamestown, Ohio, assignor to Barry Wright Corporation, Watertown, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 436,834, Mar. 3, 1965. This application Aug. 30, 1966, Ser. No. 576,004
U.S. Cl. 248—21 **8 Claims**
Int. Cl. F16f *15/08, 15/00*

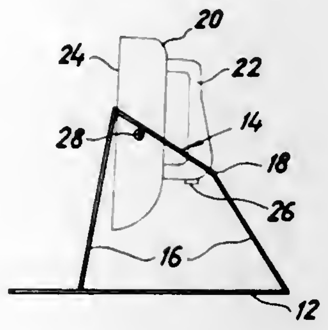
A shock and vibration isolator in which a casing has a resilient supporting wall and receives a load bearing, sleeve-spring structure. The resilient supporting wall of the casing absorbs energy from shock and impact loading, and the sleeve-spring structure dampens both axial and transverse vibrations of a load.



In an illustrative embodiment of the invention, the casing has a supporting wall of rubber-like material and a rigid end wall with an opening for receiving the sleeve-spring structure. A load-carrying cap is coupled to the sleeve-spring structure and is desirably supported beyond the end wall of the casing by a load carrying spring. The sleeve-spring structure includes an inner cylinder of resilient material that bears against the cap to provide transverse dampening. The sleeve-spring structure also includes an outer, split-sleeve cylinder that is radially pre-biased against the sides of the opening in the end wall of the casing to provide axial dampening.

3,428,280
STAND FOR IRON

Nellie B. Brandt, 146 Robbins St., Waltham, Mass. 02154
Filed Oct. 22, 1965, Ser. No. 500,745
U.S. Cl. 248—117.2 **4 Claims**
Int. Cl. D06f *79/02;* **A47j** *47/16*

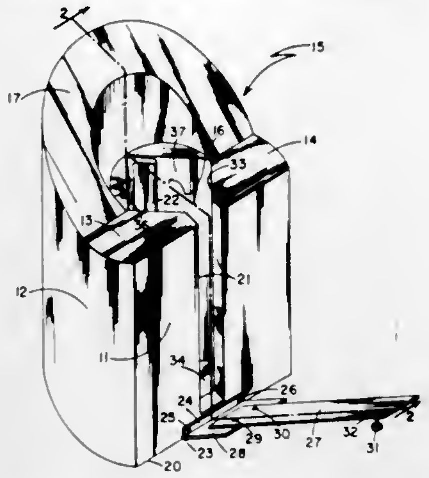


A nestable stand for maintaining a steam iron in vertical draining position comprises a closed, generally planar, triangular support member of rod-like material for receiving a steam iron and supported above a base member which is also of rod-like material. The base member encloses a larger area than that enclosed by the triangular support member to provide a stable platform for the support member and is joined to the support member by struts extending inwardly and upwardly from the base member. The support member is adapted to maintain the steam iron in a generally vertical draining position with a portion of the steam iron extending through it.

3,428,281
HOLDER FOR CONTAINERS OF RADIOACTIVE MATERIAL

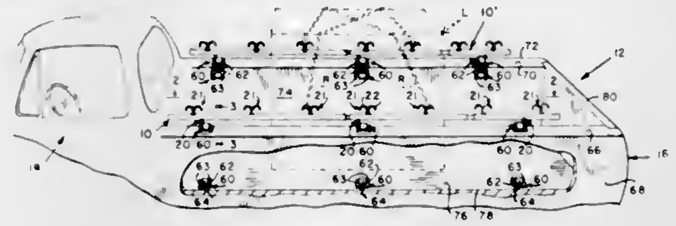
William Karp, Framingham, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,445
U.S. Cl. 248—146 **3 Claims**
Int. Cl. G21f *5/00;* **A47g** *23/02;* **A47k** *1/09*

The invention described by this disclosure is a holder for bottles that contain radioactive material. The holder is made of a material that has a high atomic weight such as lead and is shaped to provide an effective shield against radioactive hazards for laboratory personnel working in the vicinity of the container. The use of high atomic weight material also assures that the holder will remain upright, and a secure gripping means on the holder also assures that bottle tipping will not occur within the holder. The gripping means further prevents bottle rotation or other bottle motion when the bottle cap is rotated or otherwise moved. A slot in the holder permits the viewing of the bottle contents by reflective viewing means, without exposure of personnel to radiation hazards.



3,428,282
DETACHABLE HOOK BAR FOR VEHICLES

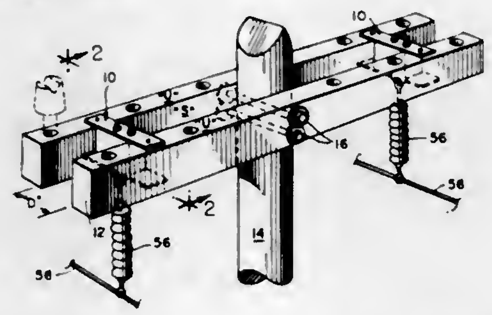
Russell Pernice, 5077 Tifton Way, San Jose, Calif. 95118
Filed Dec. 12, 1966, Ser. No. 600,898
U.S. Cl. 248—201 **9 Claims**
Int. Cl. A47b *96/06;* **A47f** *5/08;* **A47h** *1/14*



This invention provides a hook-supporting bar, which is removably connected by mounting arms and associated brackets to a vehicle wall surface. The hooks and mounting arms are carried by sleeves positioned on a rod. Two of the sleeves are movable on the rod to adapt the bar to the length of the wall surface. The mounting arms are of angular shape and circular cross-section, thus providing positioning of the bar parallel to the wall surface, and pivotal motion of the bar about the brackets.

3,428,283
ADJUSTABLE SPACER ASSEMBLY

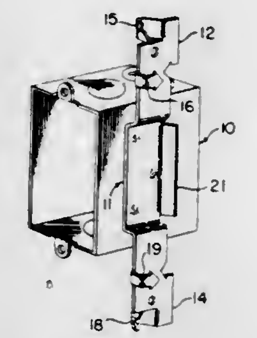
Lee J. Dake, Elmhurst, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 11, 1967, Ser. No. 666,880
U.S. Cl. 248—214 **17 Claims**
Int. Cl. A47b *93/00*



An adjustable spacer assembly for transverse structural interconnection between a pair of parallel, spaced apart, elongated, structural members such as cross-arms and the like, used on electrical transmission line utility poles, comprising first and second spacers nested together for relative, longitudinal sliding adjustment, each spacer including a pair of longitudinal side flanges in confronting contact with the flanges of the other spacer and having opposite outer end portions in overlying relation with opposite sides of the structural members. Fastening means are provided for securing the structural members to the end portions of the spacer side flanges, and each spacer includes an end flange normal to the side flanges thereof for confronting engagement with one face of a structural member which is normal to the opposite sides thereof. Fastening means are provided for securing the normal flanges to the faces to the structural members, and fastening means are provided to secure the spacers together against relative longitudinal adjustment once an adjustment has been made for a specific spacing between said structural members.

3,428,284
ELECTRIC OUTLET BOX MOUNTING

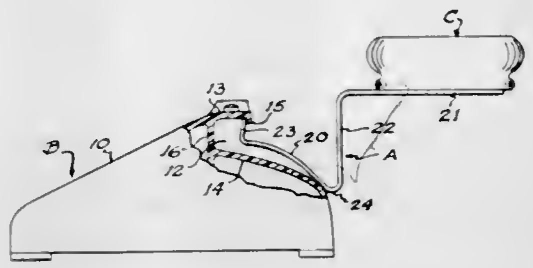
Robert S. Trachtenberg, Pittsburgh, and Julius Earl Kreuzer, Sewickley, Pa., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 4, 1967, Ser. No. 687,880
U.S. Cl. 248—216 **3 Claims**
Int. Cl. H02g *3/08*



Where an electric outlet box is mounted on a stud corner it is provided with an angular support that provides spacing for subsequent wall facing and a hammerable grasping means about a corner of the stud.

3,428,285
RECEPTACLE ATTACHMENT FOR TELEPHONES

Carl Seawall, 5347½ La Mirada Ave., Los Angeles, Calif. 90029
Filed Dec. 1, 1966, Ser. No. 598,424
U.S. Cl. 248—311 **4 Claims**
Int. Cl. H04m *1/21;* **A47f** *19/00;* **A47g** *35/00*

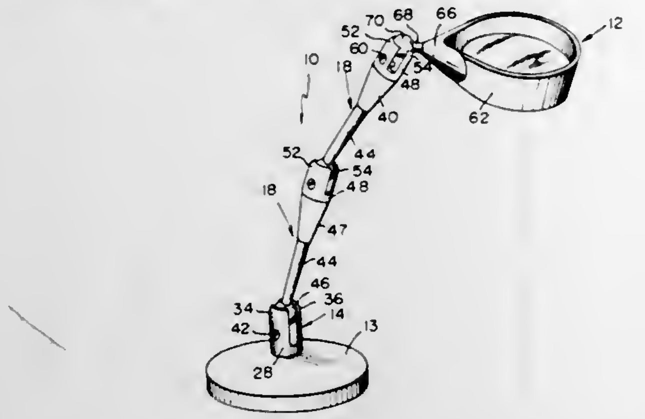


A combined telephone instrument base and cantilevered receptacle bracket, the latter having a hooked finger extending into the recess beneath the cradle of the instrument and hooked therein, and a heel fulcrumed against a sloping back surface of the base.

3,428,286

ADJUSTABLE ARTICLE HOLDER

Andrew Del Pesco, Danielson, Conn. 06239
Filed Jan. 3, 1967, Ser. No. 606,892
U.S. Cl. 248—474 **1 Claim**
Int. Cl. A47g *1/24;* **A47f** *5/04, 7/14*

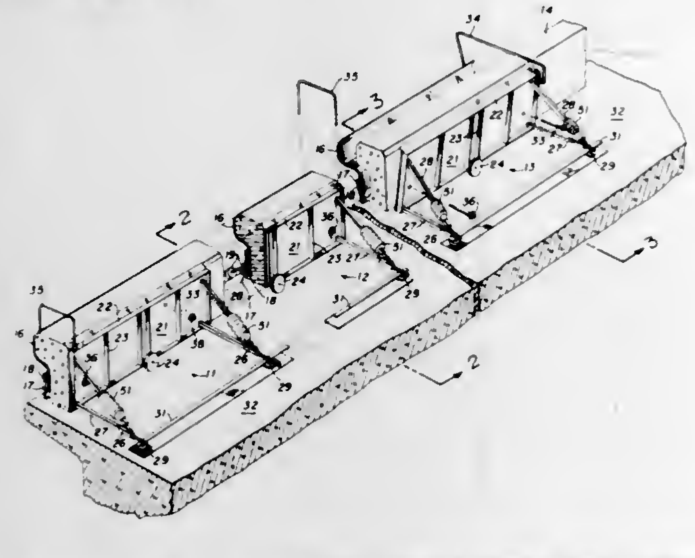


An article holder that includes a socket member interconnected to a base, the socket member receiving a ball member that provides for universal adjustment of the article for locating the article in various positions of use.

3,428,287

CONCRETE FORM ASSEMBLY

David M. Redding, 13908 Powers Road, Poway, Calif. 92064, and Rex G. Redding, 5252 N. Thorn, San Diego, Calif. 92105
Filed Mar. 20, 1967, Ser. No. 624,489
U.S. Cl. 249—13 **10 Claims**
Int. Cl. B28b *7/22*



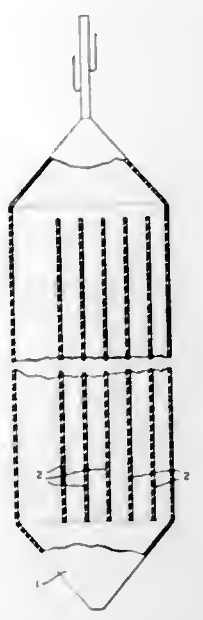
A concrete form assembly for pouring raised concrete having sections of first and second sides, each side being coupled to a plurality of wheels which are only in rotatable contact when the sides are pulled away from poured concrete and being rolled to the next location for pouring in the next concrete section, one side of each section having a novel turn-buckle coupling adjustment for coupling it to a set of wheels, and a novel tapered spreader bolt for coupling the first and second sides of each section prior to the pouring of concrete.

3,428,288

PNEUMATIC CORE FOR CONCRETE DUCTS OR PIPES OF NONCIRCULAR SECTION

Vasile Luca, Gheorghe Runceanu, Ctin Cosmescu, and Alexandru Ionescu, Bucharest, Rumania, assignors to Ministerul Industriei Constructiilor, a ministry, Bucharest, Rumania
Filed Nov. 26, 1965, Ser. No. 509,741
U.S. Cl. 249—65 **3 Claims**
Int. Cl. B28b *7/32*

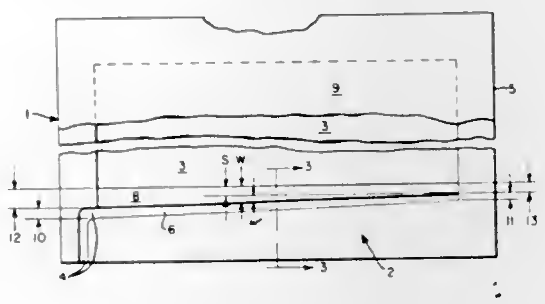
A pneumatically inflatable rubber core for the buildup of a concrete layer therearound to form a pipe or duct, the core comprising a closed elongated elastomeric shell of closed curved cross-section and a multiplicity of transversely spaced webs of elastomeric material extending parallel to one another within the shell and spanning the latter to retain the noncircular configuration thereof.



3,428,289

MOLDING APPARATUS

Robert S. Heckrotte and Edward F. Lewis, Wilmington, Del., and Elwood A. Sinson, Woodbury, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,593
U.S. Cl. 249—105 **8 Claims**
Int. Cl. B22d *35/04;* **B29c** *3/04*



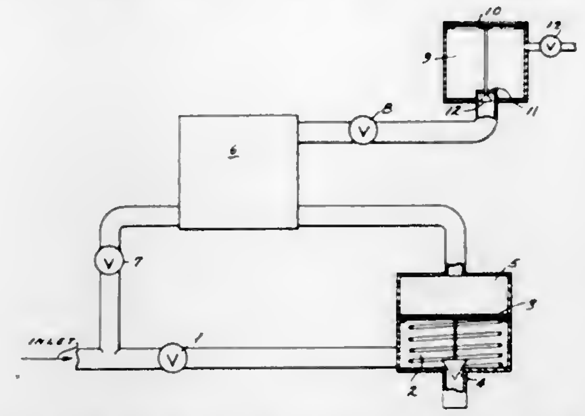
1. A molding apparatus comprising a mold having at least two parts adapted to be held together along a parting line to form a mold cavity, fluid distributor means located on said parting line adjacent the mold cavity adapted to feed fluid casting material into the mold cavity, said distributor means comprisng a header substantially parallel to said mold cavity and between said header and mold cavity and in abutting relationship thereto a gate having a land of varying width to provide a controlled flow of said casting fluid out of said header, said gate running from said header to said mold cavity along substantially the entire length of said mold cavity adjacent said land and means for introducing casting fluid into said header.

3,428,290

GAS FLOW PROGRAMMERS

David Robert Deans, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Apr. 12, 1966, Ser. No. 542,079
Claims priority, application Great Britain, Apr. 15, 1965, 16,269/65
U.S. Cl. 251—28 **11 Claims**
Int. Cl. F16k *31/12, 17/22*

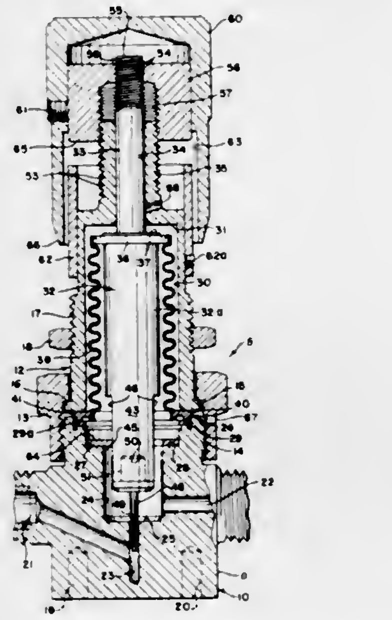
A gas flow programmer includes a control zone which provides for a continuous progressive variation in the pressure of gas contained within the control zone, and the continuous variation in gas pressure within the control zone regulates a flow of gas from a constant pressure source. The flow of gas in a passage is regulated by a restriction means which responds to the variation of pressure in the control zone.



3,428,291

BELLOWS METERING VALVE

Francis J. Callahan, Jr., Chagrin Falls, and Bernard J. Gallagher, Cleveland Heights, Ohio, Jonathan Tasker, Ann Arbor, Mich., and Earl D. Shufflebarger, Bedford, Ohio, assignors to Nuclear Products Company, Cleveland, Ohio, a corporation of Ohio
Filed May 24, 1965, Ser. No. 458,013
U.S. Cl. 251—122 **10 Claims**
Int. Cl. F16l *55/02;* **F16k** *31/44;* **E03b** *11/16*



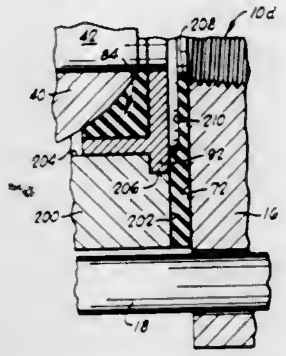
A metering valve having a base portion with a fluid passage therethrough. An elongated bore in the base opens upwardly and intersects the fluid passage. Coaxial with the elongated bore is a bonnet having a central bore, which is secured to the base. A unitary stem is reciprocally received in the bonnet and has its lower end extending into the elongated bore. A bellows surrounds part of the stem and has the upper end attached thereto and the lower end secured to the base. Oppositely directed threads are located at the upper end of the stem and bonnet and are engaged by an actuator for the stem.

3,428,292

UNSTRESSED SEATS FOR BETWEEN FLANGE VALVES

Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Jan. 3, 1966, Ser. No. 526,936
U.S. Cl. 251—151 **3 Claims**
Int. Cl. F16k *5/06, 25/00;* **F16l** *29/00*

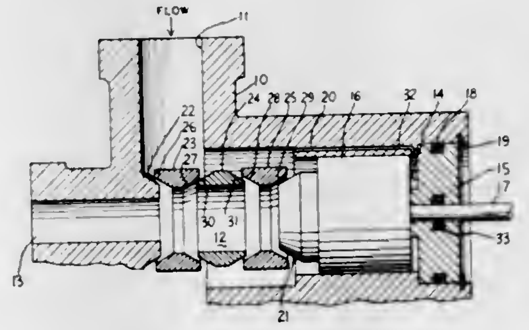
A valve including a body having an upstream and downstream end face and a bore between the end faces. A valve member is movably positioned in the bore in the body for opening and closing the bore. An annular seat-seal member disposed in the valve body encircles the bore and includes a resilient sealing element which sealingly engages the valve member, and a rigid annular member which bears against the valve body around the bore. An annular seal member sealingly contacts one of the end faces of the valve body, and also contacts the rigid annular member of the seat-seal member. A connecting member having a central aperture therethrough which is aligned with the bore sealingly engages the seal member and deforms a portion of the annular seal member inwardly in the bore toward the valve member.



3,428,293

HIGH PRESSURE VALVE WITH COOPERATING BEVELLED SEALING FACES

Harold Davies, Morris Plains, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,772
U.S. Cl. 251—170 **9 Claims**
Int. Cl. F16k *15/08, 5/04, 25/00*



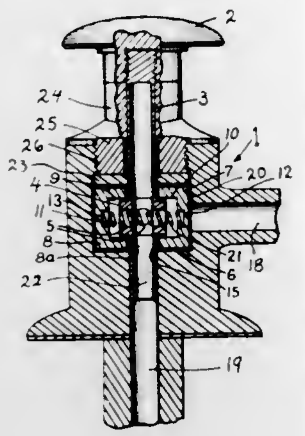
The present invention relates to a valve for very high inlet pressure use which utilizes one or more detached, floating but retained rings which nest on cooperating bevelled faces to provide an effective seal for the flow from inlet to outlet. This valve is light in weight but very high sealing pressures are achieved because of the wedging action of the rings.

3,428,294

ROTARY VALVE FAUCET

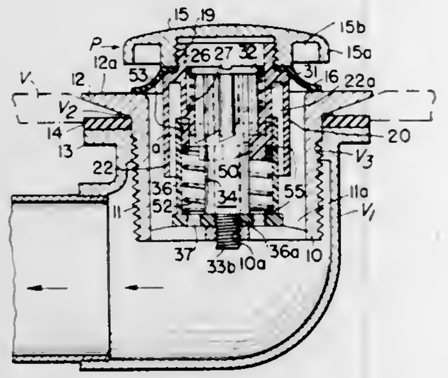
George Geddes, Sr., and Jennie Geddes Kay, both of 3544 E. Burly, Orange, Calif. 92667
Filed Dec. 27, 1966, Ser. No. 604,905
U.S. Cl. 251—182 **6 Claims**
Int. Cl. F16k *31/50, 5/04, 17/04*

A valve that includes a cylindrical chamber, within which is rotatable a cylindrical valve member having at least one side opening and an axial opening, and stem extending through the axial opening and rotatable with the split valve member, the stem having an axial opening and a side opening registering with the side opening in the split valve member. A spring forces the sections of the split valve member apart to assist in forming a seal along the wall of the valve chamber.



3,428,295
PUSH-ACTUATED DRAIN VALVE

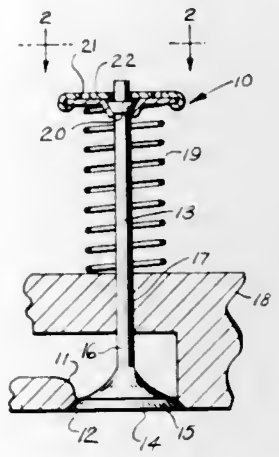
Martin W. Downey and Lloyd K. Jones, Morgantown, W. Va., assignors to Sterling Faucet Company, Morgantown, W. Va., a corporation of West Virginia
Continuation-in-part of application Ser. No. 361,501, Apr. 21, 1964. This application Aug. 15, 1966, Ser. No. 572,611
U.S. Cl. 251—263 **11 Claims**
Int. Cl. F16k *31/44;* **F16l** *37/28, 29/00*



1. In a push-actuated drain valve device for opening and closing-off fluid flow through an open drain portion, a housing fitting for removably-mounting in the open drain portion, said fitting having an open inlet portion for receiving the fluid to be drained and having an open outlet portion to deliver the drained fluid, an annular seating flange extending transversely from said inlet end portion and defining a valve seating surface about the opening to said inlet end portion, a centrally-positioned mount carried by said outlet end portion, a cooperating pair of sleeve-like front and back housing parts for relative longitudinal sliding movement with respect to each other within said fitting, means cooperating with said back housing part for removably-securing said housing parts on said mount in a radially-spaced relation within and along said fitting to define a drain passageway therewith that extends from said seating flange, said front housing part having a front end portion projecting longitudinally-outwardly beyond said seating flange, push button means removably-mounted on said front end portion, a resilient valve removably-positioned between said front end portion and the underside of said push button means and having a flap body projecting transversely-outwardly for movement into and out of seating engagement with said seating flange to open and close-off fluid flow through said passageway, and said push button means having an annular offset portion on its underside defining a relief area for said flap body when said push button is fully depressed with respect to said seating flange.

3,428,296
SAFETY COVER FOR VALVES

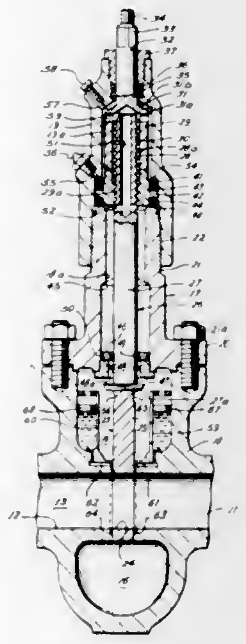
Victor Erickson, 757 W. Marine Drive, Astoria, Oreg. 97103
Filed Jan. 12, 1966, Ser. No. 520,292
U.S. Cl. 251—337 **3 Claims**
Int. Cl. F16k *17/04, 7/12*



A valve safety cap securable over a valve circular spring retainer plate so to prevent the valve components from dropping down into the engine cylinder in case of breakage or damage of the valve spring, the safety cap comprising a circular member having a peripheral edge which is crimped around the underside of the retainer plate.

3,428,297
STEM CONSTRUCTION FOR RISING-STEM GATE VALVES

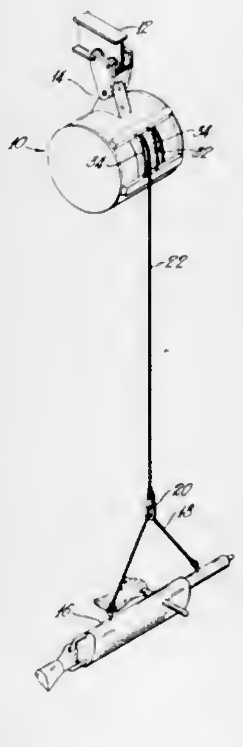
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33154
Filed Jan. 23, 1967, Ser. No. 611,094
U.S. Cl. 251—355 **11 Claims**
Int. Cl. F16k *3/16, 31/30, 25/02*



Stem construction for rising-stem gate valves including a threaded operator connection to the stem immersed in a body of sealing lubricant which is maintained by line pressure to prevent incursion of line fluids about the operator connection and to automatically balance end forces on the stem.

3,428,298
TOOL BALANCER

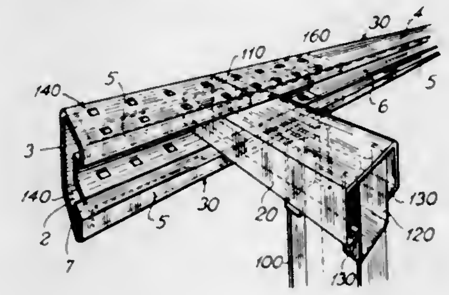
Edgar R. Powell, Birmingham, Mich., assignor to D. W. Zimmerman Mfg., Inc., Madison Heights, Mich., a corporation of Ohio
Filed Jan. 3, 1966, Ser. No. 518,287
The portion of the term of the patent subsequent to July 12, 1983, has been disclaimed
U.S. Cl. 254—168 **5 Claims**
Int. Cl. B66d *1/36;* **F15b** *13/16*



A pneumatically-operated tool balancer substantially offsets the weight of heavy tools so that they can be manipulated by an operator for extended periods without fatigue. Air pressure is used to offset the tool weight and has the principal advantage that the same amount of weight of the tool is offset regardless of the vertical position of the tool, so that the effective weight of the tool remains constant.

3,428,299
GIRDER, MORE PARTICULARLY FOR A MOTORWAY SAFETY FENCE

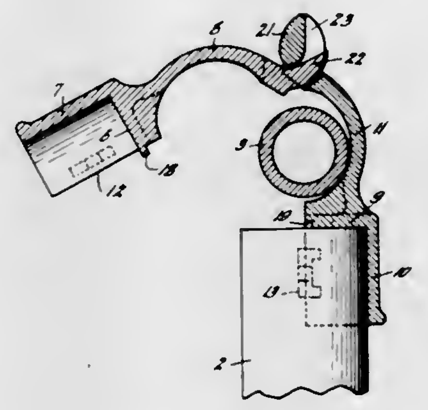
Ralph Mogens Mogensen, 4 Niles Brocksgade, Copenhagen, Denmark
Filed Apr. 9, 1965, Ser. No. 446,906
Claims priority, application Denmark, Apr. 9, 1964, 1,769/64; Nov. 10, 1964, 5,544/64
U.S. Cl. 256—13.1 **11 Claims**
Int. Cl. E01f *13/00;* **E04c** *3/32*



A motorway safety fence made of a horizontal guard rail mounted on upright supports. The guard rail is a multi-sectioned girder. Each of the girder sections is a plate profile having a rectangular cross-section, a longitudinal slot being provided in one of its sides, and along the edges of the slot inwardly extending flanges being provided. The upper ends of the upright supports extend through the slot.

3,428,300
FENCE POST CAP

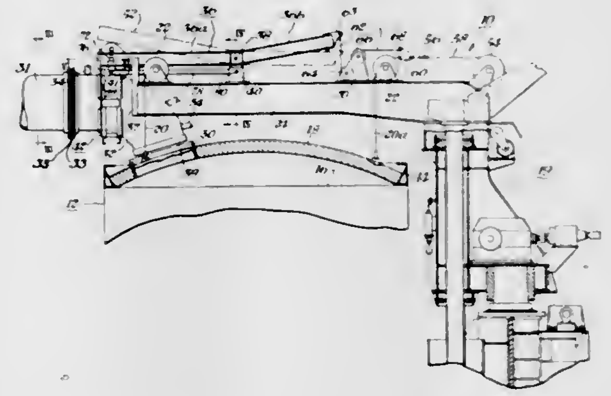
Thomas G. Sconzo, Macon St., Sayville, N.Y. 11782
Filed May 23, 1967, Ser. No. 640,735
U.S. Cl. 256—59 **6 Claims**
Int. Cl. E04h *17/14;* **F16b** *7/04*



A cap which is adapted to be applied to the upper end of a fence post for supporting a tubular rail along the upper edge of a fence, and comprises, a pair of opposed similar sections which are adapted to be removably clamped together about the upper end of a fence post.

3,428,301
LIFTING ARRANGEMENT FOR A FURNACE FUME ELBOW AND THE LIKE

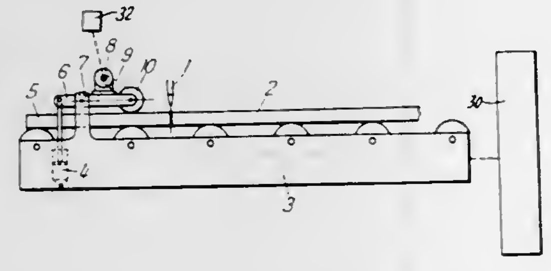
Leslie A. Chermely, Pittsburgh, Pa., assignor to Pullman Incorporated, a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,321
U.S. Cl. 263—46 **12 Claims**
Int. Cl. F27d *1/02*



A lifting arrangement is disclosed for lifting and suspending the smoke or fume elbow of an electric melt furnace or the like. The elbow is raised above the furnace during those times when the furance roof is periodically replaced with a new roof. On the other hand, the elbow is suspended at (or slightly above for draft purposes) the roof during operation of the furnace. The elbow lift is coupled to the roof lift for simultaneously lifting the elbow and the roof when the latter is raised and swung aside for changing purposes. The disclosed mechanism, however, lifts the elbow slightly faster and farther than the roof so that the raised roof clears both the top of the furnace and the lower end of the elbow when the roof and the elbow are pivoted to one side. The lifting mechanism transposes all of the considerable elbow weight to the pivotable roof supporting beams so that neither the roof nor the roof-supporting ring of the furnace need be asymmetrically strengthened to support the elbow. Thus the very heavy elbow can be supported entirely by the roof beams during operation of the furnace as well as during roof changing or furnace charging.

3,428,302
SUPERVISORY EQUIPMENT FOR CUTTING TORCH MACHINES IN CONTINUOUS CASTING INSTALLATIONS

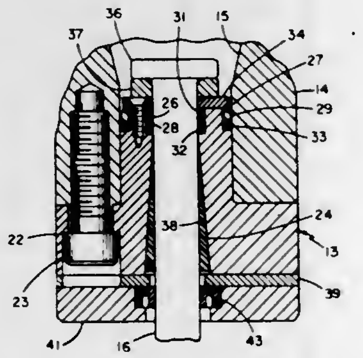
Horst K. Lotz, Frankfurt am Main, Germany, assignor to Messer Griesheim G.m.b.H., a corporation of Germany
Filed July 26, 1965, Ser. No. 474,915
Claims priority, application Germany, July 30, 1964, M 61,932
U.S. Cl. 266—23 **7 Claims**
Int. Cl. B23k *5/00;* **B65h** *17/22*



A supervisory device for flame cutting machines used in continuous casting installations which employ cutting torches to cut segments from the continuously cast work piece includes a roller downstream from the cutting torch and pressing against the segment to activate the supervisory device when there is an incomplete cutting of the segment.

3,428,303
FLUID SPRING DEVICE

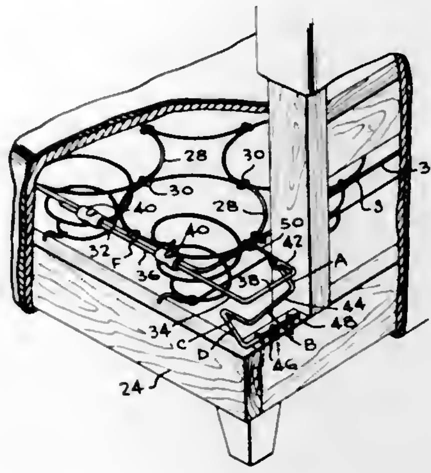
Thomas J. Lynch, North Chelmsford, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,425
U.S. Cl. 267—65 **5 Claims**
Int. Cl. B60g *11/26;* **F16d** *57/00;* **F16f**



The invention is directed to a fluid spring device designed to operate under high fluid pressures and includes a sealing means and bearing means for the plunger, in combination, whereby the integrity of the seal is maintained under high pressure conditions. The alignment of the plunger is also maintained in a simple and facile manner. The selling means comprises an O ring situated in a groove in combination with a tapered bearing having a pointed apex situated adjacent to the sealing means to prevent extrusion thereof.

3,428,304
COIL SPRING SET EXTENSION ATTACHMENT

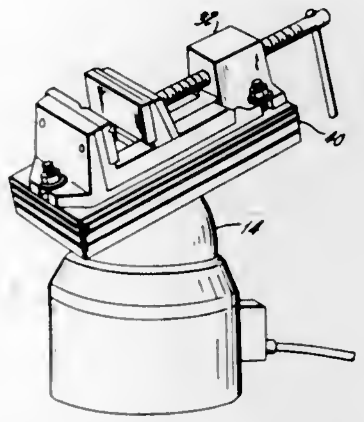
Lacy A. Rowe, Salem, Va., assignor to Johnson-Carper Furniture Company Incorporated, Roanoke, Va., a corporation of Virginia
Filed Aug. 30, 1967, Ser. No. 664,319
U.S. Cl. 267—97 **8 Claims**
Int. Cl. F16f *3/04*



An L-shaped spring attachment platform having a first leg attached to the forward edge of a rectangular coil spring set and a descending spring attached to its second leg and connected to a supporting frame to provide a lateral extension of the forward edge of the spring set.

3,428,305
MULTI-LAYERED MAGNETIC SHIELD FOR A MAGNETIC VISE

Donald I. Bohn, Battery Park Hotel, Asheville, N.C. 28802
Filed Dec. 2, 1965, Ser. No. 511,160
U.S. Cl. 269—75 **9 Claims**
Int. Cl. B25b *1/22, 11/00;* **H01f** *15/04*

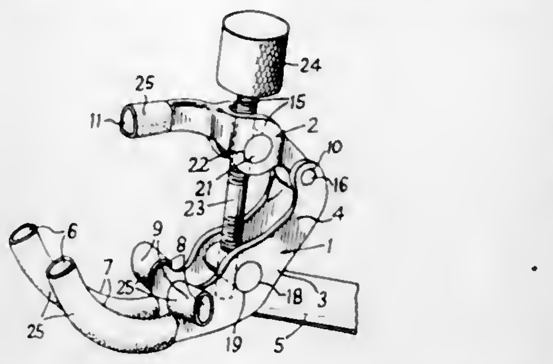


A multi-layered magnetic shield for a magnetic vise is provided with a plurality of alternate layers of magnetizable and non-magnetizable material. The layers of magnetizable and non-magnetizable materials are arranged so that as the distance from the layers to a source of magnetic lines of force associated with the vise increases, the thicknesses of respective magnetizable and non-magnetizable layers decrease.

3,428,306
CLAMPS

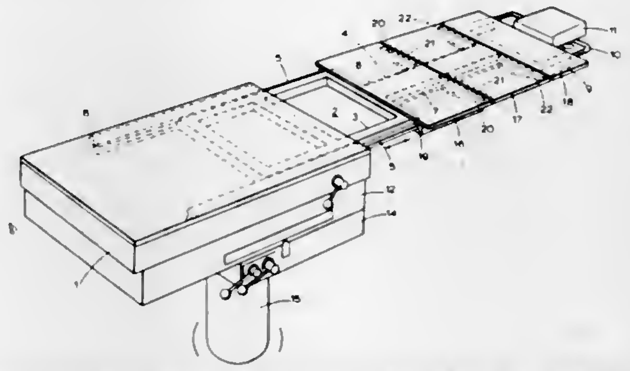
Benjamin Waugh Harrison, The Garage, Hammers Lane, London, NW. 7, England
Filed May 11, 1965, Ser. No. 454,838
Claims priority, application Great Britain, May 12, 1964, 19,694/64
U.S. Cl. 269—218 **8 Claims**
Int. Cl. B25b *1/10, 5/04, 5/16*

There is provided a clamp for generally cylindrical objects and having two jaws, one jaw provided with intersecting concave and convex surfaces. Means are provided for retaining the two jaws in clamping relation. Preferably the second jaw is of concave shape relative to the first jaw.



3,428,307
ADJUSTABLE COUCHES

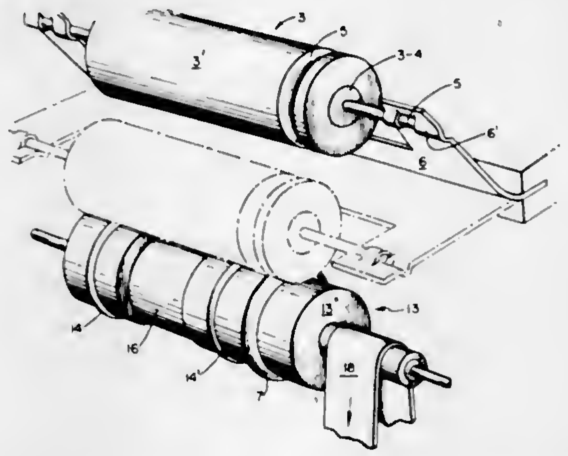
Henry Douglas Hunter, Horsham, and Alfred Kennedy Owen, Crawley, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,408
Claims priority, application Great Britain, Nov. 6, 1964, 45,322/64
U.S. Cl. 269—322 **2 Claims**
Int. Cl. A61g *13/00;* **A47b** *11/00, 1/02*



An adjustable couch particularly suitable for deep X-ray therapy comprising a base member, a support member connected to and movable relative to the base and adapted to carry a plurality of panels. The support member comprises two portions connected in tandem along the length of the couch, one portion is in the form of a central column and the other portion is in the form of a closed frame.

3,428,308
FLEXURE-MOUNTED MAGNETIC PINCH ROLL

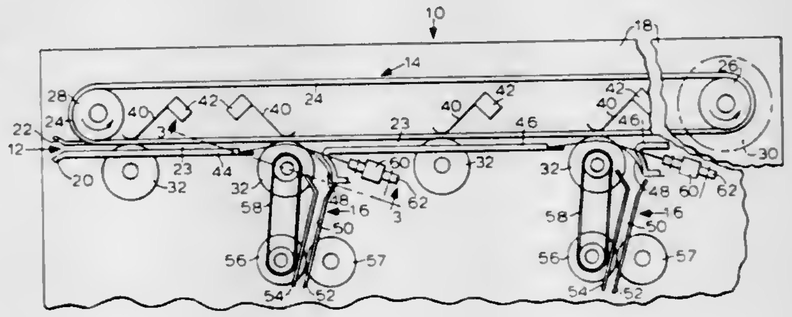
David W. Bernard, Sherborn, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,842
U.S. Cl. 271—51 **9 Claims**
Int. Cl. B65h *5/06, 29/12*



A pinch-roll arrangement for selectively advancing unit records and generally including a fixed magnetic constantly-rotating drive roll and a magnetic pinch roll resiliently mounted to be selectively and resiliently pivoted toward the drive roll for driving engagement with an intermediate record, this mounting being provided preferably with a spring flexure plate or with a resilient hub. Preferably, idler driving means is also provided for the pinch roll comprising either a second fixed idling roll, magnetically or otherwise engageable with the pinch roll to keep it rotating when not in record-advancing condition. Alternatively, this idling is provided with an idler coupling to the pinch roll from the drive roll, such as a magnetic coupling, a common belt drive or a resilient frictional coupling like a hollow O-ring. In a further embodiment, two such pinch rolls may be spring mounted to be magnetically attracted against a common drive roll.

3,428,309
SHEET DEFLECTION GATE

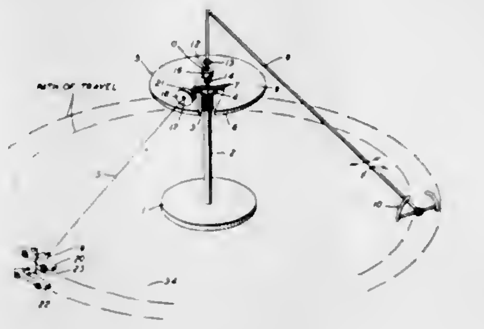
Donald E. Brozo, Livonia, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 7, 1967, Ser. No. 644,325
U.S. Cl. 271—64 **3 Claims**
Int. Cl. B65h *29/60*



A selectively operable resilient gate for deflecting transported sheets from a main transport guideway to an auxiliary transport guideway. The gate is a simple, reliable member capable of operating in high speed sheet transport systems. The gate is a curved deflecting member which forms a continuous deflecting path to transfer a sheet from the main to the auxiliary guideways in one gate position. In a second gate position, the gate directs the sheets past the auxiliary guideway without interference.

3,428,310
TOY APPARATUS WITH MANUALLY TILTABLE PLATFORM

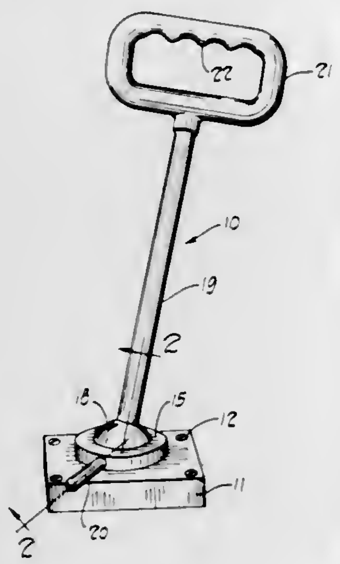
James Leath, 39 Academy Ave., Plainfield, N.J. 07062
Filed May 24, 1966, Ser. No. 552,600
U.S. Cl. 272—31 **6 Claims**
Int. Cl. A63g *18/02, 29/08, 18/16*



Toy apparatus is disclosed for manually operating a platform or track member to a plurality of tilted positions to control the traveling movement of toy racing cars and airplanes by gravity operated means. A weighted wheel and cable arrangement is used to cooperate with an upper platform surface for controllably moving the car and airplane circularly around the platform.

3,428,311
RESISTANCE EXERCISER FOR WRISTS, ARMS, AND UPPER BODY

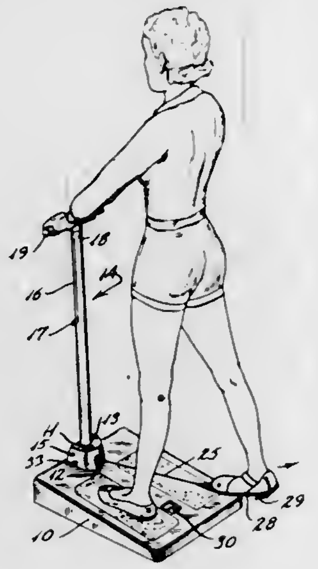
Thoral J. Mitchell, 7676 Iroquois Trail,
Macedonia, Ohio 44056
Filed Apr. 1, 1966, Ser. No. 539,422
U.S. Cl. 272—67 **1 Claim**
Int. Cl. A63b *23/00*



Apparatus for toning the musculature of the upper body and extremities, comprising a frictionally mounted pivot bar having a hand-grip at its upper end rigidly positioned at 90° to its long axis, to provide predetermined resistance to both rocking and twisting movement of the bar when the hand-grip is grasped by the user.

3,428,312
EXERCISER FOR ARMS AND LEGS

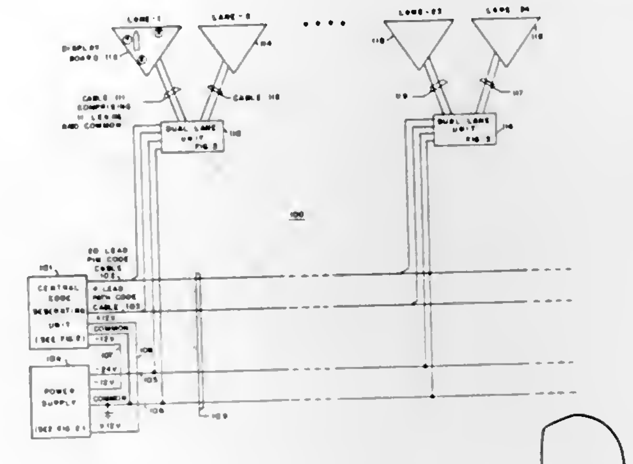
Valentine Machen, 2021 14th St. NW.,
Washington, D.C. 20009
Filed Oct. 24, 1965, Ser. No. 504,427
U.S. Cl. 272—80 **1 Claim**
Int. Cl. A63b *21/04, 23/04*



An exerciser comprising a platform, a post which can be gripped for support connected to said platform, a device applicable to the foot, and tension means connecting it to the platform so that a user can move the foot and exercise the muscles of the leg and hip.

3,428,313
BALL PATH COMPUTER SYSTEM

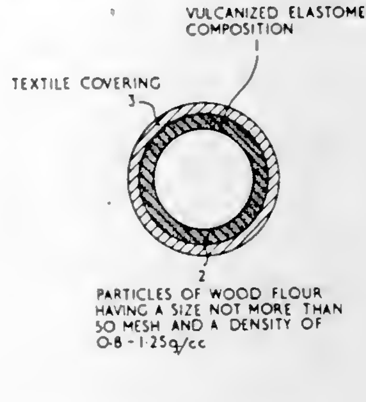
George G. D. Southard, Galion, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Dec. 9, 1965, Ser. No. 514,765
U.S. Cl. 273—54 **8 Claims**
Int. Cl. A63d *5/00*



System for displaying optimum path for making a spare in bowling equipment using a control signal generator which continually provides two sets of signals to each of the lanes over a first and a second channel, the first set of signals representing different possible pin combinations left standing and the second set of signals identifying the optimum path for the particular combination represented by the signals on the first path. Each lane has comparison means for comparing the pin condition thereat with the first signal group, and for passing the information in the second signal group to associated display equipment whenever coincidence occurs.

3,428,314
GAME BALL

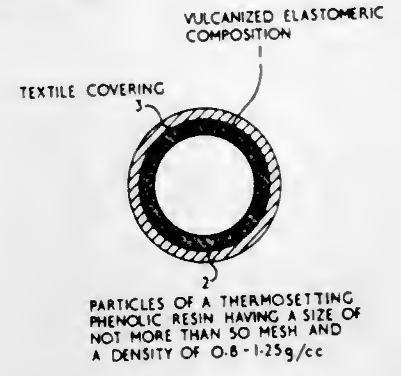
Robert C. Haines, Marston Green, Birmingham, and Royce Pridgeon, Stain Cross, near Barnsley, England, assignors to The Dunlop Company Limited, London, England, a British company
Filed June 28, 1965, Ser. No. 467,687
Claims priority, application Great Britain, July 9, 1964, 28,326/64
U.S. Cl. 273—61 **4 Claims**
Int. Cl. A63b *39/00*


VULCANIZED ELASTOMERIC COMPOSITION
1
TEXTILE COVERING
3
2
PARTICLES OF WOOD FLOUR HAVING A SIZE NOT MORE THAN 50 MESH AND A DENSITY OF 0.8-1.25g/cc

A pressureless ball e.g. a tennis ball comprising a hollow sphere of a vulcanized elastomeric composition containing dispersed discrete particles of wood flour as a reinforcing filler.

3,428,315
GAME BALL

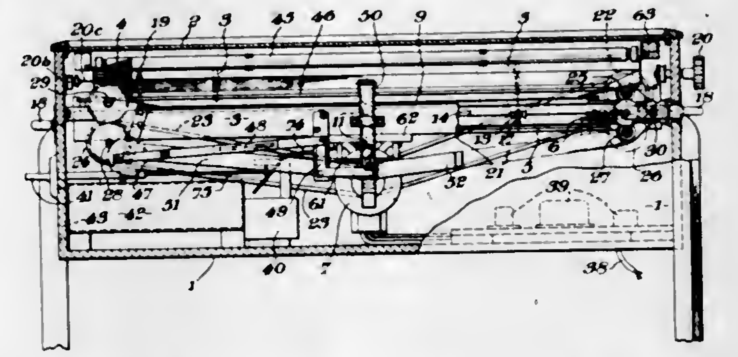
Robert C. Haines, Birmingham, England, assignor to The Dunlop Company Limited, London, England, a British company
Filed June 28, 1965, Ser. No. 467,755
Claims priority, application Great Britain, July 9, 1964, 28,327/64
U.S. Cl. 273—61 **9 Claims**
Int. Cl. A63b *39/00*


VULCANIZED ELASTOMERIC COMPOSITION
1
TEXTILE COVERING
3
2
PARTICLES OF A THERMOSETTING PHENOLIC RESIN HAVING A SIZE OF NOT MORE THAN 50 MESH AND A DENSITY OF 0.8-1.25g/cc

A pressureless ball e.g. a tennis ball comprising a hollow sphere of a vulcanized elastomeric composition containing dispersed discrete particles of a thermosetting phenolic resin as a reinforcing filler.

3,428,316
BALL GAME APPARATUS INCLUDING A PLAYING AREA AND MOVABLE PIECES SELECTIVELY MOVABLE ALONG SAID PLAYING AREA

Albert Leslie Cane, 24 Burns Way, Heston, Middlesex, England
Filed June 28, 1965, Ser. No. 467,631
Claims priority, application Great Britain, July 24, 1964, 29,734/64
U.S. Cl. 273—85 **1 Claim**
Int. Cl. A63f *7/06*

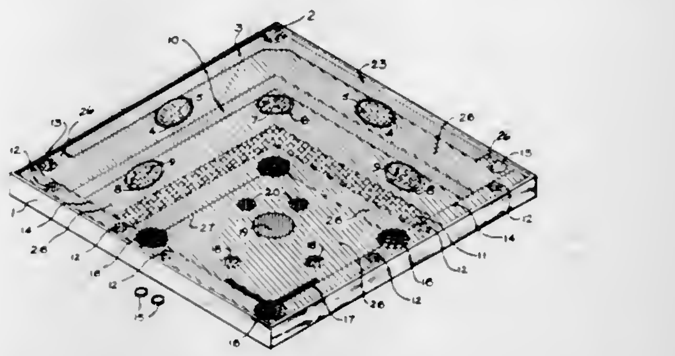


A ball game apparatus includes a parallel slotted playing surface with playing pieces each on a stem extending up through a respective slot from a sliding carriage coupled to a respective endless cable trained over pulleys at opposite ends of the playing surface. One pulley of each pair is connected to a friction wheel on a lever which can be rocked by a player to engage the wheel with a selected one of a pair of oppositely rotating spaced shafts mounted in fixed bearings, to move the associated playing piece in either direction along its slot. A pair of these shafts are provided at each end of the playing surface and each pair is associated with all of the friction wheels at the associated playing surface end.

3,428,317
BASEBALL GAME APPARATUS

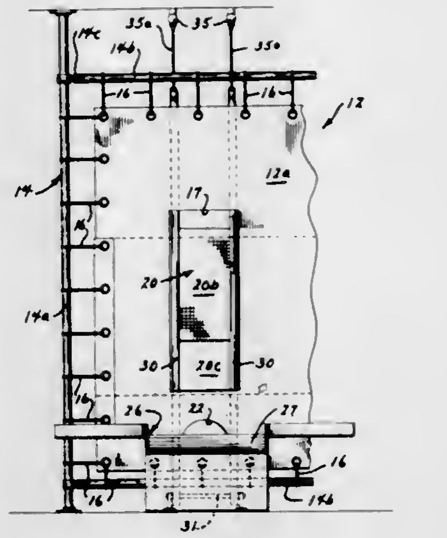
Carl W. Pulcifer, 925 E. Guthrie,
Madison Heights, Mich. 48071
Filed Mar. 8, 1967, Ser. No. 621,480
U.S. Cl. 273—88 **4 Claims**
Int. Cl. A63f *7/06, 3/00*

A baseball game apparatus employing a board as a playing field with peripheral frame therearound and with the indicia designating a baseball diamond adjacent one corner of the board; with depressions on said diamond designating the bases and home plate; with green areas applied to said board covering infield and outfield, a die rolled by the pitcher to determine the nature of a ball thrown, including strikes, balls and hits; an apertured disc slidably movable over said board, a cue alternately used by offensive and defensive players for sliding said disc and a three dimensional character movably positioned within the base defining depressions of said diamond; there being a plurality of variously colored areas applied to said diamond for designating base hits and "outs."



3,428,318
GAME COMPRISING BALL FLIPPING MEANS AND TARGET INCORPORATING SIGNALING MEANS

Elva B. Vick, R.R. 2, Newburgh, Ind. 47630
Filed May 10, 1966, Ser. No. 548,935
U.S. Cl. 273—101 **2 Claims**
Int. Cl. A63b *65/12, 63/00*

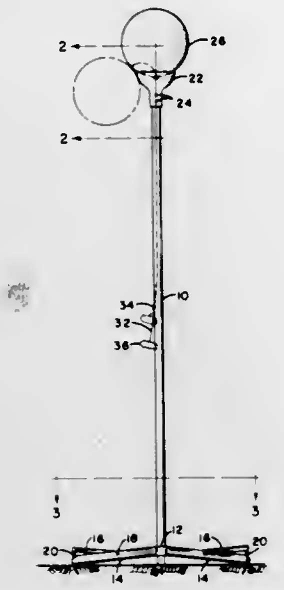


A game defined by the combination of a ball flipper, a target and a ball return, where the target face has an opening behind which and along the side edges thereof are pivotal signal controlling members, where the opening has a height equivalent to the letter-to-knees dimension in baseball, and where the pivotal signal controlling members are spaced apart to simulate the edges of baseball home plate.

3,428,319
ATHLETIC GOAL DEVICE

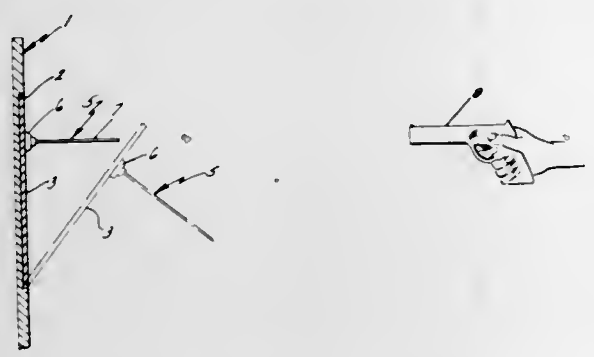
Charles A. Engle, 249 Woodland Drive,
State College, Pa. 16801
Filed July 14, 1966, Ser. No. 565,196
U.S. Cl. 273—102 **6 Claims**
Int. Cl. A63b *63/04*

This invention is a goal and scoring device used in an athletic contest the object of which is to dislodge a goal ball positioned on an elevated pedestal by striking it with a second playing ball. The device is comprised of a ground support member or base, an elevating or hollow pole member extending vertically from the base, a ball supporting ring, on the top of the pole member, upon which a goal ball rests. The goal ball is attached to the reset cable which extends through the hollow pole member and through a hole therein to the outside. When the goal ball is knocked from the ball supporting ring, it is repositioned by pulling the cable by team that scores.



3,428,320
SHOOTING GAME

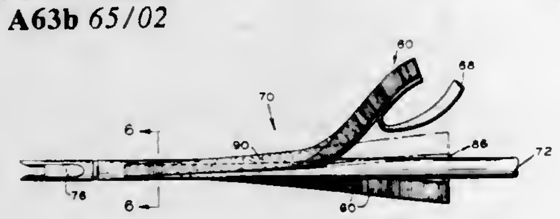
Joseph W. Yurkinas, 11747 92nd St., Alto, Mich. 49302
Filed May 3, 1965, Ser. No. 452,625
U.S. Cl. 273—102.1 **2 Claims**
Int. Cl. A63f *9/02*



A game board in combination with a dart, the game board including a plurality of recesses, the recesses being of varying sizes, a plurality of objects detachably fitted into the recesses, the objects detachable from the board under the weight of a dart attached thereto.

3,428,321
FUR FLETCHED ARROWS

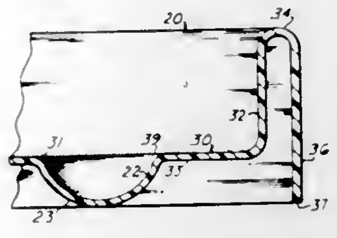
Arnold J. Manning, Eugene, Oreg., assignor to William E. Sweetland, Eugene, Oreg.
Filed Jan. 13, 1967, Ser. No. 609,186
U.S. Cl. 273—106.5 **7 Claims**
Int. Cl. A63b *65/02*



Fletchings of natural or synthetic fur are secured to arrow shafts near the nocks with the fibers of the fur extending radially of the shafts. The fur may be in narrow strips having waterproof, pressure sensitive adhesive on the hides for securing the strips to the arrows in longitudinally extending positions or in close or open spirals.

3,428,322
BALL GAME APPARATUS

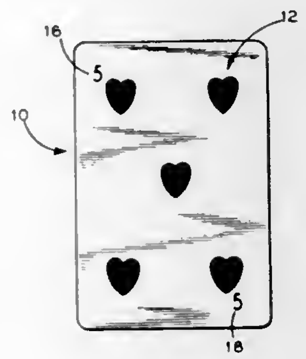
Herbert Motz, Parkhill Lane, Escondido, Calif. 92025
Filed Oct. 22, 1965, Ser. No. 501,318
U.S. Cl. 273—123 **4 Claims**
Int. Cl. A63f *7/00;* **A63d** *13/00*



A ball game apparatus that uses cues to move balls on a circular flat platform with uniformly dispersed ball receiving, ball shaped, depressions therein, and which platform is supported around its circular outer edge by an inverted "U" shaped support and throughout its surface area by the lower surface of the depressions to provide a completely supported flat surface.

3,428,323
CARDS WITH SINGLY ORIENTED FACE INDICIA AND RELATED BACK INDICIA

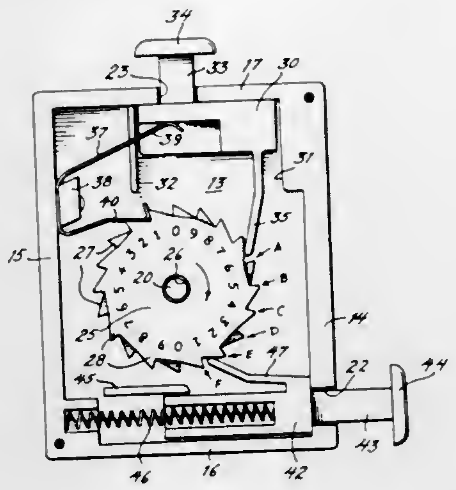
Robert S. Fried, 12 Luddington Terrace, West Orange, N.J. 07052
Filed Oct. 20, 1965, Ser. No. 498,847
U.S. Cl. 273—152.2 **6 Claims**
Int. Cl. A63f *1/00;* **G09b** *1/00*



A teaching aid for learning to play cards including a bridge deck of playing cards comprising a plurality of suits of cards wherein each suit comprises a sequence of individual cards having a face and a back. Value means, which is positioned for reading in a single preselected orientation only, is provided on the face of each card for designating the face value of that particular card. Different indicia are provided on the back of each card and are positioned at the bottom of the cards so that the indicia will be hidden by the hand when the cards are held in the hand with said preselected orientation. A different key card for each player is provided wherein each key card has different indicia thereon corresponding to the indicia on the back of respective ones of the playing cards so that the playing cards bearing the same indicia as specified on a particular key card are distributed to the player having said particular key card. Critiques are provided for explaining the best possible play of the hands when arranged in accordance with the indicia on the key cards.

3,428,324
GAME DEVICE

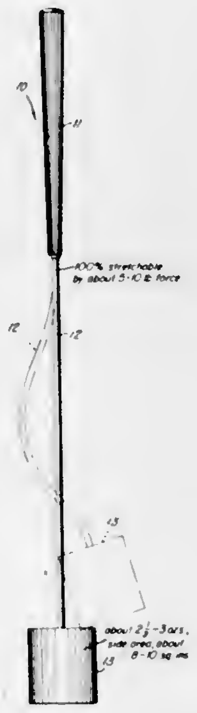
Joseph A. Weisbecker, 1220 Wayne Ave., Erlton, Cherry Hill, N.J. 08034
Filed Mar. 29, 1967, Ser. No. 626,738
U.S. Cl. 273—153 **8 Claims**
Int. Cl. A63f *9/06;* **G09c** *27/00*



A game construction wherein a movable member is adapted to be moved by at least a pair of operating mechanisms for play of the game by a single player against the game itself. In accordance with the rules of the game, it is an object of the player to move the movable member to a predeterminde position in order to win. Alternate actuation of the operating mechanisms correspond to moves or turns by the player and game respectively.

3,428,325
GOLF SWING TRAINING DEVICE

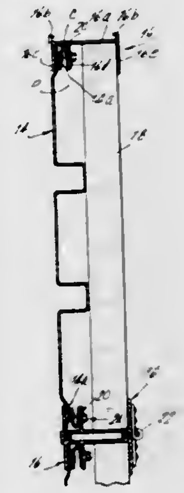
Garland P. Atkinson, 3104 Merrell Road, Dallas, Tex. 75229
Filed Jan. 13, 1966, Ser. No. 520,535
U.S. Cl. 273—186 **3 Claims**
Int. Cl. A63b *69/36*



A golfer's swing training club includes a handle member having gripping characteristics corresponding to those of a golf club handle and a soft rubber body connected thereto by a longitudinally elastic and laterally flexible cord forming a club shaft. The soft rubber body weighs about 2½–3 ounces and has a projected side area of about 8–10 square inches. The cord includes elastic strips encased in a sheath having clips squeezed around its ends. One end of the cord is inserted into an annular core member in the soft rubber body and then knotted. The other end of the cord is inserted into the handle member which is then crimped thereabout. The cord shaft is 100% stretchable by a force of about 5–10 pounds.

3,428,326
PANEL MOUNTING CONSTRUCTION

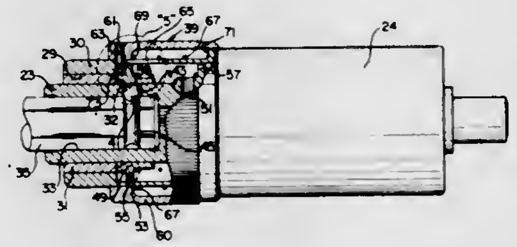
Victor Clapsaddle, Massapequa, N.Y., assignor to North American Winfield Door Corp., Lindenhurst, N.Y., a corporation of New York
Filed July 11, 1967, Ser. No. 652,533
U.S. Cl. 52—502 **2 Claims**
Int. Cl. E06b *3/58;* **E04f** *15/14*



A construction for mounting a panel in an opening of an overhead garage door or similar structure wherein the panel is extruded in a shape providing a gripping surface along each of two opposite edges and these edges are each extended into a mounting compartment bounding the panel opening which also accommodates a resilient mounting clip that is effective to engage each panel edge gripping surface to firmly hold the panel in place.

3,428,327
QUICK RELEASE ROTARY TOOL CHUCK

William F. Sindelar, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Sept. 19, 1966, Ser. No. 580,368
U.S. Cl. 279—82 **2 Claims**
Int. Cl. B23b *31/12*

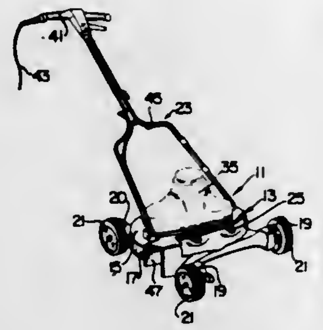


The device described herein is a portable, power driven, rotary tool which includes a housing having a motor therein adapted to rotate a spindle and a tool bit carried thereby. A quick-release chuck is provided to releasably secure the bit to the spindle and the latter is supported for accurate rotation in the housing.

3,428,328
WHEEL HEIGHT ADJUSTMENT FOR LAWN MOWER

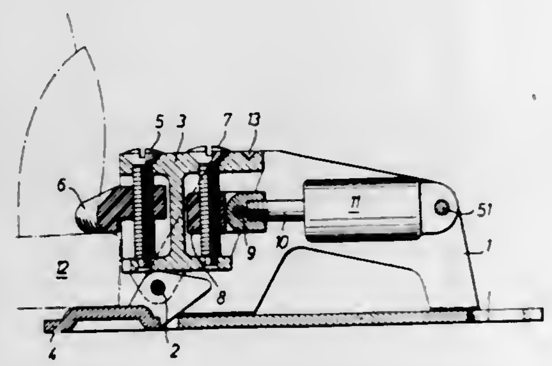
William R. Lessig III, Baltimore, and James E. Dickson, Towson, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Apr. 4, 1967, Ser. No. 628,438
U.S. Cl. 280—43.17 **13 Claims**
Int. Cl. B62d *21/14*

A lawn mower of the type having a deck housing supported upon the ground by a plurality of wheels and provided with an upstanding handle for control and manipulation thereof. One or more rotary blades are supported by the housing for rotation in a plane generally parallel to the ground and are adapted to be rotatably driven by a motor supported atop the housing. The wheels are adjustably secured to the housing so that by selectively positioning the wheels vertically relative to the housing, the cutting height of the blade or blades is varied.



3,428,329
HEEL HOLDERS FOR SAFETY SKI BINDINGS

Hermann Scheib and Günter Adam, Garmisch-Partenkirchen, Germany, assignors to Hannes Marker, Garmisch-Partenkirchen, Germany
Filed Aug. 31, 1966, Ser. No. 576,419
Claims priority, application Germany, Sept. 25, 1965, M 66,772
U.S. Cl. 280—11.35 **12 Claims**
Int. Cl. A63c *9/00*

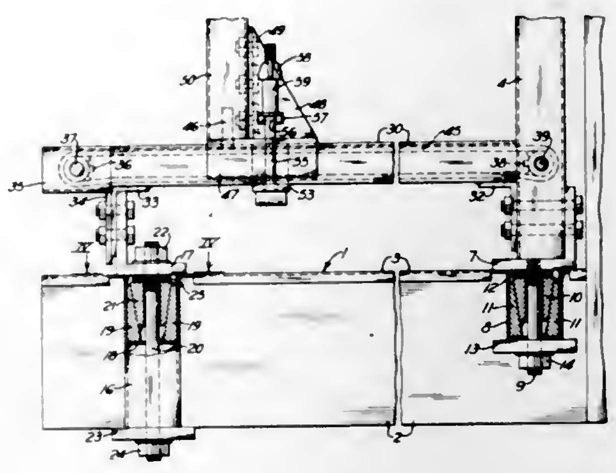


A heel holder for safety ski bindings consisting of a pressure member to engage the heel groove of a ski boot. The pressure member is pivotally mounted to the ski on an axis located behind the ski boot. A spring resiliently urges the pressure member against the ski boot, with the pressure member being pivoted to a release position when experiencing an excessive force. The spring element is in the form of a gas spring which has the advantages of functioning as a spring when subjected to minor shocks, and, when subjected to an excessive shock, such as would require release, the gas spring serves to produce equalization of pressure about its piston and functions as a plunger damped by gas pressure so that it moves to a release position without a restoring force.

3,428,330
ADJUSTABLE LOAD RACK FOR TRUCKS

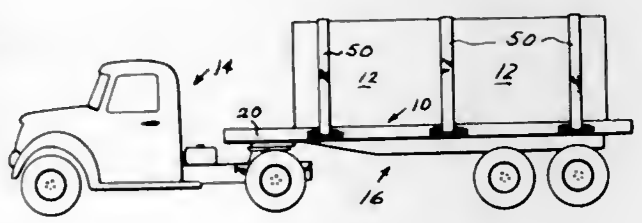
Ludwig Klein, R.D. 7, P.O. Box 63, Gibsonia, Pa. 15044
Filed Jan. 12, 1967, Ser. No. 608,772
U.S. Cl. 280—179 **8 Claims**
Int. Cl. B60p *7/00*

A load retaining rack for the open body of a truck and having a pair of horizontal hollow rails attached to the opposite sides of a truck body, with sprockets mounted at the ends of the rails to support endless chains, the lower lengths of which extend through the rails. A shoe, slidable along the top of each rail, is connected to the upper length of the underlying chain and supports a vertical post forming part of a load-retaining rack. When the sprockets are rotated, the shoes and posts are moved along the rails.



3,428,331
BINDER CONSTRUCTION FOR A LOADED MOBILE BED

Melvin C. Morgan, 1309 May St., and Carl K. Morgan, 301 Pioneer Way, both of Shelton, Wash. 98584
Filed Feb. 15, 1968, Ser. No. 705,797
U.S. Cl. 280—179 **6 Claims**
Int. Cl. B60p *7/06*



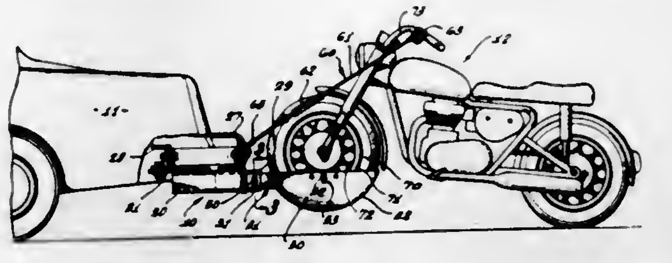
A loaded mobile bed, as a truck bed, and a load maintaining binder structure in the nature of a wide flexible band detachably hooked to one side rail of the bed, extending over the load, and detachably connected to the opposite side rail of the bed, through a winch. The winch is characterized by a drum thereof comprising a plurality of spaced and longitudinally extending rods, a stub shaft and a circular plate welded to each of the end portions of the rods, and pawl and ratchet means permitting rotation of the drum in one direction and preventing rotation in the other direction.

3,428,332
TOWING APPARATUS

Fred N. McCance, 68–805 E St., Cathedral City, Calif. 92234
Filed Sept. 1, 1966, Ser. No. 576,718
U.S. Cl. 280—292 **11 Claims**
Int. Cl. B62h *1/00;* **B62d** *53/04*

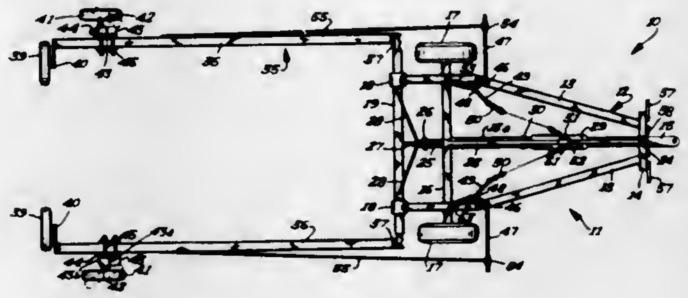
A towing apparatus for towing a two-wheeled vehicle such as a motorcycle behind another vehicle such as an automobile. The apparatus includes a wheel carrier detachably attached to the rear of the towing vehicle by means of a pair of keyed telescoping sleeves, one of which remains affixed to the towing vehicle. The carrier includes a cradle into which the pivotal steering wheel of the towed vehicle rides. A pair of guys between the towing

vehicle and a second portion of the steering assembly such as the handlebars of the towed vehicle maintains the pivotal steering wheel of the towed vehicle in a fixed attitude with respect to the towing vehicle so that the pivoting point of the towing combination is the pivot point of the steering assembly of the towed vehicle. An alternate embodiment is a carrier with a plurality of cradles for towing a plurality of two-wheeled vehicles.



3,428,333
TOW-TYPE SECTIONAL AUTOMATICALLY FOLDABLE HARROW CART

Vern Eldon Nelson, deceased, late of Clinton, Minn., by Gladys Nelson, administratrix, Clinton, Minn. 56225
Continuation of application Ser. No. 545,492, Apr. 26, 1966. This application Nov. 24, 1967, Ser. No. 691,064
U.S. Cl. 280—411 **9 Claims**
Int. Cl. B60d, B62d *53/00, 21/14*

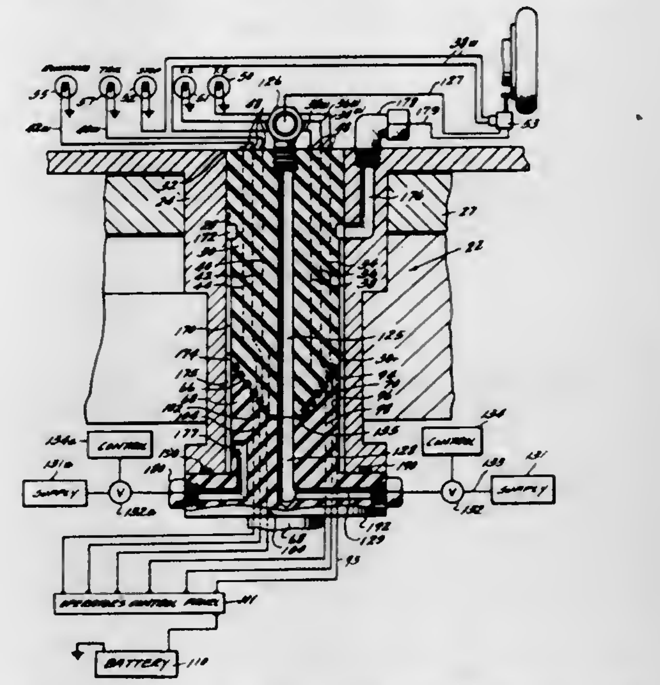


A foldable sectional tow-type implement, including a wheel cart having a centrally located drawbar revolvably mounted thereon, and a pair of outboard sections interconnected to the centrally located drawbar and each being revolvable with the drawbar and swingable in a fore and aft direction relative thereto. Each of the drawbars serving to support an earthworking implement so that when the drawbars are in an operative position, the earthworking implements engage the surface of the ground and when the drawbars are swung to an inoperative position, the associated earthworking implements are raised. Each outboard drawbar having a pair of wheels thereon, one of which supports the associated outboard drawbar for travel when the latter is in the lowered operative position and the other wheel facilitating movement of the outboard drawbar in a fore and aft direction between a folded and extended position.

3,428,334
VEHICLE ARTICULATING COUPLING WITH ELECTRICAL AND FLUID SERVICE LINE CONNECTORS

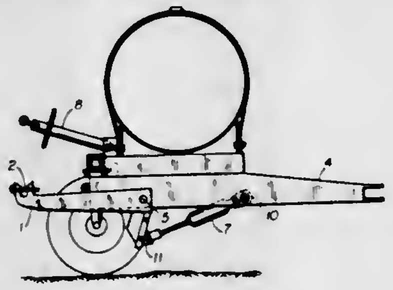
Neal C. Hils, Cincinnati, Ohio, assignor of one-half to John V. Naidenoff, Elyria, Ohio
Filed Oct. 17, 1966, Ser. No. 587,230
U.S. Cl. 280—421 **12 Claims**
Int. Cl. B60d *1/08;* **H02g** *11/02;* **F16l** *3/00*

An articulating coupling made up of a combination of elements through which electrical and pneumatic systems are respectively connected together upon coupling of such elements. Such combination is adapted to articulating vehicular movements, and comprises a kingpin or casing, an insulating material plug press fit in the bore of such kingpin or casing, and an insulating material member of less diameter than that of such bore cooperatively engaging the plug. Two independent pneumatic passageways are provided through the plug and member, and an electrical system of leads and ring contacts are provided between plug and member, whereby upon joining of the kingpin or casing, plug and member together, the articulating coupling is affected.



3,428,335
LIFT HITCH ASSEMBLY

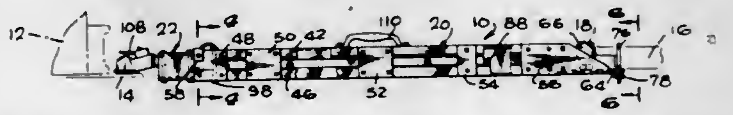
David A. Clark, P.O. Box 396, Sand Springs, Okla. 74063
Filed Mar. 8, 1967, Ser. No. 621,700
U.S. Cl. 280—479 **4 Claims**
Int. Cl. B60d *1/10;* **B60p** *3/22;* **A01b** *51/00*



A mechanical device which is a component of a tank-carrying vehicle. The mechanical device being an improved means for connecting tool bars equipped with agricultural equipment to the tank-carrying vehicle.

3,428,336
BOAT TRAILER TONGUE EXTENSION APPARATUS

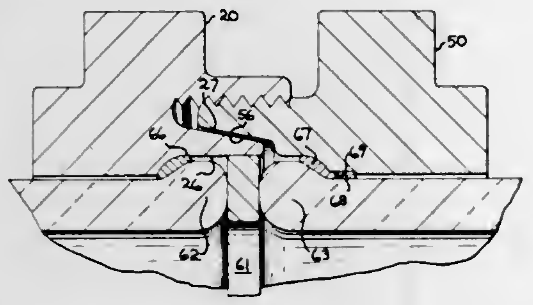
Jesse B. Thurman, 1010 North Ave. 49, Los Angeles, Calif. 90042
Continuation-in-part of abandoned application Ser. No. 618,095, Feb. 23, 1967. This application Feb. 26, 1968, Ser. No. 714,394
U.S. Cl. 280—482 **17 Claims**
Int. Cl. B60d *1/00, 1/06*



A separate unit having a ball on one end and a ball socket on the other end is arranged to be interconnected between the trailer hitch on a vehicle and the front end of a trailer to extend the distance therebetween. The extension apparatus is secured to the trailer by securement means in addition to the ball and socket on that end. Furthermore, the tongue extension apparatus is provided with two telescoping tubes so that it may be used either in the shortened or lengthened position and it may be carried and stored in the shortened position. One of the tubes carries tracks and the other carries rollers in engagement with the tracks so that telescoping can be easily accomplished. The rollers are preferably of pliable material so that when loaded, they deform and mechanical engagement between the tubes carries loads which are not longitudinal of the apparatus.

3,428,337
PIPE COUPLING

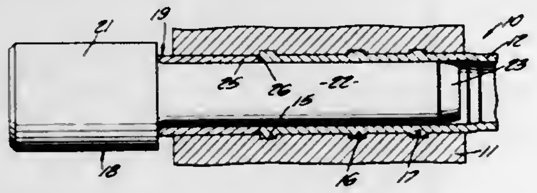
William B. Read, Sylvania, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 9, 1966, Ser. No. 578,384
U.S. Cl. 285—18 **5 Claims**
Int. Cl. F16l *49/00, 21/4, 21/08*



A pipe coupling for securely interlocking circumferentially enlarged flange-ended pipe sections having relatively fragile flanged ends, in non-contacting, end-to-end, nonleaking, intercommunicating relationship by means of constructing said pipe coupling with a pair of radially sectionalized annular collars, or rings, the sections of each of which are structurally designed to mutually interlock in snugly nesting and confining relationship around the flanged end of one each of the pipe sections to be so interlocked. The collars are also constructed to mutually interlock in such a manner that when individually sectionally interlocked, they will telescopically interconnect and preclude separation of the respective sections and at the same time bias the confined flanged ends of the pipe sections, at a circumferential location proximate the base or juncture thereof with the body of the pipe sections, axially towards each other and into annular sealing end contact or abutment with an annular sealing gasket positioned intermediate the flanged ends prior to telescopically interconnecting the collars.

3,428,338
MECHANICAL JOINT AND METHOD OF MAKING SAME

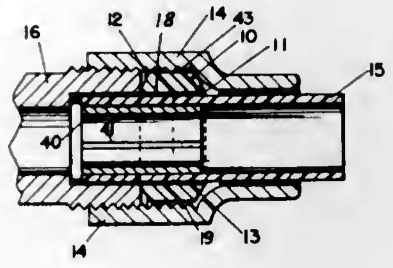
Harry L. Corwin, Los Angeles, Calif., assignor to Vernon Tool Co., Ltd., Alhambra, Calif., a corporation of California
Filed Aug. 22, 1966, Ser. No. 573,913
U.S. Cl. 285—39 **7 Claims**
Int. Cl. F16l *55/00, 35/00*



A gasketless fluid-tight heat exchanger joint and method for sealing a tube assembled to a header bore utilizing a hardened sleeve to upset the end of the tube into a fluid-tight mechanical joint with the bore wall and with the advanced end of the sleeve. The latter has a forced frictional fit with the bore wall before assembly and is sized such that its outer end protrudes beyond the bore end after assembly to safeguard the tube and bore ends against erosion.

3,428,339
PIPE COUPLING

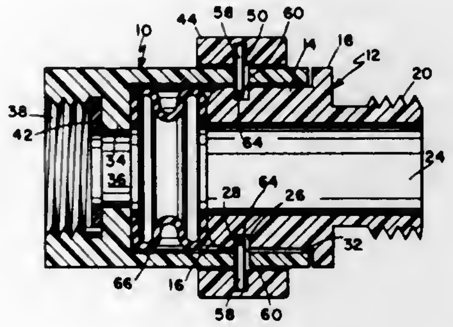
Leo J. Haulik, James G. Bradbury, Leonard S. Greer, and Clarence W. Decker, all of Erie, Pa., assignors to Hays Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1966, Ser. No. 525,711
U.S. Cl. 285—94 **10 Claims**
Int. Cl. F16l *25/00, 55/00*



A compression type coupling having a sealing washer. The sealing washer has abrasive particles embodied in its inner peripherial surface around approximately half of its length. The other half of the length of the sealing washer has a surface adapted to form a seal with the outer periphery of a tube. The abrasive particles grip the outside surface of the tube and hold it against slipping out of the coupling. The area of the washer that does not have particles forms a seal with the tube to prevent leakage. The area having the particular grips the tube and prevents it from withdrawal from the coupling.

3,428,340
HOSE COUPLING

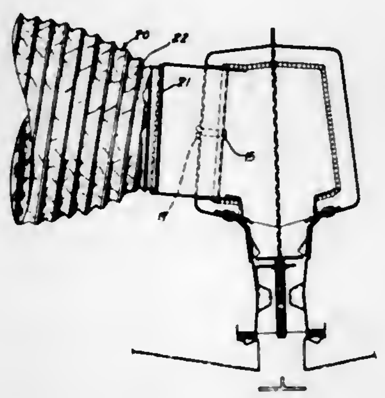
Harry L. Pelton, 13350 Poway Road, Poway, Calif. 92064
Filed Mar. 20, 1967, Ser. No. 624,571
U.S. Cl. 285—95 **2 Claims**
Int. Cl. F16l *17/04, 33/16, 37/24*



A hose coupling having a socket member which receives a plug member; the members are held together by a resilient wire locking element. A collar is mounted on the socket member for releasing the coupling members. The hose coupling has a completely concealed self-locking mechanism which is releasable by a simple twisting action, yet will not separate in normal use, the connection being sealed by a bellows type seal which is held securely by pressure within the coupling, and the coupling elements being adaptable to conventional hose connectors.

3,428,341
FLEXIBLE DUCT COUPLING FOR AIR DIFFUSING SYSTEM

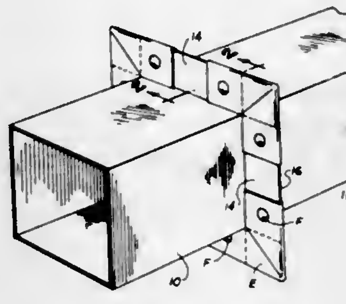
Theodore Mueller, St. Louis, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Dec. 27, 1966, Ser. No. 605,049
U.S. Cl. 285—158 **7 Claims**
Int. Cl. F16l *33/00, 41/00, 47/00*



The combination of circular flexible duct of the type having a helical coil of resilient material covered with a flexible covering and a connecting collar for connecting the duct with a sheet metal housing, the collar having an inwardly turned circumferentially uninterrupted annular lip, the inner edge of which lies in substantially a single plane and defines an opening the circumference of which is approximately equal to pi times the nominal inner diameter of the duct. The end of the duct is fitted within the compass of the lip, by compressing it radially, inserting the end, and permitting it to expand in such a way that at least one full turn of the coil is within the collar, the lip engaging the flexible covering to form a seal and the coil crossing the lip at one place.

3,428,342
CONNECTION FOR SHEET METAL DUCTS

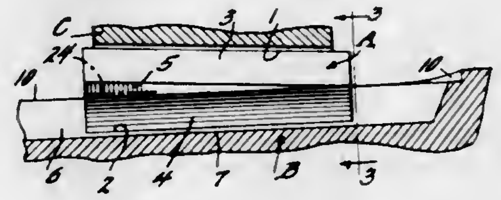
John E. Chambers, 323 Parkins Mill Road, Greenville, S.C. 29607
Filed Feb. 28, 1968, Ser. No. 709,125
U.S. Cl. 285—399 **1 Claim**
Int. Cl. F16e *23/00, 21/06*



A support member including an underlying flange portion folded back 180° integral with a leading edge of one duct, and an outwardly extending flange portion carried integrally with a leading edge of said underlying flange at a right angle thereto, is provided with a locking portion carried integrally with a leading edge of the outwardly extending flange portion. A receiving flange member is carried integrally with and parallel to each of the sides of the other of the ducts conforming to and receiving said underlying flange portion. A connecting wall extends outwardly integral with a leading edge of a duct. A locking portion is folded downwardly over an outwardly projecting abutment wall carried by each receiving flange member. An angle member and fastening means secure each corner of the connection.

3,428,343
MACHINE KEY STRUCTURE

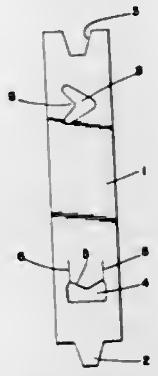
Robert R. Downie, 3328 College Ave., Beaver Falls, Pa. 15010
Continuation of applications Ser. No. 709,635, Jan. 17, 1958, and Ser. No. 325,808, Nov. 19, 1963. This application May 11, 1967, Ser. No. 637,787
U.S. Cl. 287—52.05 **18 Claims**
Int. Cl. F16d *1/08*



The disclosure relates to tapered machine keys for holding a hub and shaft against rotation. Both the hub and shaft keyways have planar pressure faces and a nonpressure surface, and the key has upper and lower pairs of pressure faces as well as upper and lower non-pressure surfaces. The shaft keyway pressure faces are longitudinally parallel as are also the corresponding key pressure faces. As to the hub keyway pressure faces, these are longitudinally inclined together with the associated nonpressure surface, and the corresponding key pressure faces and non-pressure face are similarly inclined longitudinally.

3,428,344
FASTENING DEVICE

John Strange, Llanishen, Wales, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 27, 1966, Ser. No. 582,349
Claims priority, application Great Britain, Dec. 1, 1965, 51,065/65
U.S. Cl. 287—53 **4 Claims**
Int. Cl. F16d *1/08;* **F16b** *21/09*

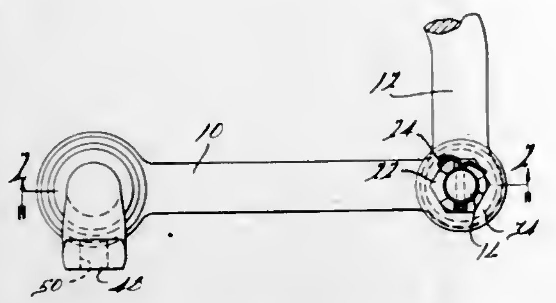


A fastener for connecting a rotatable member to a shaft. The device comprises a spring-like body of looplike shape to provide resilient circumferential expansion and contraction. One end of the body is provided with a recess; the other with a complementary projection to be received in the recess for adjustably holding the body closed. An integral tongue which projects inwardly is disposed between the projection and recess to spring-bias the rotatable member to the shaft.

3,428,345
JOINT ASSEMBLY FOR VEHICLE STEERING LINKAGE

Vincent J. Ryszewski, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 12, 1966, Ser. No. 549,699
U.S. Cl. 287—93 **2 Claims**
Int. Cl. F16b *31/00;* **F16d** *1/00*

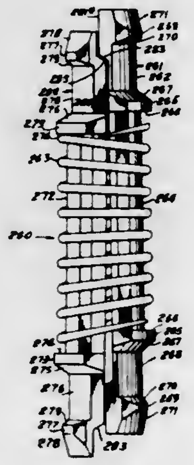
A joint assembly for interconnecting two components one of which is rotatable to the other. The joint components are threadedly interconnected for easy rotative movement at constant torque, and, axially spaced from



the cooperating threads, each component is provided with a cooperating bearing portion for relieving the threads of stress and resisting conical deflection.

3,428,346
WELL TOOLS

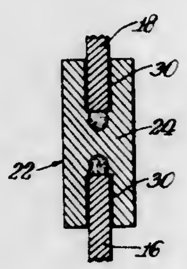
John V. Fredd, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,106
U.S. Cl. 287—111 **19 Claims**
Int. Cl. F16b *7/00;* **F16d** *1/10*



A quick coupler having a pluraliy of longitudinally movable coupler members engageable with each other for coupling spaced members in an articulated manner. Said coupler members having co-engageable surfaces normally holding said members in coupling position and movable to inoperative position upon longitudinal relative movement between said members to permit said coupler members to be disengaged from coupled relationship with the bodies.

3,428,347
TRANSITION BAR

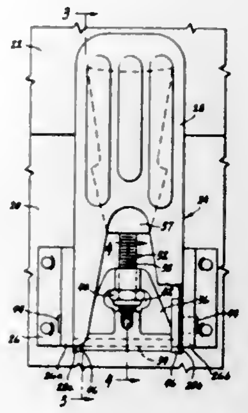
Vernon N. Tramontini, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 17, 1966, Ser. No. 595,243
U.S. Cl. 287—189.36 **4 Claims**
Int. Cl. F16b *11/00, 5/08*



A transition bar including a body portion having formed in the sides thereof two lengthwise recesses in which the edge portions of two members to be joined are adapted to be disposed and brazed. The body portion has formed therein along the bottoms of the recesses lengthwise channels in which strips of brazing material are adapted to be disposed prior to assembly. The channels have a width less than the width of the recesses whereby shoulders are presented for positively seating the edge portions of the members to be joined.

3,428,348
CATCH FOR A PACKING CASE OR THE LIKE

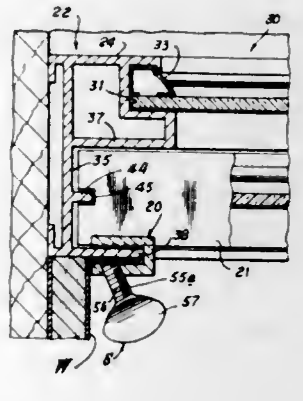
Gunnar E. Swanson, Middletown, Conn., assignor to The Nielsen Hardware Corporation, Hartford, Conn., a corporation of Connecticut
Filed Oct. 22, 1965, Ser. No. 501,425
U.S. Cl. 292—113 **3 Claims**
Int. Cl. B65d *45/24*



A packing case catch has a drawbar which is adjustable in length to readily adapt it to proper engagement with a strike when the catch and the strike are attached to a case. The adjustment is accomplished by a threaded shank on one drawbar part which passes through an opening in the other part and receives an adjustment nut. The nut is a stop nut so as to prevent accidental adjustment and includes one or more surfaces engageable with a simple tool to hold the nut during adjustment. In one embodiment the tool is formed on one of the drawbar parts and is brought into hold engagement with the stop nut by shifting the two drawbar parts out of their normal relative positions.

3,428,349
STOPS

Billy George Shelton, P.O. Box 412, Hutchins, Tex. 75141
Filed Sept. 30, 1966, Ser. No. 583,205
U.S. Cl. 292—288 **8 Claims**
Int. Cl. E05c *19/18, 17/04, 1/06*



A stop for limiting the opening movement of closures, such as slidable windows and doors, which has a channel

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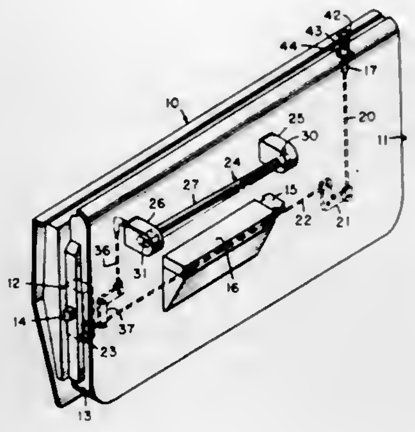
shaped body which is mountable on a window or door guide flange in position to be engaged by the closure and which is rigidly securable thereto by a screw mounted on one of the body flanges.

3,428,350
COMBINATION PULL AND LOCKING ASSEMBLY FOR AUTOMOBILE DOORS

Earl M. Trammell, Jr., Ladue, Mo.
(P.O. Box 435, St. Louis, Mo. 63166)

Filed Nov. 16, 1966, Ser. No. 594,835

U.S. Cl. 292—336.3 **16 Claims**
Int. Cl. E05b *5/00, 7/00;* **G05g** *5/00*



The automobile door incorporates a lock of conventional type that can be utilized to selectively latch the door to preclude opening from the outside. A door pull, constituting an actuating means, is mounted on the inside of the door and is operatively connected to the lock by a connecting means for conditioning the lock, as the door pull is pulled during the act of closing the door, so that the door is latched when fully closed. A push button reciprocatively mounted on and carried by the door can be selectively manipulated from the inside of the automobile to condition the lock to latch the door in order to preclude opening from outside of the automobile when the button is moved to one position and to unlatch the door when moved to another position. A connecting means between the door pull and the push button and lock causes the button to be moved automatically to the said one position as the lock is conditioned for latching during the act of closing the door. The connecting means enables independent operation of the push button in its usual manner with affecting the door pull.

The push button is disposed toward the front of the door so that it is readily visible and accessible to the occupant of the automobile in determining whether or not the door lock is conditioned for latching.

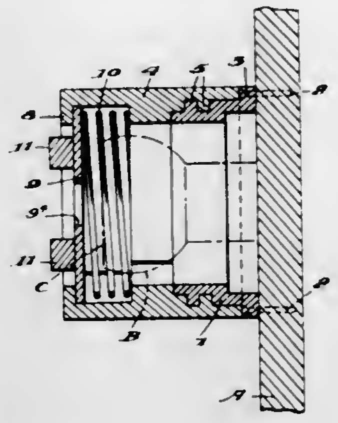
As disclosed, the door pull can be an individual door pull, a designed part of an armrest, a door handle or any other element usually gripped and pulled by the occupant to close the door.

The present safety latch assembly is particularly suitable to utilize a tubular shield of the type disclosed and claimed by applicant's prior Patent No. 2,735,289. This shield is disposed about the push button to preclude digital access to the button and is provided with a slot through which the ignition key may be inserted for actuating the button to the said one position in which the lock is conditioned for latching. The tubular shield prevents the ignition key from being left and locked in the automobile.

3,428,351
DOORKNOB SAFETY LOCKS

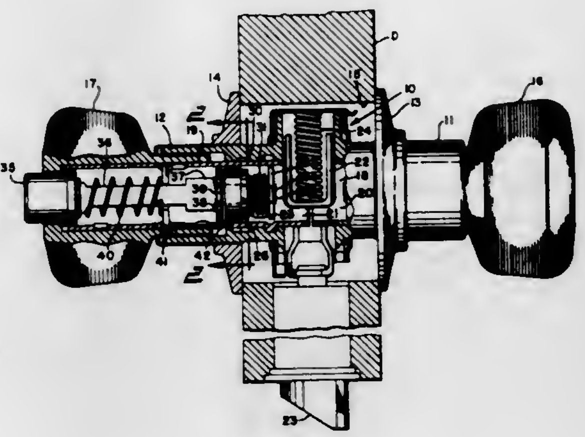
Donald B. Valk, Madison, N.J., assignor to Wel-Kids, Inc., Madison, N.J., a corporation of New Jersey
Filed Aug. 5, 1966, Ser. No. 570,620
U.S. Cl. 292—347 **9 Claims**
Int. Cl. E05b *1/00*

A safety lock for preventing children from opening a door, but allowing adults to readily operate the doorknob for opening the door. The safety lock includes a shell which is mounted either on the door or on the stationary doorknob stem, so that rotation of the shell does not impart rotation to the doorknob which is enclosed within the shell. A pressure plate on the outer end of the shell is movable inwardly to engage the outer face of the doorknob, but a spring urges the pressure plate out of engagement with the doorknob. To operate the doorknob, it is necessary to press in on the pressure plate and subsequently to rotate the shell, thereby applying torque to the doorknob. Since it is difficult for children to coordinate these two motions, they are unable to open the door.



3,428,352
HOSPITAL FUNCTION LATCH

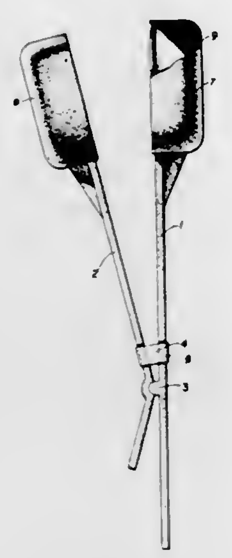
Mathias M. Check, Greenwich, Conn., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 25, 1966, Ser. No. 589,294
U.S. Cl. 292—359 **13 Claims**
Int. Cl. E05b *13/00;* **E05c** *1/12*



A locking washer slides within a knob spindle sleeve of a latch, and is spring pressed in a direction to enter an axial groove in the bearing sleeve of the spindle so as to lock the spindle in bolt retracting position. The bearing sleeve also has a transverse holding surface against which the washer wil move when a push button moves it out of the axial groove. That surface then holds the washer against its spring pressure while the latchbolt projects, and until the spindle again moves to bolt retracting position.

3,428,353
APPARATUS FOR TRAPPING AND RETRIEVING

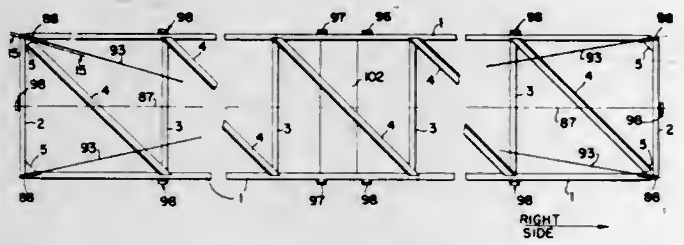
Robert R. St. Jean, 48 Bryn Mawr, Auburn, Mass. 01501
Filed Oct. 19, 1966, Ser. No. 587,879
U.S. Cl. 294—15 **8 Claims**
Int. Cl. B65g *7/12*



The invention relates generally to an apparatus for trapping and retrieving and finds particular utility in retrieving insects and small live creatures without physical damage to the same.

3,428,354
CARGO HANDLING APPARATUS

Richard W. Griffith, Green Ridge, Pa., assignor to Sun Shipbuilding & Dry Dock Company, Chester, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1967, Ser. No. 608,838
U.S. Cl. 294—67 **14 Claims**
Int. Cl. B66c *1/42;* **B65j** *1/12*

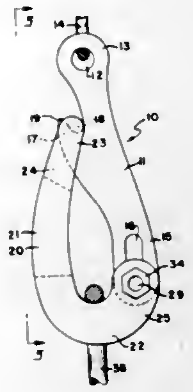


For handling a hexahedral container of standard size having latching fittings at each of its four upper corners, a rectangular frame having rotary latches at each of its four corners is utilized. Unicontrolled means, operable manually from a location adjacent the frame or by means of push-buttons from a remote point, are provided for simultaneously rotating all four of the latches on the frame to latching or unlatching position.

3,428,355
SAFETY HOISTING HOOK

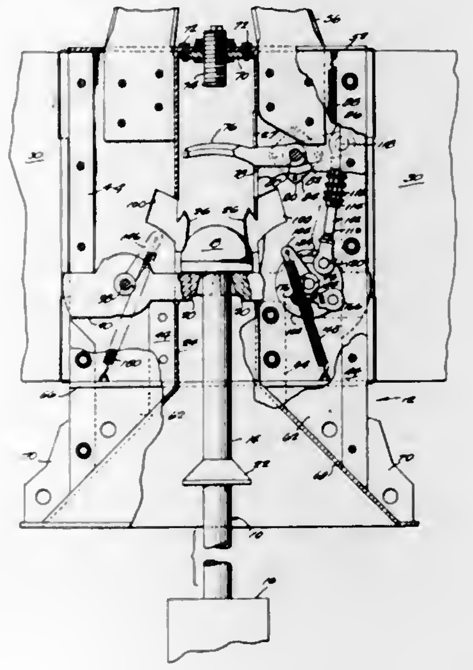
Alexander Hamilton, 4871 Union St., Burnaby, British Columbia, Canada
Filed Dec. 26, 1967, Ser. No. 693,479
U.S. Cl. 294—82 **6 Claims**
Int. Cl. B66c *1/34*

A safety hoisting hook having a vertical shank member and a swinging hook slidably and pivotally secured at the lower end of the shank member for swinging movement between an open and a closed position, the swinging hook having an eye formed at its bill end adapted to receive a projection on the shank member so as to maintain the hook in a closed position. Movement of swinging hook upwardly relative to the shank member to clear the projection permits the swinging hook to swing to an open position.



3,428,356
AUTOMATIC COUPLING FOR HOISTING HEAVY LOADS

Adolph Anderson, 238 39th Ave. S., West Richland, Wash. 99352
Filed Sept. 30, 1966, Ser. No. 583,287
U.S. Cl. 294—110 **15 Claims**
Int. Cl. B66c *1/38*

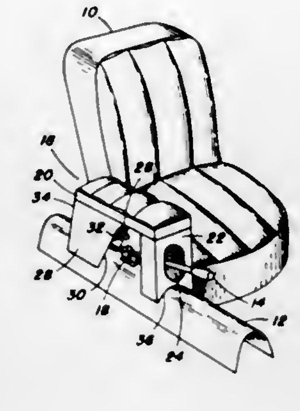


An automatic coupling for attachment to a hoist line, having a shape of an inverted funnel, and provided with an automatic, trigger operated latching mechanism.

3,428,357
VEHICLE ARM REST

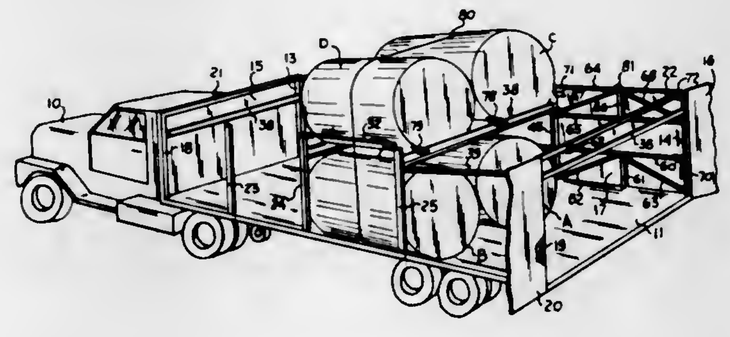
Arthur M. Lueck, 7 Stony Wood Road, East Setauket, N.Y. 11733
Filed Dec. 22, 1967, Ser. No. 692,873
U.S. Cl. 296—1 **7 Claims**
Int. Cl. B60r *7/04, 27/00*

An arm rest is provided which rests upon and is supported by the drive shaft tunnel extending between the front seats of a vehicle so constructed. The bottom of the arm rest is contoured to fit over the drive shaft tunnel and is stably supported thereby. In an embodiment particularly adapted for use in Volkswagen (trademark) and other vehicles having a hand brake lever and/or other controls mounted upon the drive shaft tunnel, front and/or side openings are provided so that these levers and controls may be operated with the arm rest in place. A storage compartment may be provided in the arm rest structure. The arm rest of the invention is surprisingly stable without any permant attachment to the drive shaft tunnel.



3,428,358
SIDE-LOADING VEHICLE FOR CARRYING ARTICLES IN MULTI-TIER ARRANGEMENT

Edwin N. Yeary, Lexington, Ky., assignor to Sideloading, Inc., Winchester, Ky., a corporation of Kentucky
Filed May 3, 1967, Ser. No. 635,771
U.S. Cl. 296—4 **5 Claims**
Int. Cl. B60p *7/06;* **B62d** *33/02;* **B61d** *3/08*

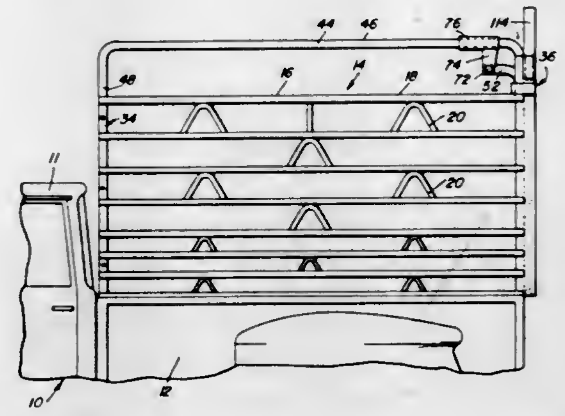


A roofless, side-loading, flat-bed vehicle for carrying articles in multi-tier arrangement. A reinforced superstructure including columns fixed to the flat-bed along one side of the same, includes transverse beams detachably engageable with removable columns located at the opposite side of the flat-bed; the beams serving to support upper-tier articles.

3,428,359
BODY CONVERSION AND TAILGATE ASSEMBLY FOR A LOAD SUPPORTING BODY

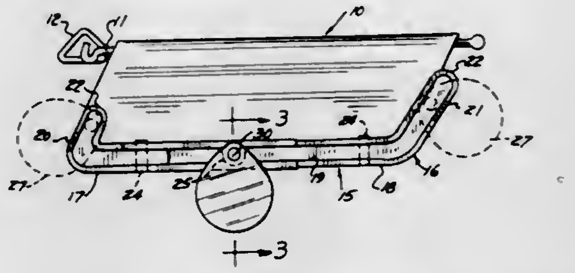
Arthur A. Kroetch, P.O. Box 256, Philip, S. Dak. 57567
Filed Nov. 2, 1966, Ser. No. 591,561
U.S. Cl. 296—10 **8 Claims**
Int. Cl. B60p *3/42;* **B62d** *25/00;* **E05d** *15/16*

A side and end wall extension assembly adapted for attachment to and to comprise upward extensions for the side and front end walls of a pickup truck load bed. The assembly includes a pair of opposing sidewalls having integral laterally inwardly directed end wall sections at one pair of corresponding ends removably joined at their adjacent ends forming an end wall for the assembly rigidly interconnecting the sidewalls of the assembly, the other pair of corresponding ends of the sidewalls of the assembly including laterally inwardly directed partial end walls spaced apart at their adjacent ends defining an opening therebetween and the assembly further including a closure gate for the opening removably positionable in position supported from the sidewalls of the assembly and closing the opening defined between the spaced apart ends of the partial end walls of the assembly.



3,428,360
GLARE SHIELD ATTACHMENT FOR AUTOMOBILE SUN VISORS

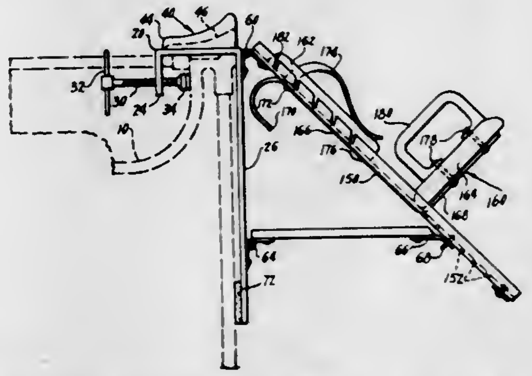
Murel E. Honor, Sr., 8047 Robson, Detroit, Mich. 48228
Filed June 6, 1967, Ser. No. 639,820
U.S. Cl. 296—97 **1 Claim**
Int. Cl. B60j *3/02*



An adjustable glare shield attachment, for automobile sun visors, including an adjustable-in-length track to be clipped to the lower edge of the visor, the track having upwardly directed end portions; a circular, magnetized slider is held within the track, with a glare shield fastened to the slider, so that the slider, with the shield, may be magnetically held in selected positions relative to the track.

3,428,361
ADJUSTABLE CHILD'S SHAMPOO CHAIR

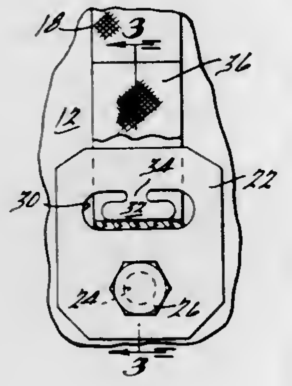
Charles I. Reynolds, 2183 McAfee Road, Decatur, Ga. 30032
Continuation-in-part of application Ser. No. 567,624, July 25, 1966. This application Nov. 28, 1966, Ser. No. 597,428
U.S. Cl. 297—182 **9 Claims**
Int. Cl. A47d *1/10, 15/00;* **A47c** *1/08*



This patent discloses an adjustable height and repose angle shampoo chair for supporting a child adjacent a sink for shampooing the child's hair in the sink. Briefly, the patent discloses a shampoo chair which has a specially designed C-clamp member for securing the chair adjacent a sink, a seat for supporting the child and a seat support unit which permits adjustment of the height of the seat relative to the sink and the angle of repose of the seat relative to the sink. Two specific constructions are disclosed for adjusting the height of the seat.

3,428,362
SEAT BELT UTILIZATION INDICATOR

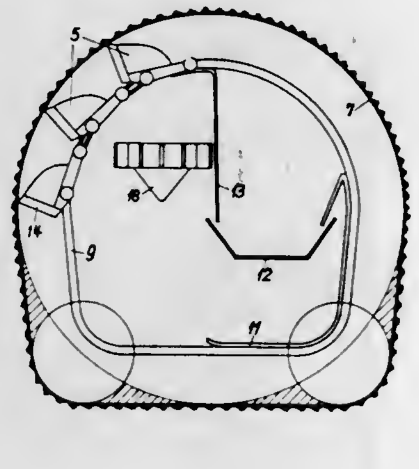
Peter C. Bertelson, Franklin, and William Sobkow, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,545
U.S. Cl. 297—385 **8 Claims**
Int. Cl. B60r *21/10;* **G01d** *21/00;* **A44c** *5/18*



A device for use in conjunction with a motor vehicle passenger restraint belt segment that, when visually inspected, will indicate if a seat belt assembly was utilized during a vehicle collision. The device includes means that are deformed by the tensioning force applied to a utilized belt under collision conditions.

3,428,363
GALLERY DRIVING MACHINE

Hans-Peter Drescher, Luneburg, and Paul Hoever, Krefeld, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Sept. 23, 1966, Ser. No. 581,601
Claims priority, application Germany, Sept. 29, 1965, B 83,927
U.S. Cl. 299—57 **3 Claims**
Int. Cl. E21d *1/00;* **E21c**

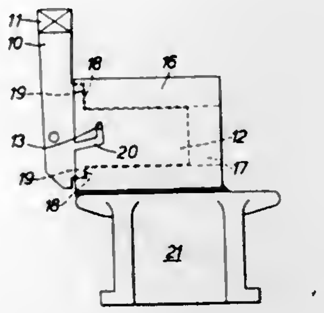


A self-propelling rock working machine comprising a drilling-head rotatable about a horizontal axis, two rotatable cutting tool means arranged behind said drilling-head when viewing the latter from the front surface thereof for producing a substantially plane bottom surface of the dugout being excavated, bucket chain conveyer means arranged behind said tool means and within said rock working machine for picking up material in the path of said bucket chain conveyer means and unloading the picked up material onto other conveyor means.

3,428,364
L-SHAPED MINERAL CUTTER PICK

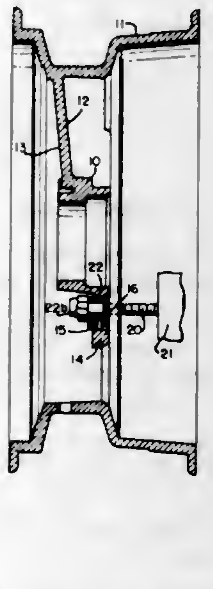
Sidney E. Proctor, High Wycombe, England, assignor to Austin Hoy and Company Limited
Filed Feb. 2, 1967, Ser. No. 613,549
Claims priority, application Great Britain, Mar. 18, 1966, 12,136/66
U.S. Cl. 299—91 **9 Claims**
Int. Cl. E21c *13/00*

A forward attack coal-cutter pick which, when mounted in a pick box at one end or side of a drum or chain, will cut clearance for itself and that part of the drum or chain on which it is mounted. The pick has a blade portion and a shank extending substantially at right angles thereto, the shank-remote end of the blade portion has a cutter tip which is wider than the blade portion and transverse thereto.



3,428,365
ADJUSTABLE BOLT CIRCLE WHEEL

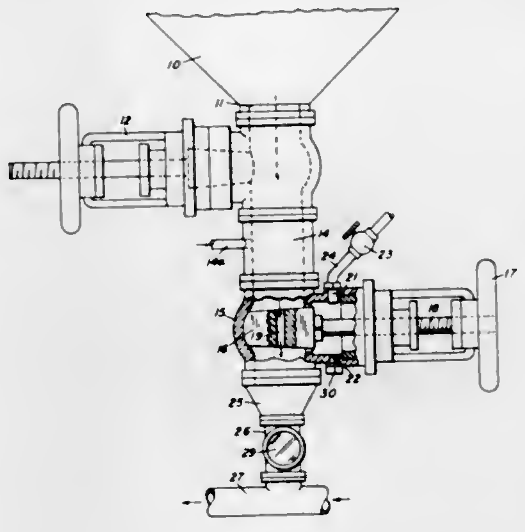
Elby Edward French, Littleton, Colo., assignor to O.K. Tire and Rubber Co., Inc., Houston, Tex., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,539
U.S. Cl. 301—9 **5 Claims**
Int. Cl. B60b *27/00, 3/14*



A vehicular wheel having a plurality of apertures in a circular array about the wheel hub, for removably receiving lugs provided with eccentric bolt holes. Each aperture is provided with three angularly spaced keyways; and each lug has a key extending therefrom for insertion in a selected one of the keyways, so that each lug can be positioned in any of at least three different positions within its aperture, to variably space the eccentric bolt hole in the lug from the axis of the wheel.

3,428,366
FLOW CONTROL ARRANGEMENT

Charles H. Harvey, Groves, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 19, 1967, Ser. No. 639,830
U.S. Cl. 302—42 **11 Claims**
Int. Cl. B65g *53/40*

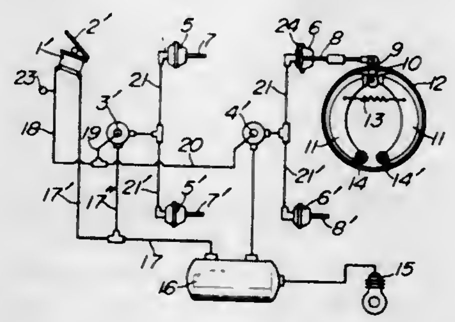


A flow control arrangement comprising a channeled flow regulating gate which may be slidably moved from a "flow control" to a "clean-up" position without interruption of flow is provided for the continuous feeding of finely divided solids such as cracking catalysts to a solids circulation system in an essentially uninterrupted manner.

In the "clean-up" position, the gate is withdrawn from the flow path of solids and the channeled portion thereof may be aligned with a high pressure gas source for removal of plugging material from the channel.

3,428,367
AIR BRAKE SYSTEM FOR AUTOMOBILES

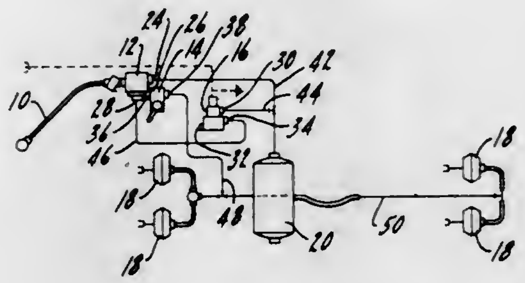
Haruo Katayama, Saitama-ken, Japan, assignor to Sanwa Seiki Mfg., Co., Ltd., Saitama-ken, Japan, a corporation of Japan
Filed May 20, 1966, Ser. No. 551,702
Claims priority, application Japan, May 31, 1965, 40/31,715
U.S. Cl. 303—6 **2 Claims**
Int. Cl. B60t *13/46*



A brake system wherein the front brakes and rear brakes are each controlled by a separate relay self lapping valve. Each valve has a restricted passage to delay the balancing pressure fluid. The relay valves are operated by an operator-actuated self lapping valve which also has a restricted passage to delay the balancing pressure fluid. The above self lapping valve system delays the self lapping action to insure that all brake actuators apply the brakes to the desired pressure setting.

3,428,368
COMPRESSED AIR BRAKE SYSTEM FOR A TRAILER

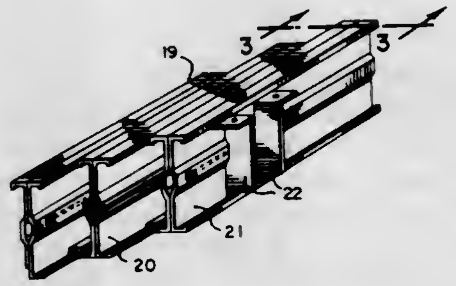
Werner Kobnick, Heidelberg, Germany, assignor to Berg Mfg. & Sales Co., a corporation of Illinois
Continuation of application Ser. No. 602,031, Dec. 15, 1966. This application Sept. 8, 1967, Ser. No. 666,314
Claims priority, application Germany, Dec. 17, 1965, B 85,030
U.S. Cl. 303—15 **5 Claims**
Int. Cl. B60t *7/00, 13/70, 15/14*



A compressed air brake system to supply either service or permanent braking air pressures to the brake cylinders of a vehicle trailer and having a control valve, a magnetic permanent brake valve, a brake force regulator, and a source of compressed air. The control valve has an inlet connected to the compressed air source, an outlet connected to the brake force regulator, and an air venting connection. The magnetic permanent brake valve has a first inlet connected to the source of compressed air, an outlet connected to the control valve air venting connection, and a second inlet vented to the atmosphere. The brake force regulator outlet is connected to the brake cylinders.

3,428,369
ARRANGEMENT FOR TELESCOPING SLIDES

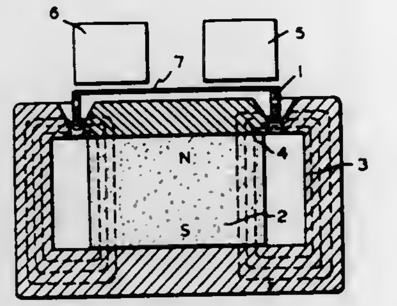
Frank J. Kowack, Oceanside, N.Y., assignor to Columbian Slides Inc., Freeport, N.Y., a corporation of New York
Filed July 5, 1966, Ser. No. 562,679
U.S. Cl. 308—3.6 **11 Claims**
Int. Cl. F16c *21/00, 29/00;* **F16g** *11/06*



Telescoping slides are constructed of a plurality of interlocking channel members movable relative to one another so that when any one channel member is moved in the direction for extending or contracting the slide, other channel members move correspondingly toward extending or contracting the slide. The slides are connected by cable means positioned below the top of the channel members. Means for guiding the cable means are included for those channel members interposed between two adjacent channel members.

3,428,370
MAGNETIC SUSPENSION SYSTEM

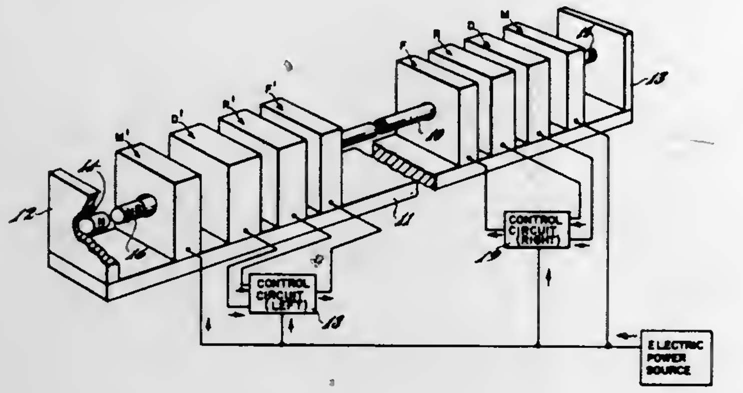
Erich Steingroever, Bonn, Germany, assignor to Magnetfabrik Bonn G.m.b.H. vorm. Gewerkschaft Windhorst, Bonn, Germany
Continuation-in-part of application Ser. No. 287,586, June 13, 1963. This application Oct. 22, 1965, Ser. No. 502,207
Claims priority, application Germany, June 16, 1962, M 53,228
U.S. Cl. 308—10 18 Claims
Int. Cl. F16c *39/06, 35/00*



A magnetic suspension system wherein a rotatable armature is attached to a ring of diamagnetic material that is disposed in the annular gap defined by opposite poles of an annular magnet body.

3,428,371
SUSPENSION APPARATUS

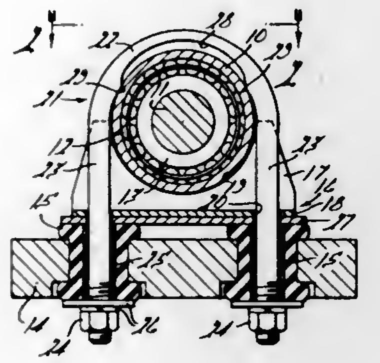
Joseph Lyman, Northport, N.Y., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Jan. 24, 1966, Ser. No. 522,726
U.S. Cl. 308—10 9 Claims
Int. Cl. F16c *39/06, 35/00*



1. A magnetic suspension system comprising,
a movable shaft member to be suspended in a desired stable position along a predetermined axis,
a frame for said suspension system,
electromagnetic means on said frame between the middle and each end of said shaft member of exerting mutually opposed forces on said shaft member transverse its axis,
means between the middle and each end of said shaft and responsive to transverse motion of said shaft for generating electric signals substantially corresponding in polarity and intensity to the direction and speed of transverse movement of said shaft,
means for amplifying said signals and controlling said electromagnetic means in response to the signals produced by the respective transverse motion responsive means,
means responsive to displacement of said shaft from said predetermined axis, and means responsive thereto for augmenting the control of said electro-magnetic means to provide force components directed toward aligning said shaft with said axis.

3,428,372
TUBULAR HOUSING AND SUPPORT

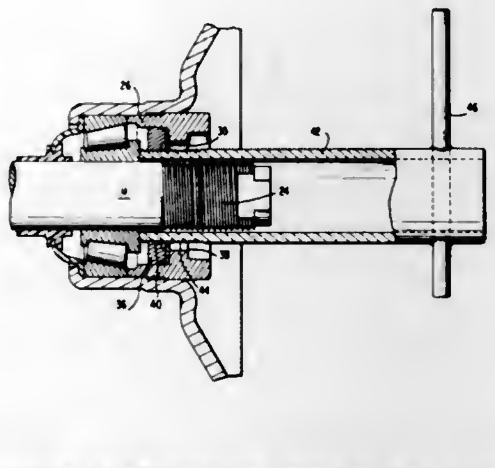
Robert P. Keller, Berkley, and Eugene J. Ash, Madison Heights, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Nov. 28, 1966, Ser. No. 597,393
U.S. Cl. 308—15 11 Claims
Int. Cl. F16c *13/00, 39/00, 35/00*



A resiliently yieldable thin walled circular tubular housing is claimed by means of a U-bolt against a saddle having a circular seat of greater diameter than the housing and contacting the latter at a central region of tangency, the base of the U-bolt being relieved to avoid contact with the housing except at two lateral locations spaced approximately 120° from said region of tangency.

3,428,373
CONVEYOR ROLL ASSEMBLY WITH REMOVABLE SHAFT BEARING RETAINER

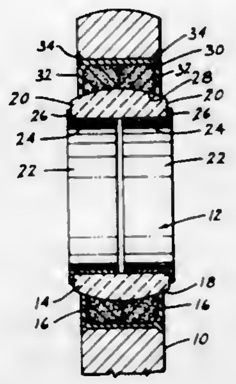
Philip J. Imse, Wauwatosa, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 17, 1966, Ser. No. 572,942
U.S. Cl. 308—20 3 Claims
Int. Cl. F16c *13/00, 35/00;* **B23p** *19/00*



A removable shaft bearing retainer for a conveyor roll frictionally engaged within the conveyor roll housing having a retainer sleeve with externally threaded portions designed to cooperate with a removing tool. The tool comprises an elongated hollow tubular member having external threads arranged along one end thereof. The tool fits within the retainer sleeve and over a central support shaft so as to engage the external and internal sets of threads causing the threaded end of the tool to abut the bearing supported on the shaft thereby forcing the retainer sleeve off the shaft and out of the conveyor housing due to rotation of the threadedly engaged tool relative to the retainer sleeve.

3,428,374
SELF-LUBRICATING BEARING

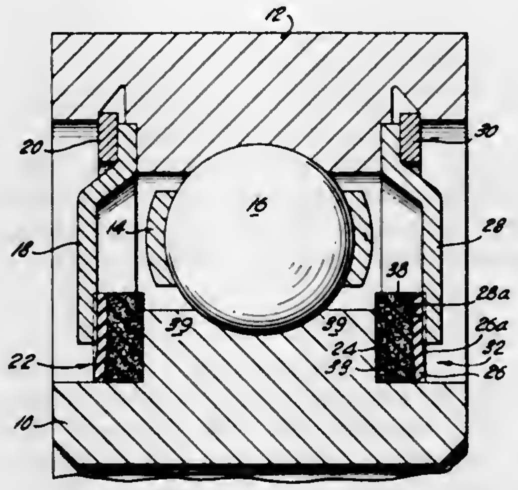
Stanley S. Orkin, Rockville, and Vincent J. Hudacko, Weatogue, Conn., assignors to Kaman Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Apr. 13, 1966, Ser. No. 542,417
U.S. Cl. 308—37 9 Claims
Int. Cl. F16c *17/04, 19/04, 9/06*



A self-lubricated bearing assembly made of two bearing members having coengaging surfaces which are movable relative to each other. One of the bearing members is a ceramic material of a composition consisting essentially of at least 99% by weight polycrystalline aluminum oxide having an average grain size of 45 microns or finer and a density of at least 3.80 grams per cubic centimeter. The other bearing member is carbon which preferably is impregnated with silver.

3,428,375
BEARING HAVING FLEXIBLE SEAL ARRANGEMENT

Steven T. Martin, West Hartford, Conn., assignor, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed Nov. 9, 1965, Ser. No. 507,003
U.S. Cl. 308—187.2 1 Claim
Int. Cl. F16c *33/78;* **F16j** *15/00*

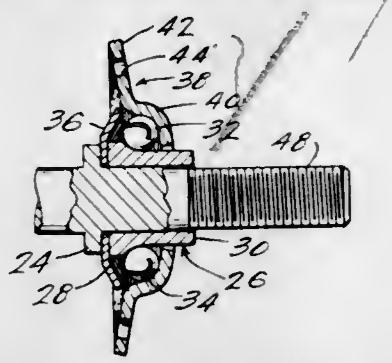


A very low frictional drag bearing seal structure which provides more effective sealing under conditions of misalignment and includes a Teflon-sponge rubber assembly between two members adapted for rotation relative to each other.

3,428,376
SPOKE-TYPE WHEEL

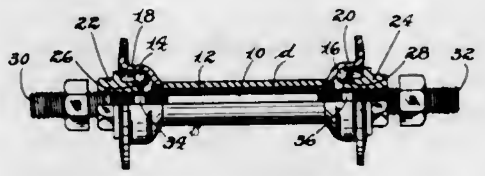
Robert C. Zeller, Defiance, Ohio, assignor to The Zeller Corporation, Defiance, Ohio, a corporation of Ohio
Filed Oct. 13, 1966, Ser. No. 586,511
U.S. Cl. 308—190 8 Claims
Int. Cl. F16c *33/00*

A hub construction for a spoke-type bicycle wheel features spoke rings forming independent outer bearing races mounted on inner races located on an axle. The outer bearing races are connected to spokes of the wheel and are independently movable axially so as to increase the force applied to bearing balls carried on the inner races when the load increases so that the wheel support is a function of the spoke tension and the wheel loading. In a preferred form, the inner races can be press fit on the axle but in another form, they can be threadedly mounted thereon for independent positioning to vary the initial tension on the spokes.



3,428,377
BICYCLE HUB

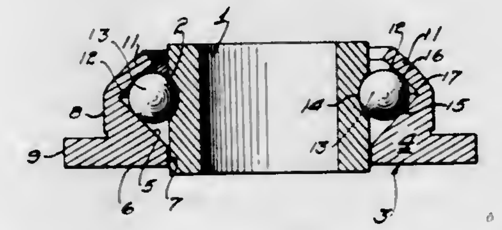
Frank T. Christian and Edwin Elliott Hood, Elmira, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,554
U.S. Cl. 308—192 3 Claims
Int. Cl. F16c *33/00, 33/30;* **F16b** *39/30*



A bearing mounted bicycle hub assembly mounted on a shaft or axle adapted to be fixed in a bicycle frame. The invention particularly relates to locking means formed by a discontinuity in rolled threads to provide an area of limited resistance to bearing support cones or nuts. The arrangement provides a low cost means of obtaining cone adjustment locking.

3,428,378
MINIATURE BALL BEARING

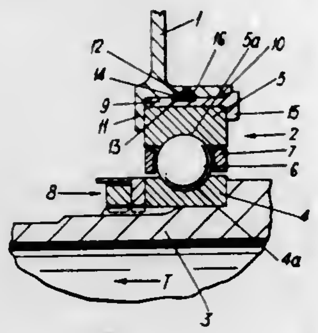
William J. Divine, Altadena, and Richard G. P. Hood, Pasadena, Calif., assignors to Di Mico Corp. Ltd., Hollywood, Calif., a corporation of California
Filed Nov. 2, 1966, Ser. No. 591,527
U.S. Cl. 308—193 3 Claims
Int. Cl. F16c *33/00;* **B21d** *53/10*



A ball bearing intended primarily for manufacture in miniature size in which a grooved cylindrical inner race is surrounded with an outer race having a relatively massive bore and deformable lip which, initially, provides with the inner race, an annular groove to receive a full complement of bearing balls and which is deformable to form with the groove and the base, three essentially point contacts with each ball.

3,428,379
BEARING ASSEMBLY AND METHOD OF MANUFACTURE OF SAME

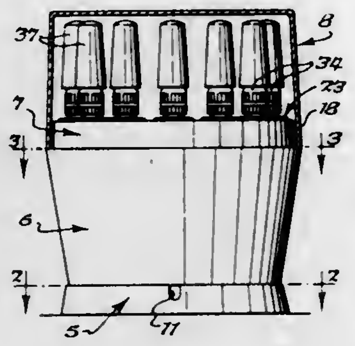
John Readman, Allastree, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Sept. 26, 1966, Ser. No. 581,826
Claims priority, application Great Britain, Oct. 27, 1965, 45,588/65
U.S. Cl. 308—236 **7 Claims**
Int. Cl. F16c *33/30*



A bearing assembly comprising an anti-friction bearing having a pair of races and rolling elements disposed therebetween, a sleeve disposed around and in contact with one of said races, a support member, the said one race being mounted from the support member by the sleeve, the sleeve and the support member each having an annular groove, and a key disposed between the sleeve and the support member and engaging said grooves the support member comprising an annular flange integral with the said support member and adapted to transmit loads from the bearing race means to the said support member in a predetermined direction.

3,428,380
PEN HOLDER

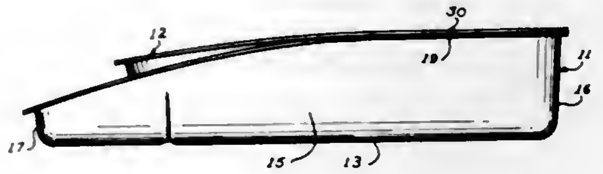
William E. Danjczek, Easton, Pa., assignor to Koh-I-Noor, Inc., Bloomsbury, N.J., a corporation of New York
Filed Nov. 30, 1966, Ser. No. 597,902
U.S. Cl. 312—31 **4 Claims**
Int. Cl. A47b *81/00;* **B43m** *17/00*



A holder for capped stylus type fountain pens which receives the pens capped or uncapped in either point up or point down position. The holder is provided with a cover and a moisture retaining element to maintain the humidity in the holder.

3,428,381
UTENSIL TRAY

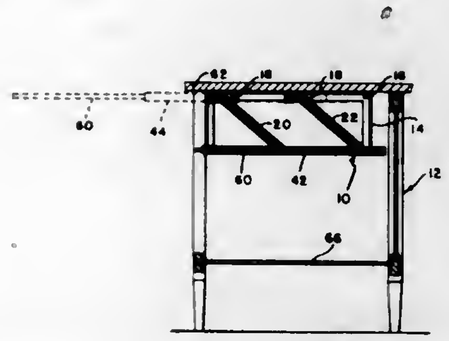
Martin Schnur, West Orange, and Mel Appel, Livingston, N.J., assignors to Deka Plastics, Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Sept. 22, 1965, Ser. No. 489,230
U.S. Cl. 312—107 **10 Claims**
Int. Cl. B65d *21/00;* **A47b** *87/02*



Stacked utensil trays wherein (a) the top tray is provided with bottom channels slidable on central partitions of the bottom tray; (b) rear and side walls on the bottom tray act to restrain the rearward movement of the top tray; (c) the top tray is provided with rear and side flanges normally resting on rear and side flanges of the bottom tray.

3,428,382
RETRACTABLE TYPEWRITER SUPPORT FOR DESKS

Orville G. Yarnell, 1901 Orme Court, Wichita, Kans. 67211
Filed Apr. 6, 1967, Ser. No. 628,917
U.S. Cl. 312—208 **17 Claims**
Int. Cl. A47b *21/03*

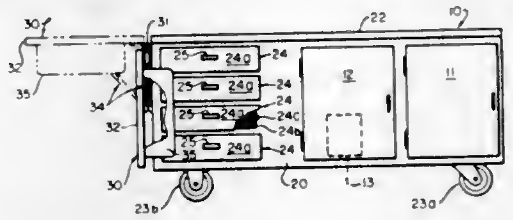


The present invention relates to a typewriter support asesembly adapted to be mounted in a desk, such assembly including a support guided for movement between a lower retracted position and an upper forward operative position with the support slidably carrying an extensible typewriter support leaf. The support can be selectively held in and released from an operative position by appropriate movement thereof along its guided travel path. In one form of the invention such selectivity is accomplished by guide channels having a horizontal or downwardly and forwardly inclined upper end portions. Two alternative structures for such selectivity each affords a choice of a plurality of height positions for the operative location of the support and each of these structures involves a ratchet means which includes means for rendering the same inoperative after the support is moved to a predetermined upper position and until the support has been fully lowered.

3,428,383
WHEELED EMERGENCY CARE VEHICLE

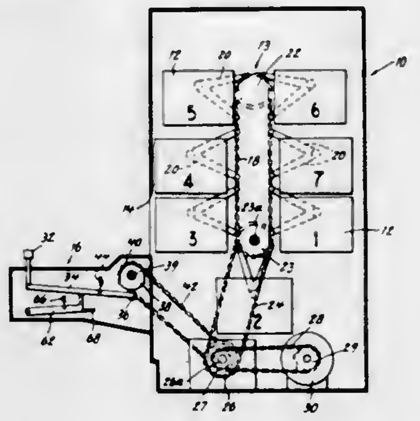
Joel J. Nobel, Philadelphia, Pa., assignor to Graduate Pain Research Foundation, Philadelphia, Pa.
Continuation-in-part of application Ser. No. 558,296, June 17, 1966. This application Oct. 21, 1966, Ser. No. 588,447
U.S. Cl. 312—209 **16 Claims**
Int. Cl. A61b *19/02*

An emergency care cart containing apparatus and instruments for cardio-pulmonary resuscitation includes a number of drawers containing consumable supply items. The drawers are arranged whereby after they have been opened they cannot be reclosed except by using a key. The top of the cart forms a firm support litter adapted to receive a cardiac patient and further includes an extension for elongating the litter. The extension, in its stored position, keeps the drawers closed.



3,428,384
CONTROL APPARATUS FOR POSITIONING MECHANISMS

Freeland R. Goldammer, Williamsville, N.Y., assignor to Sperry Rand Corporation, New York, N.Y.
Filed May 12, 1967, Ser. No. 637,973
U.S. Cl. 312—223 **12 Claims**
Int. Cl. B65g *17/16;* **B42f** *17/00*

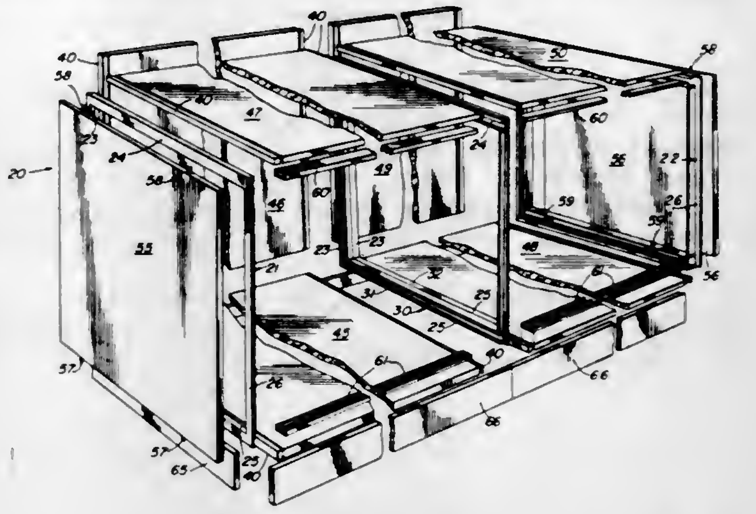


The disclosure relates to apparatus for controlling a closed loop conveyer system in mechanized file cabinets to convey a keyboard selected record tray to a retrieval location. Each key is connected to one end of a separate sensing lever whose other end carries a cam follower roller being on a cam having three distinctly different cam surfaces. The cams are relatively angularly oriented according to the positions of their associated record trays relative to the retrieval location and are rotated on a common cam shaft by a reversible motor in synchronism with movement of the conveyer. The depression of a key moves its sensing lever into engagement with a sensing bar, the responsive movement of which effects closure of either one of two switches controlling the reversible motor for selected directional motion of the conveyer and cam shaft. Two of these cam surfaces for the sensing lever roller of the depressed key determine which of the two switches is closed and thus the direction of conveyer movement necessary to bring the key selected tray to the retrieval location in the shortest time and over the shortest route. As the sensing lever roller rides onto the third cam surface, the position of the sensing lever is altered to permit opening of the previously closed switch and conveyor motion terminates with the selected tray at the retrieval location.

3,428,385
KNOCKDOWN CABINET STRUCTURES

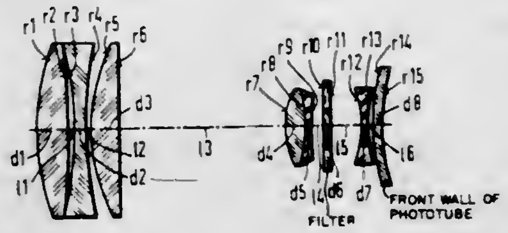
Charles F. Scott, Lincoln, Ill., assignor to Myers Industries, Inc., Lincoln, Ill., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 612,862
U.S. Cl. 312—257 **9 Claims**
Int. Cl. A47b *47/02*

Knockdown cabinet structure embodying end frames with slide channels receiving side edges of bottom and rear panels and top channels receiving side edges of top panel to form rigid cabinet structure, said slide channels preferably being C-shaped in transverse cross-section and matingly receiving tongues along sides of said panels.



3,428,386
MODIFIED PETZVAL LENS ASSEMBLY

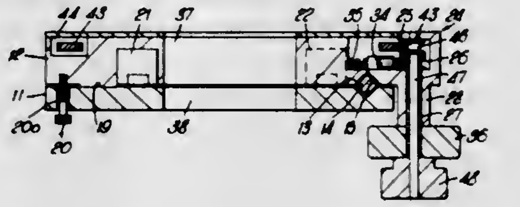
Franz Schlegel, Munich, Germany, assignor to Optische Werke G. Rodenstock, Munich, Germany
Continuation-in-part of application Ser. No. 471,531, July 13, 1965. This application Dec. 15, 1967, Ser. No. 690,854
Claims priority, application Germany, June 9, 1967, O 12,547
U.S. Cl. 350—2 **2 Claims**
Int. Cl. G02b *13/14*



A modified Petzval objective whose front component has two convergent lenses and a divergent lens interposed between and air spaced from the convergent lenses. Two examples of lens assemblies having extremely high resolving power for infrared and for visible light respectively are given.

3,428,387
FRICTION DRIVEN MICROSCOPE STAGES

Kenneth Frank Hall and George Chambers, Barnet, England, assignors to W. Watson & Sons Limited
Filed Apr. 7, 1964, Ser. No. 358,396
Claims priority, application Great Britain, Apr. 10, 1963, 14,437/63
U.S. Cl. 350—86 **10 Claims**
Int. Cl. G02b *21/26, 21/34*



A microscope stage includes a stationary bottom plate and middle and upper plates movable in perpendicular directions. Both plates have friction drives from coaxial control knobs. The middle plate is driven by a friction wheel resiliently urged into frictional engagement with an elongated rod fixed to the bottom plate and the upper plate is driven by an annular friction ring, concentric with an aperture in the stage, resiliently urged into contact with the upper plate and a second pulley on the middle plate. The bottom plate supports the middle plate at three bearing points and the plates are held together by magnets.

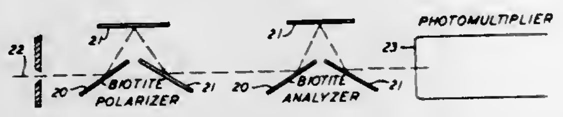
3,428,388
LAYERED STRUCTURE ULTRAVIOLET POLARIZER

Norman A. Kuebler, Irvington, Yoh-Han Pao, Chatham, and Melvin B. Robin, Warren Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 29, 1965, Ser. No. 491,344

U.S. Cl. 350—152 **3 Claims**

Int. Cl. G02b *5/30, 13/14, 27/28*



1. A light polarizer useful in the light frequency range of 6000 A. to 1000 A. comprising a structure having at least eight alternate layers of a dielectric material having a light transmission over a portion of the aforementioned light frequency range of at least 90 percent and a reflecting material having a light transmission over the same portion of said light range in the range of at least ten times less than the transmission of the dielectric layer, each of said layers having a thickness of 5 A. to 15 A. and a thickness uniformity of ±2 A. over a distance of 10 A., and means for directing a light beam having a light frequency in the aforesaid portion of the light frequency range onto the plane of said polarizing structure at approximately the Brewster angle of the structure.

3,428,389
METALLURGICAL OPTICAL SEMI-OBJECTIVE OF 8.0× MAGNIFICATION

Duane E. Judd, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Apr. 1, 1966, Ser. No. 539,577

U.S. Cl. 350—177 **6 Claims**

Int. Cl. G02b *1/00*

1. A microscope semi-objective having a combined positive power of 40× and a numerical aperture of 0.65 when used with a rearwardly aligned corrector lens of 5× magnification, said semi-objective comprising

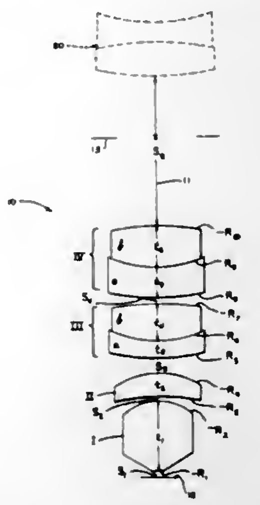
a front singlet lens member designated I of positive meniscus form which is concave toward an object surface on which said semi-objective is focused, member I being spaced an axial distance designated S_1 from said surface and having an axial thickness designated t_1,

a second singlet lens member designated II of positive meniscus form which is concave toward the front, member II being spaced at an axial distance designated S_2 rearwardly from member I and having an axial thickness designated t_2,

a front doublet lens member designated III which is spaced at an axial distance denoted S_3 rearwardly of member II, said member including a front convex-concave lens element designated III*a* which joins along an interface a rear double convex lens element designated III*b*, the axial thickness of said elements being designated t_3 and t_4 respectively,

a rear doublet lens member designated IV which is spaced at an axial distance denoted S_4 rearwardly of member III, said member including a front convex-concave lens element designated IV*a* which joins along an interface a rear double convex lens element designated IV*b*, the axial thicknesses of said elements being designated t_5 and t_6 respectively,

the values for the lens parameters constituting said semi-objective being given in the table of mathematical statements herebelow wherein F_I to F_{IV} represents the equivalent focal lengths of the successive lens members I to IV respectively, and further including the values for the aforesaid lens thicknesses t_1 to t_6 and axial air spaces S_1 to S_5, said values being given in terms of F which represents the equivalent focal length of said semi-objective taken together with said corrector lens,



$$3.28F<F_I<3.90F$$
$$4.58F<F_{II}<4.85F$$
$$8.83F<F_{III}<10.93F$$
$$9.67F<F_{IV}<13.90F$$
$$1.51F<t_1<1.57F$$
$$.54F<t_2<.75F$$
$$.31F<t_3<.33F$$
$$.82F<t_4<.88F$$
$$.04F<t_5<.93F$$
$$.85F<t_6<1.02F$$
$$.10F<S_1<.13F$$
$$.04F<S_2<.12F$$
$$.35F<S_3<.37F$$
$$.12F<S_4<.21F$$
$$2.80F<S_5<3.40F$$

$$1.618<n_D(I)<1.622 \qquad 59.8<\nu(I)<60.8$$
$$1.512<n_D(II)<1.515 \qquad 69.5<\nu(II)<70.6$$
$$1.718<n_D(IIIa)<1.722 \qquad 29.0<\nu(IIIa)<29.5$$
$$1.512<n_D(IIIb)<1.515 \qquad 69.5<\nu(IIIb)<70.6$$
$$1.747<n_D(IVa)<1.751 \qquad 34.5<\nu(IVa)<36.0$$
$$1.512<n_D(IVb)<1.515 \qquad 69.5<\nu(IVb)<70.6$$

wherein I to IV*b* represent the successive lens elements of said semi-objective, and n_D and ν designate respectively the refractive index and Abbe number of the glasses from which said elements are formed, the values thereof being absolute quantities.

3,428,390
METALLURGICAL OPTICAL SEMI-OBJECTIVE OF UNITY MAGNIFICATION

Harold E. Rosenberger, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Apr. 13, 1966, Ser. No. 542,413

U.S. Cl. 350—177 **8 Claims**

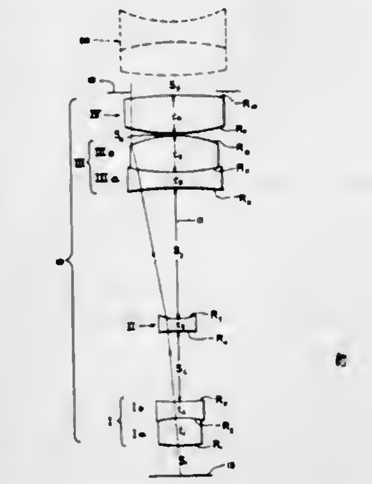
Int. Cl. G02b *1/00*

8. A microscope semi-objective having a unity rated magnification and having together with an adjacent optically aligned corrector lens a rated magnification of 5.0× and a numerical aperture of substantially 0.1, the semi-objective and corrector lens together producing an image of excellent flatness which is well corrected for distortion and astigmatism as well as all other chromatic and monochromatic aberrations, and is free of ghost reflections when used with vertical illumination,

said semi-objective comprising a front compound lens member designated I which is spaced rearwardly from an object surface at an axial distance designated S_1, said member I comprising a front double convex lens element and a rear double concave element which are in mutual contact along an interface and are designated I*a* and I*b* respectively, the axial thicknesses thereof being respectively t_1 and t_2,

a singlet double concave lens member designated II optically aligned along with other lens members rearwardly of member I, the axial space between members I and II being designated S_2 and the axial thickness thereof t_3,

a compound lens member designated III spaced at an axial distance S_3 rearwardly from member II, member III being comprised of a front double concave lens element designated III*a* which lies in mutual contact along an interface with a double convex lens element designated III*b*, the respective axial thicknesses thereof being designated t_4 and t_5.



and a rearmost double convex singlet lens element designated IV which is spaced at an axial distance denoted S_4 from member III and has an axial thickness denoted t_6,

diaphragm means located close to the rear surface of lens member and in alignment therewith for controlling the numerical aperture of the complete objective including said corrector lens, said diaphragm having a diameter between .23F and .24F where F represents the combined equivalent focal length of said semi-objective and corrector lens,

the values for the lens parameters of said semi-objective being given in Table I of mathematical statements herebelow wherein F_I to F_{IV} represent the equivalent focal lengths of lens members I to IV respectively, the minus (—) sign used with certain focal designations meaning negative focal lengths, the table further including the values for the aforesaid thicknesses t_1 to t_6 and spaces S_1 to S_5, all of said values being given in terms of F which is the equivalent focal length of said semi-objective combined with the aforesaid corrector lens,

$$.38F<F_I<.51F$$
$$.27F<F_{II}<.30F$$
$$1.01F<F_{III}<1.03F$$
$$.70F<F_{IV}<.82F$$
$$.07F<t_1<.08F$$
$$.04F<t_2<.05F$$
$$.02F<t_3<.04F$$
$$.04F<t_4<.05F$$
$$.09F<t_5<.11F$$
$$.09F<t_6<.14F$$
$$.07F<S_1<.09F$$
$$.17F<S_2<.20F$$
$$.33F<S_3<.38F$$
$$.0002F<S_4<.10F$$
$$.05F<S_5<.10F$$

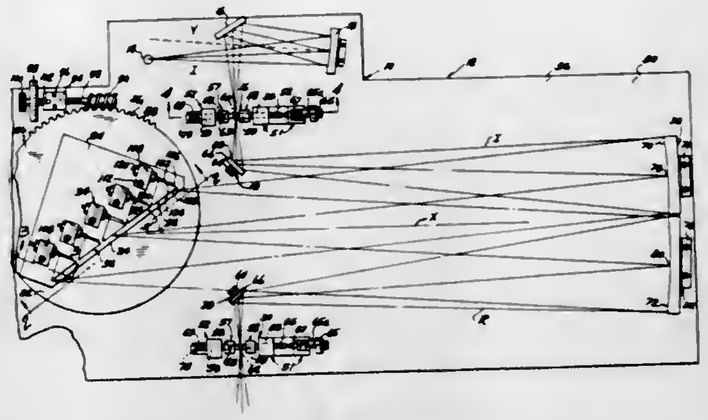
3,428,391
MULTIPLE-PRISM LIGHT DISPERSING UNIT FOR MONOCHROMATORS

Harry S. Newcomer, P.O. Box 340, Cape May, N.J. 08204

Filed Jan. 20, 1964, Ser. No. 338,744

U.S. Cl. 350—287 **4 Claims**

Int. Cl. G02b *7/18*



This light-dispersing unit (FIGURES 1 to 4) has a rotary mount **26** including a worm wheel turntable **86** carrying a multiple-prism array **24** of 30 degree–60 degree right-angled dispersing prisms **32** mounted with their slant faces **128** preferably approximately co-planar or approximately parallel to one another and parallel to the vertical axis of rotation of the turntable **86**. The latter is precisely rotated by a worm **90** on a worm shaft **92** carrying a knob **100** and also a micrometer drum **98** registering with a fixed index pointer **102**.

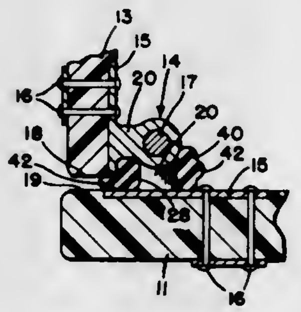
3,428,392
ELASTOMERIC RING-LIKE MEMBERS FOR BIASING SPECTACLE TEMPLES

John L. Chaney, Lake Geneva, Wis. 53147

Filed Feb. 23, 1965, Ser. No. 434,282

U.S. Cl. 351—113 **1 Claim**

Int. Cl. G02c *5/16*



An elastomeric ring-like member, placed between a hinge post secured to one of the temple members of a pair of spectacles and the hinge plate secured to the frame member, has sufficient volume so that when the temple member is moved to its unfolded position, the hinge post will compress the elastomeric material against the hinge plate to bias the temples inwardly against the head of the wearer thus holding the spectacles securely in place.

3,428,393
OPTICAL DISSECTOR

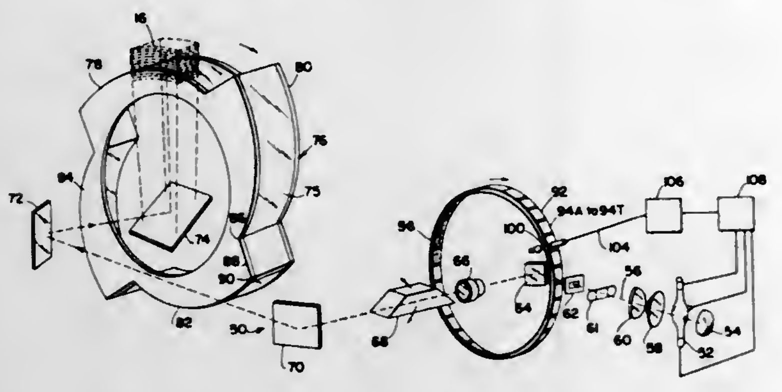
Roger Lannes de Montebello, 165 E. 66th St., New York, N.Y. 10021

Continuation-in-part of application Ser. No. 464,937, June 18, 1965. This application Nov. 5, 1965, Ser. No. 506,453

U.S. Cl. 352—43 **13 Claims**

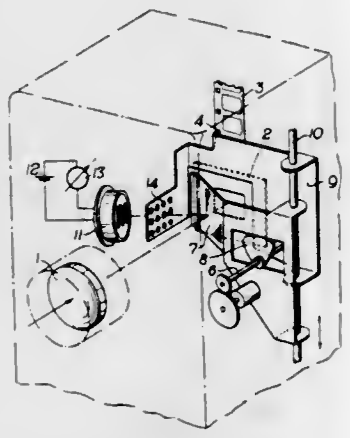
Int. Cl. G03b *35/18*

In forming and displaying a three-dimensional image of an object by projecting successively two-dimensional images of successive sections of the object on a screen that moves back and forth in the optical path, optical dissection of the three-dimensional image of the object is achieved by varying with a mask the amounts of light transmittance to different portions of the screen so that a selected portion of the three-dimensional image appears brighter than another portion.



3,428,394
EXPOSURE METER FOR MOTION PICTURE CAMERAS

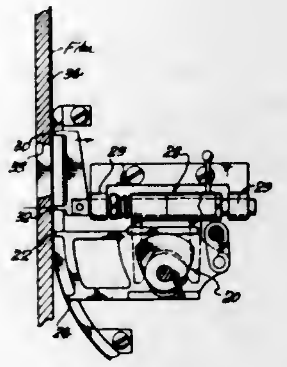
Harald Wessner, Vienna, Austria, assignor to Karl Vockenhuber and Raimund Hauser, both of Vienna, Austria
Filed Sept. 23, 1966, Ser. No. 581,595
Claims priority, application Austria, Sept. 24, 1965, A 8,697/65
U.S. Cl. 352—166 **11 Claims**
Int. Cl. G03b *1/04, 19/18*



1. In a motion picture camera, in combination, a pull-down mechanism for intermittently moving a film along a predetermined path, an optical system including a lens for producing a real image on a portion of said film in said path, means defining an exposure gate in the path of rays from said lens to said portion of said film, a photoelectric cell, a shutter which is adapted to shield said exposure gate from light from said lens and operable to open said exposure gate to light from said lens, said shutter having a reflecting surface which faces said lens and is arranged to deflect light from said lens onto said photoelectric cell when said shutter covers said exposure gate, means for operating said shutter during standstill periods of said pull-down mechanism and to hold said shutter at a standstill in the position in which it covers said exposure gate during the operation of said pull-down mechanism, a light dimmer which is spaced from said reflecting surface and movable between operative and inoperative positions, and means for moving said light dimmer between said operative and inoperative positions in synchronism with the operation of said shutter and with a phase displacement relative thereto and to maintain said light dimmer at a standstill in said operative position, said light dimmer being arranged when in said operative position to reduce the luminous flux falling on said photoelectric cell to the average value of the luminous flux which falls on said cell during the operation of said shutter.

3,428,395
FILM AND PILOT SYSTEM

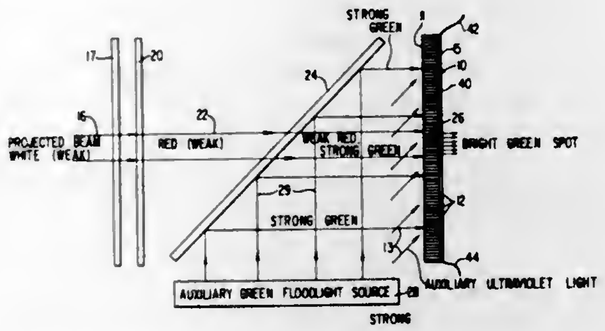
George A. Mitchell, 687 Prospect Crescent, Pasadena, Calif. 91103
Filed Feb. 23, 1966, Ser. No. 529,432
U.S. Cl. 352—194 **4 Claims**
Int. Cl. G03b *1/22*



An intermittent film movement, for a film strip having a single row of perforations, having both pilot mechanism and film moving mechanism with the pilot mechanism having two pilot pins spaced longitudinally of the film to simultaneously engage two longitudinally spaced film perforations, one of the pilot pins accurately fitting a perforation both laterally and longitudinally, and the other fitting a perforation only laterally, while the moving mechanism has two longitudinally spaced claw pins, one of which fits a perforation both laterally and longitudinally, and the other fits a perforation only laterally.

3,428,396
PHOTOCHROMIC GLASS IMAGE DISPLAY AND STORAGE SYSTEM

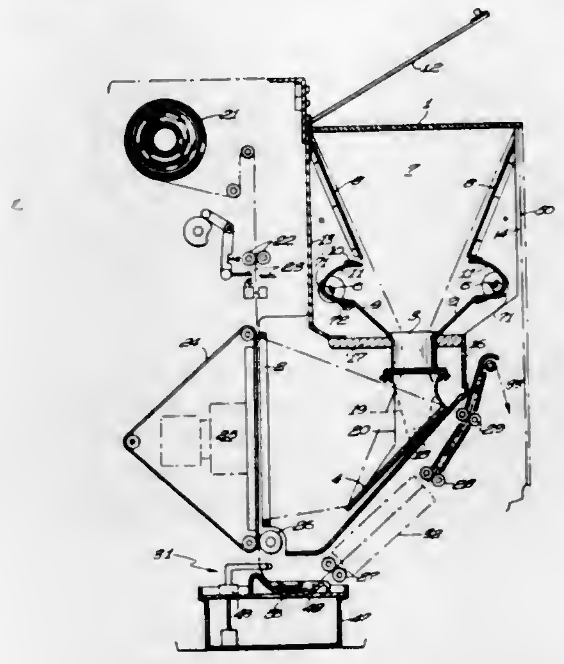
Gerhard K. Megla, Raleigh, N.C., and Bruno F. Ludovici, Owego, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 519,052, Jan. 6, 1966. This application Jan. 11, 1968, Ser. No. 697,155
U.S. Cl. 353—29 **13 Claims**
Int. Cl. G03b *21/60*



An image display and storage system is provided with a photochromic glass plate constructed of a plurality of parallel equal length glass fibers. The photochromic glass plate is first exposed to blue or ultraviolet light to uniformly darken the photochromic glass. Information in the form of red light or heat is then applied to the photochromic glass to selectively bleach portions of the photochromic glass plate. The image may be intensified and viewed by directing green light against the glass plate which will pass through the bleached areas of the photochromic glass plate.

3,428,397
ILLUMINATION IN OPTICAL IMAGING APPARATUS

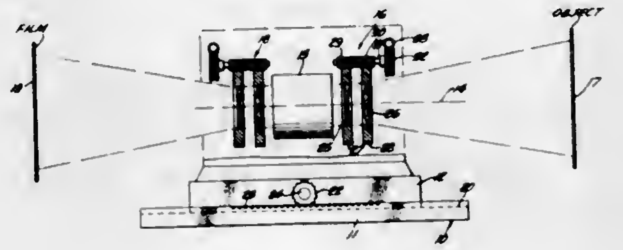
William B. Elmer, Boston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Continuation-in-part of application Ser. No. 587,286, Oct. 17, 1966. This application Dec. 28, 1967, Ser. No. 701,517
U.S. Cl. 355—11 **30 Claims**
Int. Cl. G03b *27/54*



An office copier with a transparent window holding an original document illuminated by a light box has a lens for focussing an image of the original on electrosensitive paper. Symmetrical arrays of light reflectors project light on the window, each array including a curved reflector adjacent an elongate light source and a second non-specular, light-diffusing surface between the light source and the window. The curved reflector distributes light along the second reflector so that the window is illuminated predominantly only with diffuse light distributed more intensely toward the end of the window than toward its center.

3,428,398
VARIABLE ANAMORPHIC LENS SYSTEM

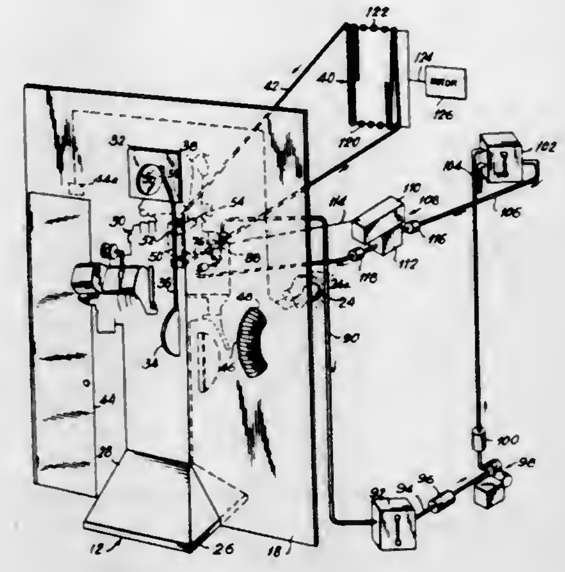
Robert E. Gottschalk, Los Angeles, Calif., assignor to Panavision Incorporated, Los Angeles, Calif., a corporation of California
Filed June 1, 1965, Ser. No. 460,151
U.S. Cl. 355—52 **2 Claims**
Int. Cl. G03b *27/68*



Two identical pairs of counter-rotating cylindrical lenses are mounted co-axially upon a carrier on opposite sides of a fixed focus spherical lens, each pair comprising a positive lens and a negative lens constrained to turn equally in opposite directions about the common optical axis, so that the width-to-height ratio of the image may be varied.

3,428,399
FILM PRINTING APPARATUS

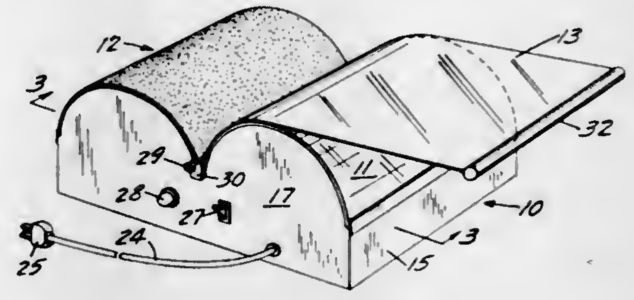
Saul Jeffee, Scarsdale, N.Y., and John Kowalak, River Edge, N.J., assignors to Movielab, Inc., New York N.Y.
Filed Mar. 4, 1966, Ser. No. 531,977
U.S. Cl. 355—100 **11 Claims**
Int. Cl. G03b *27/16, 27/30*



Apparatus for printing photographic film is installed in a wall so that the negative can be handled in non-safe light zone whereas the rawstock is handled in a separate zone in which safe lighting conditions are maintained. Liquid gate techniques and continuous negative techniques are employed.

3,428,400
CONTACT PRINTER

Glenn R. Anderson, Minneapolis, and John A. Svendsen, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,129
U.S. Cl. 355—117 **3 Claims**
Int. Cl. G03b *27/22*

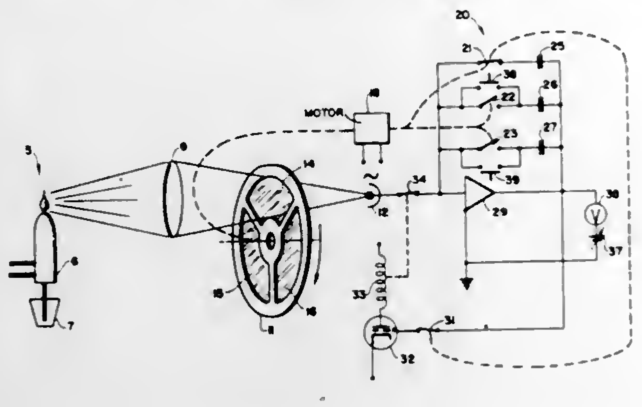


A toy copy-machine comprises a light exposure station and a heat development station in side-by-side relationship with a flexible pressure-curtain mounted between them for pressing the sensitive sheet materials against either station as required.

3,428,401
FLAME PHOTOMETER

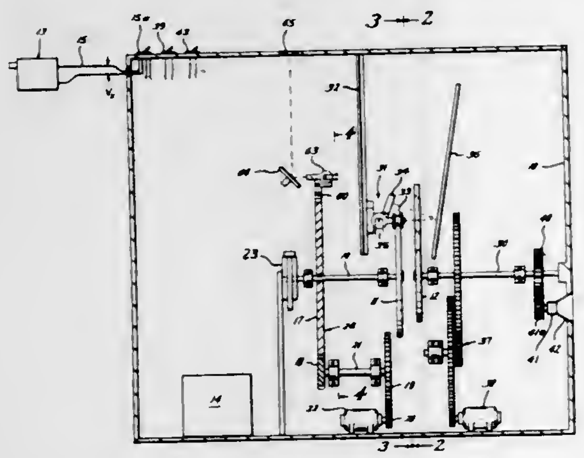
Edmund Earl Buzza, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 28, 1964, Ser. No. 407,040
U.S. Cl. 356—187 **9 Claims**
Int. Cl. G01n *21/58;* **G01j** *3/36*

The specification discloses a multi-channel flame photometer utilizing an internal standard or reference such as lithium to control the integration time. A solution containing the known concentration of the standard or reference and unknown concentrations of one or more other elements is excited in a flame. A rotating filter wheel is interposed between the flame and a radiant energy detector and successively passes the characteristic emission line of the excited elements. Different capacitors are connected across the input and output terminals of a high gain amplifier in synchronism with the rotating filter wheel to provide separate integration channels for each of the elements of the solution, such channels time-sharing a single amplifier. The integrated value of the internal standard is monitored and the integrating circuit interrupted when the integrated value of the internal standard reaches a predetermined level. A non-destructive readout is also provided.



3,428,402
APPARATUS FOR DETERMINING THE CONCENTRATION OF A SUBSTANCE IN A SOLUTION

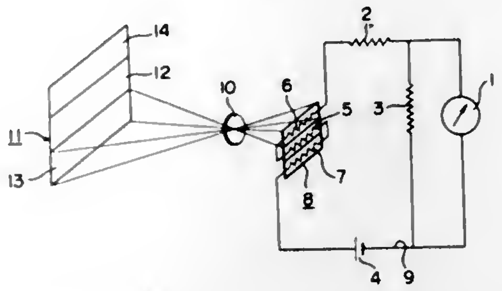
Charles V. Biddy, Houston, Tex.
(622 Bay Vista, Seabrook, Tex. 77586)
Filed Oct. 20, 1965, Ser. No. 498,541
U.S. Cl. 356—208 6 Claims
Int. Cl. G01n *21/06, 21/26;* **G01j** *3/40*



1. Apparatus for determining the concentration of a substance in a solution having a measurable characteristic that varies with the concentration of said substance in the solution, said apparatus comprising means for measuring said characteristic and providing an electrical signal having an amplitude proportional to said measurable characteristic, an indicating cam having a curvature representative of a function of said measurable characteristic, means for rotating said cam through an angle proportional to the amplitude of the electrical signal, a read-out cam having a curvature representative of said function of said measurable characteristic of the solution for known concentrations of said substance, means for rotating said read-out cam through an angle determined by the position of the indicating cam, and means responsive to the angle of rotation of the read-out cam to indicate the concentration of said unknown solution.

3,428,403
PHOTOELECTRIC EXPOSURE METER HAVING A SEGMENTED PHOTORESISTOR FOR SUBJECTS OF VARYING BRIGHTNESS

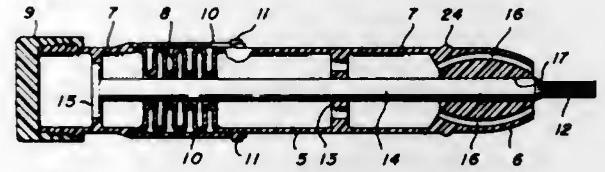
Masaichiro Konishi, Nishinomiya, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Jan. 4, 1966, Ser. No. 518,654
U.S. Cl. 356—222 4 Claims
Int. Cl. G01j *1/42*



A photoelectric exposure meter in which a plurality of photoelectric components are connected in series with an electrical source through a coil moving instrument to receive light from respective divided portions of a field via an optical focussing system, which divides the light.

3,428,404
LIQUID APPLICATOR

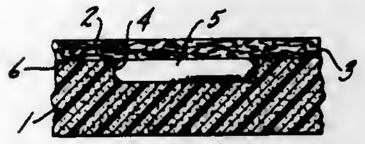
Pasqualina J. Ciancio, 34 N. Iowa Ave., Atlantic City, N.J. 08401
Filed Apr. 28, 1966, Ser. No. 547,093
U.S. Cl. 401—109 2 Claims
Int. Cl. B43k *5/16, 24/02;* **A61k** *7/00*



The invention is directed to providing a compact and convenient applicator for finger nail polish or other cosmetic fluid which can be carried in a lady's purse or handbag without risk of leakage of its contents and readily made available for use, the liquid applying means being retractable when not in use into a variable volume container or reservoir for the liquid and when projected therefrom for use adapted to receive liquid from the reservoir through lateral channels or ducts through which it may be forced by manual contraction of the reservoir capacity.

3,428,405
CLEANSING STRUCTURE

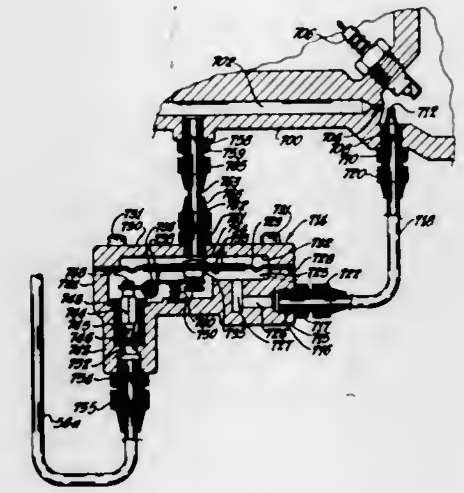
Howard Larry Posner, 2545 W. Peterson Ave., Chicago, Ill. 60645
Filed Dec. 3, 1965, Ser. No. 511,529
U.S. Cl. 401—201 4 Claims
Int. Cl. A47k *7/03*



A scouring article for use in scouring, polishing, cleaning and similar applications, said article including a plurality of flexible bonded porous portions and a soluble cleansing material to reduce surface tension of water deposited between adjacent portions. In addition said article is activated by manipulating it in water and includes a barrier between the cleansing agent and the porous portions to substantially reduce the rate of solubilization and passage of the cleansing material through the porous portions when the article is in use.

3,428,406
LIQUID FUEL BURNER SYSTEM AND FUEL CONTROL

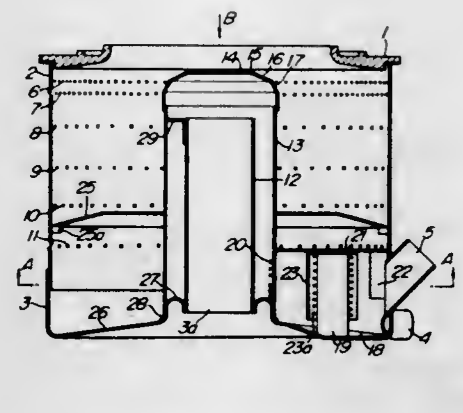
Warren D. Nutten and Bernard C. Phillips, Toledo, Ohio, assignors to The Tillotson Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Original application May 19, 1964, Ser. No. 368,475, now Patent No. 3,377,024, dated Apr. 9, 1968. Divided and this application Feb. 19, 1968, Ser. No. 706,451
U.S. Cl. 431—12 7 Claims
Int. Cl. F23n *1/00;* **F16k** *31/12, 31/36*



Fuel pressure used with an aspirating type fuel nozzle controls actuation of a diaphragm in a chamber to regulate a valve in a passage controlling fuel flow to the nozzle.

3,428,407
POT-TYPE LIQUID FUEL BURNERS

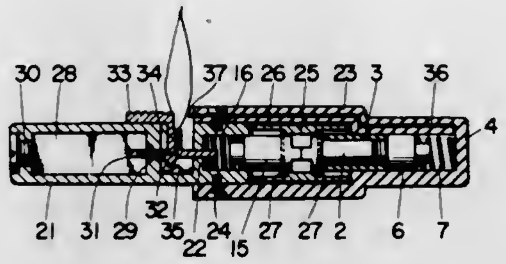
Juichi Honda, Kimio Matsumura, and Sadao Yoshida, Tochigi-ken, and Ryutaro Mori, Mitaka-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 14, 1966, Ser. No. 579,249
Claims priority, application Japan, Dec. 24, 1965, 40/79,301, 40/79,302, 40/79,303
U.S. Cl. 431—249 4 Claims
Int. Cl. F23d *5/04*



A liquid fuel pot burner having a liquid charged vaporizing plate with an outer cylindrical peripheral wall extending vertically therefrom, an open ended inner cylinder providing fluid communication through the center of the plate and being surrounded by an outer cylindrical cover provided in its lower portion with air supply holes only within a quadrant thereof. An auxiliary burner provided with a wick is mounted radially opposite the air supply holes between the plate and a pilot ring, which is between upper secondary air supply holes and lower primary air supply holes extending through the outer peripheral wall.

3,428,408
IMPACT TYPE OF PIEZOELECTRIC MECHANISM BY WAY OF AN ELECTRIC SOURCE FOR LIGHTING

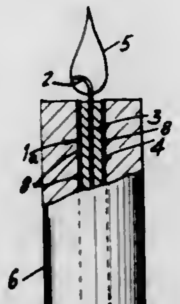
Yoshiaki Ameyama and Akira Takeda, Tokyo, Japan, assignors to Kanto Gasukigu Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 6, 1966, Ser. No. 599,553
Claims priority, application Japan, Dec. 9, 1965, 40/75,305, 40/75,308; Dec. 28, 1965, 40/80,351
U.S. Cl. 431—255 12 Claims
Int. Cl. F23g *7/12, 3/00, 13/00*



An impact type piezoelectric mechanism for use as a source of electricity for lighting a gaseous fuel. At least the piezoelectric element is movable away from an impact body against a spring means, and is released so as to be driven against the impact body to create a flow of current across spaced electrodes. The impact body can also be movable away from the piezoelectric element also against spring means so that both elements are driven toward each other to impact when they are released.

3,428,409
RIGID WICK, RIGID CORE-WICK AND RIGIDIZED CANDLE

James R. Summers, 353 E. 50th St., New York, N.Y. 10021
Continuation-in-part of application Ser. No. 406,037, Oct. 23, 1964. This application Sept. 6, 1966, Ser. No. 577,268
U.S. Cl. 431—289 25 Claims
Int. Cl. F23d *3/16, 3/24;* **C11c** *5/00*

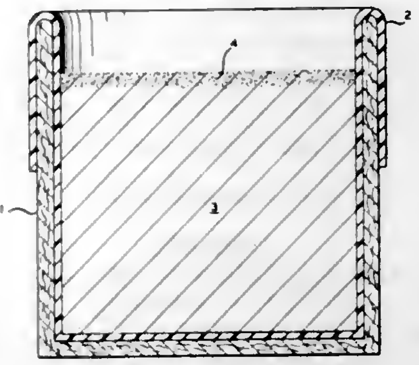


The present invention provides a rigid support for use in a candle generally including a wick and a surrounding outer portion of independently flammable, wax resistive structure, the flame on the wick igniting the outer portion to combustion.

3,428,410
COMBUSTIBLE ARTICLE OR CANDLE

Chester C. Johnston, Bartlesville, Okla., and Thomas J. Huddleston, Boulder, Colo., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 20, 1966, Ser. No. 580,659
U.S. Cl. 431—291 **5 Claims**
Int. Cl. F23d *3/16, 3/08;* **A01g** *13/06*

Combustible article or candle comprising a heat destroyable container or drum which can be made of fiber and the interior of which is lined with a polyolefin film which can be of fire retardant grade, the drum then being filled with a combustible material which can be liquid petroleum wax. The top of the wax can be covered with vermiculite which is gelled across the top of the wax as it is solidified. The liner is one embodiment extends beyond the upper end of the container and may extend down to beneath the container so as to protect the bottom of the container from moisture when the container is placed on the ground. Also in an embodiment the container is treated with fire retardant material such as sodium silicate solution. The combustible material can also include chemically impregnated sawdust, wood chips, briquets.



CHEMICAL

3,428,411
COLORING OF AROMATIC POLYESTER FIBERS WITH ANTHRAQUINONE DYESTUFFS

Guido R. Genta, Dunnstown, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 397,611, Oct. 18, 1964. This application Jan. 10, 1967, Ser. No. 608,270
U.S. Cl. 8—39 **3 Claims**
Int. Cl. D06p *1/20*

Aromatic polyester fibers, in particular polyethylene terephthalate fibers, are dyed with 1-amino-2-tetrahydrofurfuryloxy - 4-arylsulfonamidoanthraquinones to provide colored fibers having red to yellowish-red shades which are substantive, light fast, and sublimation resistant.

3,428,412
DRY CLEANING METHOD

Herman S. Gilbert, Angleton, and Nicholas B. Lorette, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,898
U.S. Cl. 8—142 **3 Claims**
Int. Cl. D06l *1/02*

1. In a method of dry cleaning wherein liquid solvent is circulated from a base tank through soiled fabric and returned to said base tank, followed by mechanically removing solvent from said fabric and then heating any solvent remaining in said fabric to dry said fabric, the steps comprising withdrawing a predetermined amount of said circulated solvent which has contacted said fabric and which contains the heaviest load of soil suspended or dissolved therein and then distilling said predetermined amount of soiled solvent before returning it to said base tank.

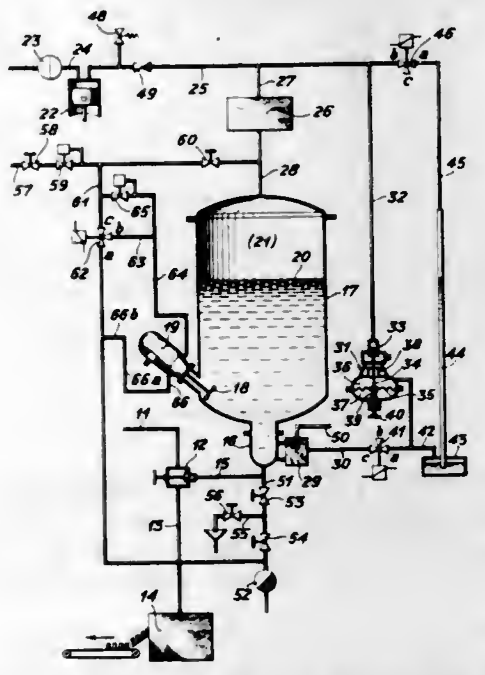
3,428,413
LIQUID COMPENSATING APPARATUS FOR USE IN COMBINATION WITH A LIQUID STERILIZATION AND RACKING SYSTEM

Martin Froelich, Grunegg, Konolfingen, Bern, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Jan. 3, 1966, Ser. No. 518,433
Claims priority, application Switzerland, Jan. 8, 1965, 234/65
U.S. Cl. 21—103 **5 Claims**
Int. Cl. A61l *3/02*

1. A liquid compensating apparatus for maintaining a constant pressure on a flow of sterilized liquid in a flow path, said apparatus comprising:

a compensating tank for connection at a lower portion thereof to a flow path from a sterilization plant to a racking station, said compensating tank having an enclosed interior for storing sterilized liquid from the sterilization plant,

means including a sterile gas filter in communication with the upper portion of said interior of said compensating tank for supplying sterilized high pressure gas thereto above stored sterilized liquid,



a pressure sensing element for sensing the pressure at said lower portion of said compensating tank, and

means responsive to said pressure sensing element for varying the pressure of said sterilized gas in said compensating tank to maintain a constant pressure at said lower portion of said compensating tank with varying levels of liquid therein.

3,428,414
PROCESS FOR REMOVING NITRIC OXIDE FROM GASEOUS MIXTURES

Werner H. Baum, Monroeville Borough, Allegheny County, Joseph G. Crist, Mount Lebanon Township, Allegheny County, and Elliott V. Nagle, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed June 2, 1966, Ser. No. 554,685
U.S. Cl. 23—2 **9 Claims**
Int. Cl. C01b *21/40, 21/46*

1. In a process for the removal of nitric oxide from a gas mixture containing oxygen and reactive organic material, including retention of the gas mixture for a short time in a reaction chamber at an elevated temperature, the improvement comprising retaining said gas mixture in said chamber in admixture with a gas containing nitrogen dioxide, the volumetric ratio of nitrogen dioxide to nitric oxide being at least about 0.06.

3,428,415
PREPARATION OF HETEROPOLYTUNGSTIC AND HETEROPOLYMOLYBDIC ACIDS

Vincent Chiola and Clarence D. Vanderpool, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
No Drawing. Filed Apr. 11, 1967, Ser. No. 629,889
U.S. Cl. 23—23 **17 Claims**
Int. Cl. C01g *39/00, 41/00*

Heteropolytungstic and heteropolymolybdic acids are prepared by effecting reaction, in the presence of a fluoride ion, between a water-soluble compound containing a tungstate or a molybdate radical, e.g., sodium or ammonium tungstates or molybdates, and a substance comprising the heteroatom to be introduced into the aforesaid heteropoly acids. Examples of such substances are those which are initially in the form of an oxide, hydroxide, or a salt with an inorganic acid, of the heteroatom; and particularly those having either inadequate water-solubility characteristics or which form insoluble products because of hydrolysis, decomposition, etc., Al, Sb, Cr, Co, Fe, Ni, Nb, Sn Ti and V are heteroatoms to which the invention is especially applicable as a means for introducing them into the aforementioned heteropoly acids.

The reaction is carried out in an aqueous medium with acidic conditions prevailing during at least the latter part of the reaction period. Typically the concentration of F ion is at least 0.1 (e.g., from ca. 0.5 to ca. 10) wt. percent, based on the weight of the total reaction mass. Reaction temp.: ca. 20° C. to ca. 100° C.

3,428,416
METHOD OF MANUFACTURING FERRITES

Ong Tjing Gie, Gerben Sjoerd Krijtenburg, and Berend Jan Nijhof, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 392,616, Aug. 27, 1964. This application Nov. 6, 1967, Ser. No. 681,036
Claims priority, application Netherlands, Aug. 9, 1963, 296,505; Apr. 11, 1964, 6403954
U.S. Cl. 23—51 **7 Claims**
Int. Cl. C01g *49/02;* **H01f** *1/11*

A method of preparing a ferrite (MFe_2O_4, in which M may be one or more bivalent metals) in which ferrous sulfate heptahydrate is mixed with a metal compound such as a metal oxide or carbonate which can react with Fe_2O_3 to form the ferrite and stirred at a temperature 30°–80° C. to form granules which are then heated at a temperature of about 250° C. to dry the granules and remove the water therefrom. The granules are then transferred to a fluid bed furnace where a solid state reaction produces the ferrite.

3,428,417
PURIFICATION OF CALCIUM CHLORIDE LIQUORS

William F. Pesold, Riverview, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Nov. 23, 1966, Ser. No. 596,408
U.S. Cl. 23—90 **4 Claims**
Int. Cl. C01f *11/24;* **C01b** *33/22*

This invention relates to a novel method of removing impurities which are present in commercial calcium chloride by treatment with precipitated magnesium silicate.

3,428,418
AMMONIUM NITRATE STABILIZATION

Richard F. McFarlin, Atlanta, Ga., and Donald E. Brown, Lakeland, Fla., assignors, by mesne assignments, to USS Agri-Chemicals Inc., Pittsburgh, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 365,867, May 6, 1964. This application June 27, 1967, Ser. No. 651,095

U.S. Cl. 23—103 **5 Claims**
Int. Cl. C01c *1/18*

Anhydrous ammonium nitrate is prepared by neutralizing nitric acid with ammonia and the resulting ammonium nitrate concentrated to anhyrdous ammonium nitrate. A portion of the anhydrous ammouium nitrate is reacted with agitation with about 6–24 fold excess of an alkaline earth metal oxide, such as magnesium and calcium oxides and alkaline earth metal carbonates and hydroxides, whereby a large volume of ammonia is liberated at a single stage while at the same time ammonium alkaline earth metal nitrates are formed. The evolved ammonia is recovered and recycled to the initial neutralizing nitric acid step while the ammonium and alkaline earth metal nitrates are metered into the concentrated anhydrous ammonium nitrate to reduce the equivalent alkaline earth metal content to a concentration in which the alkaline earth metal oxide content is at least about 0.2 percent by weight so as to stabilize the ammonium nitrate product.

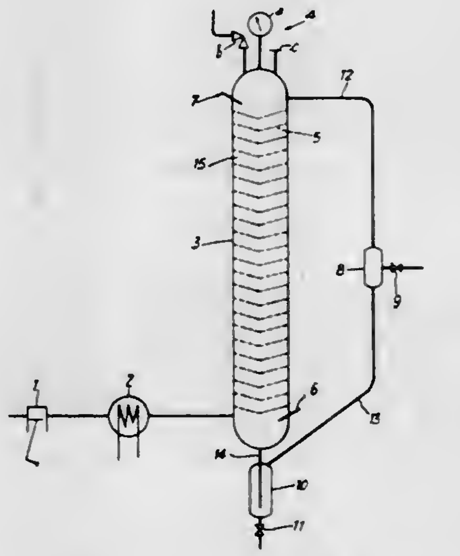
3,428,419
METHOD FOR PRODUCING AMMONIUM SULFATE

Jean-Paul Zwilling, Pau, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France, a corporation of France

Original application Feb. 19, 1962, Ser. No. 173,928. Divided and this application June 28, 1965, Ser. No. 467,699

Claims priority, application France, Feb. 21, 1961, 853,348

U.S. Cl. 23—119 **3 Claims**
Int. Cl. C01c *1/24*



Method for the production of ammonium sulfate from ammonium sulfite and ammonium bisulfite involving feeding the aqueous reaction mixture of the latter materials through a number of individual regions in an elongated reaction zone while maintaining laminar flow and minimizing turbulence throughout such zone.

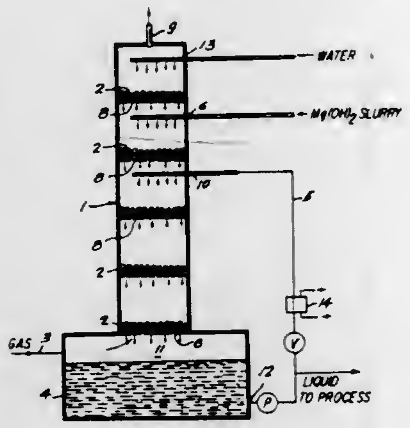
3,428,420

PREPARATION OF MAGNESIUM BISULFITE LIQUOR

Harold Roy Douglas, Hudson Heights, Quebec, and Ivan W. Snider, Cornwall, Ontario, Canada, assignors to Dominion Tar & Chemical Company, Limited, Montreal, Quebec, Canada

Filed June 7, 1965, Ser. No. 461,648

U.S. Cl. 23—132 **6 Claims**
Int. Cl. C01b *17/42*



A method of preparing magnesium bisulphite pulping liquor. $Mg(OH)_2$ slurry is added near the top of a tower and flowing downwards reacts with SO_2 gas flowing countercurrently to form $MgSO_3$, and the $MgSO_3$ so formed, in its downward flow, reacts with SO_2 to form $Mg(HSO_3)_2$. A high enough turbulence is created in the tower to enhance the reactions and prevent deposition of $MgSO_3$.

3,428,421

MANUFACTURE OF DIFLUOROPHOSPHORIC ACID

Robert A. Wiesboeck, Atlanta, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,188

U.S. Cl. 23—139 **8 Claims**
Int. Cl. C01b *7/20*

Difluorophosphoric acid is prepared from dibasic phosphates and a fluorosulfonate salt, such as an alkali or alkaline earth fluorosulfonate. A pulverized mixture of a dibasic phosphate such as, for example, dicalcium phosphate, and a fluorosulfonate such as, for example, calcium fluorosulfonate, are heated to evolve difluorophosphoric acid vapors and the acid vapors collected.

3,428,422

PREPARATION OF PHOSPHORYL FLUORIDE AND DIFLUOROPHOSPHORIC ACID

Robert A. Wiesboeck, Atlanta, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 14, 1967, Ser. No. 682,971

U.S. Cl. 23—139 **8 Claims**
Int. Cl. C01b *25/10, 25/16, 33/08*

Phosphoryl fluoride and difluorophosphoric acid are prepared directly from fluorosulfonic acid and a phosphate source, such as phosphate rock, phosphoric acid, a metal orthophosphate or metal polyphosphate, by heating the mixture at a temperature of about 150–400° C. and recovering the vapors as product. The evolved phosphoryl fluoride and difluorophosphoric acid may be recovered separately by the use of cold traps or other means.

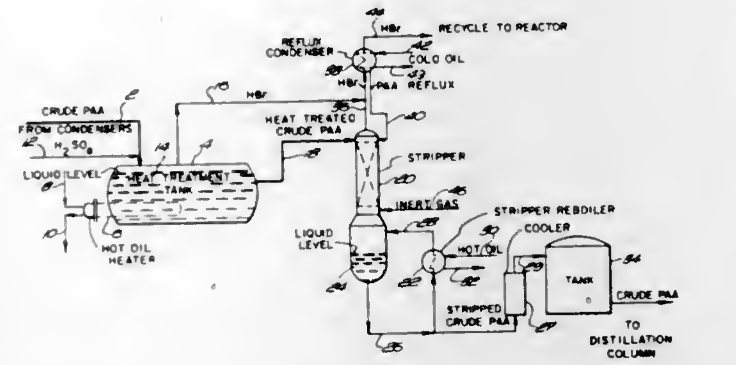
3,428,423

METHOD FOR THE REMOVAL AND RECOVERY OF PROMOTER FROM CRUDE PHTHALIC ANHYDRIDE MADE BY THE VAPOR PHASE OXIDATION OF ORTHOXYLENE IN THE PRESENCE OF PROMOTER

Robert B. Egbert, Stamford, Conn., assignor to Chemical Process Corporation, Stamford, Conn., a corporation of Massachusetts

Filed June 7, 1966, Ser. No. 555,900

U.S. Cl. 23—154 **23 Claims**
Int. Cl. B01d *3/40;* **C07c** *51/42;* **C07d** *5/38*



Removal of HBr from crude phthalic anhydride by passing the crude phthalic anhydride through a fractionating stripper column in countercurrent flow with phthalic anhydride vapor, whereby the phthalic anhydride vapor strips the HBr from the crude phthalic anhydride. The phthalic anhydride vapor containing the stripped HBr may be condensed and refluxed back to the stripper column.

The crude phthalic anhydride is first subjected to a heat treating step to remove therefrom as vapors HBr and water, and is derived from the catalytic oxidation of o-xylene in the presence of a bromine promoter, which is the source of the HBr in the crude.

The stripping and/or heating steps may be carried out at superatmospheric pressure and the HBr removed thereby may be recycled back to the reactor as a source of promoter.

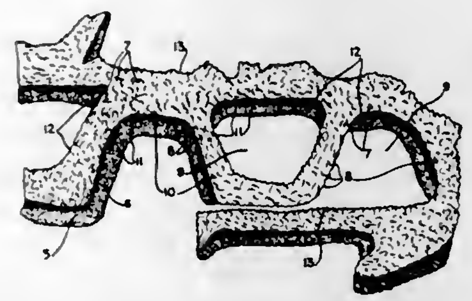
3,428,424

PRODUCTION OF NITRIC ACID

Carl D. Keith, Summit, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Feb. 24, 1965, Ser. No. 434,759

U.S. Cl. 23—162 **3 Claims**
Int. Cl. C01b *21/26*



The oxidation of ammonia to produce nitric oxide is effected in an improved process in the presence of a catalyst block comprising a porous inert unitary refractory skeletal structure having gas flow channels therethrough and a platinum group metal deposited thereon, especially on the surfaces of the gas flow channels. This process is applicable to the production of nitric acid.

3,428,425

METHOD OF PREPARING SILICA MATERIALS

Ralph Marotta, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,625

U.S. Cl. 23—182 **6 Claims**
Int. Cl. C01b *33/16;* **C09c** *1/00*

Silica xerogels with a surface area of 300–600 $m.^2/gm.$ and linseed oil absorption of about 3–5 cc./gm. and composed of particles of .01–.03 micron, with pore volumes of 0.5–1.0 cc./gm., pore diameters of 35–90 A. and average bulk density of 3–7 lbs./ft. are prepared by the simultaneous addition of alkali metal silicate with mineral acid to a solution maintained at pH less than 6.0, and a temperature less than 50° C. After a substantial part of the reactants have been added the temperature is raised to 70–95° C. and the rest of the reactants added over period of 1–3 hrs. to obtain a slurry containing 3–10% SiO_2.

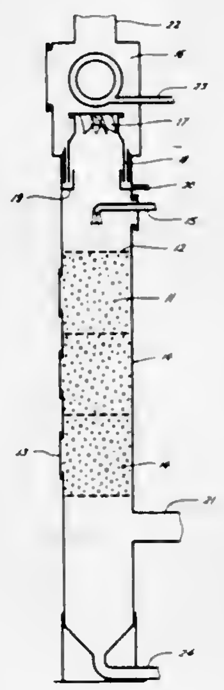
3,428,426

AMMONIA STRIPPING PROCESS

Leroy L. Carney and Gerald G. Priest, Houston, Tex., assignors to Dixie Chemical Products Co., Houston, Tex., a corporation of Texas

Filed Nov. 30, 1966, Ser. No. 597,932

U.S. Cl. 23—193 **7 Claims**
Int. Cl. C01c *1/10*



A process which removes ammonia from aqueous systems such as ammonia base sulfite liquor which has been base exchanged with calcium. This is done by heating the ammoniated system to a predetermined temperature and passing it through a column of randomly moving small spheres. Hot air, gas or vapor is simultaneously counterflowed through the column to maintain temperature control and to keep the small spheres in random motion.

3,428,427

PROCESS FOR PRODUCING A PRODUCT HIGH IN TITANIUM DIOXIDE CONTENT

Dusan Raicevic, Beloeil, Quebec, Canada, assignor to Quebec Iron and Titanium Corporation, New York, N.Y., a corporation of Canada

No Drawing. Filed June 24, 1965, Ser. No. 466,859

U.S. Cl. 23—202 **10 Claims**
Int. Cl. C01g *23/04*

This invention relates to a process for producing a product rich in titanium dioxide and relatively low in other materials from titaniferous material that is first leached with dilute sulfuric acid to produce a solid residue which is subsequently leached with a dilute aqueous alkaline solution to obtain a titanium dioxide product.

3,428,428

PRODUCTION OF HYDRIDES OF ELEMENTS OF GROUP V OF THE PERIODIC SYSTEM

Walter Miederer, Hanau am Main, and Hilmar Kuttner, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed May 27, 1965, Ser. No. 459,182

Claims priority, application Germany, May 27, 1964, S 91,250

U.S. Cl. 23—204 **7 Claims**
Int. Cl. C01b *6/00*

Described is a method of preparing hydrides of group V elements of the periodic system. These elements are arsenic, phosphorus and antimony. The method comprises reacting a halide of the group V element with a solid lithium hydride powder at a temperature from 100 to 250° C. Inert carriers may be used and the reaction is preferably carried out in a fluidized bed.

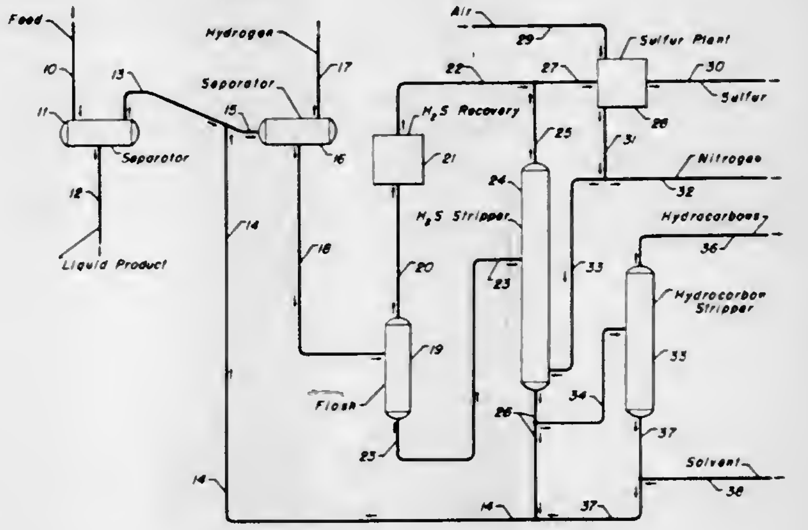
3,428,429

METHOD FOR PURIFYING HYDROGEN

Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 607,043

U.S. Cl. 23—212 **10 Claims**
Int. Cl. C01b *17/16, 1/16*



Method for purifying a hydrogen gas stream for recycle to a catalytic hydrogenation reaction zone by contacting the impure hydrogen stream with a polyglycol ether absorbent selective for the contaminants, e.g. light paraffinic hydrocarbons and hydrogen sulfide. The contacting is performed preferably as a single stage using an in-line mixer device. The purified hydrogen is separated and recycled to the reactor. The rich-absorbent is then flashed and hydrogen sulfide separated from the flashed absorbent with a stripping gas comprising nitrogen derived from the conversion of the hydrogen sulfide to sulfur via air oxidation.

3,428,430

METHOD FOR DECREASING SLUDGE FORMATION IN PHOSPHORUS FURNACE SUMP

George H. Megar and Arnett Hendrix, Florence, Ala., assignors to Tennnessee Valley Authority, a corporation of the United States

Filed Apr. 21, 1966, Ser. No. 544,270

U.S. Cl. 23—223 **6 Claims**
Int. Cl. C01b *25/02*

A nonsilica-bearing fluorine compound, aqueous ammonium fluoride, is added to condenser spray water to maintain the atom ratio F:Si above 6 so that all Si from silica tetrafluoride in the furnace gas will be hydrolyzed to a soluble fluosilicate. Without the added F, the atom ratio will be about 4 and only about two-thirds of the Si will hydrolyze to soluble fluosilicate. The remaining one-third of the silica will form a gel which occludes phosphorus, water, and solids impurities as sludge from which phosphorus is not easily separated.

3,428,431

GEOCHEMICAL PETROLEUM EXPLORATION METHOD

Gale K. Billings, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 12, 1965, Ser. No. 455,330

U.S. Cl. 23—230 **1 Claim**
Int. Cl. G01v *9/00, 33/18;* **G01n** *33/24*

The method of exploration for petroleum deposits which comprises collecting samples of formation waters from wells and determining the concentration of at least one transition metal in said waters as a component indicative of the presence of petroleum deposits.

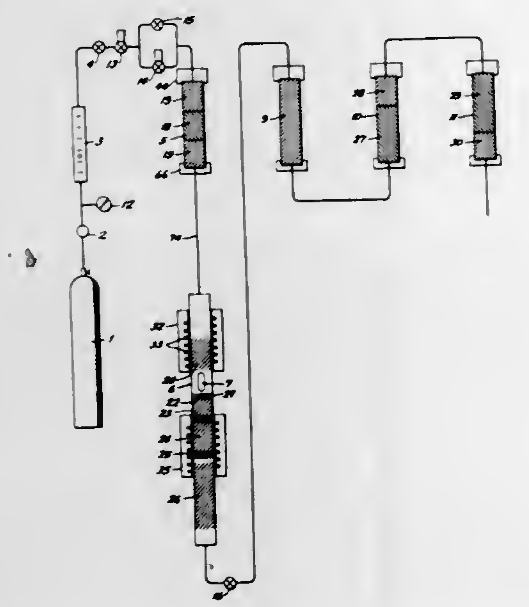
3,428,432

ANALYTICAL COMBUSTION TRAIN

John J. J. Staunton, 310 Wesley Ave., Oak Park, Ill. 60302, Lewis Malter, 7741 Davis St., Morton Grove, Ill. 60053, William J. Gleason, 408 N. 2nd Ave., Villa Park, Ill. 60181, and Rame W. Bull, 619 S. George St., Mount Prospect, Ill. 60056

Continuation-in-part of application Ser. No. 91,713, Feb. 27, 1961. This application July 6, 1964, Ser. No. 380,601

U.S. Cl. 23—253 **4 Claims**
Int. Cl. G01n *25/22, 31/00*



An analytical combustion train having a vertical combustion chamber and a plurality of vertical absorption vessels. Oxygen at a controlled flow rate is fed through the vertical combustion chamber to react with a sample supported on a uniformly packed, dry particulate material. The reaction products continue through various vertical vessels arranged in series, each vessel containing materials which absorb a particular reaction product. The oxygen flow rate is variable to accelerate combustion and absorption.

3,428,433

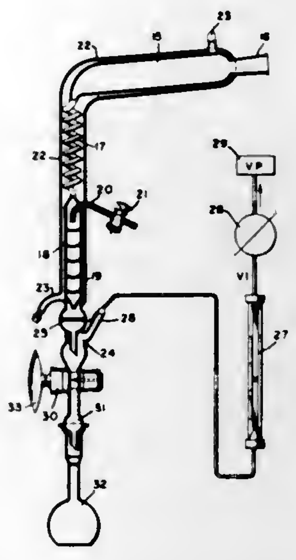
OXYHYDROGEN COMBUSTION APPARATUS FOR DETERMINING THE SULPHUR AND HALOGEN CONTENTS OF ORGANIC SUBSTANCES

Friedrich Ehrenberger, Loreleistrasse 55, Frankfurt am Main-Unterliederbach, Germany; Siegbert Gorbach, Nelkenweg 8, Kelkheim, Taunus, Germany; and Karl Hommel, Hofheimer Strasse 38a, Lorsbach, Taunus, Germany

Filed June 8, 1965, Ser. No. 462,233

Claims priority, application Germany, June 16, 1964, E 27,228

U.S. Cl. 23—253 **6 Claims**
Int. Cl. G01n *31/12*



An oxyhydrogen combustion apparatus for quantitatively determining the contents of sulphur and halogen in organic substances by means of ultimate analyses of reaction gases formed by combustion.

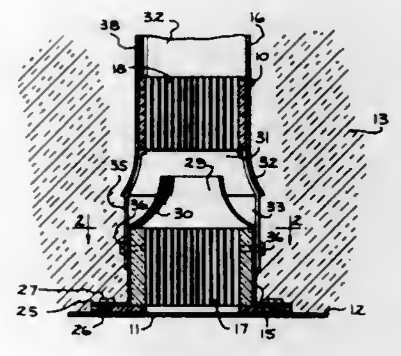
3,428,434

TWO-STAGE SELF-SUSTAINING CATALYTIC OXIDATION UNIT

Bohdan Hurko, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Sept. 15, 1964, Ser. No. 396,549

U.S. Cl. 23—288 **6 Claims**
Int. Cl. B01j *9/04;* **F24c** *15/00*



The present invention relates to a catalytic oxidation unit for treating hot gases emanating from a self-cleaning pyrolytic cooking oven wherein said unit becomes heated thereby to an activation temperature, and particularly to a two-stage unit where partial combustion occurs in the first stage and complete combustion is effected in the second stage so as to prevent the possibility of ignition when handling very heavy loads of volatile products.

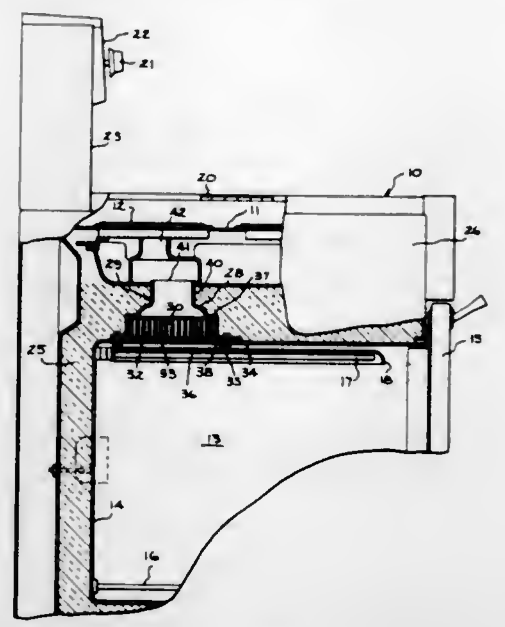
3,428,435

SELF-SUSTAINING CATALYTIC OXIDATION UNIT

Bohdan Hurko and Raymond L. Dills, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Sept. 15, 1964, Ser. No. 396,551

U.S. Cl. 23—288 **5 Claims**
Int. Cl. B01j *9/04;* **F24c** *15/00*



A catalytic oxidation unit useful in treating hot gaseous products emanating from a self-cleaning pyrolytic cooking oven wherein said unit becomes heated thereby to promote an exothermic reaction which will maintain the oxidation unit operational until all smoke, odors and other undesirable properties present in the hot gases are eliminated before the gases are discharged into the atmosphere. The unit comprises a hollow housing with a perforated ceramic block of fine cellular construction having a coating of catalytic material covering the visible surfaces of the ceramic block.

3,428,436

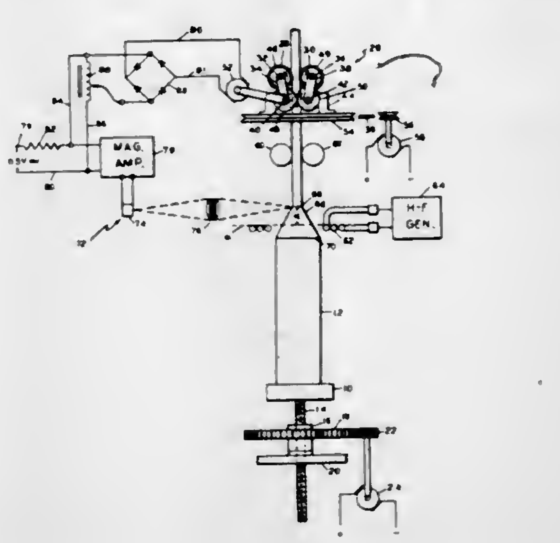
METHODS AND APPARATUS FOR ZONE MELTING

William F. Tucker, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,671

U.S. Cl. 23—301 **17 Claims**
Int. Cl. B01j *17/16*

1. In a method of zone melting a rod of semiconductor material in which the rod is vertically supported at both ends and a transverse molten zone is formed in said rod intermediate the two ends thereof, said molten zone being caused to move relative to said rod along the longitudinal axis thereof so that it is bounded at one extremity by a transverse interface of melting and at the other extremity by a transverse interface of resolidification, and in which the diameter of the rod being solidified from said molten zone is controlled by movement relative to each other of the solid portions of said rod on either side of said molten zone, the improvement which comprises continually detecting variations in the distance between at least one point on said interface of resolidification and an arbitrarily selected reference plane passing transversely through the longitudinal axis of said rod and moving relative to said rod along said longitudinal axis at a uniform rate equal to the mean rate of movement of said molten zone relative to said rod, and moving the solid portions of said rod on either side of said molten zone relative to each other in response to changes in said distance to thereby produce by solidification of said molten zone a rod segment varying only within narrow limits from a selected diameter.



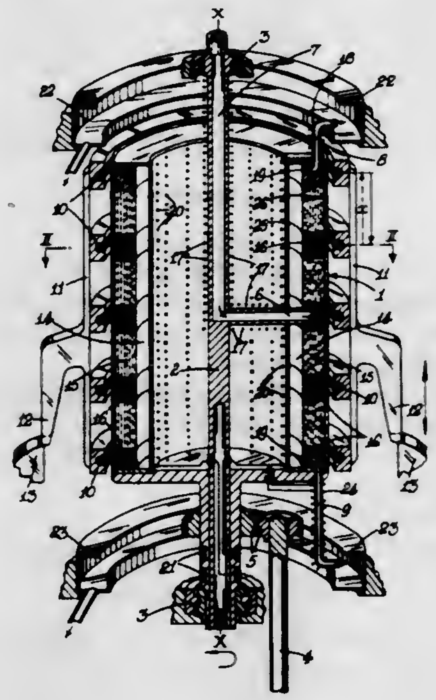
3,428,437

ZONE REFINING

Ernest L. Anderson, Lynnwood, Pretoria, Transvaal, Republic of South Africa, assignor to South African Iron and Steel Industrial Corporation Limited

Filed July 13, 1965, Ser. No. 471,693

U.S. Cl. 23—301 **22 Claims**
Int. Cl. B01j *17/16*

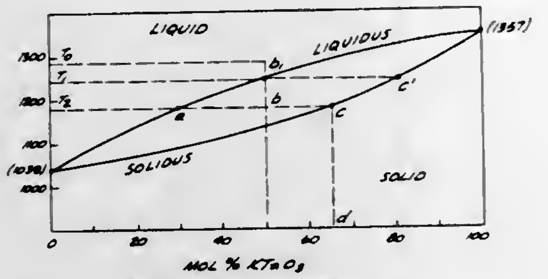


A method and an apparatus for zone refining crystalline material by subjecting the latter to one or more melting-recrystallizing cycles while under the influence of centrifugal force. The material is introduced into a container and the latter is rotated about an axis which does not pass through the material, thereby to urge the material against a wall of the container under the action of centrifugal force resulting from the rotation, the quantity of the material being such that it only partially fills the container in the direction of the centrifugal force. At least one molten zone is established in and moved through the material to zone refine it while it remains under the influence of the centrifugal force.

3,428,438
POTASSIUM TANTALATE NIOBATE CRYSTAL GROWTH FROM A MELT

Frank H. Andres, Canoga Park, and Anthony L. Gentile, Thousand Oaks, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 594,073
U.S. Cl. 23—301 **8 Claims**
Int. Cl. C22b *59/00*



PHASE EQUILIBRIUM DIAGRAM

1. The method of growing a homogeneous KTN crystal weighing on the order of from 34 grams to 142 grams of a size ranging on the order of from 30 x 30 x 5 mm. to 40 x 40 x 30 mm., having a Curie temperature within a range of +16° C. to −52° C., ±3° C., and high optical quality comprising the steps:

(1) preparing a crystal forming liquid mixture of $KTa_xNb_{1-x}O_3$ and $1>X>0$ in the presence of K_2O at crystal melting temperature;
(2) reducing the temperature of said mixture and maintaining the said mixture at a substantially constant temperature of equilibrium mixture of liquid and solid;
(3) suspending a seed crystal of KTN composition about 5 mm. below the surface of said mixture;
(4) maintaining the said mixture at a substantially constant temperature throughout crystal growth and with the seed crystal suspended therein;
(5) effecting the defined crystal growth for a period of up to about four to five days;
(6) with drawing the grown crystal from the said mixture and cooling said crystal to room temperature.

3,428,439
AZABORANES

Walter R. Hertler, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser No. 490,661 and Ser. No. 490,712, Sept. 27, 1965. This application Nov. 18, 1966, Ser. No. 595,357
U.S. Cl. 23—358 **8 Claims**
Int. Cl. C01b *21/06*

Azaboranes of the formula $MHNB_9H_{12}$ or

$$RR'R''NNB_9H_{12}$$

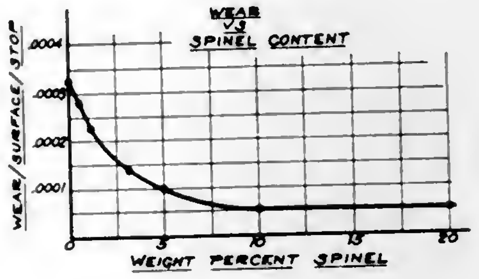
where M is a cation and the R's are selected hydrocarbyl groups. The azaboranes are prepared by reacting an N-thionitrosodialkylamine with decaborane at −25° C. to 100° C. in an inert solvent. The azaboranes are useful as blowing agents, in electrical resistors and as reducing agents.

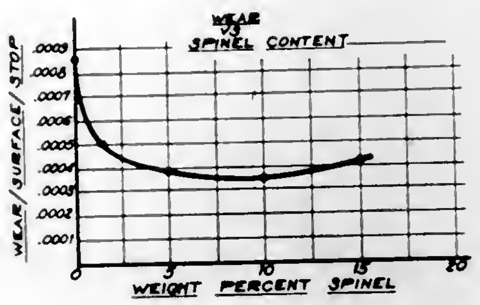
3,428,440
COPPER BASE FRICTION MATERIAL WITH DISPERSED SPINELS

Douglas J. Roth, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Continuation of application Ser. No. 496,278, Oct. 15, 1965. This application Nov. 21, 1967, Ser. No. 684,840
U.S. Cl. 29—182.5 **4 Claims**
Int. Cl. B22f *3/00, 5/00*

A sintered copper base inorganic friction material having less than about 25% by weight of a spinel disbursed throughout. The spinel additives are preferably chromate and aluminate spinels such as magnesium aluminate, magnesium chromate, or nickel chromate which, when added in the quantities indicated, produce a marked reduction in friction material wear.





3,428,441
ARTICLE COATED WITH A COMPOSITE PARTICULATE, MICROPOROUS CHROMIUM COATING AND METHOD OF PRODUCING SAID ARTICLE

Arthur H. Du Rose, Richmond Heights, Karl S. Willson, Cleveland, and Gustavo C. Tejada, Euclid, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

No Drawing. Filed July 28, 1965, Ser. No. 475,556
U.S. Cl. 29—183.5 **10 Claims**
Int. Cl. C23b *5/06;* **B32b** *3/10, 15/16*

This invention comprises a composite metal coating, and a method for preparation thereof, comprising a metal substrate having thereon a discontinuous particulate electrodeposited coating partially covering the substrate, the particles of this coating being discrete and having an average particle thickness of 0.003–0.05 mil and containing 1,000–1,000,000 particles per square inch, and a microporous chromium layer overlaying and adherent to the discontinuous layer and the exposed substrate, the chromium layer having 1,000–1,000,000 micropores per square inch and a thickness of 0.003–0.05 mil. The method of preparing the composite coating comprises the steps of electrodepositing on the metal substrate a coating of particles until the number and size gives the desired discontinuous layer, then discontinuing this electrodeposition, and subsequently electrodepositing thereon a chromium layer to the desired dimension.

3,428,442
COATED SPRAY-WELD ALLOY POWDERS

George Yurasko, Jr., Syosset, N.Y., assignor to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York

No Drawing. Filed Sept. 22, 1966, Ser. No. 581,168
U.S. Cl. 29—191.2 **8 Claims**
Int. Cl. B32b *15/02;* **B23k** *35/28*

1. A metal alloy powder comprising powder of a composition taken from one of the following groups of the following alloy systems:

Element:	Percent by weight
Boron	.75 to 5
Silicon	1.5 to 6
Chromium	0 to 20
Carbon	Trace to 1.2
Iron	Trace to 6
Nickel (essentially)	Balance

or

Element:	
Molybdenum	0 to 5
Tungsten	0 to 5
Chromium	0 to 30
Carbon	1 to 4.5
Nickel	0 to 50
Silicon	0 to 5
Boron	0 to 4
Iron (essentially)	Balance

or

Element:	
Nickel	Trace to 40
Chromium	15 to 35
Tungsten	3 to 20
Carbon	.05 to 3
Boron	0 to 3.5
Cobalt (essentially)	Balance

or

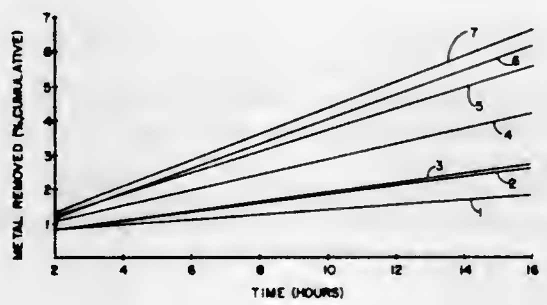
Element:	
Silicon	0 to 3
Manganese	0 to 1
Phosphorus	0 to 9
Chromium	0 to 1
Tin	0 to 10
Nickel	0 to 30
Copper	Balance

and said alloy powders being provided with an outer layer of copper.

3,428,443
BARREL FINISHING MEDIA

Howard F. Davis, Jr., Grand Island, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,820
U.S. Cl. 51—309 **5 Claims**
Int. Cl. C04b *31/16, 31/18, 31/02*



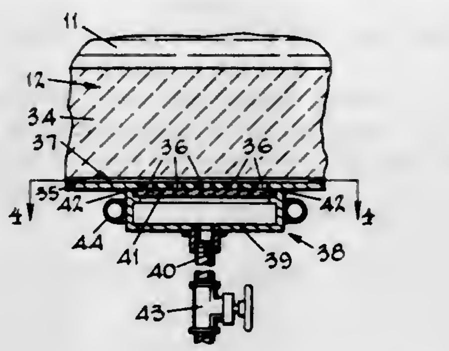
Preformed and sintered bodies useful as barrel finishing media and consisting essentially of bauxite and fused alumina uniformly distributed are produced by comminuting calcined bauxite to an average particle size of not more than about 5 microns, mixing finely divided fused alumina patricles therewith, forming the resultant mixture into shaped bodies, and sintering said bodies at a temperature between about 1400° C. and 1750° C.

3,428,444
APPARATUS FOR MINIMIZING OPEN BOTTOM BLISTERS ON FLOAT GLASS

Francis L. Swillinger, Modesto, Calif., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Feb. 21, 1966, Ser. No. 528,890
U.S. Cl. 65—182 **7 Claims**
Int. Cl. C03b *5/00*

Apparatus for producing float glass wherein a bath of molten metal is maintained in a tank having walls of refractory material and a solid casing outside of the walls. A chamber connected to a vacuum source is secured to the exterior of the casing over an opening therein, and a layer of porous material is positioned between the chamber and refractory wall over the opening.



3,428,445
IRON ORE REDUCTION

Hans Rausch, Oberursel, Taunus, and Günter Heitmann and Wilhelm Thumm, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

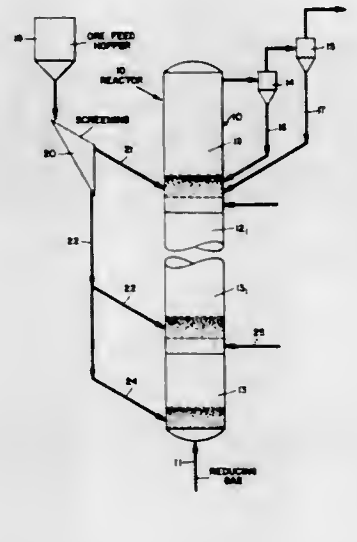
No Drawing. Filed July 20, 1966, Ser. No. 566,492
Claims priority, application Germany, July 22, 1965, M 66,075
U.S. Cl. 75—3 **6 Claims**
Int. Cl. C21b *1/16, 13/08*

Process of producing sponge iron pellets which comprise admixing iron ore with fine particle size sponge iron, pelletizing this mixture by rolling in the absence of mechanical pressure, feeding the thus produced green pellets to a rotary kiln at its upper end, directly reducing the iron ore in said green pellets in said rotary kiln, and recovering sponge iron pellets from the lower end of said kiln.

3,428,446
FLUIDIZED BED PRODUCTION OF IRON

Warren J. Locke, Jr., Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 26, 1965, Ser. No. 505,256
U.S. Cl. 75—26 **4 Claims**
Int. Cl. C22b *1/10, 1/14*



Cyclone separator fouling and ore entrainment in fluidized iron ore reduction processes utilizing separate ferric and ferrous reduction zones are minimized by adding the fine ore particles directly to high temperature ferrous reduction zones and agglomerating the particles therein.

3,428,447

RECOVERY OF METAL FROM INSULATED ELECTRICAL CABLE

Gilbert I. Addis, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 448,277, Apr. 15, 1965. This application Mar. 5, 1968, Ser. No. 710,624
U.S. Cl. 75—66 **18 Claims**
Int. Cl. C22b *27/00;* **B29h** *19/02;* **H01b** *7/34*

Alkali metal is recovered from insulated alkali metal conductors by reducing the conductor to segments of a suitable size, heating the segments in an inert media to a temperature above the melting temperature of the alkali metal but below the decomposition temperature of the insulation. The segments are preferably heated in an oil bath.

3,428,448

PROCESS FOR REDUCING METAL COMPOUNDS

Shelton Bank, Westfield, Elliot Vogelfanger, Metuchen, Lars A. Naslund, Roselle Park, and David J. C. Yates, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed July 20, 1965, Ser. No. 473,511
U.S. Cl. 75—108 **6 Claims**
Int. Cl. C22b *57/00, 55/00, 53/00*

Heavy metal salts are reduced to the corresponding heavy metals by reaction with a light metal, using as the reaction medium a basic organic dipolar nitrogen or phosphorous compound which has the dielectric constant of at least 6 which is devoid of active hydrogen atoms and hydroxyl groups.

3,428,449

EXTRACTION OF COPPER FROM ACIDIC LIQUORS WITH A PHENOLIC OXIME

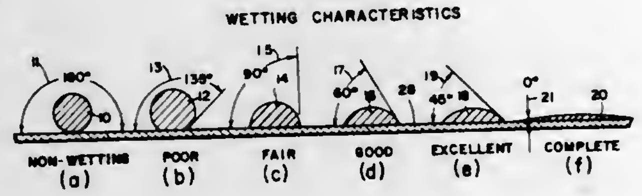
Ronald R. Swanson, New Hope, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 432,903, Feb. 15, 1965. This application Mar. 6, 1968, Ser. No. 710,787
U.S. Cl. 75—117 **25 Claims**
Int. Cl. C22b *15/08, 3/00*

Process for the recovery of copper from an aqueous solution which comprises the use of certain substituted 2-hydroxy benzophenoximes either alone or in combination with certain α-hydroxy aliphatic oximes.

3,428,450

ALLOYS FOR BRAZING SILICON NITRIDE MATERIAL

Michael J. Ginsberg and Richard H. Krock, Peabody, Mass., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,179
U.S. Cl. 75—170 **2 Claims**
Int. Cl. C22c *19/00*



A nickel based alloy containing titanium and silicon for brazing together silicon nitride parts.

3,428,451

SUPPORTS FOR RADIATION-SENSITIVE ELEMENTS AND IMPROVED ELEMENTS COMPRISING SUCH SUPPORTS

Donald J. Trevoy, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 361,229, Apr. 20, 1964, which is a continuation-in-part of application Ser. No. 56,648, Sept. 19, 1960. This application Mar. 21, 1966, Ser. No. 435,699
The portion of the term of the patent subsequent to Apr. 12, 1983, has been disclaimed and dedicated to the public
U.S. Cl. 96—1 **12 Claims**
Int. Cl. G03g *5/08*

Radiation sensitive recording elements comprising a conductive layer, e.g. a layer having cuprous iodide or other semiconductor compound dispersed in resin binder, and a recording layer, e.g. silver halide or photoconductive composition, is improved by presence of a water-impermeable dielectric resin barrier layer separating the sensitive layer from the conductive layer.

3,428,452

PHOTOCONDUCTIVE COMPOSITIONS AND ELECTROPHOTOGRAPHIC RECORDING ELEMENTS MADE THEREFROM

Edward C. Giaimo, Jr., Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed Jan. 18, 1965, Ser. No. 426,443
U.S. Cl. 96—1.7 **14 Claims**
Int. Cl. G03c *1/74*

An improved photoconductive layer is applied to a substrate of an electrophotographic record from an aqueous coating mixture comprising particles of water insoluble resin-encapsulated dye-sensitized zinc oxide dispersed in an aqueous mixture comprising a resinous binding agent for said particles. The encapsulation of the dye-sensitized zinc oxide prevents desorption of the water soluble light-sensitizing dyes in the aqueous coating mixtures.

3,428,453

IMAGE FORMING PROCESS UTILIZING XEROGRAPHY

Satoru Honjo, Odawarashi, Kanagawa-ken, Japan, assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,764
Claims priority, application Japan, Mar. 19, 1964, 39/14,988
U.S. Cl. 96—1.8 **7 Claims**
Int. Cl. G03g *7/00*

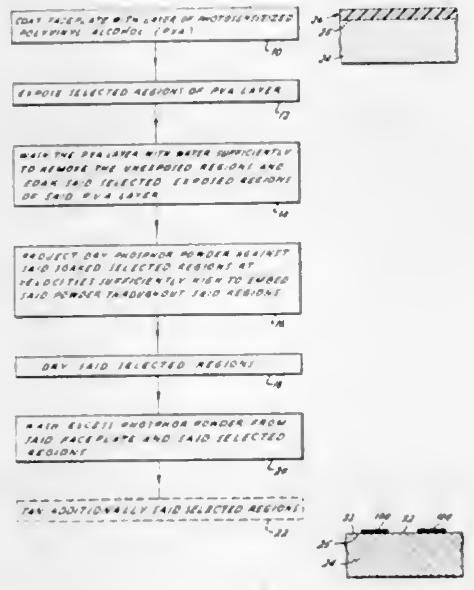
This application relates to a method of forming a relief image wherein a porous photoconductive layer overlying a polar solvent-soluble sub-layer has an electrostatic image formed thereon and developed with electroscopic developer. The developed image is caused to penetrate through the porous layer to render the sub-layer polar solvent-insoluble. The unprotected sub-layer and the overlying photoconductive layer are removed by treatment with a polar solvent to leave the relief image on the underlying supporting substrate.

3,428,454

PROCESS FOR DEPOSITING PARTICULATE SOLID MATERIAL ON SELECTED PORTIONS OF A SUBSTRATE

Louis J. Angelucci, Jr., Norristown, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,747
U.S. Cl. 96—36.1 **10 Claims**
Int. Cl. G03c *5/00;* **C23d** *5/08*

A process for depositing phosphor particles on a plurality of discrete selected portions of the faceplate of a color television picture tube, which includes the steps of forming by photographic means regions of exposed dichromated polyvinyl alcohol or similar material which, when soaked with water, are penetrable throughout their thickness by dry phosphor particles projected thereagainst with at least a given velocity, soaking said regions with water, projecting at said regions dry phosphor particles having dimensions small compared to the thickness of said regions and velocities at least as high as said given velocity, thereby to embed said phosphor particles throughout the thickness of said regions, and washing the resulting structure to remove excess phosphor particles.


COAT FACEPLATE WITH LAYER OF PHOTOSENSITIZED POLYVINYL ALCOHOL (PVA)
10
EXPOSE SELECTED REGIONS OF PVA LAYER
12
WASH THE PVA LAYER WITH WATER SUFFICIENTLY TO REMOVE THE UNEXPOSED REGIONS AND SOAK SAID SELECTED EXPOSED REGIONS OF SAID PVA LAYER
14
PROJECT DRY PHOSPHOR POWDER AGAINST SAID SOAKED SELECTED REGIONS AT VELOCITIES SUFFICIENTLY HIGH TO EMBED SAID POWDER THROUGHOUT SAID REGIONS
16
DRY SAID SELECTED REGIONS
18
WASH EXCESS PHOSPHOR POWDER FROM SAID FACEPLATE AND SAID SELECTED REGIONS
20
TAN ADDITIONALLY SAID SELECTED REGIONS
22

Where different phosphor particles also are to be deposited on other portions of the faceplate, the process includes the additional step of tanning further the already-exposed regions, thereby to inhibit their imbibation of water and render them impervious to penetration by phosphor particles subsequently projected thereagainst.

3,428,455

OPTICALLY SENSITIZED PHOTOGRAPHIC ELEMENT CONTAINING A DEVELOPING AGENT

Theodore J. Kitze, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 28, 1965, Ser. No. 459,912
U.S. Cl. 96—76 **17 Claims**
Int. Cl. G03c *1/48, 1/10*

Radiation sensitive photographic elements having an unhardened silver halide emulsion layer containing silver halide developing agent, are spectrally sensitized with a solubilized oxacarbocyanine or benzimidazole carbocyanine dye.

3,428,456

ANTISTATIC PHOTOGRAPHIC MATERIALS

Herbert Grabhöfer, Cologne-Flittard, and Hans Ulrich, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 2, 1965, Ser. No. 460,819
Claims priority, application Germany, June 19, 1964, F 46,356
U.S. Cl. 96—87 **8 Claims**
Int. Cl. G03c *1/82;* **C07d** *29/20*

This invention relates to an improved photographic element which contains antistatic agents, more particular which contains diesters of amidophosphoric acid with glycols or polyglycols which are etherified at one end.

3,428,457

ANIMAL FOOD COMPOSITION

Harold D. Hutchinson, Quincy, Ill., assignor to Moorman Manufacturing Company, Quincy, Ill., a corporation of Illinois
No Drawing. Filed Dec. 7, 1964, Ser. No. 416,583
U.S. Cl. 99—2 **11 Claims**
Int. Cl. A23k *1/02*

A palatable nutriment for control of iron deficiency anemia in swine, which includes from 20% to 80% by weight of sphagnum moss, from 5% to 20% by weight of an edible humectant and an iron supplying ingredient in a quantity sufficient to furnish said composition with an iron content of at least 0.05% by weight in a form capable of being absorbed by the swine.

3,428,458

MICROBIOLOGICAL DECONTAMINATION OF AFLATOXIN-CONTAMINATED EDIBLES

Alex Ciegler and Eivind B. Lillehoj, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed July 1, 1966, Ser. No. 563,339
U.S. Cl. 99—2 **2 Claims**
Int. Cl. A23k *1/00*

1. A process for rendering aflatoxin-contaminated human foodstuffs and animal feed materials acceptable for use by completely destroying or inactivating the aflatoxin present therein, said process comprising mixing into the contaminated food material a sufficient amount of an aqueous type vehicle containing viable cells of the organism *Flavobacterium aurantiacum* NRRL B–184 to provide on the order of 2×10^{13} of said cells for every 50 grams of the aflatoxin contaminated material, the aqueous type vehicle being one that will not kill the said viable cells:

permitting the cells to remain in contact with the food material at room temperature for at least about 4 hours to completely destroy the aflatoxin present therein.

3,428,459

FISH BAIT COMPOSITION

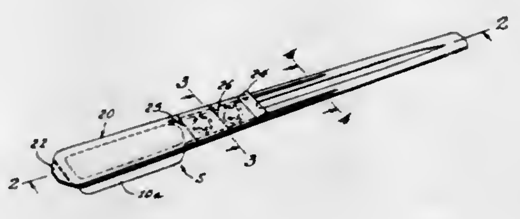
Cyril Hinds, Lafayette, La., assignor to Oil Center Research, Inc., a corporation of Louisiana
No Drawing. Filed Jan. 4, 1967, Ser. No. 607,149
U.S. Cl. 99—3 **8 Claims**
Int. Cl. A01k *85/02*

A dry pulverulent hydratable fish bait consisting of locust-bean or guar gum, cornmeal, wheat flour, and dehydrated ubiquitous insects.

3,428,460

CONTAINER TYPE STIRRER

Laurice D. Ely, 835 S. Wellesley,
Los Angeles, Calif. 90049
Filed Aug. 5, 1965, Ser. No. 477,450
U.S. Cl. 99—77.1 **6 Claims**
Int. Cl. A23f; B65b *29/06*



A container adapted for stirring a beverage including an elongated member defining cavities containing beverage additives. The cavities are closed by a cover strip allowing selective mixing of an additive with the beverage.

3,428,461
CULINARY MIXES

William A. Hatton and Erlend R. Lowrey, Greenhills, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Sept. 29, 1965, Ser. No. 491,081

U.S. Cl. 99—94 **4 Claims**

Int. Cl. A21d

A dry prepared culinary mix for layer cakes containing bread flour which has been dry heat treated under certain time and temperature conditions.

3,428,462
CRACKLINGS AND PROCESS FOR THEIR MANUFACTURE

Juan Francisco De Lara, 9433 Beverly Blvd., Pico Rivera, Calif. 90660

Filed Jan. 17, 1966, Ser. No. 539,596

U.S. Cl. 99—107 **7 Claims**

Int. Cl. A23l *1/31*

A process for making moist and tender pork cracklings by heating fresh pork skins in cooking oil to at least 200° F. to render said pork skins, adding cold water to the mixture, reheating the resulting mixture to at least 225° F., and further repeating similar reheating steps until the desired product characteristics are obtained.

ERRATUM

For Class 99—166 see:
Patent No. 3,427,951

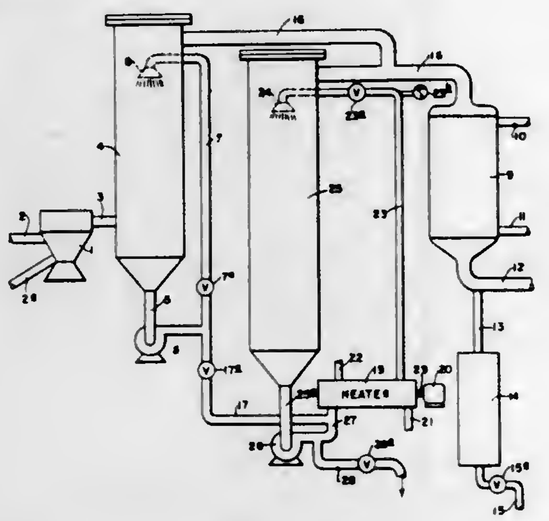
3,428,463
METHOD OF PRODUCING HIGH DENSITY, LOW VISCOSITY FRUIT JUICE CONCENTRATE

Ralph G. Sargeant, 408 W. Windsor St., Lakeland, Fla. 33803

Filed June 21, 1963, Ser. No. 289,702

U.S. Cl. 99—205 **4 Claims**

Int. Cl. A23l *1/02;* **A23b** *7/02*



Prepares orange or other fruit juice concentrates by means of radio or other high frequency electrical energy. The citrus fruit product has a density of 72° Brix, a viscosity of only 4,000 to 10,000 centipoises, and when reconstituted to form an acceptable drink, has a pulp content of 5 percent to 13 percent and a sugar to acid ratio ranging from between 14 and 16 to 1. No fresh juice is added. The product is storable indefinitely at a temperature as high as 30° F.

The juices flow in series through a thermal conduction heating device, and a special electrode for subjecting them to the action of radio frequency electrical energy, and are then de-aerated.

In order to improve the taste and flavor of the final product, the relatively cool concentrate is caused to condense and absorb relatively hot vapors of esters and flavoring constituents given off from fresh juice by heating the same.

3,428,464
REFRACTORY COATING COMPOSITIONS

Leonard W. Pollard, Burlington, Ontario, Canada, assignor to Alchem Limited, Burlington, Ontario, Canada, a corporation of Canada

No Drawing. Filed Feb. 2, 1965, Ser. No. 429,886

U.S. Cl. 106—38.23 **11 Claims**

Int. Cl. C04b *35/16*

A coating composition especially suitable for coating of cast iron mold stools which comprises a suspension of finely divided macroscopic refractory solid particles in an aqueous liquid containing a binder is stabilized with an Xanthomonas hydrophilic colloid.

3,428,465
PREPARATION OF MOLDS

Gordon Donald McLeod, Adrian, Mich., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,123

U.S. Cl. 106—38.35 **17 Claims**

Int. Cl. C04b *35/16*

Guanidine carbonate is included in a silicate binder-refractory mixture to catalyze the curing thereof.

3,428,466
CRYSTALLIZABLE ENAMELS FOR GLASS-CERAMICS

William F. Wolf, Washington, and Raymond Kosiorek, Bridgeville, Pa., assignors, by mesne assignments, to Hercules Incorporated, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 436,302, Mar. 1, 1965. This application Jan. 25, 1966, Ser. No. 522,819

U.S. Cl. 106—48 **5 Claims**

Int. Cl. C03c *3/08, 7/00*

Enamels for glass-ceramics having low coefficients of expansion comparable to those of glass ceramics and which after application to glass objects which are to be converted to the glass-ceramic state by controlled nucleation and crystallization are provided by compositions containing by weight on an oxide basis 50–70% SiO_2; 10–25% B_2O_3; 8–18% Al_2O_3; 0.1–10% Li_2O; 0.1–6% TiO_2 and 0.1–6% Bi_2O_3 in proportions adapted to form spodumene after nucleation and crystallization as a major phase.

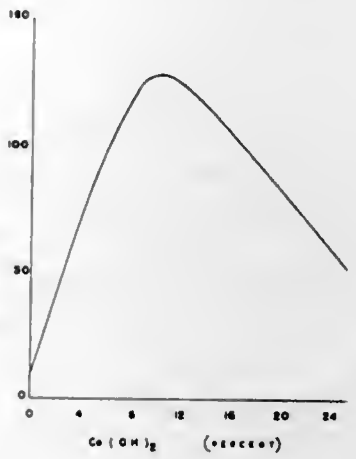
3,428,467
MAKING LIMED BLOOD PRODUCTS FOR USE IN ALKALINE BLOOD GLUES OF NORMAL WORKING VISCOSITY AT HIGH WATER RATIOS

Charles N. Cone, Portland, Dale J. Hohbach, Hillsboro, and Harold A. Smith, Forest Grove, Oreg., assignors to Pacific Adhesives Company, Inc., Hillsboro, Oreg., a corporation of Oregon

Filed Feb. 13, 1967, Ser. No. 615,711

U.S. Cl. 106—161 **6 Claims**

Int. Cl. C09h *5/00*



A blood product useful in the manufacture of alkaline blood glues of normal working viscosity at high water ratios is manufactured by reacting declotted animal blood with lime. The resulting product then may be spray dried to make a powdered blood glue base convertible into a glue by mixing it with water and selected glue making chemicals.

3,428,468
ART OF PRODUCING FILAMENTARY MATERIALS OF CELLULOSE ESTER

Lawrence R. Blake, Cumberland, Md., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,619

U.S. Cl. 106—171 **19 Claims**

Int. Cl. C08b *21/04*

The spinning characteristics of a solvent solution of a cellulose ester, especially a cellulose acetate, are improved by incorporating into the spinning solution from about 0.02 to about 6% by weight of the said ester, of certain epoxidized materials. These epoxidized substances are fatty acids or esters of fatty acids that contain from 6 to about 26 carbon atoms, inclusive, in the fatty chain portion thereof and having, before epoxidation, an iodine value of at least about 80 and from 1 through 4 non-conjugated ethylenic groups and, after epoxidation, containing epoxide groups across the bridges of said ethylenic groups. The epoxidized materials may be natural or synthetic in origin, and they may be derived from animal, marine, vegetable or other origin. Numerous specific examples of such epoxidized substances are given. Epoxidized soybean oil is preferred.

The dry-spinning of the above-described spinning solution, in comparison with that of a corresponding solution containing no such epoxidized material, reduces jet-deposit build-up, permits higher extrusion speeds (e.g., up to about 100% more), reduces filament spraying, lessens filament-denier variation, and provides improved color stability on aging.

3,428,469
PLASTIC AND RESIN STABILIZED WITH BORATES OF ALKANOLAMINES

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 367,854, May 15, 1964. This application Mar. 6, 1968, Ser. No. 710,791

U.S. Cl. 106—186 **5 Claims**

Int. Cl. C08b *27/68;* **C08f** *45/60;* **C08g** *51/60*

Plastic and resin selected from polyester, polycarbonate, polyurethane, epoxy resin, ABS and cellulose plastic stabilized against deterioration by weathering by an additive comprising a borate of N,N-di-sec-alkyl-alkanolamine or a borate of N,N-dicycloalkyl-alkanolamine.

3,428,470
BIOLOGICAL SPECIMEN IN A CROSS-LINKED WATER-SWELLABLE ACRYLAMIDE TYPE RESIN AND THE INCORPORATION OF THE SPECIMEN THEREIN

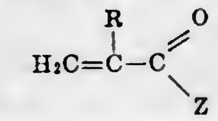
William M. Welsh and Bobby L. Atkins, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 9, 1966, Ser. No. 556,262

U.S. Cl. 117—3 **6 Claims**

Int. Cl. B65b *29/00;* **A61l** *13/00*

1. A method of packaging a preserved specimen of an animal or an organ thereof which comprises immersing said specimen in an aqueous medium and gelling said medium with a mixture of a surfactant and a water swellable polymeric material produced by polymerizing at least one monomer of the formula

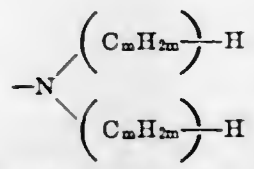


wherein

(a) R is selected from the group consisting of hydrogen atom and the methyl group: and

(b) Z is selected from the group consisting of

(i) the group



in which each of *n* and *m* is independently an integer of from 0 to 4, and

(ii) the group —OM in which M is selected from the group consisting of the hydrogen atom, an alkali metal and ammonium and wherein said swellable polymeric material is cross-linked by a water-swellable polymeric material which has been cross-linked with a member selected from the group consisting of divinylbenzene, the divinyl ether of diethylene glycol, diallyl sucrose and an alkylidene bis-acrylamide.

3,428,471
METHOD FOR THE MANUFACTURE OF EMBOSSED VINYL FLOOR COVERINGS AND PRODUCTS OBTAINED THEREBY

Jay D. Tuthill, Salem, Nicholas Kulka, Penns Grove, and Bert S. Arban, Woodstown, N.J., assignors to Mannington Mills, Salem, N.J., a corporation of New Jersey

Filed Nov. 8, 1967, Ser. No. 681,461

U.S. Cl. 117—10 **9 Claims**

Int. Cl. B44c *1/22*

A layer of a foamable vinyl plastisol composition containing a blowing agent uniformly dispersed therein is applied to a felt backing and pre-gelled by heating at a temperature below that at which the blowing agent is decomposed. A decorative pattern is printed on the surface of the gelled vinyl layer by applying a barrier and preferably other inks thereto, and the entire surface, including the area covered by the barrier ink is coated with a second layer of a vinyl composition containing an activator for the blowing agent. After the activator has penetrated into portions of the foamable vinyl composition, a wear layer is applied. The composite is then heated under controlled conditions of time and temperature to fuse the resinous layers and decompose the blowing agent throughout those areas not covered by the barrier ink thereby producing an embossed resinous surface wherein those areas of the surface that have not had applied thereto the barrier ink are elevated above those areas that have been coated with the barrier ink.

3,428,472
METHOD FOR FORMING METAL COATINGS

Takaaki Shimose, Nishinomiya, Kenji Mori, Rokkodaimachi, Kobe, Kimio Inoue, Kobe, and Zenichiro Takao, Nishinomya, Japan, assignors to Kobe Steel Works, Ltd., Kobe, Japan

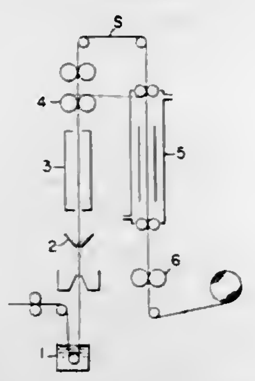
Filed Oct. 13, 1964, Ser. No. 403,600

Claims priority, application Japan, Oct. 14, 1963, 38/55,272; Nov. 7, 1963, 38/60,051

U.S. Cl. 117—22 **9 Claims**

Int. Cl. C23c *3/00;* **B44d** *1/46*

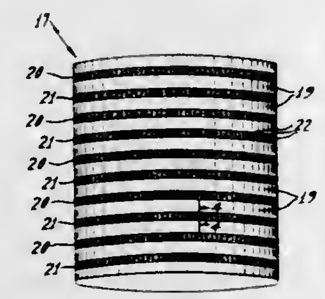
Clean steel strip is coated with a viscous aqueous solution of potassium polymetaphosphate and sodium polymetaphosphate, and then contacted with powered metal which is adhesively retained by the polymetaphosphate solution. The coated strip is dried, compressed between rolls, and the powder coating is thereafter sintered. It is bright even without a finishing pass between another pair



of rollers, and the composite material has high flexural strength without spalling.

3,428,473
SPACE VEHICLE

Robert C. Langley, Millington, N.J., assignor to Engelhard Minerals & Chemicals Corporation, a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,888
U.S. Cl. 117—35 **8 Claims**
Int. Cl. C23d *5/10;* **F24j** *3/02;* **B44d** *1/34*



Space vehicles are provided with superficial discontinuous outer coatings designed to control the temperature and/or reflectivity of the vehicle. Such coatings comprise lead borate which has been pre-reduced to render the coating opaque or, alternatively, nickel or palladium oxide which, under space conditions, are converted to the metallic state and diffuse into the metallic space vehicle surface.

3,428,474
METHOD FOR FORMING CERAMIC METALLIC BONDS

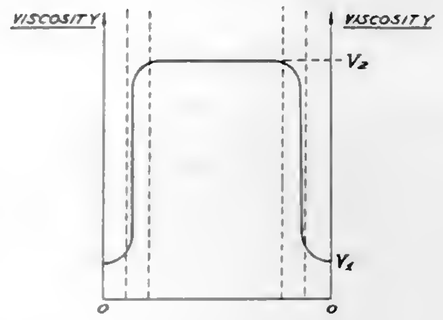
Joseph R. Hensler, Rochester, and Eugene C. Letter, Penfield, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
No Drawing. Filed June 24, 1964, Ser. No. 377,500
U.S. Cl. 117—47 **3 Claims**
Int. Cl. C23c *13/04*

An improved method for forming a ceramic metallic bond of the type wherein the ceramic article to be coated is first coated with a vacuum deposited coating of the alloy and the alloy in turn in provided with a vacuum deposited layer of solder.

3,428,475
HIGH STRENGTH GLASS AND METHOD FOR MAKING THE SAME

Robert O. Teeg, Grosse Pointe, Mich., assignor to Teeg Research, Inc., Detroit, Mich., a corporation of Delaware
Continuation-in-part of applications Ser. No. 325,282, Nov. 21, 1963, Ser. No. 546,249, Apr. 29, 1966. This application Nov. 17, 1966, Ser. No. 595,231
U.S. Cl. 117—54 **4 Claims**
Int. Cl. C03c *17/02, 3/00*

The present invention relates to novel high strength glasses and to a method for manufacturing glasses having distinctive physical qualities obtained by coating a first glass of predetermined viscosity with a second glass of



lower viscosity such that the coating is substantially in a plastic phase at the temperature of use of the glass composite.

3,428,476
METHOD FOR PRODUCING HYDROGEN DIFFUSION CELLS

Robert C. Langley, Millington, and Herbert Myers, Newark, N.J., assignors to Engelhard Minerals & Chemicals Corporation, a corporation of Delaware
No Drawing. Filed June 22, 1965, Ser. No. 466,115
U.S. Cl. 117—62 **5 Claims**
Int. Cl. C23c *3/00;* **B44d** *1/44*

A method for forming a non-porous hydrogen-permeable palladium alloy film on a porous ceramic support wherein a film of palladium dispersed in a vitreous glaze is first deposited on the support, and a thin film of an alloying metal is deposited on the palladium film and heated to effect interdiffusion of the alloying metal with the palladium.

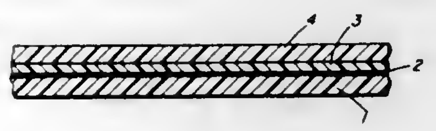
3,428,477
PROCESS OF STABILIZING PARTICLEBOARD SURFACES BY TREATMENT WITH WATER SOLUTIONS OF CURABLE RESINS

Earland G. Hallonquist, Nanaimo, British Columbia, and Manfred M. Honnige, Cedar, British Columbia, Canada, assignors to MacMillan Bloedel Limited, a corporation of British Columbia
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,152
U.S. Cl. 117—65.2 **14 Claims**
Int. Cl. B44d *1/46, 1/12*

The process of stabilizing the surface of particleboard by applying to said surface a water solution of water dilutable, heat-curable phenolic resin having a low degree of advancement or polymerization to cause raising of said particles, and curing said resin to stabilize the raised particle.

3,428,478
HYDROPHOBIC ORGANIC FILM COATED WITH A POLYOL-POLYMETHYLOLAMIDOGEN CONDENSATE AND PROCESS FOR PREPARATION OF SAID FILM

Malcolm Macfarland Donaldson, Bedford Village, N.Y., and Adolph Roy Morris, South Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Continuation-in-part of application Ser. No. 374,618, June 12, 1964. This application Feb. 25, 1966, Ser. No. 536,525
U.S. Cl. 117—73 23 Claims
Int. Cl. B44d *1/22;* **C08j** *1/44*



Hydrophobic organic film possesses improved adhesion for topcoat material and improved heat sealing properties, when it carries a coating of an at least partially thermoset polyol-polymethylolamidogen condensation product. The coating is a condensation product of a polyol having a molecular weight in excess of 2,000 with a material selected from the group consisting of the polymethylolamidogens and lower alkyl ethers thereof. The ratio of the number of hydroxyl substituents of the polyol to the sum of the hydroxyl substituents and etherified hydroxyl substituents of the amidogen is between 1:0.5 and 1:5.

3,428,479
ANCHORING COMPOSITION FOR FILM AND FILM ANCHORED THEREWITH

Robert Alan Dobransky, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Feb. 25, 1966, Ser. No. 529,965
U.S. Cl. 117—76 **10 Claims**
Int. Cl. C08j *1/39;* **B32b** *25/08;* **B44d** *1/22*

1. A fluid aqueous topcoat anchoring latex comprising a water-insoluble vinyl polymer composed to the extent of 5 to 25 mol percent of (C_2–C_6 hydroxyalkyl) acrylate linkages, a water-dispersible alkyd resin having a molecular weight in excess of about 1,500 and containing at least about 2 etherifiable hydroxyl substituents per macromolecule, and sufficient of a material selected from the group consisting of poly(methylol)amidogens and lower alkyl ethers thereof to form a unitary resin by reaction with said vinyl polymer and said alkyd resin, the weight ratio of said vinyl polymer to said alkyd resin being between about 3:7 and 9:1.

8. Polystyrene film carrying an anchor coating of the dried residue of the interreacted vinyl polymer, alkyd resin and amidogen of claim 1.

3,428,480
FLAME-RETARDANT CELLULOSIC MATERIAL, COMPOSITION AND METHOD FOR MAKING SAME

George M. Wagner, Lewiston, and Rex A. Schad, North Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Feb. 18, 1965, Ser. No. 433,812
U.S. Cl. 117—136 **15 Claims**
Int. Cl. D06m *15/08, 13/30, 13/08*

A composition for treating cellulosic materials to render them flame retardant. This composition comprises a tetrakis(alpha-hydroxyorgano) phosphonium halide, a watersolube tertiary amine, a water-soluble cyclic nitrogen containing compound, a carbamic acid derivative, a halogenated paraffin, and a polyvinyl halide composition. The polyvinyl halide composition is present in an amount which is not in excess of about 25% by weight of the halogenated paraffin in the composition. This composition produces a flame-retardant product having a soft hand wherein the flame retardancy is very durable.

3,428,481
ANTISTATIC LUBRICATING COMPOSITION FOR TEXTILE FIBERS

Carl E. Latschar, Camden, S.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 450,505, Apr. 23, 1965. This application July 6, 1966, Ser. No. 563,061
U.S. Cl. 117—138.8 **3 Claims**
Int. Cl. B44d *1/22;* **D06m** *15/42*

An antistatic composition for textile fibers containing a diethanol amine salt of a phosphate ester and a condensate of ethylene oxide and nonylphenol prevents static charge accumulation on fiber surface and does not adversely affect the production of high quality yarns.

3,428,482
MOISTURE-PROOF TERPOLYMER COATED CELLOPHANE

Kanji Mayumi, Kamakura-shi, Kiyoshi Yamaki and Akio Konishi, Tokyo, Shigeyuki Suzuki, Sagamihara-shi, and Soji Kiyama, Tokyo, Japan, asisgnors to Kureha Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 21, 1964, Ser. No. 419,562
Claims priority, application Japan, Dec. 28, 1963, 38/70,763
U.S. Cl. 117—145 **7 Claims**
Int. Cl. B44d *1/22;* **B32b** *23/08;* **C08j** *1/38*

Moisture-proof cellophane comprising a cellophane sheet coated with a terpolymer consisting of 0.5 to 25% of alpha, beta-unsaturated aldehydes, 10 to 94.5% of vinylidene chloride and the remainder a member selected from the group consisting of acrylonitrile, alkyl esters of acrylic acid, and vinyl chloride.

3,428,483
VINYLIDENE CHLORIDE COPOLYMER COATED POLYMERIC FILM CONTAINING STEATITE TALC IN THE COATING

Daniel Kenyon Owens, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 13, 1965, Ser. No. 425,341
U.S. Cl. 117—145 **3 Claims**
Int. Cl. C08j *1/38;* **B32b** *27/30, 23/08*

The slip and blocking characteristics of vinylidene chloride copolymer coatings for regenerated cellulose and other organic polymeric films are improved without deleterious side effects by incorporating in the coatings between 0.25 and 1.2% by weight, based on the weight of copolymer, particulate steatite talc having a particle size within the range of 0.5 to 10 microns.

3,428,484
METHOD OF TREATING PAPER WITH ETHYLENIMINE DERIVATIVES USING A BORON TRIFLUORIDE-AMINE COMPLEX CATALYST

Duane L. Kenaga, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 30, 1964, Ser. No. 407,894
The portion of the term of the patent subsequent to Apr. 4, 1984, has been disclaimed
U.S. Cl. 117—155 **13 Claims**
Int. Cl. D21h *3/36;* **C09d** *3/48*

Paper treated with ethylenimine derivatives and a boron trifluoride-amine complex in a substantially anhydrous system has improvement in one or more of the following characteristics: sizing, wet strength, dry strength, or flame-resistance.

3,428,485
PAPER TREATED WITH ALKENYL FATTY ACID ESTER/ALPHA,BETA-OLEFINICALLY UNSATURATED POLYCARBOXYLIC ACID INTERPOLYMER

Francis A. Bonzagni, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,265
U.S. Cl. 117—155 **7 Claims**
Int. Cl. B32b *27/04;* **D21h** *3/44, 3/28*

An ammonium salt of a lower alkenyl fatty acid monoester/alpha,beta-olefinically unsaturated polycarboxylic acid anhydride interpolymer which is useful in the preparation of treated paper.

3,428,486

POLYAMIDE-IMIDE ELECTRICAL INSULATION

Norman J. George, St. Louis, Mo., assignor to The P. D. George Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,331

U.S. Cl. 117—218 **11 Claims**

Int. Cl. H01b *17/60, 3/42;* **B44d** *1/18*

Insulated electrical conductors having a base polyester resin cured on the conductor and an over coat of a polyamide-imide resin cured on the base coat. The polyester resins include resins derived from a phthalic acid, a glycol and glycerine and also resins derived from tris(2-hydroxyethyl)isocyanurate and polycarboxylic acids and esters thereof, glycols, polyols, or mixtures thereof. The polyamide-imide resin include resins derived from tricarboxylic acids or anhydrides thereof, such as trimellitic acid or anhydride, and a polyamine, such as a phenylene diamine and such as a polyamine whose hydrocarbon containing moiety contains at least one amido group.

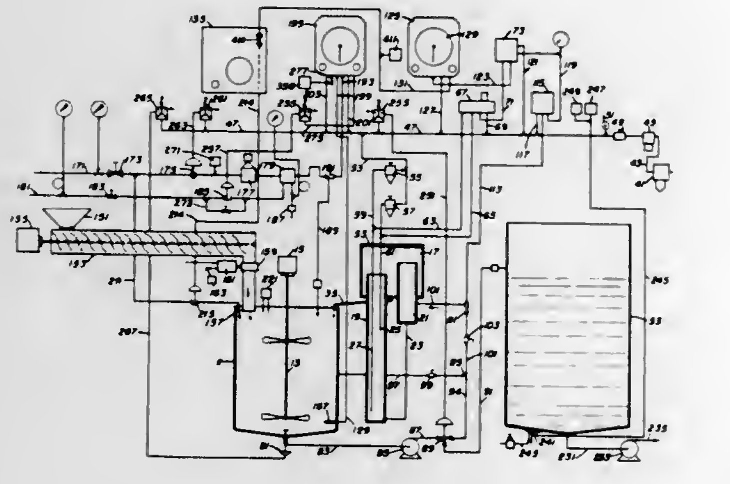
3,428,487

APPARATUS AND METHOD FOR PRODUCING SUGAR SOLUTIONS

Edward Ronald Allen, Brighton, N.Y.
(258 Avalon Drive, Rochester, N.Y. 14618)
Filed May 24, 1965, Ser. No. 458,062

U.S. Cl. 127—22 **6 Claims**

Int. Cl. C13f *1/14*



A sugar solution is formed by adding to a measured quantity of water, a quantity of dry sugar measured by operating a sugar conveyor for a predetermined length of time. The quantity of sugar added to the water is selected so as to give a solution somewhat stronger than the strength or concentration ultimately desired. The concentration of the solution thus formed is determined by passing a sample through a bubble column, the output of which is fed, through intermediate elements, to a computing relay and thence to a pneumatically operated controller which controls the addition of trim water in an amount sufficient to lower the concentration from the original strength to the concentration ultimately desired. A sensing device on a main storage tank then determines the available capacity in the main tank. If there is sufficient space in the main tank, the newly formed solution in the melt tank is transferred to the main tank, to be used as required. If the main tank does not have sufficient space to receive the entire batch of newly formed solution in the melt tank, the solution is held in the melt tank until such time as space is available in the main tank, and is then transferred.

3,428,488

PROCESS FOR THE SURFACE TREATMENT OF PLANTS CONTAINING WATER AND/OR STEAM

Paul Joan Peter van Dillen, Simpelveld, Netherlands, Eva Maria Vollmer, Hilden, Herbert Kallfass, Cologne-Stammheim, and Max Zimmermann, Ostrach, Hohenzollern, Germany, assignors to Borg Holding Aktiengesellschaft, Zug, Switzerland, a corporation of Switzerland, and Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,729

U.S. Cl. 134—3 **11 Claims**

Int. Cl. C01g *49/00*

Process for the protection of ferrous metal surfaces which comprises pickling wall surfaces with oxidizing and reducing substances by the steps of cleaning with organic acid, converting Fe II to Fe III and finally enhancing the protective layer by contact with hydrazine and a reaction accelerator.

3,428,489

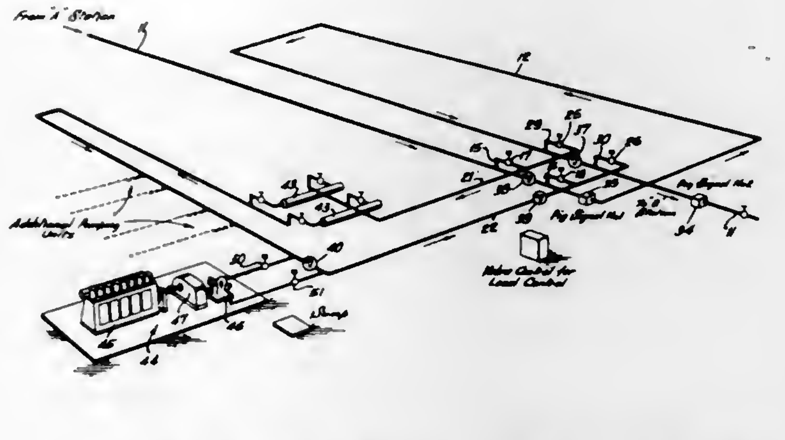
PIPELINE SCRAPER-PASSING METHOD AND SYSTEM

John W. Gentry, Jr., Dobbs Ferry, N.Y., assignor to The Texas Pipe Line Company, Houston, Tex., a corporation of Texas

Original application May 1, 1963, Ser. No. 277,245. Divided and this application Oct. 12, 1964, Ser. No. 411,957

U.S. Cl. 134—8 **1 Claim**

Int. Cl. B08b *9/04*



A method of pipeline pumping. The approach of a scraper to a pumping station triggers a by-passing connection that sends the scraped debris and scraper around a loop without going through the pump.

3,428,490

NOBLE METAL ALUMINUM ALLOYS AS CATALYSTS FOR FUEL CELL ELECTRODES

Justo B. Bravo, Malvern, and Glenn R. Dimeler, West Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Aug. 29, 1962, Ser. No. 220,250

U.S. Cl. 136—86 **7 Claims**

Int. Cl. H01m *27/00;* **C22c** *5/00*

1. An electric-current generating fuel cell comprising an oxygen-gas electrode, a hydrogen electrode and an alkaline electrolyte and an electrolyte in contact with both said electrodes, said hydrogen electrode having been prepared by compounding 88–99% by weight of a diluent metal matrix selected from the group consisting of silver, chromium, titanium, nickel and mixtures thereof and 1–12% by weight of a catalytic noble metal-aluminum alloy ranging in content from 20–70% by weight of noble

metal and 80–30% by weight of aluminum, and treating said composition with an alkali leaching solution until at least a major portion of the aluminum is removed.

3,428,491

METHOD AND APPARATUS FOR REDUCING THE CONCENTRATION POLARIZATION OF A FUEL CELL

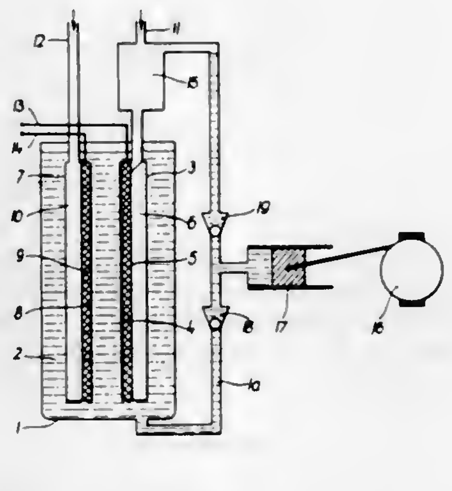
Eduard Justi and August Winsel, Braunschweig, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, and Varta Aktiengesellschaft, Hagen, Westphalia, Germany, both corporations of Germany

Filed Apr. 2, 1963, Ser. No. 269,907

Claims priority, application Germany, Apr. 6, 1962, A 39,893

U.S. Cl. 136—86 **14 Claims**

Int. Cl. H01m *29/00*



1. The method of reducing concentration polarization during the operation of a fuel cell comprising a gas diffusion electrode separating an electrolyte chamber from a gas chamber and having a finer pore electrolyte side layer and a coarser pore gas side layer, the gas pressure being greater than the sum of the capillary pressure of the electrolyte in the coarse pores and the electrolyte pressure in the electrolyte chamber and smaller than the sum of the electrolyte pressure and the capillary pressure in the fine pores, the pores of the layers being at least partly filled with electrolyte and gas, respectively during operation,

the method which comprises, while feeding gaseous fuel or gaseous oxidant to the gas chamber of the gas diffusion electrode,

feeding electrolyte to the gas chamber side surface of the coarse pore layer of the electrode, thereby supplying it to the three-phase boundaries formed by the electrode, electrolyte and gas in the interior of the pores, and in such a manner as to reduce concentration polarization, and

discontinuing said feeding of electrolyte when the concentration polarization has been reduced to a predetermined level while continuing the operation of the fuel cell by continuing the feeding of gaseous fuel or gaseous oxidant to said gas chamber.

3,428,492

ELECTRODE WITH CONDUCTIVE RETICULATE ELEMENT AND FUEL CELL THEREWITH

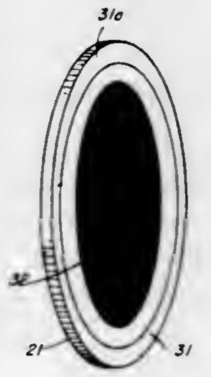
Anthony J. Stankavich, Syracuse, and Thomas E. Geckle, Liverpool, N.Y., assignors to Carrier Corporation, Carrier Parkway, N.Y., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,134

U.S. Cl. 136—86 **5 Claims**

Int. Cl. H01m *27/04*

A fuel cell having a casing construction adapted for battery assembly and electrodes having surface embedded screen wire reinforcements smaller than the peripheral dimensions of the electrode matrix and more highly compacted peripheral zones extending beyond the reinforcing elements.



3,428,493

ELECTRICAL ENERGY STORAGE DEVICE COMPRISING ALUMINUM-LITHIUM ELECTRODE AND MECHANICAL SCREEN SURROUNDING THE ELECTRODE

Harry A. Adams, Bedford, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 3, 1966, Ser. No. 518,113

U.S. Cl. 136—100 **5 Claims**

Int. Cl. H01m *17/02, 43/06*

An electrical energy storage device operable above the melting point of the electrolyte. The device includes a fused salt electrolyte, an aluminum-lithium electrode immersed in the electrolyte, and a screen contacting the electrode and surrounding the surface of the electrode exposed to the electrolyte, for controlling dendritic growth on the electrode.

3,428,494

METHOD FOR MANUFACTURING A DRY CELL

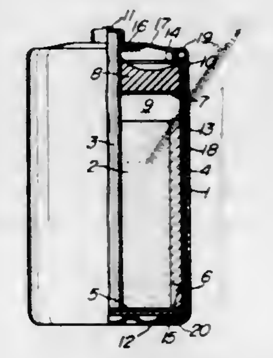
Jun Watanabe, Kobe, Susumu Hosoi, Osaka, Hiroaki Izawa, Moriguchi-shi, Tadashi Sawai, Kyoto, and Koichiro Kawakami, Kurume-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Apr. 25, 1966, Ser. No. 544,744

Claims priority, application Japan, Apr. 28, 1965, 40/25,772, 40/25,773, 40/25,774, 40/25,775, 40/25,776, 40/25,777; May 13, 1965, 40/28,989; May 26, 1965, 40/31,580; June 29, 1965, 40/39,613

U.S. Cl. 136—102 **4 Claims**

Int. Cl. H01m *13/08*



A dry cell comprising a zinc anode having a paste deposit consisting of three layers, the surface of said anode facing to a cathodic mixture wetted with a wetting liquid mainly composed of water and then having the wetted surface stuck with a water soluble or water swelling paste powder, in said layers the layer near the wetted surface being in film form wherein the paste power is in the state of swelling and soluble, the intermediate layer being in the state of half-swelling and half-soluble, and the surface layer being in a powder form. An electrolyte is held in said paste, and the cathodic mixture opposed to said zinc anode through said paste deposit. The zinc anode and the paste deposit are assimilated and closely stuck together, and a major portion of the paste is in a form of power or of near powder with the surface thereof in contact with the electrolyte, and it easily absorbs the electrolyte and is rapidly swollen and dissolved to be expanded. But since before absorbing the electrolyte the paste deposit is extremely thin, the diameter of the cathodic mixture is larger than in a conventional cell, whereby an increase in the discharge performance of the dry cell can be expected.

3,428,495

SEPARATOR ARRANGEMENTS FOR ELECTROCHEMICAL POWER SOURCES, METHODS OF THEIR MANUFACTURE AND POWER SOURCES EQUIPPED THEREWITH

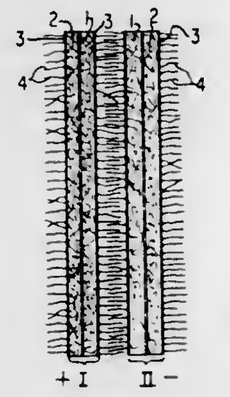
Robert Marcel Deschamps, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France

Filed Feb. 7, 1967, Ser. No. 614,501

Claims priority, application France, Feb. 23, 1966, 50,838

U.S. Cl. 136—143 **14 Claims**

Int. Cl. H01m *3/00;* **B01k** *3/02*



The disclosure is of electrode-separator arrangements wherein separators are directly affixed to the electrodes and comprise fibers of selected length and diameter oriented so that their lengths extend substantially perpendicular to the electrode faces and their ends are affixed as by adherance to such faces as by thin layers of adhesive material applied to the electrode faces. It also discloses a method of electrostatic deposition of such oriented fibres onto previously applied adhesive layers on the electrodes and discloses further electrochemical power sources equipped with such electrode separator arrangements, the purpose being to reduce internal resistances of such power sources to their lowest possible values, a particularly desirable result, since in the case of storage batteries with closely spaced electrodes enhanced flow of electrolysis products transferred by diffusion occurs. Also, production and assembly of such power sources is speeded at reduced cost.

3,428,496

PORTABLE THERMOELECTRIC GENERATOR

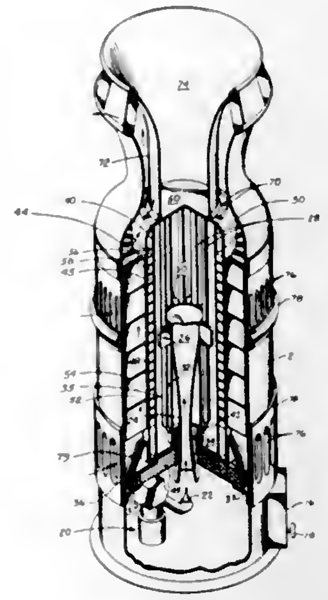
Robert Addis Lockwood, Northridge, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed June 18, 1965, Ser. No. 465,077

U.S. Cl. 136—208 **7 Claims**

Int. Cl. H01v *1/04*

A thermoelectric generator is described which utilizes a hermetically sealed module of thermoelectric elements in the center of which is disposed a heat conducting sleeve for transmitting heat to the hot junctions of the thermoelectric elements. Fuel combustion apparatus is positioned adjacent the sleeve to uniformly distribute the heat over the surface of the sleeve. This fuel combustion apparatus also includes a means for vaporizing the fuel and mixing the vaporized fuel with air for combustion in the combustion apparatus.



3,428,497

METHOD OF MAKING BONDED WELDING FLUX

Thomas L. Coless, Maplewood, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,301

U.S. Cl. 148—26 **6 Claims**

Int. Cl. C23c *1/12*

2. A method for making a welding composition which comprises:

(a) dry mixing ingredients to be made into a welding composition;

(b) adding an aqueous solution of a bonding agent to the dry mixed ingredients;

(c) passing said ingredients through a granulating device to form wet, bonded granules of the welding composition;

(d) introducing carbon dioxide into the wet ingredients to cause said granules to become free-flowing; and

(e) heating said granules to thoroughly dry the same.

3,428,498

PREPARATION OF SINTERED PERMANENT ALNICO MAGNETS

Gunther Heimke, Buschdorf, Germany, assignor to Magnetfabrik Bonn G.m.b.H., vorm. Gewerkschaft Windhorst, Bonn, Germany

Filed July 29, 1965, Ser. No. 475,716

Claims priority, application Germany, Aug. 6, 1964, M 62,021

U.S. Cl. 148—101 **2 Claims**

Int. Cl. B22f *1/00;* **H01f** *1/09*

Method of making a sintered permanent alnico magnet by filling a die with the powdered component materials while subjecting them to an inhomogeneous magnetic field having a concentrated transverse field extending in the direction of movement of the powder into the cavity, compacting the powder, sintering and heat treating the compacted body in a magnetic field.

3,428,499

SEMICONDUCTOR PROCESS INCLUDING REDUCTION OF THE SUBSTRATE THICKNESS

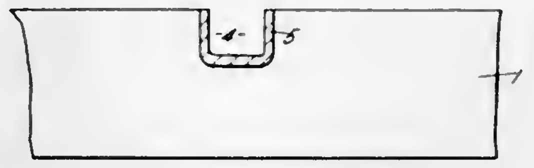
Roger Cullis, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,350

Claims priority, application Great Britain, Jan. 1, 1965, 58/65

U.S. Cl. 148—174 **8 Claims**

Int. Cl. H01l *7/36, 7/50*



A method of preparing a slice of semiconductor material having a region of high resistivity and a region of low resistivity, including the steps of forming in one major face of the high resistivity region of the slice, at least one hole with a layer of inert, optically distinctive material formed only on the sides and bottoms thereof, depositing a layer of low resistivity semiconductor material on said face and in said at least one hole and successively reducing the thickness of the slice from the face opposite said one face until the layer of optically distinct material on the bottoms of said holes is exposed. The thickness of the slice may be reduced by etching. A positional index of the interface between the grown layer and said one face may be provided at the periphery of the slice.

3,428,500

PROCESS OF EPITAXIAL DEPOSITION ON ONE SIDE OF A SUBSTRATE WITH SIMULTANEOUS VAPOR ETCHING OF THE OPPOSITE SIDE

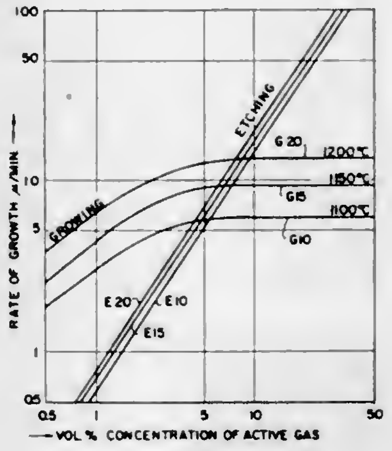
Kazuo Maeda, Chigasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Apr. 21, 1965, Ser. No. 449,761

Claims priority, application Japan, Apr. 25, 1964, 39/23,375

U.S. Cl. 148—175 **5 Claims**

Int. Cl. H01l *7/00*



Described is a method of producing semiconductor crystalline members. The method comprises placing a semiconductor crystalline substrate and a semiconductor crystalline source face-to-face adjacent to each other with an interspace of more than 10 and less than 200 micron width, heating said substrate and source in a reaction vessel to transport reaction temperature with the source at a higher temperature than the substrate, passing at said temperature a mixture of carrier gas and an adjusted concentration of active gas through the vessel and thereby growing an epitaxial layer on the source side of the substrate and simultaneously etching material away from the opposite side of the substrate. As a result, a thick epitaxial layer is grown on the source side of said substrate, and said substrate is so reduced in thickness as to form a thin layer of the resulting semiconductor member.

3,428,501

MIXTURE OF OZONE AND OXYGEN CONTAINING A FLUORINE ADDITIVE

Edward R. Blanchard, Summit, and William G. Marancik, Basking Ridge, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 18, 1966, Ser. No. 567,345

U.S. Cl. 149—1 **8 Claims**

Int. Cl. C06b *15/00;* **B01f** *3/02*

This invention relates to a solubilized and stabilized liquid mixture containing ozone, oxygen, and an additive taken from the class consisting of F_2 and OF_2.

3,428,502

POLYVINYL ACETATE BINDER FOR CRYSTALLINE EXPLOSIVE

William L. Evans, Blackwood, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 481,150, Aug. 19, 1965. This application Oct. 25, 1966, Ser. No. 589,199

U.S. Cl. 149—19 **40 Claims**

Int. Cl. C06b *15/02, 3/00*

An explosive composition comprising 45 to 85% particulate crystalline explosive and at least 15% polymeric binder comprising 5 to 55% of a vinyl acetate-based copolymer made from 50 to 99 mole percent vinyl acetate and, preferably, the composition contains a polymeric metallocarboxylate elastomer.

3,428,503

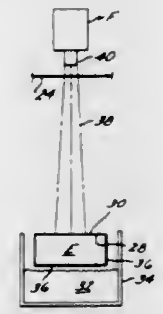
THREE-DIMENSIONAL REPRODUCTION METHOD

Lloyd D. Beckerle, 11902 Paseo Bonita, Los Alamitos, Calif. 90720

Filed Oct. 26, 1964, Ser. No. 406,257

U.S. Cl. 156—11 **6 Claims**

Int. Cl. B44b *1/04;* **B32b** *3/00*



A method for creating three-dimensional reproductions wherein both photography and etching are employed. The result is obtained by disposing a plurality of unexposed photographic films at a fixed location from an object to be reproduced, applying a beam of light upon the object to illuminate the same, exposing said films in sequence to the lighted sections of the object, developing said films after exposure and subsequently, photographically reproducing the images of the films upon an etchable block which is etched to produce the desired three-dimensional reproduction.

3,428,504

METHOD AND APPARATUS FOR CONTINUOUSLY PRODUCING A CONTINUOUS LENGTH OF INSULATED WIRE

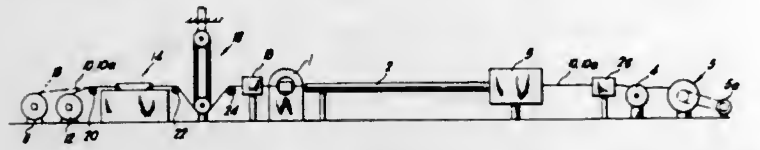
John E. N. Figg, Lachine, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed May 11, 1965, Ser. No. 454,884

U.S. Cl. 156—49 **6 Claims**

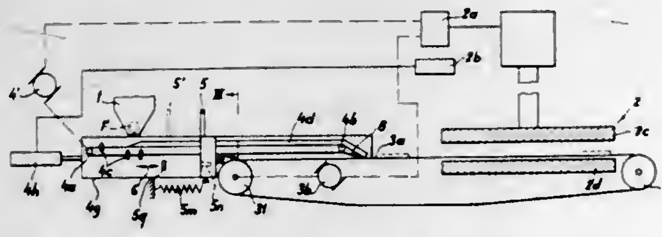
Int. Cl. B65h *69/02;* **G03d** *15/04*

Apparatus for continuously producing a continuous length of wire wherein wire is fed from a first supply to a continuously insulating means through an accumulator until the first supply is nearly exhausted. The feed from the first supply is then stopped and a wire from a second supply is welded to the trailing end of the wire from the first supply; the continuously insulating means meanwhile being fed from the accumulator. Wire is then fed from the second supply until it is nearly exhausted when a further wire is attached from the first supply and so on. Means are provided for identifying the joints between consecutive wire lengths after the insulation is applied whereby the joints may be removed.



3,428,505
METHOD OF AND APPARATUS FOR THE PRODUCTION OF PRESSED BOARD

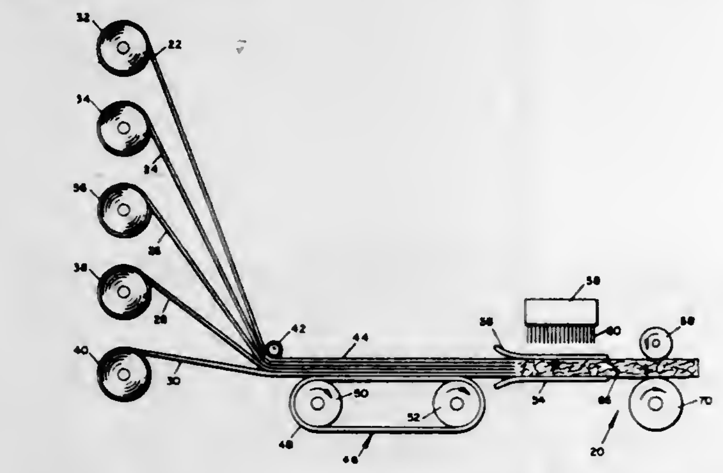
Eugene Siempelkamp, Hohenzollernstrasse 69, Krefeld, Germany
Filed May 24, 1965, Ser. No. 458,228
U.S. Cl. 156—62.2 **8 Claims**
Int. Cl. B29j *5/08*



Method of and apparatus for the production of pressed board in which a first conveyor receives a layer of fibrous material and deposits this layer upon a conveyor passing through a press by reciprocation of the first conveyor while advancing its layer-receiving surface to deposit the layer upon a press conveyor, the first conveyor being then withdrawn at a constant rate as its surface continues to advance for the deposition of a subsequent layer thereon. The press conveyor, during this period, advances the first layer into the press and is halted during the press cycle as the second layer is formed upon the surface of the first conveyor.

3,428,506
METHOD OF PRODUCING A NEEDLED, NONWOVEN FIBROUS STRUCTURE

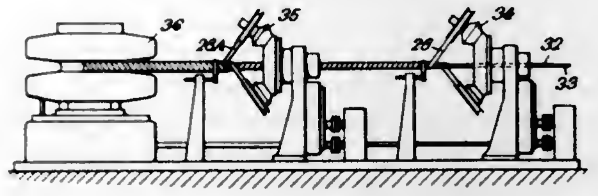
Paul L. Johnstone, Greenville, Del., assignor to Hercules Incorporated, a corporation of Delaware
Filed Jan. 11, 1965, Ser. No. 424,646
U.S. Cl. 156—148 **16 Claims**
Int. Cl. B32b *11/00*



1. A method of producing a nonwoven fibrous structure which comprises penetrating a film assembly comprised of a plurality of superposed layers of unbalanced oriented polymeric film with a plurality of closely spaced barbed needles whereby each film layer is fissured into a filigree structure comprised of interconnected filamentary members and a plurality of fibrils, the fibrils being entangled with other fibrils and with the interconnected filamentary members to provide a unitary nonwoven structure of good tensile and separation strength.

3,428,507
METHOD OF MAKING A HOSE PIPE OF HELICALLY WOUND STRIPS OF THERMOPLASTIC MATERIAL

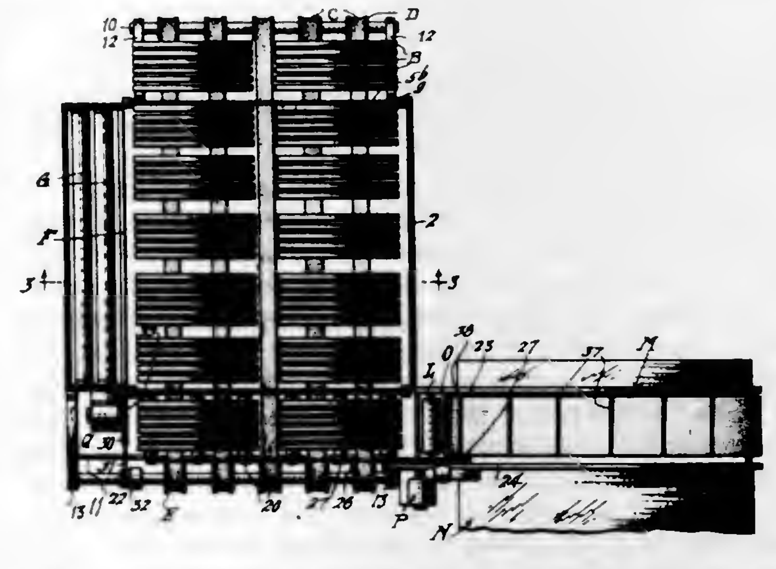
Eric Ball, Melton Park, Newcastle-upon-Tyne, England, assignor to George Angus & Company Limited, Newcastle-upon-Tyne, England, a company of England
Filed May 18, 1965, Ser. No. 456,707
Claims priority, application Great Britain, May 20, 1964, 20,822/64
U.S. Cl. 156—188 **6 Claims**
Int. Cl. B65h *81/08;* **F16i** *11/08*



A hose pipe comprising an inner tube, strips of thermoplastic material wound about said tube and a cover about said strips of material. Each strip includes spaced, parallel reinforcing filaments which extend in the longitudinal direction and have been embedded in the thermoplastic material under heat and pressure. The filaments are spaced in each strip by at least half the diameter of the filaments and the ratio by weight of polymeric material to filamentary material in each strip is at least three-to-one with half of the strips being wound left-handed and the other half right-handed. The strips are thereafter bonded together and to the inner tube.

3,428,508
LUMBER CONDITIONING AND GLUING METHOD AND APPARATUS

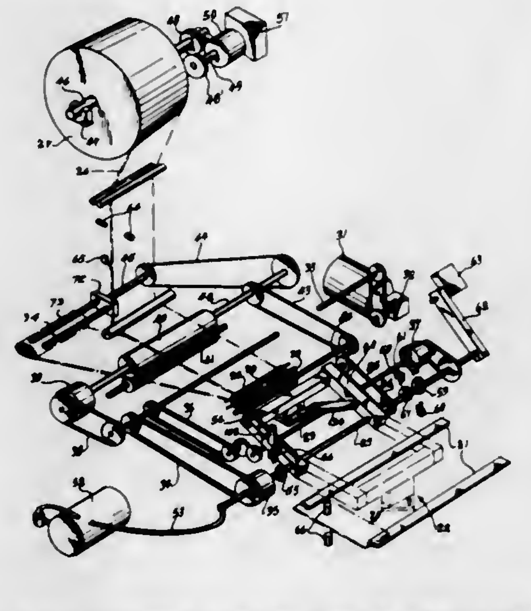
Lloyd Quick, John L. Mortoly, and Steele P. Cameron, Poughkeepsie, N.Y., assignors to James L. Taylor Manufacturing Company, Poughkeepsie, N.Y., a corporation of New York
Filed Oct. 7, 1964, Ser. No. 402,254
U.S. Cl. 156—307 **4 Claims**
Int. Cl. C09j *5/06;* **B32b** *21/04*



A method and apparatus wherein members to be glued together are heated and moistened throughout their masses to a temperature above the heat-setting temperature of the adhesive as the members are conveyed through a chamber, then the surfaces to be bonded together are cooled and after a time delay adhesive is applied to said cool surfaces as the members are conveyed through a glue-applicator from which the members are conveyed to a gluing press where the adhesive is cured under pressure by the retained heat in the members.

3,428,509
LABELING MACHINE

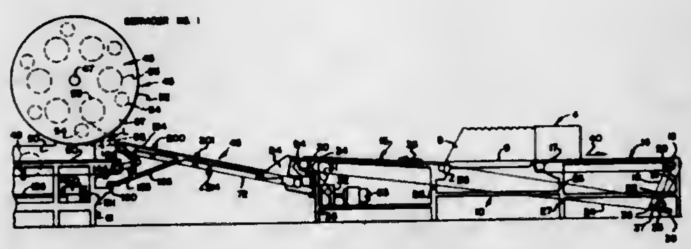
Edwin E. Messmer, Roslyn Heights, N.Y., assignor to Roto American Corporation, New York, N.Y., a corporation of New York
Filed Oct. 27, 1964, Ser. No. 406,727
U.S. Cl. 156—361 **17 Claims**
Int. Cl. B65h *25/10*



Labeling apparatus includes frame pivotable on fixed axis between label pick-up station and applying station, and an applicator carried by frame and pivotable on an axis parallel to fixed axis in response to movement of frame. Motion transmitted to frame via electric clutches. Labels mounted in series on backing strip; strip moves between rollers to kink labels, knurled roller pulls each label from strip and delivers label to pick-up station defined by a platform formed by spaced parallel rails.

3,428,510
TIRE FABRIC HANDLING APPARATUS

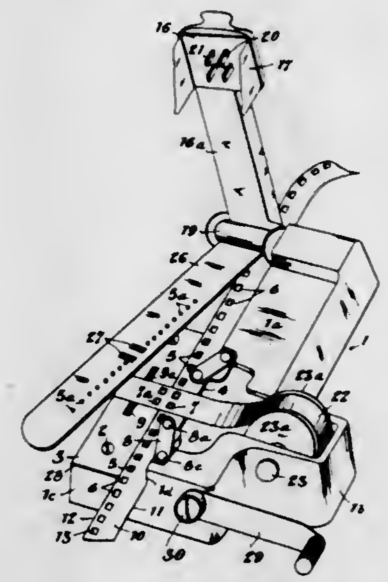
Thomas C. Jones, Salem, and Armindo Cantarutti, Cuyahoga Falls, Ohio, assignors to NRM Corporation, a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,505
U.S. Cl. 156—406 **14 Claims**
Int. Cl. B29h *17/02;* **G05g** *15/08*



Improvements in tire fabric handling and storage apparatus comprising a loading and centering conveyor for tire servicers for drum type tire building machines wherein the conveyor for each servicer is pivotally mounted on an axis extending through the center of the servicer liner apron which is beyond the end of the conveyor and means for pivoting the conveyor properly to center the fabric and means to control the speed of the conveyor in response to the flexure of the material being deposited thereon.

3,428,511
FILM SPLICING DEVICE

Leo Catozzo, 2/B Via Ferdinando Fuga, Rome, Italy
Filed Dec. 20, 1965, Ser. No. 514,980
Claims priority, application Italy, May 28, 1965, 11,756/65
U.S. Cl. 156—505 **9 Claims**
Int. Cl. B31f *5/06*



1. A film splicing device of the class using adhesive tape for splicing together the ends of two cinematographic film strips of the type having only one margin perforated and the opposite unperforated margin adapted to receive a sound track, said device comprising:

(a) stationary cutting means, coacting with movable cutting means, to sever a length of adhesive tape, applied to the splice area of said film strips, on one side coincidently with the edge of the unperforated margin and, on the other side, at a distance from the edge of the perforated margin, to form a tongue of adhesive tape projecting beyond said perforated margin;

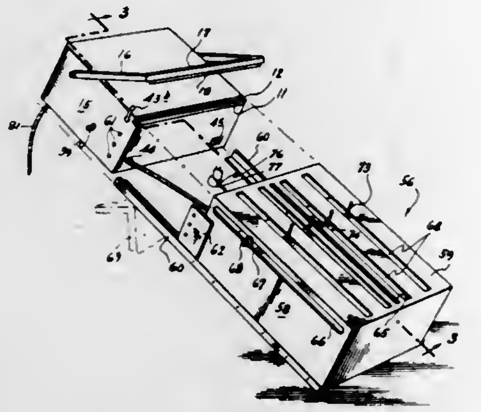
(b) stationary diehole means, coacting with movable punch means, to pierce holes into said applied adhesive tape coincidently with the film perforation holes in the splice area and on the tongue, the holes punched through said tongue being spaced, from the edge of the perforated margin, a distance equalling the distance between said film edge and the perforations plus the folding arc of the tape.

3,428,512
MEANS FOR CONVERTING A MANUAL BENCH SEALER TO AN AUTOMATIC SEALER

Kermit H. Cooper, New Rochelle, N.Y., assignor to Customized Sealers Corporation, Long Island City, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 514,280
U.S. Cl. 156—515 **6 Claims**
Int. Cl. B30b *15/34;* **B32b** *31/20*

1. Means for converting to an automatic heat sealer a bench heat sealer structure for sealing filled bags or the like wherein said bench structure has means operable upon closing a main switch for initiating and maintaining for a predetermined interval of time a cycle consisting of the sequential steps of pressing an energized heated wire against the open end of a manually held filled bag, releasing the wire from the bag and deenergizing the wire, said first-named means consisting of a second structure having means for securing the same to said bench structure with the top surfaces of both said structures lying in a common plane, the combination unit thus formed by both said structures being adapted to be supported with said bench structure uppermost on a horizontal surface at an angle greater than the angle of repose

of a filled bag situated thereon, said second structure having longitudinally adjustable normally upwardly projecting stop means thereon and being adapted to have the filled bag laid thereon with said open end of the bag positioned for application of said energized wire thereto as aforesaid and with the opposite end of the bag engaged by said stop means whereby the stop means prevents the bag from sliding down said second structure, said second structure having a normally open micro-switch projecting above the top surface thereof in the bag-receiving area thereof, said micro-switch being connected in parallel with said main switch and being closed by the weight of the filled bag and serving as a substitute for said main switch to initiate and maintain said cycle, means maintaining said stop means in the normal upwardly projecting position, means for retracting said stop means, and means for actuating said retracting means upon completion of said cycle.



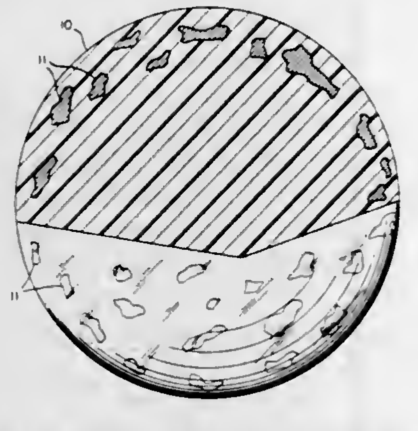
3,428,513
STRENGTHENED CRYSTALLINE ARTICLE AND METHOD OF MAKING THE SAME

Robert R. Denman, Sylvania, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
No Drawing. Filed Apr. 24, 1964, Ser. No. 362,481
U.S. Cl. 161—1 **8 Claims**
Int. Cl. B32b *17/06;* **C03c** *17/00*

A crystalline ceramic article made from a certain crystallizable glass is contacted with an inorganic salt containing alkali metal ions to form a surface compression layer thereon. The resultant strengthened article is useful for dinnerware and cookware.

3,428,514
SPHERICAL REFLECTANT ORGANIC POLYMER ARTICLE AND PROCESS

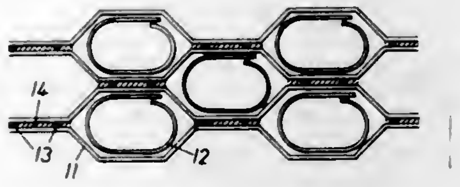
Albert H. Greer, Haddonfield, and Robert W. Hardy, Summit, N.J., assignors to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York
Filed May 18, 1966, Ser. No. 551,105
U.S. Cl. 161—5 **8 Claims**
Int. Cl. B01j *13/02;* **C02b** *5/00*



Disclosed is a smooth surfaced transparent spheroidal reflective cross linked polymer bead having a utility in reflective paint and in silk screening printing inks, including 0.1 to 2% by weight of reflectant metal flakes ranging in size from 16 to 400 mesh distributed near the surface of the bead, the inner core of the cross linked polymer bead being substantially void of reflectant metal flakes, and a process for the preparation thereof comprising a suspension polymerization carried out on an admixture of two moieties, the first moiety comprising 60 to 100 mol percent of a monovinyl-type monomer, 0.1 to 40 mol percent of a polyvinyl cross linking agent, a suitable catalyst and 0.1 to 2% by weight of metal flakes and the second moiety comprising water, protective colloids and a buffer to maintain the pH of 5:11.

3,428,515
STRUCTURAL BOARD HAVING OPEN CELLS EXTENDING AT AN ANGLE TO THE SURFACES OF THE BOARD

Hans Ludvig Lorentzen, Oslo, Norway (Leidsegracht 58, Amsterdam, Netherlands)
Filed May 23, 1961, Ser. No. 112,056
Claims priority, application Norway, May 27, 1960, 136,101
U.S. Cl. 161—68 **4 Claims**
Int. Cl. B32b *3/12*



1. A structural board constituted by open cells, said board comprising sheet-like webs of fibrous material, a plastic material impregnating the webs of fibrous material in addition to constituting spaced strip-like elements between and connecting said webs, and webs and strip-like elements defining said open cells each of which has a free cross-sectional area of about the same shape as that of a honeycomb cell, the axis of each cell extending at an angle to the surfaces of the board, and a coiled foil in at least some of the cells, said foils each having a coil axis substantially coaxial with the associated cell.

3,428,516
HEAT ACTIVATED PEELABLE RESEALABLE LABELS FOR CLOSURES

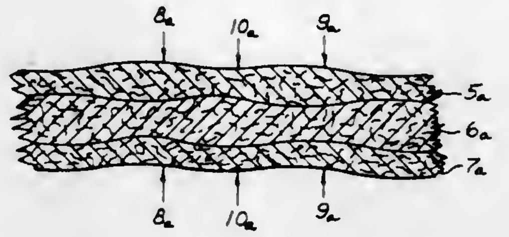
William G. Reid, Willowdale, Ontario, and Boris W. Petron, Oshawa, Ontario, Canada, assignors to E. S. & A. Robinson (Canada) Limited, Leaside, Ontario, Canada, a corporation of Canada
No Drawing. Filed Apr. 16, 1964, Ser. No. 360,421
U.S. Cl. 161—113 **1 Claim**
Int. Cl. B32b *31/20, 7/06*

A resealable packaging material having an impermeable flexible sheet coated on one side with a permanently tacky adhesive, the adhesive being covered by a porous coating through which the adhesive will migrate on the application of heat so that the package can be sealed and resealed as often as desired.

3,428,517
PACKING MATERIAL FOR LETTERPRESS IMPRESSION CYLINDERS

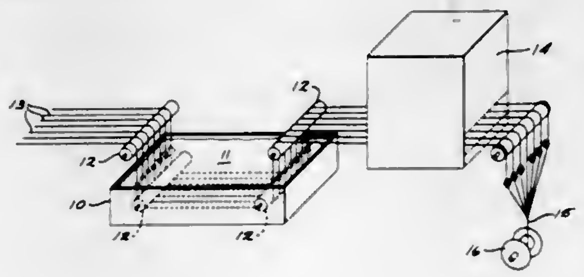
Edward Howard Grupe, Appleton, Wis., and John Franklin Hechtman, Munising, Mich., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,249
U.S. Cl. 161—165 **4 Claims**
Int. Cl. B32b *27/30, 25/12*

An improved packing material for letterpress impression materials consisting of a unitary laminate of elastomer impregnated webs of alpha-cellulose fibers. The laminate has a uniform apparent density of about 5 to 6 obtained by heat-curing the elastomer impregnant in the component webs and subsequently supercalendering the cured webs to the desired density before laminating. After laminating, one side of the laminate is microground to a depth less than the thickness of one component web. The finished laminate has a smooth suede-like finish on the microground side. The microgrinding removes local areas of disuniformity in thickness and density so that the maximum within-sheet thickness variation is less than ±.0075″.

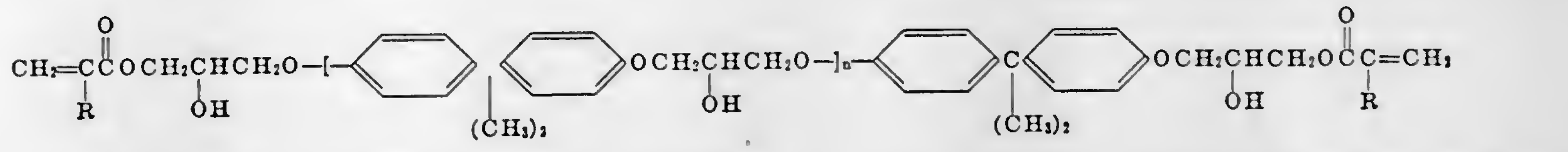


3,428,518
FILAMENTARY REINFORCEMENT FOR LAMINATED ARTICLES AND RELATED METHODS

Kenneth A. Schafer, Cedarburg, Wis., assignor to Freeman Chemical Corporation, Port Washington, Wis., a corporation of Delaware
Filed Jan. 24, 1963, Ser. No. 253,545
U.S. Cl. 161—170 **13 Claims**
Int. Cl. C03c *25/02*



1. Fibrous roving comprising discrete fibers each coated with a dry, thermosetting resinous mixture comprising:
(a) an unsaturated polyester resin having alpha-beta ethylenic unsaturation; and
(b) a polymerizable diester polyether resin having the formula



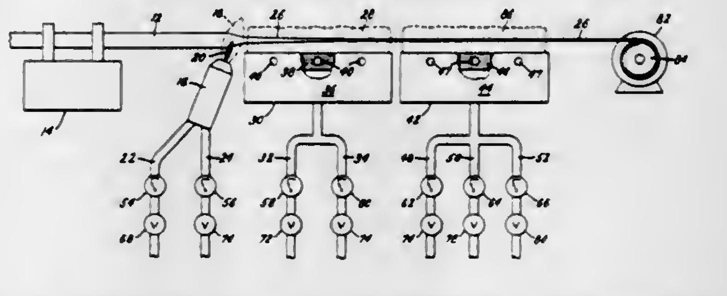
$$CH_2{=}\underset{R}{C}\overset{O}{\overset{\|}{C}}OCH_2\underset{OH}{C}HCH_2O{-}[{-}C_6H_4{-}\underset{(CH_3)_2}{C}{-}C_6H_4{-}OCH_2\underset{OH}{C}HCH_2O{-}]_n{-}C_6H_4{-}\underset{(CH_3)_2}{C}{-}C_6H_4{-}OCH_2\underset{OH}{C}HCH_2O\overset{O}{\overset{\|}{C}}\underset{R}{C}{=}CH_2$$

wherein R is selected from the class consisting of hydrogen, lower aliphatic hydrocarbon radicals and phenyl radicals; and *n* is an integer from zero to twelve.

3,428,519
METHOD FOR MAKING A COATED SILICA FIBER AND PRODUCT PRODUCED THEREFROM

Carl M. Zvanut, Paoli, Pa., assignor to General Electric Company, a corporation of New York
Continuation-in-part of applications Ser. No. 376,062, June 18, 1964, and Ser. No. 518,056, Jan. 3, 1966. This application Dec. 22, 1966, Ser. No. 622,831
U.S. Cl. 161—181 **5 Claims**
Int. Cl. C03b *37/02;* **D01f** *9/06*

Fine vitreous fibers of highly uniform diameter are drawn from a thick rod by heating it to its softening point and drawing the fiber along a path whose temperature decreases monotonically to a value at which the fiber is hard; and then given a protective coating by passage through a fuel-rich exothermally decomposing mixture of carboniferous gas with an oxidant.



3,428,520
PULPING PROCESS WITH LIGNIN RECOVERY

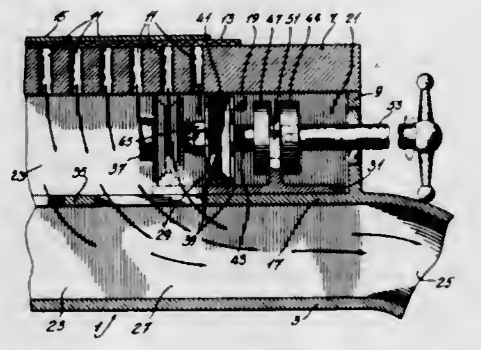
Peter N. Yiannos, Wilmington, Del., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1965, Ser. No. 479,272
U.S. Cl. 162—38 **3 Claims**
Int. Cl. D21c *3/22, 3/00*

Process for recovery of pulping by-products and unused digesting materials, in which chips are impregnated and pulped with organic peroxygen compounds by vapor phase digestion with subsequent caustic solubilization, by separating the chips from the caustic extraction liquor, adding an acid to said liquor to precipitate certain lignin derivatives, removing said precipitate to retain a brown liquor, separating said brown liquor into first and second fragments, recycling said first fragment to said caustic extraction step for recycling whereby lignin content of the liquor is continuously increased, and recycling said second fragment to said chip impregnation step.

3,428,521
ADJUSTABLE DECKLE FOR THE SUCTION FLAT BOX OF A PAPER-MAKING MACHINE

Georges Adrien Roy, 157 Brunelle St., and André Roy, 235 Des Chatelets, both of Cap de la Madeleine, Quebec, Canada
Filed July 14, 1965, Ser. No. 471,855
U.S. Cl. 162—366 **1 Claim**
Int. Cl. D21f *1/52, 5/14*

1. An adjustable deckle for suction boxes of paper-making machines, comprising:
(a) a sub-atmospheric pressure chamber provided with a series of apertures therethrough across the width of said chamber;
(b) a suction duct extending adjacent said chamber and across the width of said chamber;



(c) a solid supporting wall between said chamber and the suction duct having a series of openings therein connecting the said duct to the said chamber;

(d) movable piston means at one end of said chamber for increasing the width of the said chamber and exposing additional apertures to said chamber, the said additional apertures being located at one end of the series of apertures;

(e) a slot in said supporting wall facing said additional apertures, whereby the suction produced between the said additional apertures and the said slot is substantially perpendicular to the supporting wall.

3,428,522

METHOD AND DEVICE FOR THE REFUELLING OF NUCLEAR REACTORS

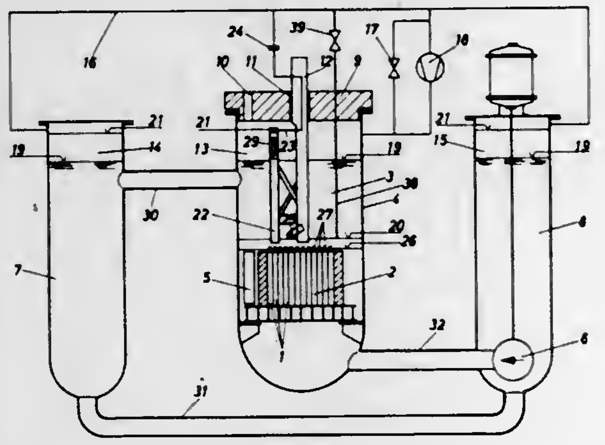
Arno Müller, Neuthard, Germany, assignor to Gesellschaft für Kernforschung m.b.H., Karlsruhe, Germany

Filed Nov. 24, 1965, Ser. No. 510,146

Claims priority, application Germany, Nov. 24, 1964, G 42,086

U.S. Cl. 176—31 **7 Claims**

Int. Cl. G21c *19/20, 19/10, 19/04*



This specification discloses a novel core element insertion and removal device for use in connection with nuclear reactors. The type of nuclear reactor particularly pertinent is one in which a core of fuel elements is provided, totally immersed in a liquid coolant, preferably a liquid sodium coolant. According to this disclosure, a core loading tube having a grasping or grappling means therein for mechanically lifting or lowering individual core elements is provided within the reactor which can be controlled from a remote source. There is described a gas blanket above the level of liquid coolant and a pumping or gas blower means connected to the gas space above the coolant. When it is desired to change, remove or insert core elements, the gas pressure is increased in the reactor, whereby the liquid level is significantly reduced. The loading tube is positioned on top of a particular core element and the grasping or grappling means is engaged with the core element. Means are provided for describing the pressure within the loading tube so that as the core element is mechanically lifted from the core, the coolant level rises within the loading tube in order to provide a coolant bath completely covering the core elements, even after such has been extracted into the loading tube.

3,428,523

NUCLEAR FUEL HANDLING SYSTEM

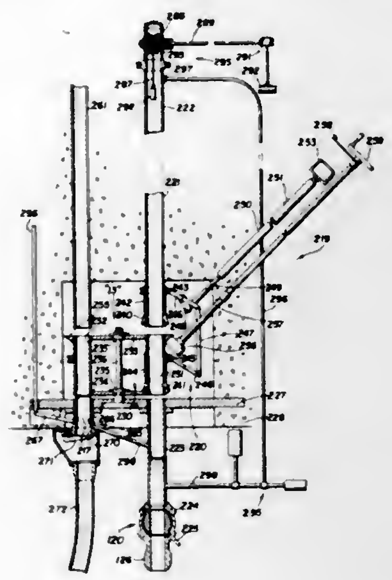
Ian Norton MacKay, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Nov. 16, 1966, Ser. No. 594,805

U.S. Cl. 176—32 **8 Claims**

Int. Cl. G21c *19/22*

To refuel while on-load a down flow vertical reactor having free standing fuel elements in stacked array within individual fuel channels, a mobile magazine is sealingly locked to the bottom of the fuel channel and the stack of elements exchanged for a replacement stack contained in the magazine.



3,428,524

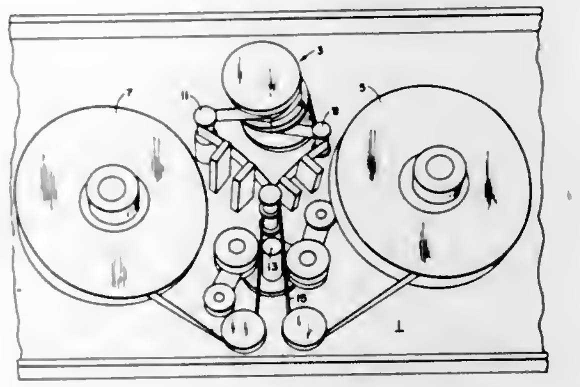
HELICAL TAPE SCANNER

Roy C. Wilcox, Seattle, Wash., and Furman D. Kell, Cherry Hill, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed July 29, 1966, Ser. No. 568,991

U.S. Cl. 179—100.2 **1 Claim**

Int. Cl. G11b *5/00;* **B65h** *23/00*



A helical tape scanner having a diagonally mounted mandrel with a recessed portion 380° thereabout for guiding a magnetic tape through and over a magnetic head positioned within the mandrel. Air-lubrication is supplied through spaced ports within the recessed portion from a regulated air supply.

3,428,525

PRODUCTION OF O-CARBAMYL-D-SERINE

Edward B. Hodge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed May 28, 1964, Ser. No. 371,129

U.S. Cl. 195—80 **5 Claims**

Int. Cl. C12k *1/00*

A process for producing O-carbamyl-D-serine is disclosed. The process includes cultivating the product in an aqueous nutrient containing *Streptomyces orchidaceous,* adjusting the pH of the medium to about 2 to 5, absorbing cycloserine in a cation exchange resin, adjusting the effluent pH to about 4 to 6.5, concentrating and then cooling the effluent to crystallize the O-carbamyl-D-serine and separating the crystals out.

3,428,526

PRODUCTION OF RADICICOL

Hans-Peter Sigg, Binningen, and Wolfgang Loeffler, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

Filed Apr. 30, 1965, Ser. No. 452,248

Claims priority, application Switzerland, May 20, 1964, 6,575/64

U.S. Cl. 195—80 **4 Claims**

Int. Cl. C12k *1/00;* **A61k** *21/00*

Process for the production of the antibiotic radicicol (Rhi 12–648) through the cultivation of two new strains of fungus species *Humicola grisea* Traaen (*Fungi imperfecti,* Moniliales). Cultivation takes place in a nutrient medium and the antibiotic is isolated by adsorption or extraction. The antibiotic has marked inhibiting action toward yeast and fungi.

3,428,527

METHOD FOR THE AUTOMATIC CONTROL OF THE QUALITY OF THE BOTTOM AND TOP PRODUCT IN A CONTINUOUS DISTILLATION PROCESS

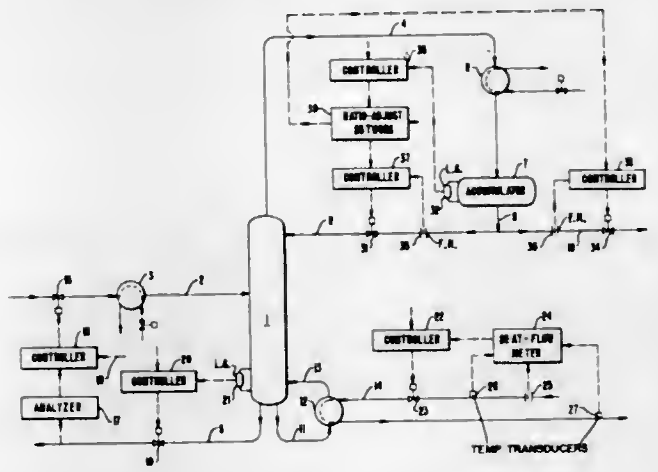
Johannes E. Rijnsdorp, Johannes A. van Kampen, and Hans Bollen, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 26, 1965, Ser. No. 510,021

Claims priority, application Netherlands, Nov. 30, 1964, 6413882

U.S. Cl. 203—1 **5 Claims**

Int. Cl. B01d *3/42, 3/14*



Automatically controlling a continuous distillation process for the separation of feed stream into a top and a bottom product stream in a column using reflux and re-evaporation. Upon a control action for keeping the quality of the bottom product constant the quality of the top product does not change. This is achieved by analyzing the quality of the bottom product and adjusting the feed flow rate to maintain the quality thereof and adjusting some of the remaining process variables to maintain the liquid levels in the accumulator and in the bottom of the column between desired limits and the ratio between the vapor flow and the liquid flow in the rectifying section of the column at a constant value.

3,428,528

FRACTIONATION DISTILLATION CONTROL PROCESS AND APPARATUS WITH SIDE STREAM, REFLUX AND BOTTOMS FLOW CONTROL

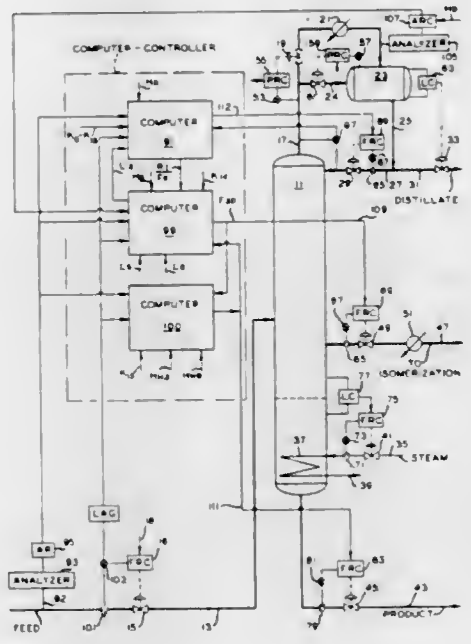
Minor W. Oglesby, Jr., Bartlesville, Okla., and Robert M. Keeler, Corpus Christi, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 29, 1965, Ser. No. 510,277

U.S. Cl. 203—1 **10 Claims**

Int. Cl. B01d *3/42*

In a fractionation system having an overhead product, a sidedraw product and a bottom product, the flow rate of each of the external reflux, the sidedraw product stream and the bottom product stream is manipulated by a respective output of a computer control system. The inputs to the computer control system include the feed flow rate, feed component concentrations, and desired component concentrations in each of the three product streams. The computer control system performs the simultaneous solution of three interrelated predictive equations to obtain the three flow control signals.



3,428,529

SOLAR DISTILLATION OF FOAMED SALINE WATER TO RECOVER FRESH WATER

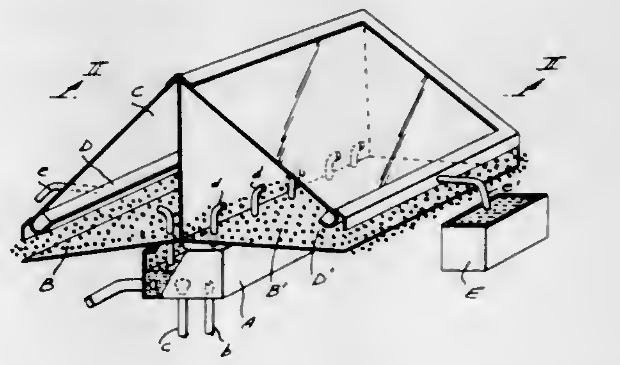
Ricardo Salcedo Gumucio, Madrid, Spain, assignor to Instituto Nacional de Industria, Madrid, Spain

Filed July 18, 1966, Ser. No. 565,780

Claims priority, application Spain, July 17, 1965, 315,400

U.S. Cl. 203—10 **10 Claims**

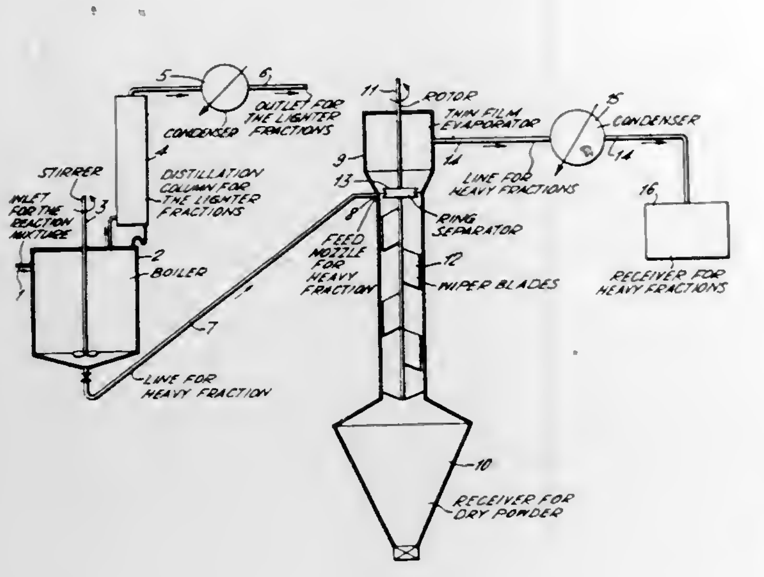
Int. Cl. C02b *1/06, 5/06;* **B01d** *3/34*



A distilling method which comprises the steps of converting a liquid to be distilled into a foam, and subjecting the thus formed foam to solar heat so as to evaporate at least a substantial portion of said foam; and a distilling device for distilling a liquid by utilizing solar heat, which comprises foam forming means for converting a liquid into a foam, solar distilling means for exposing the thus formed foam to solar heat so as to vaporize at least a portion of the liquid of said foam, condensing means operatively associated with said solar distilling means for condensing the vaporized portion of said liquid, and conduit means for passing foam from said foam forming means to said solar distilling means.

3,428,530
PROCESS FOR THE PURIFICATION OF CHLOROSILANES BY DISTILLATION AND THIN-FILM EVAPORATION

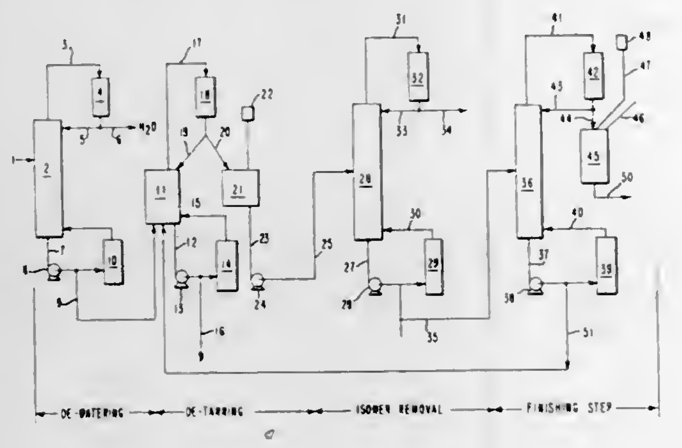
Paul Charles Fauche and Philippe Lacan, Lyon, France, assignors to Rhone-Poulenc S.A.
Filed Sept. 8, 1966, Ser. No. 577,818
Claims priority, application France, Sept. 10, 1965, 31,082
U.S. Cl. 203—72 **3 Claims**
Int. Cl. B01d *3/14, 3/10;* **C07f** *7/16*



The invention relates to a process for the continuous purification of trichlorosilane, tetrachlorosilane, phenyldichlorosilane, phenyltrichlorosilane, and diphenyldichlorosilane, prepared by reaction of chlorobenzene with silicon, in which the reaction product, containing the chlorosilanes, and solid and tarry material, is condensed to obtain a suspension, the suspension is distilled at 180° C. at at least atmospheric pressure to separate the trichlorosilane and tetrachlorosilane, and the residue is evaporated in a thin film evaporator at a pressure between 2.3 mm. and 22 mm. of Hg, so that the remaining chlorosilanes evaporate, leaving behind the solid and tarry material.

3,428,531
DISTILLATION RECOVERY OF METAPHENYLENEDIAMINE

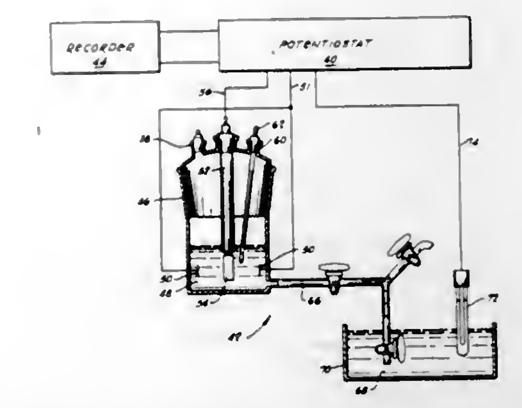
Donald Mars Dietz, Westhaven, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,815
U.S. Cl. 203—80 **1 Claim**
Int. Cl. B01d *3/14, 3/10;* **C07c** *85/16*



A continuous process for the separation of meta-phenylenediamine from the ortho and para isomers and tars, by a series of distillations, at or above atmospheric pressure.

3,428,532
METHOD FOR IDENTIFYING METALS AND ALLOYS

William P. Banks, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 343,041
U.S. Cl. 204—1 **5 Claims**
Int. Cl. B01k *3/00*



A method for quantitatively identifying metals and alloys comprising making the metal specimen an electrode and obtaining a polarization curve and weight loss value for said metal specimen at a given passive potential region which is determined from said polarization curve; repeating the above series of steps with metals and alloys of known composition; and matching the polarization curves and weight loss values of the unknown sample with those obtained from the metal or alloy of known composition.

3,428,533
HIGH QUALITY SUB-MASTERS AND METHOD FOR PRODUCING THEM

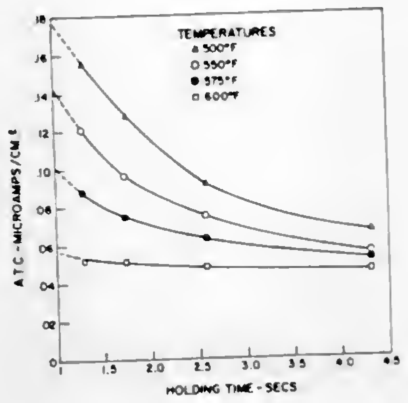
Marlowe A. Pichel, La Canada, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.
Filed Apr. 13, 1964, Ser. No. 359,280
U.S. Cl. 204—7 **6 Claims**
Int. Cl. C23b *7/08*

1. A method of an optically accurate metal replica mirror master of an original glass mirror master, said method comprising the steps of: forming a plastic submaster from the original glass master; sensitizing the working surface of the sub-master by coating it with an electrically conductive material; electroplating a metal layer over said electrically conductive coating; mounting a stable structure onto said metal layer to rigidize its shape; separating said rigidized structure from the plastic sub-master; and removing the coating of electrically conductive material from the metal layer by dissolving it in a solvent which is selective thereto without distorting the metal layer surface, thereby leaving the desired replica master.

3,428,534
MANUFACTURE OF ELECTROLYTIC TINPLATE

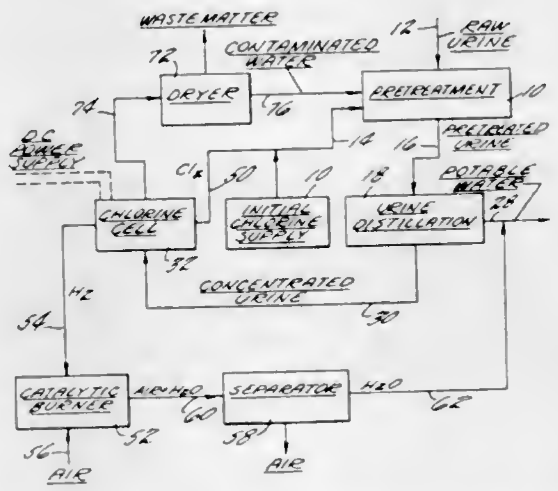
Paul Rothstein, Castle Shannon, and Walter Batz, Hopewell Township, Beaver County, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 3, 1965, Ser. No. 506,211
U.S. Cl. 204—37 **8 Claims**
Int. Cl. C23b *5/52*

The brightening temperature of continuously flow-brightened electrolytic tinplate is lowered when the speed of travel of the strip is reduced and increased when the speed of travel of the strip is increased so as to maintain constant the corrosion resistance of the tinplate as indicated by its ATC values.



3,428,535
PROCESS OF EXTRACTING POTABLE WATER FROM URINE

David F. Putnam, Granville, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,156
U.S. Cl. 204—149 **7 Claims**
Int. Cl. C02c *5/12;* **C02b** *1/04*

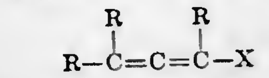


1. In the process of extracting potable water from urine, the improvement which comprises:
- electrolytically decomposing the sodium chloride in the urine to liberate chlorine,
- collecting the chlorine thus liberated, and
- pretreating the raw urine with the collected chlorine to fix the ammonia therein.

3,428,536
PROCESS OF AND ELECTROLYTES FOR BRIGHT NICKEL ELECTROPLATING

Jack C. Towle, East Cleveland, Arthur H. Du Rose, Cleveland, William H. Meek, Jr., Euclid, and Dale G. Block, Parma, Ohio, assignors to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware
No Drawing. Filed May 9, 1966, Ser. No. 553,001
U.S. Cl. 204—49 **15 Claims**
Int. Cl. C23b *5/08*

This invention comprises a process for bright nickel plating and compositions used therefor in which the nickel electroplating bath contains at least 0.02 gram per liter of an allenic compound having the formula



$$\overset{R}{\underset{}{R-C}}=C=\overset{R}{C}-X$$

wherein R and X are groups selected from a variety of specified radicals, typical allenic compounds being 2,2-dimethyl-3,4-pentadienal, 2,3-butadienoic acid, etc. These allenic compounds serve as brightening agents in the electroplating bath.

3,428,537
PROCESS FOR THE MANUFACTURE OF B-NOR- OR B-NOR-19-NOR-ANDROSTANES

Oskar Jeger, Zollikerberg, Zurich, Kurt Schaffner, Zurich, and Hans Ueli Wehrli, Schaffhausen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,043
Claims priority, application Switzerland, Oct. 2, 1964, 12,834
U.S. Cl. 204—158 **8 Claims**
Int. Cl. B01j *1/10*

1. Process for the preparation of B-nor- or B-nor-19-norandrostanes, wherein a 3-oxo-6,7-oxido-Δ^4-androstane or its 19-nor derivative in a solvent is irradiated with ultraviolet light.

3,428,538
METHOD FOR PREPARING AZIRIDINES BY PHOTOLYSIS OF TRIAZOLINES

Peter Scheiner, 29 Hamilton Ave., Princeton, N.J. 08540
No Drawing. Filed Jan. 13, 1966, Ser. No. 520,348
U.S. Cl. 204—158 **6 Claims**
Int. Cl. B01j *1/10;* **C07d** *23/06*

1. The method of making a substituted aziridine which comprises irradiating a solution of the corresponding substituted 1,2,3-Δ^2-triazoline with ultraviolet light until evolution of nitrogen gas terminates.

3,428,539
PHOTOHALOGENATION OF HYDROCARBONS

George R. Lester, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 11, 1965, Ser. No. 431,994
U.S. Cl. 204—163 **10 Claims**
Int. Cl. C07c *17/10*

Photohalogenation of a paraffinic hydrocarbon by treating said hydrocarbon with HBr, in the substantial absence of free halogen, at a temperature of from about ambient to about 150° C., a pressure of 1–50 atmospheres, in the presence of UV light having a wavelength of 1800–2400° A.

3,428,540
PROCESS FOR MAKING TRIFLUOROAMINE OXIDE

William B. Fox, Jefferson Township, Morris County, James S. MacKenzie, Parsippany Troy Hills, and Nicholas Vanderkooi, Jr., Pequannock Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 9, 1962, Ser. No. 179,521
U.S. Cl. 204—177 **10 Claims**
Int. Cl. B01k *1/00*

1. The process for making F_3NO which comprises subjecting a starting mixture comprising oxygen difluoride and nitrogen-fluorine material of the group consisting of (a) nitrogen trifluoride and (b) a mixture of elemental nitrogen and elemental fluorine to the action of an electrical discharge effected in a reaction zone by maintaining across said zone a potential drop substantially in the range of 1–20 kilovolts at a current substantially in the range of 5–50 milliamperes, effecting said discharge while maintaining in said zone temperature substantially in the range of minus 160–minus 196° C. and pressure in the range of substantially zero–150 mm. of Hg absolute, whereby there is formed in said zone a condensed reaction product containing F_3NO, and discharging F_3NO from the reaction zone.

3,428,541
ARC DEPOSITION OF PLATINUM-CARBON ELECTRICALLY RESISTIVE FILMS

John C. Froemel, Verona, and Meyer Sapoff, West Orange, N.J., assignors to Victory Engineering Corporation, Springfield, N.J., a corporation of Delaware

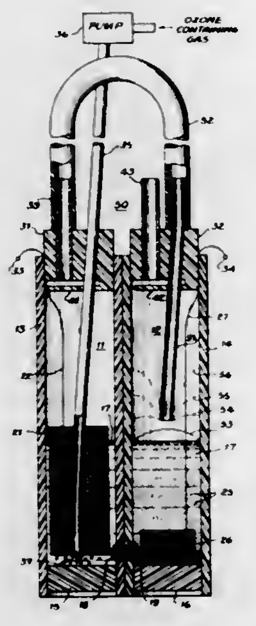
No Drawing. Filed June 3, 1966, Ser. No. 555,006
U.S. Cl. 204—192 **6 Claims**
Int. Cl. C22c *5/00*

1. A method for preparing an electrically-resistive film, which comprises in combination the steps of providing an electrode comprising carbon and a platinum-group metal in intimate admixture, striking an arc between said electrode and a counter-electrode, thereby producing a vaporized mixture of said carbon and said platinum-group metal, and condensing said vaporized mixture on a substrate to form a film comprising said carbon and said platinum-group metal.

3,428,542
METHOD OF SENSING THE OZONE IN UPPER ATMOSPHERE

Walter D. Komhyr, 4343 Lee Highway, Arlington, Va. 22207

Filed Oct. 11, 1965, Ser. No. 494,988
U.S. Cl. 204—195 **1 Claim**
Int. Cl. B01k *3/00*



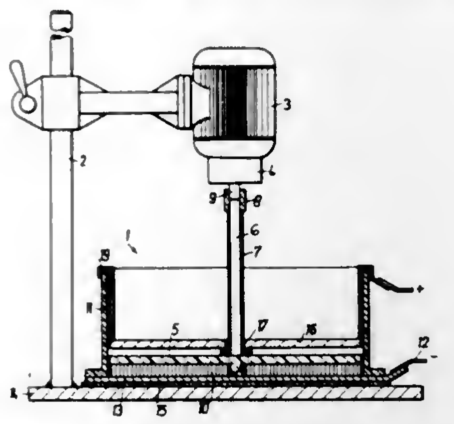
A gas containing ozone is introduced into a cathode chamber containing a halide electrolyte and a platinum cathode. The spent gas is conveyed into an anode chamber containing a powdered carbon anode slurry, and is discharged at a point above the slurry. When the atmospheric pressure decreases and the carbon de-gasses, the discharged gas expands and breaks the ensuing bubbles, and the liquid drains back into the anode chamber.

3,428,543
COMPOSITE POWDERS AND APPARATUS FOR THE PRODUCTION OF THE SAME

Theodor Weber, Goslar, Harz, Germany, assignor to Hermann C. Starck Berlin, Berlin-Charlottenburg, Germany

Filed May 7, 1965, Ser. No. 454,011
Claims priority, application Germany, May 9, 1964, St 22,106
U.S. Cl. 204—273 **4 Claims**
Int. Cl. B01k *3/00*

A composite powder consisting essentially of a core of tungsten, titanium or the carbides, borides, silicides, nitrides and oxides of tungsten or titanium and an envelope electrodeposited thereon, said envelope being nickel, cobalt, copper or silver; and an apparatus for preparing said composite powders.



3,428,544
ELECTRODE COATED WITH ACTIVATED PLATINUM GROUP COATINGS

Giuseppe Bianchi and Antonio Nidola, Milan, Italy, assignors to Oronzio de Nora Impianti Elettrochimici S.A.S., Milan, Italy, a corporation of Italy

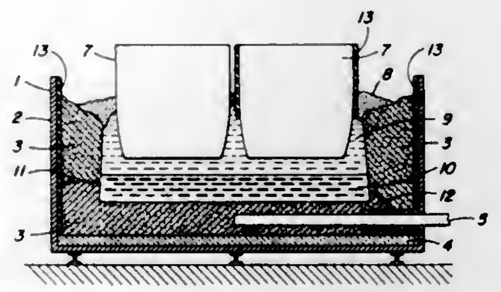
No Drawing. Filed Nov. 8, 1965, Ser. No. 506,852
U.S. Cl. 204—290 **3 Claims**
Int. Cl. B01k *3/06*

Method of improving the catalytic activity of coatings of metals of the platinum group on a base structure and to novel platinum group electrodes produced by the said method. The invention relates especially, but not exclusively, to electrodes for use in the electrolysis of salt solutions.

3,428,545
CARBON FURNACE ELECTRODE ASSEMBLY

Arthur F. Johnson, 5700 Arlington Ave., Riverdale, N.Y. 10471

Original application Oct. 22, 1962, Ser. No. 231,969, now Patent No. 3,372,105, dated Mar. 5, 1968. Divided and this application Oct. 25, 1967, Ser. No. 695,301
U.S. Cl. 204—290 **8 Claims**
Int. Cl. B01k *3/08*



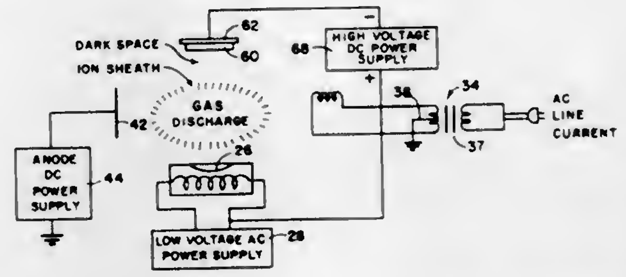
Insulating material is provided wherein heat insulating, electrical insulating and/or chemical insulating refractories are bonded to a suitable substrate whereby the resulting material may be placed in a relationship to the substance to be insulated so that oxidation of said substance is avoided.

3,428,546
APPARATUS FOR VACUUM DEPOSITION ON A NEGATIVELY BIASED SUBSTRATE

Gary Allen Baum, Stillwater, Okla., and Richard L. Beno and Theodore Van Vorous, Boulder, Colo., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 27, 1966, Ser. No. 583,119
U.S. Cl. 204—298 **5 Claims**
Int. Cl. C23c *15/00*

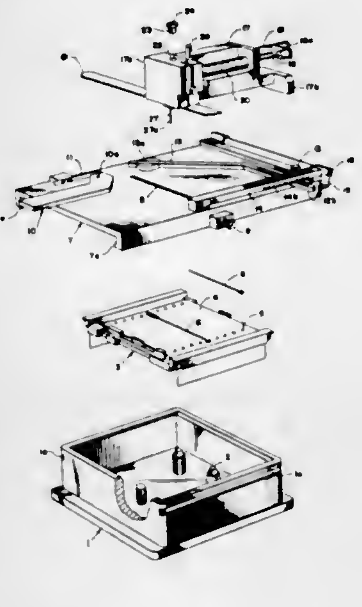
1. Apparatus for depositing low energy accelerated ions on a substrate comprising, in combination, a chamber, means for controllably evacuating the chamber, means for controllably admitting an inert ionizable gas into the chamber, means for supporting and positioning a substrate within said chamber, an evaporant source for supporting evaporant material within the chamber spaced from the substrate, means associated with the evaporant source for heating the source and the evaporant material, thermionic filament means for providing a source of electrons for ionizing the inert gas and the evaporant, anode means spaced from the filament means for attracting electrons emitted by the filament, said filament means and said anode means being operatively disposed intermediate the substrate and the evaporant source, and means for biasing the substrate negative with respect to the evaporant source to attract and accelerate ionized evaporant material to said substrate for deposition thereon.



3,428,547
ANTISERUM APPLICATOR USED IN IMMUNOELECTROPHORESIS

Zvonimir Juan Zec, Palo Alto, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed July 2, 1965, Ser. No. 469,214
U.S. Cl. 204—299 **8 Claims**
Int. Cl. B01k *5/00*



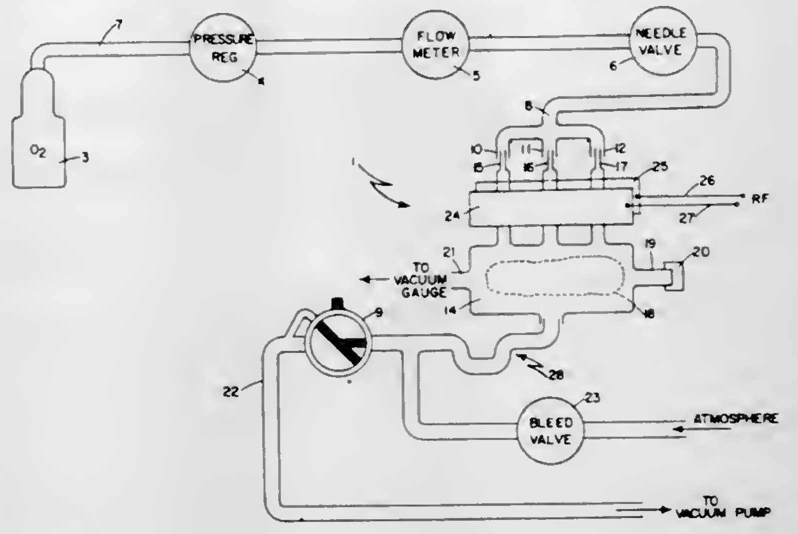
Semiautomatic apparatus for applying a quantity of antiserum to a filter paper strip placed on an electrophoresis support membrane comprising a cam-operated syringe holding a quantity of antiserum, a tube for delivering antiserum from the syringe to the paper strip and a two-way valve positionable for filling the syringe and dispensing fluid from the syringe.

3,428,548
PLASMA REACTION SYSTEM FOR REACTING A GAS WITH A NON-GASEOUS MATERIAL

John R. Hollahan, Berkeley, Calif., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Sept. 27, 1966, Ser. No. 582,442
U.S. Cl. 204—312 **5 Claims**
Int. Cl. B01k *1/00*

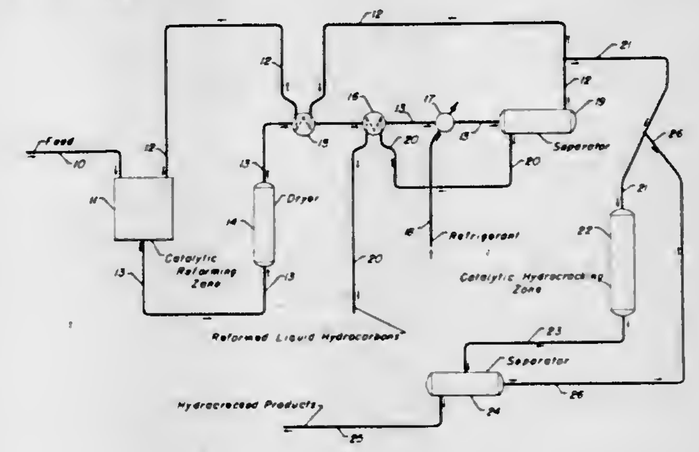
1. Apparatus for reacting a gas with a non-gaseous material at relatively low temperatures comprising a reaction vessel having a first chamber for receiving the non-gaseous material and a plurality of individual second chambers for activating the gas in immediate communication with said first chamber, means to induce a flow of gas simultaneously into said plurality of second chambers, means external of said reaction vessel to couple an RF field of sufficient intensity to ionize the gas within said plurality of second chambers, and exhaust means to withdraw the ionized gas from said plurality of second chambers by way of said first chamber to enable the non-gaseous material to be uniformly reacted with the ionized gas.



3,428,549
CONVERSION PROCESS IN THE PRESENCE OF HYDROGEN

Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,941
U.S. Cl. 208—79 **7 Claims**
Int. Cl. C10g *37/10*



Conversion process involving catalytic reforming and catalytic hydrocracking wherein there is provided a method for purification of the recycle hydrogen gas to the reformer and feed hydrogen gas to the hydrocracker.

3,428,550
CRYSTALLINE ALUMINOSILICATE-CONTAINING CATALYST AND METHODS OF TREATING AND USING SAME

Henry Erickson, Park Forest, and Marvin F. L. Johnson, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,400
U.S. Cl. 208—120 **11 Claims**
Int. Cl. C10g *11/04;* **B01j** *11/40*

Crystalline aluminosilicate is combined with a hydrous alumina mixture consisting of about 10 to 90% amorphous hydrous alumina and about 10 to 90% alumina monohydrate having a crystallite size of up to about 50

A. The aluminosilicate is one having pores in the 8 to 15 A. size range and a molar ratio of silica to alumina of at least about 3.5:1, e.g. synthetic faujasite. The resultant composition when dried, is useful as a cracking catalyst, the activity and selectivity of which can be enhanced by mild steam treatment.

3,428,551
PROCESS OF PREPARING A FILTER MEDIUM FROM MOSS AND ITS USE

John Ernest Dawe, Crowell Post Office, Shelburne County, Nova Scotia, Canada

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,520

U.S. Cl. 208—188 **6 Claims**

Int. Cl. C10g *33/04*

Residues of moss plants (Sphagnum and Hypnum genus) growing on a bog are collected from a shallow near-surface layer, the selected material being nearly free of peat and under microscopic examination revealing undegraded cellular and channel network structures. Foreign matter is removed and the residues are washed to remove colloidal contaminants, then are soaked at an elevated temperature, e.g. from 120° F. to nearly boiling point in an aqueous dilute NaOCl solution at a concentration from 0.05% to 10%, until decolored and waxes and sizing compounds are released; a series of baths of decreasing concentration is very effective. The decolored material is rinsed to neutrality and dried to a moisture content from 10% to 45% to yield a stable, resilient product. By the use of filters packed with the product, clarification of stable water-in-oil emulsions in hydrocarbons is shown to be excellent; superior filtering of fruit juices and green beer is shown; and effective oil filters at engine operating temperatures are realized.

3,428,552
CYCLIC ADSORPTIVE SEPARATION PROCESSES

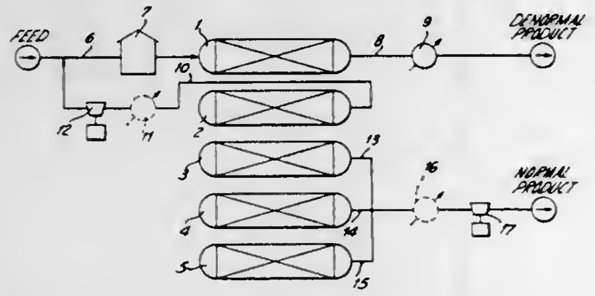
John N. Turnbull, Twickenham, and Ronald J. H. Gilbert, Staines, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England

Filed Mar. 29, 1967, Ser. No. 626,834

Claims priority, application Great Britain, Apr. 6, 1966, 15,304/66

U.S. Cl. 208—310 **18 Claims**

Int. Cl. C10g *25/10;* **B01d** *53/06*



Cyclic vapour phase separation process, using a molecular sieve adsorbent, in which the desorption step is effected by directly condensing the effluent from the adsorbent bed to draw a vacuum.

3,428,553
SEPARATING PRIMARY SOLVENT WITH A SECONDARY SOLVENT

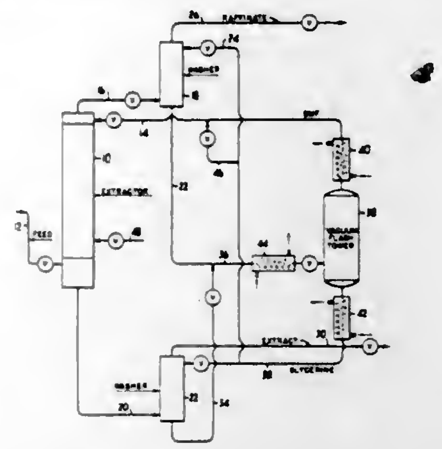
Chyn duog Shiah, 189 Nassau Ave., Manhasset, N.Y. 11030

Continuation-in-part of application Ser. No. 372,577, June 4, 1964. This application Feb. 3, 1966, Ser. No. 524,806

U.S. Cl. 208—321 **8 Claims**

Int. Cl. C10g *21/16, 21/20*

The aromatic components of hydrocarbon oil are separated from the non-aromatic components by contacting the oil with a primary solvent, preferably a solvent containing a major amount of dimethyl formamide and then contacting the thus produced extract and raffinate with a secondary solvent which is an organic hydroxy compound to remove the primary solvent.



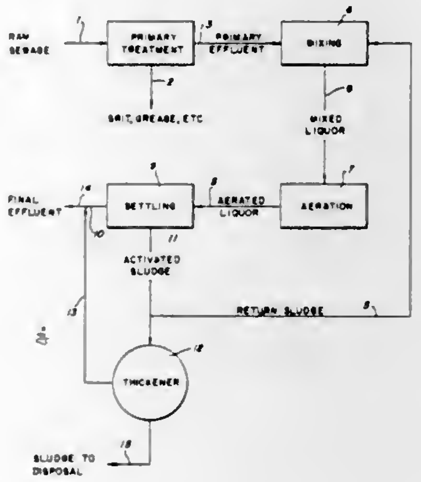
3,428,554
SEWAGE TREATMENT PROCESS

Edgar O. Dye, 322 N. Plumer Ave., Tucson, Ariz. 85719

Filed Dec. 11, 1967, Ser. No. 689,460

U.S. Cl. 210—4 **3 Claims**

Int. Cl. C02c *1/06*



An improved activated sludge sewage treatment process in which the length of the aeration period is controlled by periodically measuring the ash contents of the mixed liquor suspended solids and return sludge suspended solids. The aeration period is terminated when the ash content of the mixed liquor suspended solids is between about 25–40% and the ash content of the return sludge suspended solids is maintained within −8 to +1 percentage units of the ash content of the mixed liquior suspended solids.

3,428,555
METHOD AND AN APPARATUS FOR PURIFYING WASTE

Hiroshi Kitagawa, Tokyo, and Yo Maeda, Shuhei Nakamura, Toru Miyagi, Seiichi Itoh, Minondo Kimura, and Yasuo Suzuki, Shimodate-shi, Japan, assignors to Hitachi Chemical Company, Ltd., Tokyo, Japan, a corporation of Japan

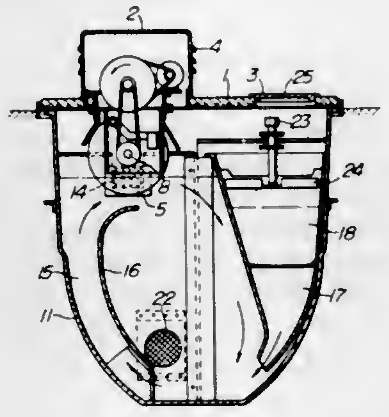
Filed Jan. 3, 1967, Ser. No. 606,678

Claims priority, application Japan, Jan. 10, 1966, 41/943; Mar. 4, 1966, 41/18,987, 41/18,988; Mar. 18, 1966, 41/24,081

U.S. Cl. 210—7 **24 Claims**

Int. Cl. C02c *1/08*

The present disclosure is directed to a method and apparatus for aerobically purifying waste products in a vessel using aerobes or an activated sludge which is kept alive in a bath of said waste products in said vessel which comprises pulverizing and dissolving solid substances contained in the waste products by conveying the waste products through a dissolving zone containing smooth rotating surfaces, which successively contact the air and the waste products, further conveying said waste products through an aeration zone also containing smooth rotating surfaces, said rotating surfaces supplying oxygen, which is dissolved in water membranes adhesively disposed on said rotating surfaces, to the waste products, said rotating surfaces also providing a circulating flow sufficient to distribute the dissolved oxygen throughout the waste products and to prevent settling of the activated sludge and introducing the aerated waste products into a settling zone to separate the suspended activated sludge from the purified product, said settling zone being disposed in the aeration zone and having a gradually decreasing cross-sectional area from the upper portion to the lower portion of the vessel.



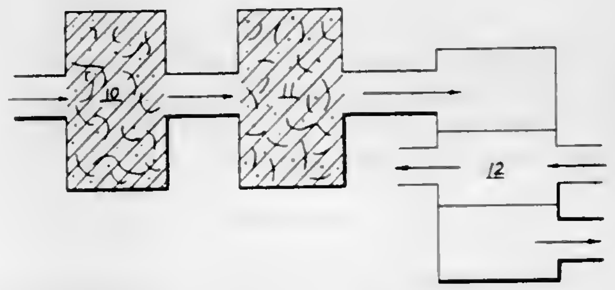
3,428,556
FILTRATION AND DISTILLATION PROCESS

Donald A. Gunther, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania

Filed May 6, 1964, Ser. No. 365,461

U.S. Cl. 210—26 **3 Claims**

Int. Cl. B01d *3/00*



2. A process of distillation comprising
providing a source of liquid to be distilled,
passing said liquid through a charcoal filter,
then passing said liquid through a weak acid cation exchanger,
and then distilling said liquid.

3,428,557
METHOD AND APPARATUS FOR CONTROLLING BOILER SYSTEMS

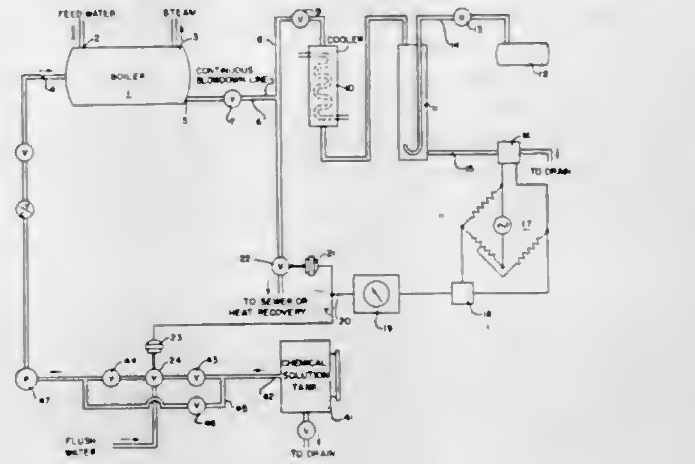
Hubert M. Rivers, Upper St. Clair Township, Allegheny County, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania

Filed Sept. 19, 1966, Ser. No. 580,452

U.S. Cl. 210—59 **5 Claims**

Int. Cl. C02b *3/06*

This invention provides a method and apparatus for treating input water to a boiler and blowdown therefrom by the steps of measuring the conductivity of the water in the boiler and simultaneously feeding water treating chemicals into the boiler in response to the measured conductivity and regulating the blowdown in response to the measured conductivity to maintain a predetermined conductivity in the boiler. Means are provided for generating a control signal representative of conductivity, means for feeding water treating chemicals into the boiler in response to said control signal and means for simultaneously blowing down the boiler in response to said control signal.



3,428,558
METHOD OF CLARIFYING WATER AND COMPOSITIONS USED THEREFOR

John Phillip Murphy, 346 Morning View Ave., Akron, Ohio 44305

No Drawing. Filed July 25, 1967, Ser. No. 655,751

U.S. Cl. 210—59 **15 Claims**

Int. Cl. B01d *21/01*

This invention is directed to a composition for treating water and more specifically to a method of dispersing high-molecular weight water-soluble polymers in water by means of gasogenic agents. The composition comprises an admixture of said high-molecular weight polymers and a gasogenic agent. The gasogenic agents comprise an acidic compound and a CO_2-releasing compound wherein the CO_2-releasing compound is selected from the group consisting of ammonium carbonates and bicarbonates and the alkali and alkaline earth metal carbonates and bicarbonates. The acidic compound is selected from the group consisting of solid organic acids having 2 to 20 carbon atoms per molecule, the anhydrides and the acid salt thereof, the inorganic acid salts, the alums, e.g., aluminum sulfate, and various mixtures thereof.

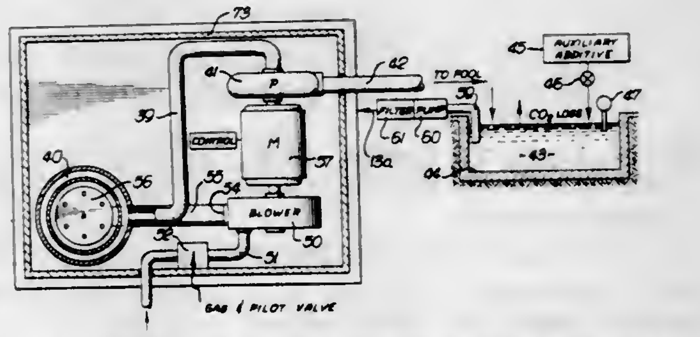
3,428,559
APPARATUS AND METHOD FOR TREATING SWIMMING POOL WATER

Andrew M. McInnis, Covina, Calif., assignor to Ballard & Associates Inc., Pasadena, Calif., a corporation of California

Filed Oct. 14, 1966, Ser. No. 586,847

U.S. Cl. 210—60 **11 Claims**

Int. Cl. C02b *1/18*



The disclosure concerns apparatus and method for heating and controlling swimming pool water, using hot gaseous products of combustion.

3,428,560
YARN-LUBRICATING COMPOSITION

John Sylvester Olsen, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 419,207, Dec. 17, 1964, now Patent No. 3,306,850, dated Feb. 28, 1967. This application Feb. 27, 1967, Ser. No. 618,995

U.S. Cl. 252—8.7 **1 Claim**
Int. Cl. D06m *13/20*

A self-emulsifiable, stable yarn-lubricating composition of isocetyl stearate, sodium di-(2-ethyl hexyl) sulfosuccinate, and a non-ionic emulsifying agent.

3,428,561
MIXED SALTS OF PHOSPHORUS ACIDS AND HYDROCARBON-SUBSTITUTED SUCCINIC ACIDS

William M. Lesuer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 543,013, Apr. 18, 1966, which is a continuation-in-part of application Ser. No. 395,031, Sept. 8, 1964. This application Mar. 1, 1968, Ser. No. 709,807

U.S. Cl. 252—32.5 **15 Claims**
Int. Cl. C10m *3/42*

Metal salts of mixtures of organic phosphorus acids (especially phosphinodithioic acids) and hydrocarbon-substituted succinic acids improve oxidation stability and extreme pressure and frictional characteristics of lubricating oils, especially automatic transmission fluids and trans-axle lubricants. Mixtures of these salts with a basic metal salt of an organic (sulfonic, carboxylic or phosphorus-containing) acid are particularly useful.

3,428,562
PROCESS FOR PREPARING A GREASE COMPOSITION CONTAINING SYNTHETIC OIL AS THE SOLE LUBRICATING OIL COMPONENT

Roy L. Crouch and Paul A. Cook, Nederland, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 4, 1966, Ser. No. 591,978

U.S. Cl. 252—42 **8 Claims**
Int. Cl. C10m *5/14*

The present invention is directed to a process for the preparation of a lithium soap thickened grease composition containing a synthetic oil as the sole lubricating oil component by saponifying a saponifiable fatty material with a lithium saponifying agent in water at a temperature of 160–200° F., adding 23–41% by weight of synthetic lubricating oil based on the oil component of the finished grease, heating the resulting mixture at a rate of 0.7° F. or more per minute to 380–450° F. while adding 30–56% by weight of additional synthetic lubricating oil based on the oil component of the finished grease, maintaining the heated mixture at 380–450° F. while adding any additional synthetic oil and shearing the mixture.

3,428,563
ALKENYL SUCCINIMIDE-ANTIMONY DITHIOPHOSPHATE COMBINATIONS IN LUBRICANTS

Warren Lowe, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Oct. 24, 1967, Ser. No. 677,778

U.S. Cl. 252—32.7 **9 Claims**
Int. Cl. C10m *1/54, 3/48, 1/48*

Novel lubricant compositions containing combinations of alkenyl succinimide ashless detergents and antimony dihydrocarbyl dithiophosphates.

3,428,564
STABLE HIGHLY BASIC DISPERSIONS OF CALCIUM COMPOUNDS IN LIQUID LUBRICATING OILS

Claire Bluestein, Glen Rock, Wilfrid L. Lauze, Rutherford, and Bernard R. Bluestein, Glen Rock, N.J., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1966, Ser. No. 586,054

U.S. Cl. 252—33 **10 Claims**
Int. Cl. C10m *7/38, 5/22, 3/34*

Production of a stable colloidal dispersion of a calcium compound in a liquid lubricating oil composition comprising providing a fluid suspension of calcium methoxide in isobutanol; carbonating said suspension by adding carbon dioxide thereto to produce a carbonated complex suspended in the isobutanol, said complex being characterized by substantial insolubility in methanol or isobutanol or mixtures thereof, or in mineral oil; adding said isobutanol suspension of the carbonated complex, under conditions of agitation, to an essentially single phase oily solution containing a lubricating oil, an oil soluble sulfonic acid dispersing agent or a calcium salt thereof having a pH not less than about 7, isobutanol and water; effecting hydrolysis whereby to produce a colloidal dispersion of the hydrolyzed calcium salts; heating to effect stripping of volatiles therefrom; and then filtering to produce a clear filtrate having a base number not less than about 150.

3,428,565
LUBRICATING COMPOSITIONS

Robert L. Fischer, Trenton, N.J., assignor to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,625

U.S. Cl. 252—59 **12 Claims**
Int. Cl. C10m *5/10, 5/06*

Wire rope lubricating composition comprising 40 to 75% mineral oil, 20 to 50 wt. percent micro-crystalline wax and 0.1 to 20 wt. percent of a relatively crystalline poly-1-alkylene, such as polyethylene, having an average molecular weight of 5,000 to 100,000. The composition may contain other ingredients, such as anti-wear agents, extreme pressure additives, anti-rust additives or wetting agents and may be formed by mixing the ingredients together at temperatures of about 300° F. for a sufficient time to provide a fluid, homogeneous composition. The blended composition may be applied by conventional techniques, such as dripping, spraying or brushing and is preferably applied to the individual wires before they are closed into strands.

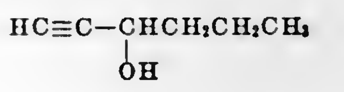
3,428,566
PROCESS OF CORROSION INHIBITION WITH 1-HEXYN-3-OL

Charles O. Herman, Fords, and John G. Funkhouser, New Brunswick, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 770,924, Oct. 31, 1958. This application July 7, 1966, Ser. No. 563,616

U.S. Cl. 252—146 **3 Claims**
Int. Cl. C11d *7/26, 7/08*

Effective corrosion inhibition of an aqueous hydrochloric acid solution having a concentration of at least 15% with respect to corrosion of a ferrous metal at a temperature of at least 82° C. with a minimum amount of corrosion inhibitor is effected by having present in the hydrochloric acid solution when it is in contact with the ferrous metal 0.1 to 0.2% by weight of 1-hexyn-3-ol which has the structural formula



$$HC\equiv C-\underset{\displaystyle OH}{\underset{|}{C}}HCH_2CH_2CH_3$$

3,428,567
STABILIZER FOR POLYOLS

Robert A. Newton, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 3, 1965, Ser. No. 506,257

U.S. Cl. 252—188.3 **3 Claims**
Int. Cl. C09k *3/00*

Phenothiazine is used as a stabilizer to prevent discoloration and deterioration of mixtures of aliphatic polyols and halogenated aliphatic hydrocarbons. It is particularly useful in formulations used to make polyurethane foams.

3,428,568
CATION EXCHANGE PROCESS

Robert I. Harker, State College, Pa., and Joseph P. Pellicane, Jr., Bound Brook, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,375

U.S. Cl. 252—301.1 **12 Claims**
Int. Cl. C02c *1/44*

1. The method of removing radioactive cations from radiation contaminated aqueous media comprising intimately contacting the radiation contaminated aqueous media containing radioactive cations with a cation exchange medium consisting essentially of mineral loughlinite.

3,428,569
ZINC SULPHIDE PHOSPHORS ACTIVATED BY PHOSPHORUS AND LEAD

Yoh Mita, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan

Filed Mar. 23, 1966, Ser. No. 536,922

Claims priority, application Japan, Mar. 25, 1965, 40/17,388

U.S. Cl. 252—301.6 **13 Claims**
Int. Cl. C09k *1/20, 1/12*

1. A zinc sulphide phosphor containing at least 0.01 mol percent of lead,
and at least 0.01 mol percent of phosphorus,
said amounts of phosphorus and lead being added as two coexistent activators.

3,428,570
TIRE INFLATOR GAS

Albert E. Daniels, Williamsville, N.Y., assignor to Impact Container Corporation, Alden, N.Y., a corporation of New York

No Drawing. Filed Dec. 9, 1966, Ser. No. 600,382

U.S. Cl. 252—372 **2 Claims**
Int. Cl. C09k *3/30, 3/00*

Gas composition which is a mixture of bromo trifluoro methane and 20 to 26% ethane; there may be additionally contained up to about 5% impurities in this mixture.

3,428,571
ADDITIVE FOR INHIBITING CAKING AND FREEZING OF SODIUM CHLORIDE AND FOR INHIBITING CORROSION IN THE PRESENCE OF SODIUM CHLORIDE BRINE

Charles H. Jacoby, Grosse Ile, and Frank V. Whelply, Dearborn, Mich., assignors to International Salt Company, Clarks Summit, Pa.

No Drawing. Filed May 10, 1966, Ser. No. 548,838

U.S. Cl. 252—383 **2 Claims**
Int. Cl. C09j *3/00*

A mixture of a block type copolymer of ethylene and propylene oxides, calcium chloride, sodium ferrocyanide decahydrate and an ammonium salt of an amido-polyphosphate as an additive for inhibiting caking and freezing of bulk particulate sodium chloride and for inhibiting corrosion which may occur incidental to the formation of brine solutions therefrom.

3,428,572
METHOD OF CATALYST PREPARATION

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,053

U.S. Cl. 252—436 **10 Claims**
Int. Cl. B01j *11/16*

A method of compositing a catalytic component with an inorganic oxide carrier material. A soluble compound of a catalytically active metal and a soluble sulfur-containing compound are admixed with an inorganic oxide hydrosol, the mixture being thereafter treated at conditions effecting gelation of the hydrosol.

3,428,573
OXIDATION CATALYSTS

Ronald E. Reitmeier, Middletown, Ky., and Daniel A. Hirschler, Jr., Birmingham, and Frances W. Lamb and Ruth E. Stephens, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia and Catalysts and Chemicals, Inc., Louisville, Ky., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,535

U.S. Cl. 252—455 **21 Claims**
Int. Cl. B01j *11/16*

Exhaust gas of internal combustion engines is oxidized by contact with a catalyst containing copper oxide and palladium on a three-component support made by acid peptization of a mixture of clay, alumina gel and crystalline alumina hydrate, followed by extrusion, drying and calcination.

3,428,574
CRYSTALLINE ZEOLITE

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 359,414, Apr. 13, 1964. This application Dec. 3, 1965, Ser. No. 511,340

U.S. Cl. 252—455 **17 Claims**
Int. Cl. B01j *11/40;* **C01b** *33/28*

Synthetic crystalline faujasite containing zeolites can be prepared in a process in which refractory oxide particles are contacted with, and aged in, a solution of an alkali metal compound, such as sodium aluminate, after which the pH of the solution is raised and the particles are again aged in a second aging step until the particle has substantially converted to a faujasite containing zeolite. The materials are useful as absorbents, catalysts and catalysts supports.

3,428,575
ALKALI ON A SUPPORT PROMOTED BY IRON OR IRON AND ANTIMONY IN SULFUR DIOXIDE REMOVAL

Franciscus W. Pijpers and Maria M. J. J. Starmans, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 19, 1964, Ser. No. 390,754. Divided and this application May 15, 1967, Ser. No. 649,400

Claims priority, application Netherlands, Oct. 3, 1963, 298,751

U.S. Cl. 252—464 **2 Claims**
Int. Cl. B01j *11/22;* **B01d** *53/00*

The removal of SO_2 from hot gaseous mixtures by an alkalized alumina, magnesia or chromia solid acceptor and the regeneration thereof is improved by incorporating a minor amount of iron oxide and, optionally, antimony oxide into the solid acceptor.

3,428,576

MANUFACTURE OF POLYMERIC DIGUANIDES

John David Dickinson, Francis Samuel Fowkes, and Trevor James Rose, Blackley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

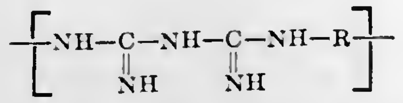
No Drawing. Filed Nov. 17, 1966, Ser. No. 595,005

Claims priority, application Great Britain, Nov. 26, 1965, 50,340/65

U.S. Cl. 260—2 **18 Claims**

Int. Cl. C08g *33/02;* **C07c** *129/16*

Manufacture of polymeric diguanides of the unit formula



$$\left[-NH-\underset{\underset{NH}{\|}}{C}-NH-\underset{\underset{NH}{\|}}{C}-NH-R-\right]$$

by reacting approximately equimolar proportions of a diamine or its inorganic acid salt with a diamine salt of dicyanimide, at least the initial part of the reaction being carried out in the presence of a hydroxylic liquid which is a solvent for the reactants. Alternatively, 2 equivalents of the diamine or its inorganic acid salt can be reacted with 1 equivalent of a salt of dicyanimide with a metal capable of being precipitated from the reaction mixture in the form of a compound insoluble therein.

3,428,577

FLAME-RESISTANT POLYURETHANE PLASTICS

Rudolf Merten and Otto Bayer, Leverkusen, Gunther Braun, Cologne-Flittard, and Hermann Kaiser, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 10, 1965, Ser. No. 431,720

Claims priority, application Germany, Feb. 14, 1964, F 42,005

U.S. Cl. 260—2.5 **9 Claims**

Int. Cl. C08g *22/44;* **C09k** *3/28*

Flame-resistant polyurethane plastics based on phosphorus containing hydroxyl compounds which are prepared by reacting a phosphorus acid, an alkylene oxide and an alpha, beta-unsaturated carboxylic acid. The phosphorus polyols lead to the production of cellular polyurethane plastics which have better flame-resistance and in addition the phosphorus polyol makes it possible to prepare cellular polyurethane plastics without the necessity for special mixing equipment or special precautions.

3,428,578

FLAME RESISTANT POLYURETHANE PLASTICS

Rudolf Merten, Leverkusen, Otto Bayer, Burscheid, Gunther Braun, Cologne, and Hermann Kaiser, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,949

Claims priority, application Germany Mar. 4, 1964, F 42,194

U.S. Cl. 260—2.5 **5 Claims**

Int. Cl. C08g *22/44;* **C09k** *3/28*

Flame-resistant polyurethane plastics which are based on phosphorous-containing polyols prepared from the reaction of a phosphorous acid with an alkylene oxide, an aldehyde and an aliphatic amine. The phosphorous polyols are reacted with organic polyisocyanates, if desired in the presence of a blowing agent, in order to prepare flame-resistant polyurethane plastics which have improved chemical properties including low brittleness, good adhesion, good pore structure and low tendency to shrink.

3,428,579

EXPANDABLE FINELY DIVIDED PLASTICS COMPOSITIONS

Erhard Stahnecker, Ziegelhausen, and Johannes Grohmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,619

Claims priority, application Germany, Apr. 1, 1964, B 76,141

U.S. Cl. 260—2.5 **9 Claims**

Int. Cl. C08f *47/08*

Expandable styrene polymer particles containing an expanding agent and obtained by coating with very small amounts of aqueous polymer dispersions and evaporating the water. The particles do not agglomerate during preexpansion and give moldings in which fusion of the particles is not impaired.

3,428,580

SELF-EXTINGUISHING ORGANOPOLYSILOXANE FOAMS

Siegfried Nitzsche, Rudolf Riedle and Gerhard Hombergsmeier, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

No Drawing. Filed Sept. 16, 1965, Ser. No. 487,914

Claims priority, application Germany, Sept. 18, 1964, W 37,575

U.S. Cl. 260—2.5 **10 Claims**

Int. Cl. C08g *47/02*

A self-extinguishing silicone resin foam consisting essentially of (1) an organosiloxane polymer free of hydrogen to silicon bonds, (2) a fluid organohydrogen siloxane polymer, (3) a hydroxyl group containing compound and (4) a catalyst.

3,428,581

RESINOUS MATERIAL, INTERMEDIATE AND PROCESSES OF MAKING THEM

Robert L. Purper, Levittown, Pa., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware, and Vulcanized Rubber and Plastics Company, Morrisville, Pa., a corporation of Maine

No Drawing. Filed Sept. 29, 1965, Ser. No. 491,410

U.S. Cl. 260—5 **9 Claims**

Int. Cl. C08d *7/02;* **H01b** *3/28;* **C08c** *11/18*

Resilient rubbery resins for use in electrical connectors having superior dielectric strength, light color, high resistance to heat, good size recovery after compression, substantial hardness, and superior tensile strength manufactured by curing with a peroxide crosslinking agent a mixture of a ethylene propylene terpolymer, an unsaturated elastomer such as styrene butadiene rubber and crosslinked polyethylene, having a filler of submicron silica and talc.

3,428,582

INTERPOLYMER AQUEOUS DISPERSIONS AND PAPER COATED THEREWITH

Oliver Des Deex, Clayton, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 6, 1966, Ser. No. 548,064

U.S. Cl. 260—8 **9 Claims**

Int. Cl. C09j *3/14;* **D21h** *3/38, 3/82*

Interpolymer latices, useful as pigment binders or adhesives in pigment coating compositions for paper, paper board and similar materials, selected from the group consisting of (a) an interpolymer containing about 15–70 percent ethylene, about 30–85 percent vinyl chloride and about 0.1–10 percent of at least one other polar monomer including at least 0.1–10 percent of acrylamide, and (b) interpolymers of the type described in (a) treated with an acid or base, said interpolymer latex being used either alone or in combination with paper coating starch or protein material.

3,428,583

METHOD OF FOAMING AND CROSSLINKING POLYOLEFINS USING POLYAZODIFORMATE COMPOUNDS

Henry R. Lasman, Wilmington, Mass., assignor to National Polychemicals, Inc., Wilmington, Mass., a corporation of Massachusetts

Filed Feb. 24, 1966, Ser. No. 529,826

U.S. Cl. 260—2.5 **5 Claims**

Int. Cl. C08f *47/08*

Cellular polyolefin resin products are prepared by incorporating into a thermoplastic polyolefin resin an amount ranging from 0.5 to 20 parts of a polyazodiformate compound per 100 parts of the resin and heating the mixture to obtain a thermoset resin.

3,428,584

FREEZE-DRIED MEMBRANE AND METHOD OF TREATING SAME

Robert L. Riley, San Diego, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

No Drawing. Filed July 15, 1965, Ser. No. 472,304

U.S. Cl. 260—15 **12 Claims**

Int. Cl. C08b *21/16, 29/30*

A process for making improved osmotic membranes from an organic solution of a cellulose derivative and a swelling agent by casting a tin layer followed by immersion in water. The solute-rejection capability of the osmotic membrane can be improved 40 percent or more by freeze-drying. The freeze-drying process also provides a dry osmotic membrane that can be stored indefinitely prior to rehydration. The cellulose derivative osmotic membrane can be made useful for separation of solutions containing organic solvents by rendering it insoluble thereto by means of cross-linking the cellulose. The formed osmotic membrane is treated with a suitable cross-linking agent either prior to or subsequent to a suitable drying process, the cross-linking either being performed simultaneously with the drying or subsequent thereto, as by heating.

3,428,585

ALIPHATIC GUANAMINE-FORMALDEHYDE RESINS

Barry Schuller, Florham Park, and August J. Specht, Madison, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Dec. 4, 1963, Ser. No. 328,110, now Patent No. 3,288,902, dated Nov. 29, 1966. Divided and this application Oct. 21, 1965, Ser. No. 515,274

U.S. Cl. 260—17.3 **2 Claims**

Int. Cl. C08g *51/18, 37/24*

Molding powder consisting essentially of from 63% to 79.4% by weight of an aliphatic guanamine-formaldehyde reaction product, from 0.5–5% of an acid accelerator, from 20% to 30% by weight of cellulosic filler, and from 0.1 to 2% by weight lubricant; molding said powder at 300–400° F., and molding time between 30 seconds and 5 minutes, with controlled correlation between accelerator concentration and molding time to give articles with improved coffee-stain resistance; up to above 35% melamine may be substituted for the guanamine.

3,428,586

WATER DISPERSIBLE COATING COMPOSITION AND USE OF SAME IN ELECTROCOAT PAINTING

Carlton E. Coats, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,073

U.S. Cl. 260—22 **16 Claims**

Int. Cl. C08g *39/08;* **C09d** *3/64;* **B05b** *5/02*

A vehicle for coating compositions comprising a blend of resins which comprises:

- (A) as a major component, 65 to 95 weight percent of a polycarboxylic acid resin product prepared by heating
  - (1) an alpha, beta-ethylenically unsaturated acid or anhydride,
  - (2) an oil comprising a natural drying oil modified with a polymerizable, ethylenically unsaturated monomer, and
  - (3) a low molecular weight alcohol until the resulting polycarboxylic acid resin has a viscosity of greater than 15 stokes, and
- (B) as a minor component, 5 to 35 weight percent of a polycarboxylic acid anhydride resin prepared by heating
  - (1) an alpha, beta-ethylenically unsaturated anhydride and
  - (2) an oil selected from the group consisting of natural drying oils and natural drying oils modified with polymerizable, ethylenically unsaturated materials

until the resulting polycarboxylic acid anhydride resin exhibits an increase in viscosity.

These blends of resins find particular utility in electrocoat painting.

3,428,587

METHOD OF PREPARING LINEAR CONDENSATION POLYESTER RESINS HAVING IMPROVED STABILITY

Aleksander Piirma, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 369,605, May 22, 1964. This application Mar. 13, 1968, Ser. No. 712,865

U.S. Cl. 260—22 **6 Claims**

Int. Cl. C08g *51/62, 39/04*

Linear condensation polyesters having improved stability are produced through polycondensation of glycol esters of at least one organic dicarboxylic acid by heating the same under reduced pressure in the presence of a stabilizing amount of an alkali or alkaline earth metal salt of a lower aliphatic carboxylic acid.

3,428,588

SALTS OF PARTIAL FATTY ESTERS OF CARBOXYLIC POLYMERS USEFUL IN AQUEOUS COATING COMPOSITIONS

Martin Skoultchi, New York, N.Y., and Joseph Fertig, Elizabeth, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,818

U.S. Cl. 260—23 **8 Claims**

Int. Cl. C08f *27/12;* **C09d** *3/74*

A method for preparing air-drying, crosslinkable resin compositions and the compositions thus prepared, comprising the process of reacting a vinyl polymer containing anhydride groups within its molecule with an ester-alcohol derived from an unsaturated fatty acid.

3,428,589

ELECTROCOATING COMPOSITIONS COMPRISING AROMATIC AMINE AMIDATED DRYING OIL COPOLYMER-MALEIC ANHYDRIDE ADDUCTS

Carlton E. Coats, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Sept. 30, 1965, Ser. No. 491,889

U.S. Cl. 260—23.7 **6 Claims**

Int. Cl. C08g *20/26;* **C09d** *5/02*

A water-dispersible resinous composition is provided for use in the electrodeposition of coatings thereof onto metallic surfaces basically composed of an adduct of a drying oil or copolymer thereof, and a dicarboxylic anhydride of which the carboxyl groups contained by said adduct are partially amidated with an aromatic amine and the balance of said groups neutralized to a partial extent with an alkanolamine.

3,428,590

PROCESS FOR THE PRODUCTION OF TRIOXANE COPOLYMERS

Yoshiaki Yamase, Tokyo, and Teruo Kutsuma, Kawasaki, Japan, assignors to Yawata Chemical Industry Co., Ltd., Tokyo, Japan

Filed Jan. 18, 1966, Ser. No. 521,289

Claims priority, application Japan, Jan. 22, 1965, 40/2,997, 40/2,998; Mar. 3, 1965, 40/16,895; Apr. 6, 1965, 40/19,720

U.S. Cl. 260—67 **10 Claims**

Int. Cl. C08g *1/04, 1/12*

The present invention relates to an improvement in a process for production of trioxane copolymers, cationically copolymerized with a copolymerizable monomer in the presence of sulfone, cyclic carboxylic anhydride or cyclic oxalic ester, for example, dimethylsulfone, tetrahydrothiophene-1,1-dioxide, succinic anhydride, diglycolic anhydride, and ethylene oxalate, which accelerates the copolymerization reaction and increases the yield and molecular weight of the resultant copolymer.

3,428,591

WAX COMPOSITIONS CONTAINING GRAFT POLYMER OF POLYETHYLENE AND TO PAPERBOARDS COATED THEREWITH

Walter E. F. Lewis, Stamford, Conn., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 30, 1968, Ser. No. 701,563

U.S. Cl. 260—28.5 **11 Claims**

Int. Cl. C08f *45/52;* **B32b** *23/08*

This invention relates to coated paperboards and to coating compositions containing wax and a polyethylene graft polymer which impart superior wet strength properties when applied to paperboard. The graft polymer is prepared by reacting a polyethylene with maleic anhydride. It contains from 0.1 to 5 percent by weight maleic anhydride. The amount of graft polymer utilized in the coating compositions ranges from 0.1 to 4 percent by weight.

3,428,592

POLYISOCYANATE EMULSIONS

Mortimer Alexander Youker, Clearwater, Fla., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 24, 1966, Ser. No. 552,427

U.S. Cl. 260—29.2 **6 Claims**

Int. Cl. C08g *41/02*

Aqueous dispersions of aromatic isocyanates having an isocyanato function of at least two are prepared by dissolving the isocyanate in an N-alkylated amide of an aliphatic carboxylic acid or an N-alkylated sulfonamide, both the amide and sulfonamide having from 6 to 25 carbon atoms, and subsequently dispersing said isocyanate solution in water having a stabilizing amount of an emulsifying agent dispersed therein.

3,428,593

HIGH EFFICIENCY STABLE LIQUID PHENOL-FORMALDEHYDE RESIN

Harold P. Higginbottom and John R. Le Blanc, Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 2, 1965, Ser. No. 460,825

U.S. Cl. 260—29.3 **6 Claims**

Int. Cl. C08g *5/06*

Stable, high efficiency, single phase, aqueous phenol-formaldehyde resins and process for making same by reacting phenol and formaldehyde under controlled reaction conditions and a controlled excess of free formaldehyde.

3,428,594

RESINOUS COMPOSITION WITH FLUORINATED ANTIMIGRATION AGENT

Donald E. Lovness, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

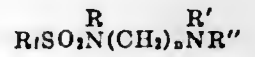
No Drawing. Division of application Ser. No. 126,444, July 14, 1961, now Patent No. 3,245,817. Continuation of application Ser. No. 461,575, May 6, 1965. This application Jan. 25, 1968, Ser. No. 700,653

U.S. Cl. 260—31.8 **5 Claims**

Int. Cl. C08f *45/48;* **C09d** *5/00*

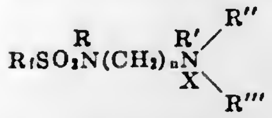
1. A substantially solid unitary mass comprising a mixture of a solid linear vinyl chloride polymer containing no fluorine and having a melting point of at least 50° C., between about 1 and about 90 weight percent of a relatively lower molecular weight nonfluorinated oleaginous carboxylic or phosphate ester plasticizer compatible with said resin and being liquefiable at a temperature at which said resin is solid, whereby it has a tendency to migrate to surface of said mass, and between about 5 and about 1000 parts per million of an organic antimigration compound soluble in said lower molecular weight oleaginous material in the latter's liquid state selected from the group consisting of

(a)

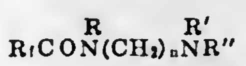


$R_fSO_2\overset{R}{N}(CH_2)_n\overset{R'}{N}R''$

(b)

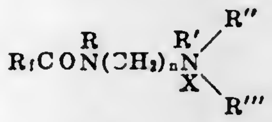


(c)

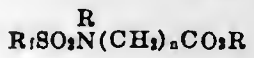


$R_fCO\overset{R}{N}(CH_2)_n\overset{R'}{N}R''$

(d)



(e)



$R_fSO_2\overset{R}{N}(CH_2)_nCO_2R$

(f) R_fCO_2R'

in which R_f is a fluorinated alkyl radical containing a perfluoro terminal group having at least 4 and not more than 12 carbon atoms, R is selected from the group consisting of a hydrocarbon alkyl radical of not more than 6 carbon atoms and hydrogen, R', R'' and R''' are nonfluorinated organic radicals of 1 to 12 carbon atoms and at least one of which is a hydrocarbon alkyl radical, X is a halogen selected from the group consisting of bromine, iodine and chlorine, and *n* is an integer from 1 to 6.

3,428,595

METHOD OF PREPARING ANTISTATIC MOLDED ARTICLES OF SYNTHETIC RESIN

Tomomichi Tsukada, Kawasaki-shi, Kimiaki Kabuki, Tokyo, and Tokuo Nakazawa, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

No Drawing. Filed Apr. 1, 1966, Ser. No. 539,285

Claims priority, application Japan, Apr. 7, 1965, 40/20,014, Patent 41–3209

U.S. Cl. 260—41 **2 Claims**

Int. Cl. C08f *45/04;* **C08c** *11/10*

This disclosure relates to the manufacture of molded synthetic resin articles wherein a zeolitic substance or the combination of a zeolitic substance and colloidal silica or colloidal alumina are added to the synthetic resin to reduce semipermanent electrostatic charging of the final molded product.

3,428,596

RUBBER COMPOSITION OF CONJUGATED DIENE RUBBER CONTAINING A NON-REINFORCING FILLER MATERIAL AND A NITROGEN FUNCTIONAL STYRENE-MALEIC ANHYDRIDE RESIN BRIDGING AGENT

Robert C. Strand and Donald L. Marion, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,458

U.S. Cl. 260—41.5 **10 Claims**

Int. Cl. C08d *9/10;* **C08c** *11/12, 11/18*

This invention provides rubber compositions comprising a major amount of conjugated diene rubber, a non-reinforcing filler material and a small amount of a diene-soluble, nitrogen-functional styrene-maleic anhydride resin as a bridging agent. This bridging agent is the reaction product of a monoamine, such as octadecylamine, and a polyamine, such as diethylaminopropylamine or tetraethylenepentamine, with a polymer resin of a monovinyl monomer of 2–12 carbon atoms, such as styrene, and maleic anhydride. Only a small amount of the bridging agent is necessary, such as .1 to 5% by weight, to obtain improvement in tensile strength, modulus, and tear strength of the rubber composition.

3,428,597

STABILIZATION OF POLYAMIDES

Gerardus P. Dikötter, Geleen, and Arnoldus A. W. Schaapveld and Pierre J. Franssen, Stein, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,486

Claims priority, application Netherlands, Feb. 2, 1965, 6501290

U.S. Cl. 260—45.75 **6 Claims**

Int. Cl. C08g *51/58, 51/62;* **C07f** *9/28*

Stabilizers for polyamide compositions are disclosed, composed of the complex compounds of cuprous iodide and a hydrocarbon phosphine or phosphite compound.

3,428,598

POLYURETHANE ELASTOMER COMPOSITIONS

Kanji Matsubayashi and Hiroyuki Segawa, Kurashiki, Japan, assignors to Kurashiki Rayon Co. Ltd., Kurashiki, Japan

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,234

Claims priority, application Japan, Sept. 15, 1965, 40/56,557; Sept. 16, 1965, 40/56,831

U.S. Cl. 260—45.75 **5 Claims**

Int. Cl. C08g *51/58, 51/04*

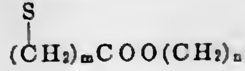
Polyurethane elastomers otherwise subject to yellowing upon exposure to heat and atmospheric gases are stabilized by incorporating therewith from 0.01 to 10% by weight, based upon the elastomer, of a sulfur-containing compound selected from the group consisting of

(i) $CH_3(CH_2)_nS(CH_2)_mOH$

(ii) $CH_3(CH_2)_nS(CH_2)_mCOOH$

(iii) $CH_3(CH_2)_mS(CH_2)_mCOO(CH_2)_nCH_3$

(iv)



and

(v) $HO(CH_2)_mS(CH_2)_nCOOH_3$

wherein *m* is an integer of from 1 to 5, and *n* is an integer of from 6 to 30, and from 0.01 to 10% by weight, based upon the elastomer, of titanium dioxide.

3,428,599

METHOD FOR PREPARING, WITHOUT PREMATURE GELATION, ORGANOPOLYSILOXANE

Charles W. Newing, Jr., Sylvania, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed May 24, 1965, Ser. No. 458,378

U.S. Cl. 260—46.5 **9 Claims**

Int. Cl. C08g *31/06, 47/04*

Methods of preparing, without premature gelation, organopolysiloxanes from organotrialkoxysilane monomers. Premature gelation is prevented by controlling the acidity of the polymers during the precuring step by means of a silazane such as hexamethyldisilazane. The resultant organopolysiloxanes have a shelf life previously not obtainable and are capable of being cured to provide hard, solid castings and coatings.

3,428,600

CARBONATE POLYMER SYNTHESIS

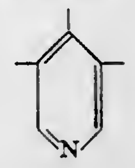
Robert C. Sullivan, Chappaqua, N.Y., and Markus Matzner, Highland Park, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 18, 1965, Ser. No. 465,183

U.S. Cl. 260—47 **10 Claims**

Int. Cl. C08g *17/13*

In the preparation of carbonate polymer resin by the reaction of a diol reactant with a difunctional chloroformate reactant the improvement of conducting the reaction in the presence of a particulate insoluble solid resin containing in its structure the moiety



wherein the resin is present in the reaction in an amount at least sufficient to bind the acid generated by the polymerization reaction.

3,428,601

METHOD OF CONVERTING AN EPOXY RESIN INTO THE INFUSIBLE STATE

Rinse Dijkstra and Pieter Hans Pasman, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 9, 1967, Ser. No. 621,790

Claims priority, application Netherlands, Mar. 19, 1966, 6,603,638

U.S. Cl. 260—47 **5 Claims**

Int. Cl. C08g *43/00, 51/84*

Use of diethylene tetramethylene-tetramine mixed with an aromatic compound containing at least one nuclear bound hydroxy group as harder for epoxy resins. An example is the epoxy resin formed from diphenylolpropane and epichlorohydrin mixed with p-nonylphenol and diethylene tetramethylene tetramine. This abstract is not intended to be a description of the invention defined by the claims.

3,428,602
PROCESS OF MAKING THICK POLYIMIDE STRUCTURES

James R. Haller, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 520,165, Jan. 12, 1966. This application June 13, 1967, Ser. No. 645,798
U.S. Cl. 260—47 **8 Claims**
Int. Cl. C08g *20/32, 53/00*

Polyimide articles with relatively thick cross sections are prepared by subjecting a dilute solution of the polyamide acid precursor to a shearing action at an elevated temperature below the heat curing temperature to remove most of the solvent therein, then increasing the temperature to drive off the remaining solvent and convert the polyamide acid into the polyimide.

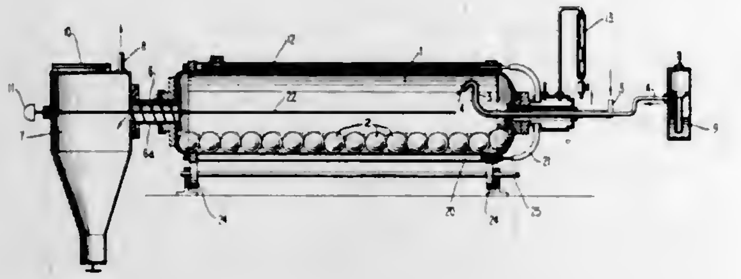
3,428,603
PROCESSING AIDS IN PREPARATION OF NBR FLEXIBLE MAGNETS

William J. Kroenke, Brecksville, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 16, 1967, Ser. No. 609,358
U.S. Cl. 252—62.54 **2 Claims**
Int. Cl. H01f *1/11, 1/113, 1/117*

Alkyl amine salts of alkyl iminopolyacetic acids and derivatives thereof assist in the combination of large volumes of fine barium ferrite particles with butadiene-acrylonitrile synthetic rubber polymers. The heavily loaded rubber stocks are then readily extruded into solid shapes for use as flexible magnets.

3,428,604
GAS PHASE MANUFACTURE OF POLYFORMALDEHYDE

Henri Jean, Berthaud a Palaiseau, and Claude Thibault, Saint-Mande, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Oct. 6, 1960, Ser. No. 60,956
Claims priority, application France, June 14, 1960, 829,971
U.S. Cl. 260—67 **6 Claims**
Int. Cl. C08f *3/40*



1. A method of polymerizing formaldehyde in the absence of a liquid medium that comprises filling a reaction space from 1/10 to 1/4 full of grains of finely divided polyformaldehyde, maintaining the grains in constant motion with respect to one another, bringing gas phase formaldehyde into the reaction space and into contact with the grains in admixture with a vapor comprising a tertiary amine catalyst for formaldehyde polymerization in a proportion of 1–15 moles of amine for 3000 moles of monomer at a temperature between −80 and +80° C.

3,428,605
STABILIZATION OF OXYMETHYLENE COPOLYMERS

Eldred T. Smith, Corpus Christi, Tex., and Walter E. Heinz, Frankfurt am Main, Germany, assignors to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Sept. 30, 1964, Ser. No. 400,585
U.S. Cl. 260—67 **2 Claims**
Int. Cl. C08f *3/40*

Disclosed herein is a process for stabilizing oxymethylene polymers. The polymers are stabilized through the use of hydrolysis. The improvement disclosed herein comprises the use of a trioxane containing hydrolysis medium.

3,428,606
COPOLYMERS OF FORMALDEHYDE AND A MIXTURE OF DICARBONALS

Henri Sidi, Paramus, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 389,196, Aug. 12, 1964, now Patent No. 3,372,146, dated Mar. 5, 1968. This application Feb. 1, 1966, Ser. No. 523,954
U.S. Cl. 260—67 **13 Claims**
Int. Cl. C08g *1/04, 1/12*

Di(alkoxymethyl)dicarbonals and di(hydroxymethyl)-dicarbonals are polymerized with formaldehyde or its cyclic trimer trioxane to form polyacetal resins that contain randomly-occurring oxymethylene groups and randomly-occurring groups derived from these dicarbonals. These new polymers are particularly suitable for molding applications and may be fabricated into films, filaments, fibers, rods and tubes.

3,428,607
PROCESS FOR THE PREPARATION OF FINELY DIVIDED, INSOLUBLE AND INFUSIBLE MELAMINE-FORMALDEHYDE CONDENSATION PRODUCTS

Alfred Renner, Allschwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Jan. 11, 1966, Ser. No. 519,963
Claims priority, application Switzerland, Feb. 12, 1965, 1,964/65
U.S. Cl. 260—67.6 **12 Claims**
Int. Cl. C08g *9/30, 53/02*

A process for the preparation of finely divided infusible and insoluble melamine-formaldehyde condensation products of mean particle size below 1 micron, characterized by reacting—preferably at an elevated temperature—an aqueous solution of melamine and formaldehyde, preferably having a molar ratio of 1.5 to 6 mols of formaldehyde per 1 mol of melamine, or an aqueous solution of a precondensate of melamine and formaldehyde, in the presence of a protective colloid, in the pH range of 6.0 to 8.0, until a solid phase is formed. The products are useful as reinforcing fillers in natural and synthetic rubbers and in thermoplastics.

3,428,608
THERMAL STABILITY TREATMENT OF OXYMETHYLENE POLYMERS WITH ETHYLENE IMINE GROUP-CONTAINING COMPOUNDS

James Hofton, Stonnall, near Walsall, William Henry Vickers, Sutton Coldfield, and Anthony Woodward, Smethwick, England, assignors, by mesne assignments, to British Industrial Plastics Limited, Manchester, England
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,654
Claims priority, application Great Britain, Aug. 18, 1964, 33,685/64; Nov. 23, 1964, 47,554/64
U.S. Cl. 260—67.5 **23 Claims**
Int. Cl. C08g *9/24*

A process for improving the thermal stability of oxymethylene copolymers comprises reacting the copolymers at temperatures above 130° C. with ethylene imine group-containing compounds.

3,428,609
POLYURETHANE COATING COMPOSITIONS AND PROCESS OF MAKING SAME

Kenneth William Chilvers and Gordon Trappe, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 14, 1966, Ser. No. 533,829
Claims priority, application Great Britain, Mar. 15, 1965, 10,767/65
U.S. Cl. 260—75 **4 Claims**
Int. Cl. C08g *22/08, 22/18*

A process for the manufacture of a solution in an organic solvent of a polyurethane which comprises the steps of (1) interacting in an organic solvent which is inert to isocyanate groups a mixture of a substantially linear polymeric polyol of molecular weight within the range 800 to 5,000, and a branched polymeric polyol and/or low molecular weight polyol and an amount of an organic diisocyanate compound providing 0.95 to 1.3 isocyanate groups for each hydroxyl group present, until the resultant solution has a viscosity of from 1 to 1,500 poises at 25° C., and (2) thereafter adding a compound containing two or more hydroxyl groups in amount such that there are at least two hydroxyl groups for each isocyanate group unreacted at the end of step (1).

3,428,610
POLYURETHANES PREPARED FROM AROMATIC AMINES HAVING ALKYL GROUPS IN THE ORTHO POSITIONS TO THE AMINE GROUPS

Wolfgang Klebert, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 10, 1966, Ser. No. 548,858
Claims priority, application Germany, May 14, 1965, F 46,056
U.S. Cl. 260—75 **5 Claims**
Int. Cl. C08g *22/04*

Cross-linked polyurethanes are prepared by reacting (1) one equivalent of an intermediate containing between 0.5 percent and 15 percent free NCO groups with (2) between 0.8 and 1.2 equivalents of an aromatic diamine having (i) one linear alkyl substituent of 1 to 3 carbon atoms in an ortho position to one amino group and two linear alkyl substituents of 1 to 3 carbon atoms in both ortho positions to the other amino group, or (ii) two linear alkyl substituents of 1 to 3 carbon atoms in both ortho positions of both amino groups.

3,428,611
VISCOSITY CONTROL OF SPANDEX SOLUTIONS

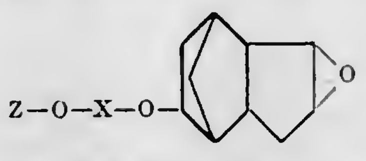
Thomas K. Brotherton and John Smith, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,797
U.S. Cl. 260—75 **8 Claims**
Int. Cl. C08g *22/04, 53/14*

A small controlled amount of water is reacted with an isocyanate-terminated prepolymer prior to the addition of diamine extender in order to regulate the viscosity of the final product.

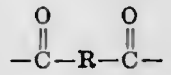
3,428,612
DIEPOXIDE COMPOSITIONS

Samuel W. Tinsley, South Charleston, Paul S. Starcher, Charleston, and Charles W. McGary, Jr. and Charles T. Patrick, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 5, 1960, Ser. No. 60,587
U.S. Cl. 260—78.4 **24 Claims**
Int. Cl. C08g *30/12;* **C07d** *1/00*

1. A diepoxide characterized by the general formula:



wherein Z is selected from the group consisting of (1) vicinal-epoxyalkyl radical having from 3 to 18 alkyl carbon atoms and in which the vicinal epoxy group is at least one carbon atom removed from the appropriate oxygen atom shown in the above formula, (2) vicinal-epoxycycloalkyl having from 5 to 7 carbon atoms in the cycloalkyl ring and in which the vicinal epoxy group is at least one carbon atom removed from the appropriate oxygen atom shown in the above formula, (3) vicinal-epoxycycloalkyl having from 5 to 7 carbon atoms in the cycloalkyl ring and in which the alkyl moiety contains up to 7 carbon atoms, (4) a 3-oxatricyclo[3.2.1.$0^{2,4}$]oct-6-yl radical, (5) a 3-oxatricyclo[3.2.1.$0^{2,4}$]oct-6-ylalkyl radical having up to 7 carbon atoms in the alkyl moiety; and wherein X is selected from the group consisting of (a) carbonyl, and (b) the unit,



$$-\overset{O}{\overset{\|}{C}}-R-\overset{O}{\overset{\|}{C}}-$$

in which R represents the residue after removal of the two carboxy groups of a hydrocarbon dicarboxylic acid.

3,428,613
METHOD FOR SYNTHESIS OF ADDUCTS

John E. Harris, Hyde Park, Mass., and Clifford N. Matthews, St. Louis, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,309
U.S. Cl. 260—78.4 **8 Claims**
Int. Cl. C08f *3/74;* **C07c** *121/30, 121/02*

A method for synthesizing adducts of tetracyanoethylene with amines. The method involves the reaction of tetracyanoethylene with tertiary amines to produce adducts which can be pyrolyzed to produce heat stable polymers useful as heat-stable materials of construction.

3,428,614
ANAEROBIC ADHESIVE

Arthur M. Brownstein, Morristown, N.J., assignor to Princeton Chemical Research, Inc., Princeton, N.J.
No Drawing. Filed Sept. 28, 1966, Ser. No. 582,537
U.S. Cl. 260—77.5 **19 Claims**
Int. Cl. C08g *17/10;* **C09j** *3/16*

1. A composition suitable for use as an anaerobic adhesive comprising a mixture of (1) a diester of a dicarbamic acid, wherein the alcoholic moiety of said ester contains a carbonyl group in conjugation with an olefinic unsaturation; and (2) a mono-ester of a polycarboxylic acid, wherein the alcoholic moiety of said ester contains a carbonyl in conjugation with an olefinic unsaturation.

3,428,615

DETERGENT COPOLYMER ACYL AMIDO ALKYL ETHERS OF POLYALKYLENE GLYCOL

Frank A. Stuart, Walnut Creek, William T. Stewart and Warren Lowe, El Cerrito, and Frank W. Kavanagh, Walnut Creek, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Application Apr. 21, 1958, Ser. No. 729,560, which is a division of application Ser. No. 821,686, June 22, 1959, which is a division of application Ser. No. 197,839, May 28, 1962, which is a division of application Ser. No. 427,159, Jan. 21, 1965. Divided and this application Aug. 21, 1967, Ser. No. 661,837

U.S. Cl. 260—86.1 **4 Claims**

Int. Cl. C10m *1/28, 1/36*

1. An oil-soluble polymer of (A) polymerizable oil-solubilizing compounds having a single ethylenic linkage and containing a monovalent hydrocarbon group of from 4 to 30 aliphatic carbon atoms and (B) at least one ethylenically unsaturated acyl amido alkyl ether of polyalkylene glycol selected from the group consisting of polyalkylene glycols having a molecular weight between about 220 and 30,000, and from 2 to 7 carbon atoms in each alkylene group and monoalkyl ethers thereof, said acyl group having from 3 to 20 carbon atoms and said amido alkyl group having from 2 to 7 carbon atoms, said (A) component constituting from about 40 to 96% by weight and said (B) component constituting a total of from about 4 to 60% by weight of the polymer composition, there being present at least one monomer of said (B) component and said polymer being substantially saturated and having a molecular weight of at least 50,000 as determined by standard light scattering methods and a solubility in oil of at least 0.5% by weight, said polyglycols having at least 5 alkylene oxide units each and being attached by a single amino group to said polymer.

3,428,616

REGENERATIVE POLYMERIC GRIGNARD COMPOSITIONS

Albert H. Greer, Haddonfield, N.J., and Marvin P. Weaver, Parkersburg, W. Va., assignors to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York

Filed May 9, 1966, Ser. No. 548,731

U.S. Cl. 260—88.3 **12 Claims**

Int. Cl. C08f *27/04, 27/02, 15/02*

A solid chemically stable polymeric Grignard composition, consisting of the reaction product of a crosslinked polymer containing a plurality of ether, tertiary nitrogen, or N-oxide groups with a Grignard compound This composition is prepared by reacting one mol of a Grignard compound with about 0.1 to about 1 gram equivalent of the polymer, the gram equivalent being based on the ether, tertiary nitrogen or N-oxide groups.

3,428,617

CATIONIC HYDROXY-CONTAINING POLYMERS, PREPARATION AND USE

Igor Sobolev, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 354,163, Mar. 23, 1964. This application Oct. 19, 1964, Ser. No. 404,963

U.S. Cl. 260—89.5 **10 Claims**

Int. Cl. C08f *3/62*

1. A cationic hydroxy-containing homopolymer of an ester of an alkenoic acid containing from 3 to 6 carbon atoms and glycidyl trialkylammonium chloride wherein each of the alkyl radicals contains from 1 to 12 carbon atoms, said cationic hydroxy-containing polymer having an intrinsic viscosity ranging from 0.3 dl./g. to 5.0 dl./g. as determined in 0.5 M NaCl at 25° C.

3,428,618

PROCESS FOR POLYMERIZING FLUOROOLEFINS WITH A CYCLIC AZO AMIDINE FREE RADICAL INITIATOR

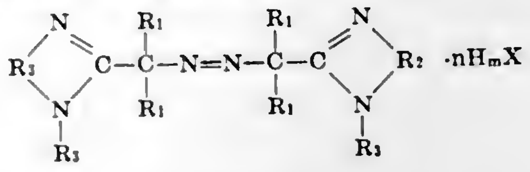
Jack E. Cook, New Brighton, Minn., and Oren L. Marrs, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 10, 1965, Ser. No. 454,717

U.S. Cl. 260—92.1 **10 Claims**

Int. Cl. C08f *3/22*

Fluoroolefin monomers are polymerized using a cyclic amidine initiator of the formula



$$R_3\begin{smallmatrix}N\\ \\ N\\ |\\ R_3\end{smallmatrix}C-\overset{R_1}{\underset{R_1}{\overset{|}{\underset{|}{C}}}}-N=N-\overset{R_1}{\underset{R_1}{\overset{|}{\underset{|}{C}}}}-C\begin{smallmatrix}N\\ \\ N\\ |\\ R_3\end{smallmatrix}R_2\cdot nH_mX$$

3,428,619

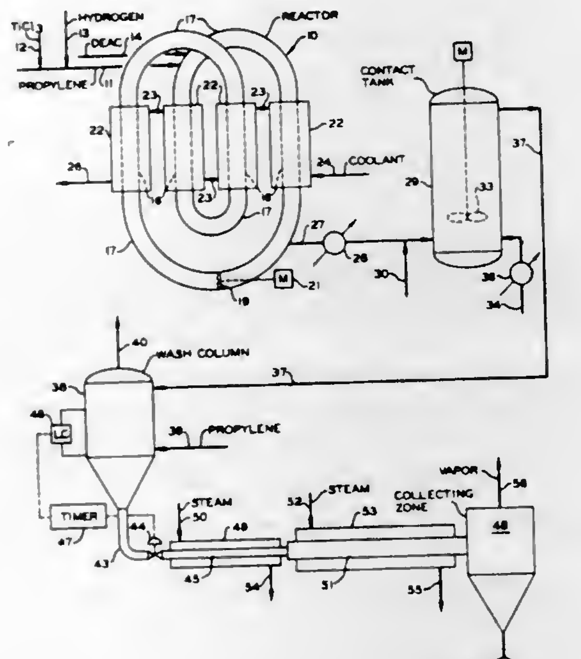
SUSPENSION HANDLING

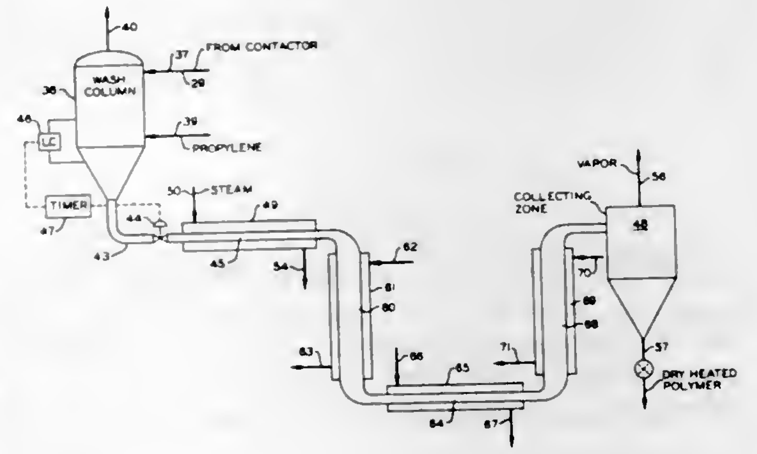
Harold M. Hawkins and Don C. Christensen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

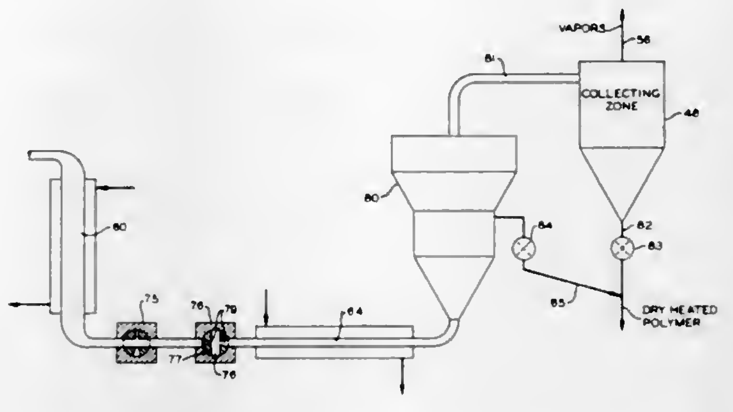
Filed May 27, 1965, Ser. No. 459,338

U.S. Cl. 260—93.7 **8 Claims**

Int. Cl. F26b *3/00;* **B01d** *43/00*







A method and apparatus for transferring a suspension of particles in a liquid from a zone of elevated pressure to a zone of lower pressure wherein the liquid is substantially vaporized and the particles dried during the transferring by use of a plurality of externally heated zones of varying size and by controlling the rate of flow of materials through the zones.

3,428,620

ANTHRAQUINONE AZO BARBITURIC ACID DERIVATIVE DYES

Willy Braun, Heidelberg, and Ingo Paetzke, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,352

Claims priority, application Germany, Feb. 23, 1965, B 80,663; June 9, 1965, B 82,321; Aug. 3, 1965, B 83,115

U.S. Cl. 260—154 **6 Claims**

Int. Cl. C07c *49/68;* **C09b** *29/24*

Pigment dyes of the anthraquinone azo series in which the coupling component is barbituric acid, thiobarbituric acid, barbiturimide or thiobarbiturimide. The compounds are yellow pigments of good color strength and outstanding light fastness.

3,428,621

THIADIAZOLYL MONOAZO DYESTUFFS

David J. Wallace and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 26, 1965, Ser. No. 474,964

U.S. Cl. 260—158 **9 Claims**

Int. Cl. C09b *49/12*

Thiadiazolyl-azo-aniline compounds having a di(acyl)-amidoalkyl group attached to the aniline nitrogen atom are useful as dyes for hydrophobic fibers.

3,428,622

WATER-INSOLUBLE PHENYL AZO PHENYL DYES

Ruedl Altermatt, Tecknau, Basel-Land, and Curt Mueller, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Jan. 13, 1966, Ser. No. 520,396

Claims priority, application Switzerland, Jan. 14, 1965, 519/65

U.S. Cl. 260—207 **12 Claims**

Int. Cl. C09b *29/12;* **D06p** *1/02*

Water-insoluble 2,4 - dinitro-6-alkylsulfonylphenyl-azo-3′-alkoxy-4′-(N-alkyl-N-acyloxy-, alkoxycarbonyl- or alkoxycarbonyloxy-alkylamino)benzenes, substituted in the 5′-position with either alkyl, alkoxy, acylamino, alkoxycarbonylamino, aralkoxycarbonylamino or aryloxycarbonylamino, are disperse dyes.

3,428,623

COUMARIN DERIVATIVES

John G. Keil, Manlius, and Irving R. Hooper, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 583,984, Oct. 3, 1966. This application Nov. 2, 1966, Ser. No. 591,451

U.S. Cl. 260—210 **19 Claims**

Int. Cl. C07g *3/00;* **C12k** *1/00;* **A61k** *21/00*

The cleavage of the antibiotic substances coumermycin A_1 and A_2 with an acylating agent of the benzoic acid series produces new benzoyl derivatives of the parent coumermycin that possess potent antibacterial activity.

The compounds and the process as practiced herein are typified by the reaction of ditetrahydropyranylcoumermycin A_1 with benzoyl chloride to produce N-benzoyl-3-amino-4-hydroxy-8-methyl-7-[3-0-(5-methyl - 2 - pyrrolylcarbonyl)novisoyloxy]coumarin.

3,428,624

CALCIUM SUGAR PHOSPHATE PROCESS

Arthur D. F. Toy, Stamford, Conn., assignor, by mesne assignments, to The Colonial Sugar Refining Company Limited, Sydney, Australia, a corporation of Australia

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,492

U.S. Cl. 260—234 **7 Claims**

Int. Cl. C08b *19/00*

Process for producing calcium sugar phosphate reaction products containing substantially no calcium chloride and being substantially less hygroscopic than calcium sugar phosphates hitherto available. The process involves introducing a sodium phosphate into a solution obtained by the reaction in solution of sugar, phosphorus oxychloride and a calcium oxy-compound, and thereafter recovering the reaction product.

3,428,625

PROCESS FOR THE CONTINUOUS MANUFACTURE OF LAUROLACTAM IN THE LIQUID PHASE

Gunther Strauss, Marl, Germany, assignor to Chemische Werke Huls A.G., Marl, Germany

No Drawing. Filed Sept. 23, 1966, Ser. No. 581,455

Claims priority, application Germany, Oct. 1, 1965, C 37,024

U.S. Cl. 260—239.3 **7 Claims**

Int. Cl. C07d *41/06*

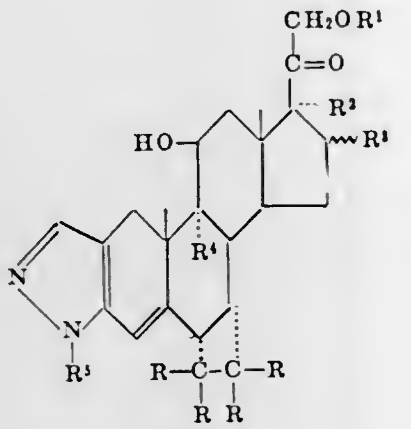
In a process for the continuous manufacture of laurolactam in the liquid phase by the steps of oximation and Beckmann rearrangement, the improvement in the oximation step which leads to faster reaction times and a purer final product, comprising reacting cyclododecanone with a hydroxyl amine salt in the liquid phase in an aliphatic or cycloaliphatic solvent immiscible with sulfuric acid, the important oximation reaction conditions being that the pH be 2 to 7, preferably 3 to 5, that the reaction temperature be 80–120° C., preferably 90–100° C., and has the conversion of the cyclododecanone to cyclododecanone oxime be terminated after the conversion reaches 80–97%, preferably 90–95%; and that the solvent be separated before conducting the Beckmann rearrangement.

3,428,626

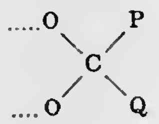
6α,7α - ETHYLENE AND 6α,7α - TETRAFLUOROETHYLENE DRIVATIVES OF 4-PREGNENO-[3,2-c]-PYRAZOLES

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Sept. 12, 1966, Ser. No. 578,501
U.S. Cl. 260—239.5 **13 Claims**
Int. Cl. C07c *173/10*

1. A compound having the following formula:



wherein each of R together is hydrogen or fluoro;
R^1 is hydrogen, tetrahydropyran-2-yl or a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms;
R^2 is hydrogen, hydroxy or a hydrocarbon carboxylic acyloxy group containing less than 12 carbon atoms;
R^3 is hydrogen, α-methyl, β-methyl, α-hydroxy or an α-hydroxy carboxylic group containing less than 12 carbon atoms;
R^2 and R^3 together is the group



in which P is hydrogen or lower alkyl and Q is hydrogen, alkyl or aryl of up to 8 carbon atoms;
R^4 is hydrogen or fluoro; and
R^5 is hydrogen, phenyl or p-fluorophenyl.

3,428,627

17α-[3'-FURYL]-ESTRANE DERIVATIVES

Yvon Lefebvre, Pierrefonds, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 16, 1966, Ser. No. 602,162
U.S. Cl. 260—239.55 **15 Claims**
Int. Cl. C07c *173/00;* **A61k** *17/00*

There are disclosed herein 17α-[3'-furyl]-17β-hydroxy-4-estren-3-one and 17α-[3'-furyl]-17β-hydroxy-5(10)-estren-3-one, their 17β-acyloxy derivatives in which the 17-acyloxy group contains from 2–4 carbon atoms, as well as their corresponding 3α- and 3β-hydroxy-derivatives and their respective 3-acylates in which the acyl group is an aliphatic, cycloaliphatic, aromatic, or aliphatic-aromatic group containing from 2–8 carbon atoms; those compounds possess progestational and cholesterol-lowering activities and formulations for their use are also given.

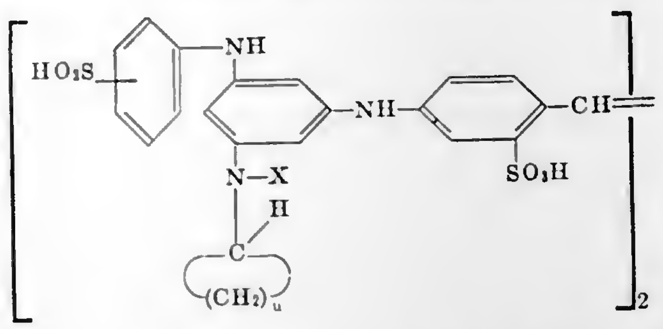
The intermediates 17α-[3'-furyl]-17β-hydroxy-3-methoxy-2,5(10)-estradiene and 17α-[3'-furyl]-17β-hydroxy-3-(1'-pyrrolidyl)-3,5-estradiene, both used in the preparation of the above compounds, are also disclosed.

3,428,628

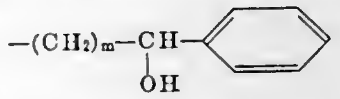
CERTAIN CYCLOALKYLAMINE SUBSTITUTED BIS - TRIAZINYLAMINO STILBENE COMPOUNDS

Christopher Johannes Tscharner, Warwick, R.I., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed June 23, 1965, Ser. No. 466,453
U.S. Cl. 260—240 **9 Claims**
Int. Cl. C09b *23/10;* **D06l** *3/12*

Bis-triazinylamino stilbene compounds of the formula:



in which *u* has a value of 4 to 5, and in which X represents $—(CH_2)_n—OH$ where *n* has a value of 2 to 4; or



where *m* has a value of 1 to 3, and salts thereof, are optical brightening agents useful for the brightening of paper and textile products. The compounds are particularly useful in application from solutions of low pH. The compounds maintain their brightening effect under severe pH conditions which ordinarily would destroy the brightening properties of known optical brighteners as well as causing "greening" effects. A particularly preferred compound is tetrasodium-4,4'-bis{[<4[4-sulfoanilino]-6-[N-2 - hydroxyethyl - N - cyclohexyl-amino]-1,3,5-triazin-2-Y1>]-amino}-stilbene-2,2'-disulfonate.

3,428,629

HALOVINYL COMPOUNDS

Emil B. Rauch, Port Dickinson, and John A. Welsh, Binghamton, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 13, 1965, Ser. No. 471,762
U.S. Cl. 260—240 **9 Claims**
Int. Cl. C07d *85/46;* **C09b** *23/06;* **G03c** *1/52*

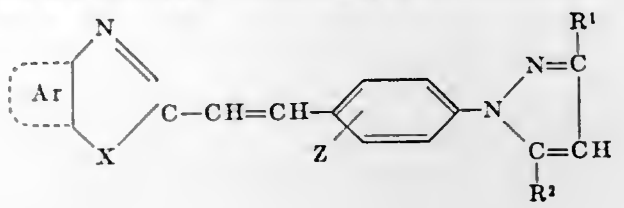
2-(beta-chloro- or beta-bromo-beta-alkyl- or beta-arylvinyl)-ortho-aryleneoxazoles of which the ortho-arylene group is phenylene, naphthylene, mono- or dialkylphenylene, chlorophenylene, phenylphenylene or 2'-thienyl-phenylene and the beta-alkyl or beta-aryl radical attached to the vinyl group is chloro-methyl, alkyl of 1–17 carbon atoms, phenyl, chloro-phenyl, tolyl or naphthyl.

3,428,630

PYRAZOLYL DERIVATIVES HAVING OPTICAL WHITENING PROPERTIES

Asim Kumar Sarkar, Adel, Leeds, England, assignor to Hickson & Welch Limited, Castleford, Yorkshire, England, a British company
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,407
Claims priority, application Great Britain, Dec. 8, 1964, 49,925/64
U.S. Cl. 260—240.9 **5 Claims**
Int. Cl. C09b *23/14*

There are provided compounds of the formula



in which Ar represents an aromatic ring system which may for example be derived from benzene or naphthalene and may if desired be substituted by one or more substituents such as for example halogen (e.g., chlorine) atoms or alkyl, alkoxy or cyano groups; X represents an oxygen or sulphur atom; or a group of formula —NR— wherein R represents a hydrogen atom; an alkyl group (either unsubstituted or substituted, e.g. by a halogen atom or by a hydroxy, carboxy, alkoxy or cyano group); a group of formula $—COR^3$ (wherein R^3 represents a substituted or unsubstituted alkyl group or an aryl group); or a group of formula $—SO_2R^4$ (wherein R^4 represents an aryl group); Z represents a hydrogen or halogen atom, or an alkyl or alkoxy group; and R^1 and R^2, which may be the same or different, each represents a hydrogen atom or an alkyl or aryl group. The compounds are useful as optical whitening agents.

3,428,631

BASICALLY SUBSTITUTED 1,3,4-THIADIAZINES AND METHODS OF PREPARATION THEREOF

Donald L. Trepanier and Paul E. Krieger, Indianapolis, Ind., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 30, 1966, Ser. No. 583,453
U.S. Cl. 260—243 **16 Claims**
Int. Cl. C07d *93/22;* **A61k** *27/00*

Substituted 5,6-dihydro- and 3,4,5,6-tetrahydro-1,3,4-thiadiazine compounds having a basic substituent in the 2 position, such as 2-amino-5,6-dihydro-4,6-dimethyl-4H-1,3,4-thiadiazine or 3,4,5,6-tetrahydro-4,6-dimethyl-2-(3-pyridyl)-1,3,4-thiadiazine, are prepared by the reaction of β-hydrazinoalkylthiols with an aldehyde, an imido ester or a nitrile. The compounds are useful as agents which are active on the central nervous system and are active in the potentiation of barbiturates such as hexobarbital, as indicated by their effectiveness in prolonging hexobarbital sleep time in mice.

3,428,632

PRODUCTION OF 3,4,5,6-TETRAHYDRO-4,5,6-SUBSTITUTED-2H-1,3,4-OXADIAZIN-2-ONES

Donald L. Trepanier, Indianapolis, Ind., and Guy H. Harris, Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 23, 1966, Ser. No. 581,431
U.S. Cl. 260—244 **9 Claims**
Int. Cl. C07d 87/*08*

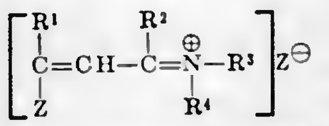
A method of preparing 3,4,5,6-tetrahydro-4,5,6-substituted-2H-1,3,4-oxadiazin-2-one compounds by the reaction of a substituted hydrazine with phosgene and hydrogen chloride.

3,428,633

SALTS OF ENAMINOKETONES AND PROCESSES FOR THEIR PREPARATION

Angelo John Speziale and Gerhard H. Alt, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 524,932, Dec. 16, 1965, which is a continuation-in-part of application Ser. No. 218,547, Aug. 22, 1962. This application Dec. 19, 1966, Ser. No. 602,506
U.S. Cl. 260—247 **14 Claims**
Int. Cl. A23k *1/16*

Enaminoketone salts having the formula:



$$\left[\underset{Z}{\overset{R^1}{C}}{=}CH{-}\overset{R^2}{C}{=}\underset{R^4}{\overset{\oplus}{N}}{-}R^3\right]Z^{\ominus}$$

wherein R^1 and R^2 are each alkyl groups having a maximum of 4 carbon atoms or together forms a ring having at least 4 and a maximum of 8 carbon atoms; R^3 and R^4 are each alkyl groups having a maximum of 4 carbon atoms or together form an alkylene, oxaalkylene or thialkylene having at least 2 and a maximum of 7 carbon atoms; and Z is chlorine or bromine.

These compounds are prepared by the reaction of the corresponding enaminoketone with an acid chloride or bromide of a carboxylic acid having a pKa of less than 1.3.

3,428,634

3-TERTIARY AMINO ALKOXY-1-HYDROCARBON INDAZOLES

Giuseppe Palazzo, Rome, Italy, assignor to Aziende Chimiche Riunite Angelini Francesco, Rome, Italy, a corporation of Italy
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,919
Claims priority, application Italy, Mar. 13, 1965, 5,587/65
U.S. Cl. 260—247.5 **13 Claims**
Int. Cl. C07d *87/40, 49/18;* **A61k** *27/00*

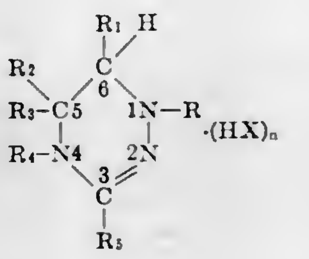
Indazole derivatives having N-hetero groups have antihelminthic activity and protect against gastric ulcerations. Such derivatives can be formed by reacting a haloalkylamine with an alkaline metal salt of a 3-hydroxy-indazole.

3,428,635

SUBSTITUTED 1,4,5,6 - TETRAHYDRO - AS - TRIAZINES AND A METHOD FOR THEIR PRODUCTION

Donald L. Trepanier, Indianapolis, Ind., and Guy H. Harris, Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 5, 1966, Ser. No. 598,977
U.S. Cl. 260—248 **8 Claims**
Int. Cl. C07d *55/10, 109/04*

1. A 1,4,5,6-tetrahydro-as-triazine corresponding to the formula



wherein R represents hydrogen or methyl, R_1 independently represents hydrogen or methyl, R_2 independently represents hydrogen or methyl, R_3 independently represents hydrogen, methyl, or phenyl, R_4 independently represents hydrogen, methyl or ethyl, and when R_4 represents methyl or ethyl R_3 represents hydrogen, R_5 represents lower alkyl, phenyl, halophenyl, halobenzyl, methoxyphenyl, pyridyl or halophenoxymethyl, X represents chlorine or bromine and *n* represents one of the integers 0 or 1.

3,428,636

PROCESS FOR THE PRODUCTION OF SUBSTITUTED TRIAZINES

Ernst Grigat, Cologne-Stammheim, and Rolf Pütter, Dusseldorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 19, 1966, Ser. No. 521,546
Claims priority, application Germany, Feb. 10, 1965, F 45,186
U.S. Cl. 260—248 **3 Claims**
Int. Cl. C07d *55/50;* **A01n** *9/22*

6-aryl or 6-haloalkyl-substituted 2,4-dimercapto-1,3,5-triazines having herbicidal properties and a process for producing them by reacting a mole of cyanic acid ester with 2 mols of hydrogen thiocyanate at a temperature of about −50° through +100° C.

3,428,637
PERINONE DYES

Xaver Pfister, Richen, Basel-Stadt, and Karl Ulrich Steiner, Binningen, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sadoz A.G.), Basel, Switzerland

No Drawing. Continuation-in-part of application Ser No. 528,361, Feb. 18, 1966. This application Nov. 16, 1967, Ser. No. 683,470

Claims priority, application Switzerland, Feb. 25, 1965, 2,597/65; Aug. 5, 1965, 11,046/65

U.S. Cl. 260—251 **5 Claims**

Int. Cl. C07d *51/28, 27/30, 29/38*

Acylamino-substituted perinone pigment dyes eminently suitable for the coloration of synthetic materials, in particular synthetic polyamides, in the melt.

3,428,638
CERTAIN 2-IMINOBARBITURIC ACIDS

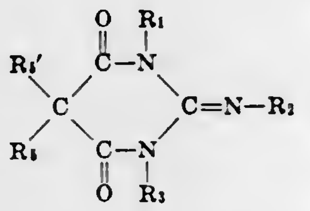
James M. Dille, Seattle, Wash., and Frank J. Stiefel, Princeton Junction, and Mervin Meyer, East Brunswick, N.J., assignors to Carter-Wallace, Inc., New York, N.Y., a corporation of Maryland

No Drawing. Continuation-in-part of application Ser. No. 523,922, Feb. 1, 1966. This application Feb. 10, 1967, Ser. No. 615,057

U.S. Cl. 260—256.4 **5 Claims**

Int. Cl. C07d *5/22;* **A61k** *27/00*

A group of compounds of the formula:



in which R_2, R_5 and R_5' are alkyl having from 2 to 6 carbon atoms, R_1 is alkyl having from 1 to 6 carbon atoms, and R_3 is hydrogen or alkyl having from 1 to 6 carbon atoms. Said compounds are useful for inducing non-hypnotic sedation in warm-blooded animals.

3,428,639
PREPARATION OF ERGOT ALKALOIDS

Paul Stadler, Biel-Benken, Basel-Land, and Franz Troxler and Albert Hofmann, Bottmingen, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,489

Claims priority, application Switzerland, Nov. 2, 1965, 15,114/65

U.S. Cl. 260—268 **2 Claims**

Int. Cl. C07d *51/64*

Ergot alkaloids, e.g., ergotamine, ergostine, etc. are prepared by reaction of 6-methyl-$\Delta^{8,9}$-ergolene-8-carboxylic acid chloride hydrochloride with a 3,6-dioxo-octahydro-oxazolo[3,2-a]pyrrolo[2,1-c]pyrazine salt at temperatures between −20° C. to 30° C. in an inert organic solvent in the presence of an acid binding agent.

3,428,640
METHOD OF PREPARING PYRIDINES

Everett A. Mailey, Norristown, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,916

U.S. Cl. 260—290 **13 Claims**

Int. Cl. C07d *31/02*

A lower alkylene oxide is reacted with a lower trialkyl amine in the presence of a metal oxide catalyst at 350–500° C. to produce a composition comprising a mixture of pyridine and pyridine related compounds.

3,428,641
METHYLATION OF PYRIDINES

Richard C. Myerly, Charleston, W. Va., and Kurt Weinberg, Upper Saddle River, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 396,407, Sept. 14, 1964. This application Oct. 27, 1967, Ser. No. 678,497

U.S. Cl. 260—290 **10 Claims**

Int. Cl. C07d *31/02, 31/20*

Pyridine compounds are methylated at a position alpha to the heterocyclic nitrogen atom by contact with an organic compound capable of forming methyl radicals in the presence of a catalyst of nickel and nickel oxide. A typical illustration of the process is methylation of pyridine by contact with methanol to produce α-picoline.

3,428,642
CARBAMATES AND THIOCARBAMATES AND THE PROCESS OF PREPARATION AND THERAPEUTIC APPLICATIONS THEREOF

André Georges Debay, Paris, and Jacques Louis Marie Joseph Thery, Le Vesinet, France, assignors, by mesne assignments, to A. B. Astra, Sodertalje, Sweden

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,959

Claims priority, application Great Britain, Sept. 2, 1964, 35,939/64

U.S. Cl. 260—295 **6 Claims**

Int. Cl. C07d *31/48, 31/34;* **A61k** *27/00*

The compounds are pyridylmethyl-, N-oxypyridylmethyl-, benzyl- or methoxybenzyl- N-monosubstituted carbamates and thiocarbamates. They are useful as sedative, hypnogenous and neuroleptic drugs.

3,428,643
5-ARYLOXATRICYCLO[3.2.2.$0^{2,4}$]NONAN-1-YL URETHANES

Paul E. Aldrich, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 8, 1967, Ser. No. 641,412

U.S. Cl. 260—295 **6 Claims**

Int. Cl. C07d *31/44, 27/20;* **A61k** *27/00*

5-phenyl, 5-substituted phenyl, 5-pyridyl, and 5-substituted pyridyl oxatricyclo[3.2.2.$0^{2,4}$]nonan-1-amines, and N-carboalkoxy-5-phenyl, 5-substituted phenyl, 5-pyridyl, and 5-substituted pyridyl oxatricyclo[3.2.2.$0^{2,4}$] nonan-1-amines.

Examples of some compounds of this invention are: ethyl N-5-(4-pyridyl)3-oxatricyclo[3.2.2.$0^{2,4}$]nonan-1-yl urethane, 5-phenyl - 3 - oxatricyclo[3.2.2.$0^{2,4}$]nonane-1-amine, and 5-phenyl-3-oxatricyclo[3.2.2.$0^{2,4}$]nonane-1-amine maleate.

3,428,644
PREPARATION OF HOMO- AND HETEROARYL-2-ANILINE KETONES

Paul Aeberli, Madison, and William J. Houlihan, Mountain Lakes, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed June 28, 1965, Ser. No. 467,690

U.S. Cl. 260—296 **8 Claims**

Int. Cl. C07d *31/42, 27/20, 63/10*

Homo- and heteroaryl-2-aniline ketones (I) useful as intermediates for pharmaceuticals, are prepared by contacting a 3-homo- or heteroaryl- oxindole with a base to form a salt which is then reacted with oxygen to form I.

3,428,645
PHOSPHORUS ESTERS OF CERTAIN THIAZOLE DERIVATIVES

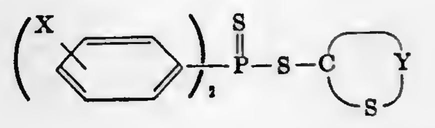
Carl C. Greco, Bronx, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,244

U.S. Cl. 260—306 **3 Claims**

Int. Cl. C07f *9/16*

1. A compound of the formula



wherein X is a substituent selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, and halogen; and Y represents the atoms necessary to complete a heterocyclic ring selected from the class consisting of 2-thiazolyl, 2-thiazolin-2-yl, 2-thiazolidinyl, and 2-benzothiazolyl wherein each ring may be substituted with one or more substituents selected from the group consisting of lower alkyl, lower alkoxy, benzyl and halogen.

3,428,646
4-IMIDAZOLIDONES AND PROCESSES FOR PREPARING SAME

Joseph Hellerbach, Basel, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

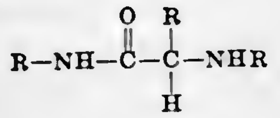
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,807

Claims priority, application Switzerland, Aug. 12, 1963, 9,931/63; Jan. 22, 1964, 737/64

U.S. Cl. 260—309.7 **13 Claims**

Int. Cl. C07d *49/30*

4-imidazolidinones and methods for preparing same comprising reacting amino acid derivatives of the formula



$$R-NH-\overset{\overset{\textstyle O}{\|}}{C}-\underset{\underset{\textstyle H}{|}}{\overset{\overset{\textstyle R}{|}}{C}}-NHR$$

with formaldehyde in the presence of an acid agent. Such 4-imidazolidinones are useful as muscle relaxants.

3,428,647
ANTHRA[1,2-c]PYRAZOLE DERIVATIVE

Willy Braun, Hiedelberg, and Ernst Anton, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

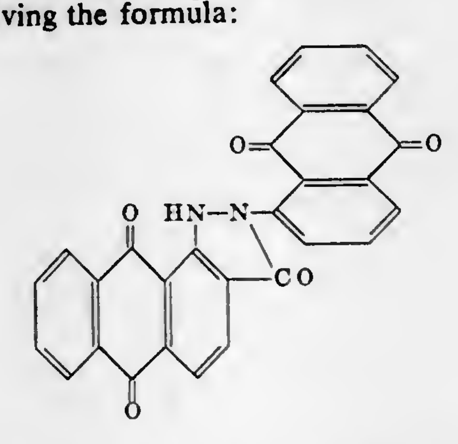
No Drawing. Filed Apr. 5, 1967, Ser. No. 628,574

Claims priority, application Germany, Apr. 6, 1966, B 86,550; Aug. 26, 1966, B 88,634

U.S. Cl. 260—312 **3 Claims**

Int. Cl. C07d *49/24;* **D06p** *1/20*

A dye having the formula:



which is prepared by condensation of 1-aminoanthraquinone-2-carboxylic acid - (1 - anthraquinonyl)amide with aluminum chloride in a pyridine base and is outstandingly suitable as an orange pigment dye.

3,428,648
3-(SUBSTITUTED PHENYL) PYRROLE DERIVATIVES AND METHODS OF PRODUCING THEM

Suminori Umio, Kawanishi, Kazuo Kariyone, Kyoto, and Kunihiko Tanaka, Osaka, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a company of Japan

No Drawing. Continuation-in-part of applications Ser. No. 489,412, Ser. No. 489,413, Ser. No. 489,429, and Ser. No. 489,432, Sept. 22, 1965. This application Mar. 20, 1967, Ser. No. 624,139

Claims priority, application Japan, Oct. 12, 1964, 39/58,242; Oct. 22, 1964, 39/60,200; Dec. 7, 1964, 39/68,740, 40/17,732; Dec. 24, 1964, 39/73,138; Feb. 2, 1965, 40/5,814; Apr. 8, 1965, 40/20,733

U.S. Cl. 260—313.1 **21 Claims**

Int. Cl. C07d *27/20;* **A61k** *27/00*

The derivatives are halo, nitro or alkoxy phenyl pyrroles which are useful as fungicide for medicinal and agricultural applications and/or as key intermediates in the preparation of pyrrolnitrin which is produced by fermentation and which is particularly efficacious in the treatment of athlete's foot. Efficient methods are also proposed for production of the derivatives.

3,428,649
OXINDOLE DERIVATIVES

Janis Plostnieks, Philadelphia, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 460,576, June 1, 1965. This application Jan. 23, 1968, Ser. No. 699,761

U.S. Cl. 260—325 **27 Claims**

Int. Cl. C07d *27/42, 27/40*

Oxindole derivatives are prepared by the interaction of isatins with appropriate alkylidene phosphoranes or phosphonate ester anions; these derivatives are used in the synthesis of other indoles.

3,428,650
2-(o-AMINOARYL)ISOINDOLES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed July 21, 1966, Ser. No. 566,727

U.S. Cl. 260—326.1 **3 Claims**

Int. Cl. C07d *27/48;* **A61k** *27/00*

This invention relates to 2-(o-aminoaryl)isoindoles and to methods for preparing the same. The compounds of the invention are useful as anti-depressants, mild tranquilizers and hypotensive agents.

3,428,651
ESTERS OF CHRYSANTHEMUM-MONOCARBOXYLIC ACID AND CHRYSANTHEMUM-DICARBOXYLIC ACID MONOMETHYL ESTER WITH N-HYDROXY METHYL MALEIMIDES

Takeaki Kato and Kenzo Ueda, Nishinomiya-shi, Sadao Horie, Suita-shi, Toshio Mizutani, Amagasaki-shi, Keimei Fujimoto, Minoo-shi, and Yositosi Okuno, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Original application Dec. 1, 1964, Ser. No. 415,209, now Patent No. 3,318,766, dated May 9, 1967. Divided and this application Feb. 11, 1966, Ser. No. 538,885

Claims priority, application Japan, Dec. 3, 1963, 38/65,181; Dec. 19, 1963, 38/68,673; Mar. 18, 1964, 39/14,946

U.S. Cl. 260—326.3 **9 Claims**

Int. Cl. C07d *27/00;* **A01n** *9/22*

Esters of either chrysanthemum monocarboxylic acid or pyrethric acid as the acid moiety and an N-hydroxymethyl maleimide compound as the alcohol moiety were prepared. The esters possess significant insecticidal power but are harmless to warm-blooded animals.

3,428,652
ANGUIDINE DERIVATIVES

Hans-Peter Sigg, Binningen, Erich Flury, Bottmingen, and Daniel Hauser, Arlesheim, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
Filed May 27, 1966, Ser. No. 553,421
Claims priority, application Switzerland, July 2, 1965, 9,330/65
U.S. Cl. 260—326.3 **3 Claims**
Int. Cl. C07d *7/18;* **A61k** *27/00*

The compounds are derivatives of anguidine, e.g., betainyl-anguidine-chloride, useful in inhibiting mouse tumor cells.

3,428,653
3-INDOLYLMETHYLGUANIDINE

Malcolm R. Bell, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 28, 1965, Ser. No. 467,767
U.S. Cl. 260—326.15 **1 Claim**
Int. Cl. C07d *27/56*

1. 3-Indolylmethylguanidine.

3,428,654
ALKENE SULFONATION PROCESS AND PRODUCTS

Joseph Rubinfeld, Brooklyn, N.Y., and Willem Bian Gwan Ouw, Jersey City, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 477,228, Aug. 4, 1965. This application May 10, 1966, Ser. No. 548,827
U.S. Cl. 260—327 **36 Claims**
Int. Cl. C07d *99/02;* **C07c** *143/36*

Strong sulfuric acid is used to treat sultones or sultone-containing mixtures which are obtained by sulfonation of olefins. On neutralization of the treated material an active detergent of reduced free oil content is obtained.

3,428,655
CONTROLLING INSECTS AND OTHER PESTS WITH PHOSPHONOTHIOATES

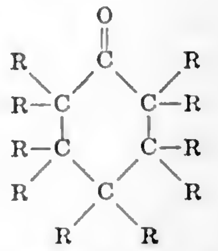
Thomas Mason Melton, Richmond, Va., and Harold A. Kaufman, New Brunswick, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,769
U.S. Cl. 260—330.5 **3 Claims**
Int. Cl. C07d *63/10;* **A01n** *9/36*

Organophosphorus compounds containing sulfur are provided which are useful as pesticidal agents. The new compounds are derivatives of phosphonothioate acids containing the benzothienyl group, and are characterized as S-alkyl O- or S-benzothienyl alkylphosphonothioates.

3,428,656
METHOD FOR PRODUCING THE DERIVATIVES OF 6-HYDROXYCAPROIC ACIDS

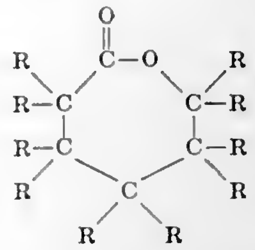
Francis J. Weiss, Pierre-Benite, France, assignor to Ugine Kuhlmann, Paris, France, a French company
No Drawing. Continuation-in-part of application Ser. No. 361,573, Apr. 21, 1964. This application Feb. 6, 1967, Ser. No. 614,014
Claims priority, application France, Feb. 7, 1966, 48,652
U.S. Cl. 260—343 **19 Claims**
Int. Cl. C07d *9/00;* **C07c** *49/30*

Derivatives of 6-hydroxycaproic acids are produced by reacting a cyclohexanone with hydrogen peroxide and formic acid at a temperature in the range between 0° and 100° C. The cyclohexanone suitable for the process has the general formula:



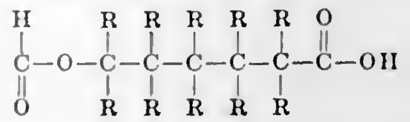
(I)

wherein any one of the R's can be a hydrogen atom, an alkyl or a cyclic alkyl. The derivatives of 6-hydroxycaproic acids thus obtained are predominately ϵ-caprolactone of the formula



(II)

and 6-formyloxycaproic acid of the formula



$$\begin{array}{cccccccccccccccc} H & & & & R & & R & & R & & R & & R & & O & \\ | & & & & | & & | & & | & & | & & | & & \| & \\ C & - & O & - & C & - & C & - & C & - & C & - & C & - & C & -OH \\ \| & & & & | & & | & & | & & | & & | & & & \\ O & & & & R & & R & & R & & R & & R & & & \end{array}$$

(III)

Each of the R's in the Formulas II and III corresponds to the R in the Formula I.

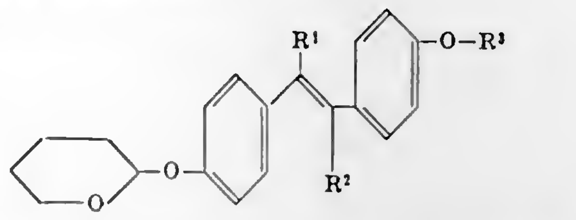
When the reaction is carried out by adding progressively H_2O_2 to a mixture of formic acid and a cyclohexanone at a temperature in the range of 40°–100° C., the products of the reaction have a greater amount of 6-formyloxycaproic acid than ϵ-caprolactone. Conversely, when the reaction is carried out by adding a cyclohexanone to a reaction mixture of H_2O_2 and formic acid and the reaction temperature is maintained at a range between 0° and 40° C., ϵ-caprolactone predominates in the products.

A small amount of peroxides of cyclohexanone produced by simultaneous parasitic reactions is removed advantageously from the reaction mixture by adding hereto a solvent for said peroxides such as carbon tetrachloride which is substantially insoluble in and immiscible with the reaction medium. During the reaction, the small amount of peroxides thus formed is effectively removed by preferentially dissolving in the solvent therein. The amount of the solvent used ranges from 0.1 to 1.0 times the amount of formic acid used for the reaction.

3,428,657
TETRAHYDROPYRANYLOXY DERIVATIVES OF STILBENE DERIVATIVES

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Dec. 7, 1965, Ser. No. 512,227
U.S. Cl. 260—345.8 **5 Claims**
Int. Cl. C07d *7/02;* **C09b** *23/00;* **A61k** *27/00*

Tetrahydropyranyloxy derivatives of trans stilbenes useful as orally active estrogenic agents and to increase feed consumption in livestock are disclosed. These compounds have the formula



wherein each of R^1 and R^2 is hydrogen or lower alkyl and R^3 is hydrogen, tetrahydropyranyl, or a hydrocarbon carboxylic acyl group of less than 12 carbon atoms.

3,428,658
PROCESS FOR THE SYNTHESIS OF OLEFIN OXIDES

Robert James Kassal, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 512,523, Dec. 8, 1965. This application Feb. 20, 1967, Ser. No. 617,074
U.S. Cl. 260—348.5 **8 Claims**
Int. Cl. C07d *1/08, 5/14*

A process for the synthesis of olefin oxides of 2–4 carbon atoms in the liquid phase by oxidation of the corresponding olefins with oxygen in the presence of a solvent mixture comprising a saturated cyclic hydrocarbon and a chlorinated benzene at elevated temperature. Olefin oxides are useful as comonomers in the production of molding resins.

3,428,659
PREPARATION OF BROMAMINIC ACID

Dominic A. Zanella, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware
No Drawing. Filed Feb. 17, 1966, Ser. No. 528,041
U.S. Cl. 260—371 **5 Claims**
Int. Cl. C07c *143/36;* **C09b** *1/24*

1. In a method for the production of bromaminic acid wherein 1-aminoanthraquinone is reacted with at least a stoichiometric quantity of chlorosulfonic acid in the presence of an inert organic solvent and the resulting 1-aminoanthraquinone-2-sulfonic acid is treated with bromine in the presence of water to form bromaminic acid, the improvement comprising adding, after the sulfonation step but prior to bromination, a basic alkali metal salt in a quantity sufficient to neutralize any excess acid and to form the alkali metal salt of the 1-aminoanthraquinone-2-sulfonic acid while maintaining a substantially neutral pH and thereafter adding at least a stoichiometric quantity, based on the quantity of HBr formed during bromination, of an acid-binding agent which, when added in the appropriate quantity, provides a reaction mixture of substantially neutral pH.

3,428,660
PROCESS FOR RECOVERING FATTY ACIDS AND TRIGLYCERIDE OIL FROM SOAPSTOCK

John E. Morren, Bloomingdale, Ill., assignor, by mesne assignments, to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Jan. 20, 1964, Ser. No. 338,812
U.S. Cl. 260—412.5 **4 Claims**
Int. Cl. C11b *13/02*

A process for recovering fatty acids and triglyceride oil from soapstock containing the oil and soap as principal components comprising continuously mixing the soapstock at a temperature above 175° F. but not over 300° F., preferably between about 200 and 270° F., with an aqueous mineral acid such as sulfuric acid to obtain an acidulated mixture with the soap converted to free fatty acids and salt. The mixture comprises an aqueous phase containing the salt and excess mineral acid and an oil phase containing the triglyceride oil and free fatty acids. The mixture is continuously passed into a centrifugal force field in the outer portion of the field but at a position spaced inwardly from the outermost boundary thereof whereby the oil phase flows inwardly and wash water is continuously introduced into the field at a position inwardly of the mixture but spaced outwardly from the innermost boundary thereof so that the wash water flows outwardly in continuous countercurrent contact with the oil phase which is flowing inwardly. The oil phase is removed at the inward position of the force field and the aqueous phase, containing the wash water, is removed from an outward position of the force field.

3,428,661
IRIDIUM (I) COMPOUNDS WITH CHELATING LIGANDS

Keith Andrew Taylor, Runcorn, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 21, 1966, Ser. No. 545,522
Claims priority, application Great Britain, Apr. 30, 1965, 18,327/65
U.S. Cl. 260—429 **13 Claims**
Int. Cl. C07f *3/10, 9/66;* **C07c** *5/02*

There are provided complex compounds of iridium (I) and a process for the preparation thereof. The compounds have the general formula

$$Z_xIr(R_n.X—R'—X'.R_n)(R_n.X''—R'—X'''.R_n)Y$$

where:

Z represents nothing ($x=0$) or a neutral ligand ($x=1$);
X, X′, X″ and X‴ represent an element or elements of groups 5*b* or 6*b* of the Periodic Table of the elements and where the various elements X may be the same or different;
R represents an organic group or hydrogen. For simple groups n is 1 or 2 as required to satisfy the relative valencies of R and the various elements X but more complex groups may form part of ring systems including the elements X, X′, X″, X‴ and possibly parts of the groups R′;
R′ represents an organic group having a valency of at least 2 and a chain of z carbon atoms (where $z=1$–4) linking the elements X, X′, X″, X‴ where some but not all of the carbon atoms may be replaced by oxygen, sulphur or phosphorus and Y represents a monovalent anion.

3,428,662
METHOD OF PREPARING METAL DIHYDROCARBYL DITHIOPHOSPHATES

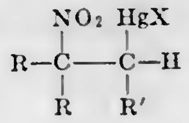
Alfred J. Millendorf, Fishkill, and Frederick G. Oberender, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 16, 1965, Ser. No. 472,689
U.S. Cl. 260—429.9 **1 Claim**
Int. Cl. C07f *3/06, 9/02*

A method of preparing oil soluble metal salts of dihydrocarbyl dithiophosphoric acid comprising contacting a hydroxy substituted aromatic hydrocarbon with P_2S_5 while simultaneously blowing the reaction mixture with an inert gas and then contacting the resultant diester dithiophosphoric acid with a metal carbonate at a temperature between about 30 and 140° F. under reduced pressure sufficient to permit the continuous distillation of water and subsequently raising the reaction temperature to between about 140 and 300° F. under said reduced pressure.

3,428,663
β-NITROALKYL MERCURIC HALIDES AND METHOD OF PREPARING SAME

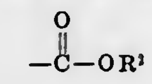
Gustave Bryant Bachman, Lafayette, Ind., and Maynard Lester Whitehouse, Delmar, N.Y., assignors to Purdue Research Foundation, Lafayette, Ind., a corporation of Indiana
No Drawing. Filed June 15, 1966, Ser. No. 557,620
U.S. Cl. 260—431 **12 Claims**
Int. Cl. C07f *3/10;* **A01n** *9/38*

As compositions of matter β-nitroalkyl mercuric halides which are of the formula



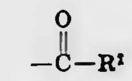
$$\begin{array}{ccccc} & NO_2 & & HgX & \\ & | & & | & \\ R- & C & — & C & -H \\ & | & & | & \\ & R & & R' & \end{array}$$

wherein X represents a halogen radical, R represents a lower alkyl radical or hydrogen, R′ represents hydrogen, a lower alkyl radical or the radical



$$-\overset{O}{\overset{\|}{C}}-OR^2$$

or the radical

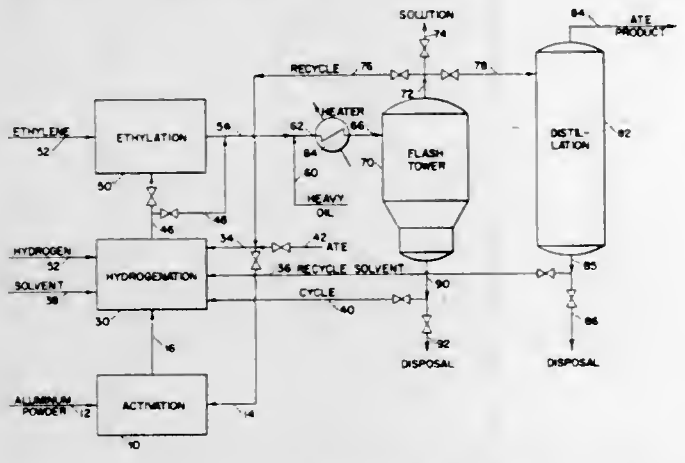


$$-\overset{O}{\overset{\|}{C}}-R^2$$

and R^2 represents a lower alkyl radical. The β-nitroalkyl mercuric halides are useful as bactericides and fugicides, in particular in stabilizing petroleum lubricants.

3,428,664
DISTILLATIVE PURIFICATION OF ALUMINUM ALKYL

Malcolm M. Turner, Houston, Tex., and Daniel F. Cameron, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,436
U.S. Cl. 260—448 **16 Claims**
Int. Cl. C07f *5/06;* **B01d** *3/34*

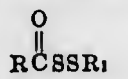


Contaminant solids are removed from alkyl aluminum solution by adding thereto a low volatility oil and flashing the alkyl aluminum off to leave a residue of solids in the oil.

3,428,665
POLYCHLOROETHYL AND POLYCHLOROVINYL ACYL MONO AND BISDISULFIDES

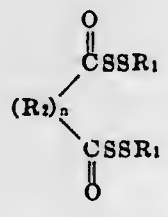
Paul C. Aichenegg, Prairie Village, Kans., and Carl D. Emerson and Lawrence E. Gillen, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 23, 1965, Ser. No. 481,958
U.S. Cl. 260—453 **19 Claims**
Int. Cl. C07c *161/00;* **A01n** *9/12*

Compounds are prepared having one of the formulae



$$R\overset{O}{\overset{\|}{C}}SSR_1$$

and

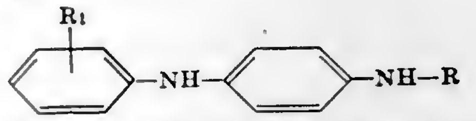


where R is selected from the group consisting of alkyl, haloalkyl, aryl, aralkyl, aryloxyalkyl, haloaryl, haloaralkyl and haloaryloxyalkyl; R_1 is selected from the group consisting of trihaloethyl, tetrahaloethyl, dihalovinyl and trihalovinyl; R_2 is selected from the group consisting of alkylene and phenylene and *n* is selected from the group consisting of 0 and 1. The compounds are useful as fungicides, herbicides and nematocides.

3,428,666
PROCESS FOR THE STABILIZATION OF ACRYLONITRILE

Paul Schneider, Opladen, Germany, and Bernhard Scherhag, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 16, 1966, Ser. No. 527,722
Claims priority, application Germany, Mar. 6, 1965, F 45,438
U.S. Cl. 260—465 **6 Claims**
Int. Cl. C07c *121/66, 121/28*

A process for stabilizing acrylonitrile which comprises admixing acrylonitrile with a substituted aminodiphenylamine having the formula:

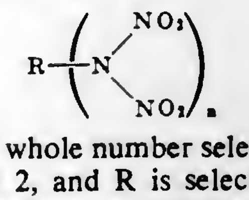


wherein R is aryl, aralkyl, cycloalkyl or alkyl (C_{1-8}) and R_1 is hydrogen or alkyl (C_{1-2}).

3,428,667
N,N-DINITRAMINES OF CERTAIN ORGANIC COMPOUNDS AND PROCESS

Edward E. Hamel, Citrus Heights, and Robert E. Olsen, Shingle Springs, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
No Drawing. Filed Sept. 20, 1962, Ser. No. 224,979
U.S. Cl. 260—467 **20 Claims**
Int. Cl. C07c *111/00;* **C06b** *7/00*

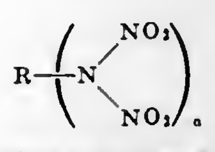
1. Compounds of the formula



$$R\left(-N\begin{matrix}NO_2\\NO_2\end{matrix}\right)_n$$

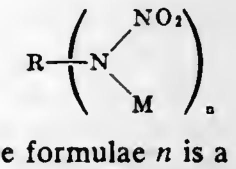
wherein *n* is a small whole number selected from the group consisting of 1 and 2, and R is selected from the group consisting of monovalent and divalent organic radicals, said monovalent organic radicals being selected from the group consisting of alkyl, aryl, haloalkyl, haloaryl, nitroalkyl, nitroaryl, nitraza-interrupted alkyl, nitratoalkyl and nitratoaryl; and said divalent organic radicals being selected from the group consisting of alkylene, arylene, halo-substituted alkylene, halo-substituted arylene, nitro-substituted alkylene, nitro-substituted arylene, nitraza-interrupted alkylene, nitrato-substituted alkylene and nitrato-substituted arylene.

10. The method of preparing compounds of the formula



$$R\left(-N\begin{matrix}NO_2\\NO_2\end{matrix}\right)_n$$

which comprises reacting a non-gaseous highly conductive ionic nitronium salt with a compound of the formula



$$R\left(-N\begin{matrix}NO_2\\M\end{matrix}\right)_n$$

wherein in the above formulae *n* is a small whole number selected from the group consisting of 1 and 2, R is selected from the group consisting of monovalent and divalent organic radicals, said monovalent organic radicals being selected from the group consisting of alkyl, aryl, haloalkyl, haloaryl, nitroalkyl, nitroaryl, nitraza-interrupted alkyl, nitratoalkyl and nitratoaryl, and said divalent organic radicals being selected from the group consisting of alkylene, arylene, halo-substituted alkylene, halo-substituted arylene, nitro-substituted alkylene, nitro-substituted arylene, nitraza-interrupted alkylene, nitrato-substituted alkylene and nitrato-substituted arylene, and M is selected from the group consisting of hydrogen, the ammonium group, alkali metals and alkaline earth metals.

3,428,668
PROCESS FOR THE PREPARATION OF 1,4-CYCLOHEXANE DICARBOXYLIC ACID DIALKYL ESTERS

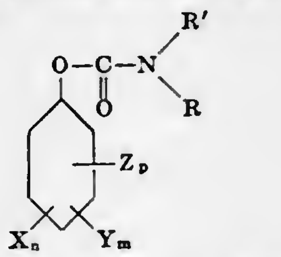
Hans-Leo Huelsmann, Witten-Rudinghausen, and Gustav Renckhoff, Witten-Ruhr, Germany, assignors to Chemische Werke Witten G.m.b.H., Witten-Ruhr, Germany
No Drawing. Filed Feb. 20, 1963, Ser. No. 260,043
Claims priority, application Germany, Feb. 23, 1962, C 26,307
U.S. Cl. 260—468 **5 Claims**
Int. Cl. C07c *61/08, 69/24*

1. In a process for the preparation of a 1,4-cyclohexane dicarboxylic acid dialkyl ester of an alkanol selected from the group consisting of monohydric alkanols having up to 5 carbon atoms by hydrogenation of the corresponding terephthalic acid dialkyl ester at a temperature of between approximately 150° and 250° C. and a hydrogen pressure of between approximately 20 and 300 atmospheres in the presence of between approximately 0.1 and 5.0% by weight of a nickel catalyst on a mineral carrier material, the improvement which comprises carrying out said hydrogenation in the presence of at least 10% by weight of a compound selected from the group consisting of p-toluic acid alkyl esters, 4-methylcyclohexane carboxylic acid alkyl esters and mixtures thereof, whereby substantially quantitative yields of said 1,4-cyclohexane dicarboxylic acid dialkyl ester are obtained.

3,428,669
ARYL CARBAMATES

Delta W. Gier, Parkville, and Ralph W. Pritchard II, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 11, 1965, Ser. No. 439,056
U.S. Cl. 260—471 **10 Claims**
Int. Cl. C07c *79/46;* **A01n** *9/20, 5/00*

The compounds are prepared having the formula:

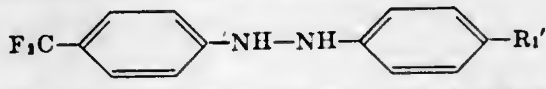


where X is chlorine, Y is nitro, Z is selected from the group consisting of methyl and hydrogen, R is selected from the group consisting of phenyl, tolyl and chlorophenyl and R′ is selected from the group consisting of hydrogen, phenyl, tolyl, chlorophenyl, alkyl and cycloalkyl, where *n* and *m* are integers from 1 to 3 and *p* is an integer from 0 to 3. The compounds are useful as defoliants, disiccants, fungicides and nematocides.

3,428,670
HYDRAZOBENZENES AND THEIR PRODUCTION

Ernst Jucker, Ettingen, Adolf J. Lindenmann, Basel, and Fulvio Gadient, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Original application Sept. 10, 1963, Ser. No. 307,816, now Patent No. 3,250,782, dated May 10, 1966. Divided and this application Aug. 18, 1965, Ser. No. 493,295
Claims priority, application Switzerland, Jan. 6, 1961, 180/61; Sept. 21, 1961, 10,983/61; Nov. 16, 1961, 13,309/61; Aug. 6, 1962, 9,385/62; Feb. 20, 1963, 2,085/63
U.S. Cl. 260—479 **6 Claims**
Int. Cl. C07c *69/00;* **A61k** *27/00;* **C09b** *29/12*

Hydrazobenzenes of the formula:



wherein R_1' is hydrogen, halogen, lower alkoxy, lower acyloxy, lower acylamino or trifluoromethyl are useful as antiphlogistics and analgesics for the treatment of rheumatic and other inflammatory processes.

3,428,671
BROMIDE ION PROMOTED OXIDATION OF SULFIDE-SULFUR BY LOWER DIALKYL SULFOXIDES

William G. Toland, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 8, 1965, Ser. No. 485,938

U.S. Cl. 260—51.3 **12 Claims**
Int. Cl. C07c *147/02, 149/06*

Compounds containing sulfide-sulfur are oxidized by lower dialkyl sulfoxides in a liquid phase reaction promoted by bromide ion. In the process the sulfoxide is converted to the corresponding dialkyl sulfide and the oxidation state of the sulfide-sulfur atom is increased.

3,428,672
4-SUBSTITUTED-2,3,5,6-TETRAFLUORO-NITROSOBENZENE

Joseph A. Castellano, Wayne, and Joseph Green, Dover, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Dec. 16, 1965, Ser. No. 514,401

U.S. Cl. 260—515 **4 Claims**
Int. Cl. C07c *81/00, 81/08*

Cured nitroso rubber polymer is prepared from a novel 4-substituted - 2,3,5,6-tetrafluoronitrosobenzene wherein the substituent is bromo or carboxy.

3,428,673
NITRATION OF 4-ACETAMIDOBENZOIC ACID

James Edgar Mallonee, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 245,413, Dec. 18, 1962. This application June 3, 1964, Ser. No. 372,361

U.S. Cl. 260—518 **3 Claims**
Int. Cl. C07c *101/48*

Process for the preparation of 4-acetamido-3-nitrobenzoic acid by dissolving 4-acetamidobenzoic acid in sulfuric acid and nitrating by adding mixed sulfuric and nitric acids. The 4-acetamido-3-nitrobenzoic acid may optionally be hydrolyzed to 4-amino-3-nitrobenzoic acid without isolation from the reaction mass.

3,428,674
PROCESS OF OXIDATION OF OLEFINS TO UNSATURATED ALDEHYDES AND ACIDS

James L. Callahan, Cuyahoga County, Ohio, and Berthold Gertisser, Essex County, N.J., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Original application Jan. 11, 1965, Ser. No. 462,460, now Patent No. 3,308,151, dated Mar. 7, 1967. Divided and this application Sept. 30, 1965, Ser. No. 505,221

U.S. Cl. 260—533 **6 Claims**
Int. Cl. C07c *45/02*

A catalyst consisting essentially of the oxides of Sb and U is used in the oxidation of olefins to unsaturated aldehydes and acids.

3,428,675
PROCESS FOR THE PREPARATION OF OXALIC ACID

Bernard Pierre Brossard, Jacques Boichard, Michel Louis Marie Joseph Gay, Raymond Marc Clement Janin, and Louis Marius Elie Pichon, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

Filed July 1, 1966, Ser. No. 562,149

Claims priority, application France, July 5, 1965, 23,501

U.S. Cl. 260—533 **6 Claims**

Int. Cl. C07c *51/20*

Ethylene is oxidized to oxalic acid by nitric acid in the presence of sulfuric acid.

3,428,676
SYNTHESIS OF CYCLIC PHOSPHONITRILES

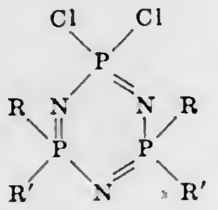
Janet H. Smalley, Irwin, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,740

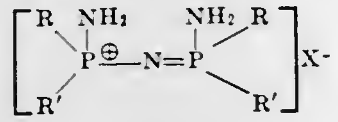
U.S. Cl. 260—543 **4 Claims**

Int. Cl. H01b *3/30;* **C07d** *105/02*

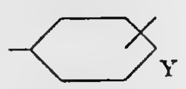
1. The method of preparing a cyclic trimeric phosphonitrile of the formula



comprising reacting a quasiphosphonium salt of the formula



where X is halogen and R and R′ are members selected from the class consisting of phenyl, dinitrophenyl and a substituted phenyl of the formula



3,428,677
CHEMICAL COMPOUNDS AND METHODS OF PREPARING SAME

Edward L. Engelhardt, Gwynedd Valley, and Marcia E. Christy, Colmar, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Sept. 24, 1962, Ser. No. 225,864, now Patent No. 3,306,934. Divided and this application Oct. 31, 1966, Ser. No. 604,501

U.S. Cl. 260—556 **5 Claims**

Int. Cl. C07c *143/70*

The present disclosure includes 5H-dibenzo[a,d]-cycloheptenes which are substituted at the 5-position with a tertiaryaminopropylidene radical and at the 3-position with a sulfamoyl radical. These compounds, which are useful in pharmaceutical application because of their tranquilizing and antidepressant activity, are prepared by reaction of 3-halo-5H-dibenzo[a,d]cycloheptenone with fluorosulfonic acid to produce 10,11-dihydro-7-halo-3-halosulfonyl ketone, reacting with a mono or dialkylamine to form 3-alkyl-substituted sulfamoyl-10,11-dihydro-7-haloketone, and reaction of said ketone with a Grignard reagent followed by hydrolysis and dehydration to produce the desired compounds.

3,428,678
2-METHYL-2-(β-CHLOROETHYL) ACID HYDRAZIDE HYDROCHLORIDES

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 547,432, May 4, 1966. This application Sept. 28, 1966, Ser. No. 582,553

U.S. Cl. 260—558 **4 Claims**

Int. Cl. C01d *87/00*

2-methyl-2-(β-chloroethyl) acid hydrazide hydrochlorides are prepared by the reaction of β-hydroxyethyl hydrazides with thionyl chloride. The novel compounds such as benzoic acid 2-(β-chloroethyl)-2-methylhydrazide hydrochloride are useful as pesticides, chemical intermediates and as antidepressants.

3,428,679
TETRACYCLINE HYDROXY CARBOXYLIC ACIDS

Jacques Rondelet, Rixensart, Belgium, assignor to Recherche et Industrie Therapeutiques R.I.T., Genval, Belgium, a corporation of Belgium

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,347

Claims priority, application Great Britain, May 8, 1964, 19,315/64

U.S. Cl. 260—559 **8 Claims**

Int. Cl. C07c *103/20*

Tetracycline hydroxy acids are prepared by condensation of a tetracycline antibiotic with an aldehydic carboxylic acid, ester, salt, or hemiacetal thereof.

3,428,680
POLYQUATERNARY AMMONIUM SALTS OF POLYMERIZED EPICHLOROHYDRIN

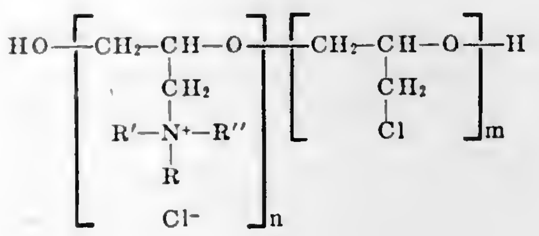
George B. Walker, Columbia Township, and Cushman M. Cambre, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,655

U.S. Cl. 260—567.6 **6 Claims**

Int. Cl. A61k *27/00;* **C07c** *87/30*

1. A polyquaternary ammonium salt of a polymerized epichlorohydrin, the polyquaternary ammonium salt having the following unit structure



$$HO-\left[CH_2-\underset{\substack{|\\CH_2\\|\\R'-N^+-R''\\|\\R\\Cl^-}}{CH}-O\right]_n-\left[CH_2-\underset{\substack{|\\CH_2\\|\\Cl}}{CH}-O\right]_m-H$$

wherein R is an alkyl group containing 8, 10, or 12 carbon atoms and R′ and R″ are each alkyl groups containing from 1 to about 4 carbon atoms; wherein *n* plus *m* ranges from 5 to about 12.5, *n* ranges from 1 to about 12.5, and *m* ranges from 0 to about 11.5 when R contains either 8 or 10 carbon atoms; and wherein *n* plus *m* is about 5, *n* ranges from 1 to about 5, and *m* ranges from 0 to about 4 when R contains 12 carbon atoms.

3,428,681
N-HALOTRICHLOROACETAMIDINES

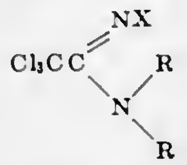
Perry R. Kippur and Randal E. Bailey, Orange, Conn., assignors, by mesne assignments, to The Ansul Company, a corporation of Wisconsin

No Drawing. Filed Sept. 1, 1966, Ser. No. 576,539

U.S. Cl. 260—564 **3 Claims**

Int. Cl. C07c *129/08;* **A61k** *27/00*

1. A compound having the formula:



wherein X is iodine, chlorine or bromine and each R is independently selected from the group consisting of hydrogen, alkyl having from 1 to 8 carbon atoms, aryl having from 6 to 10 carbon atoms and benzyl.

3,428,682
POLYOXYALKYLENE-CONTAINING AMMONIUM COMPOUNDS

Richard R. Egan, Edina, and Leon D. Smiens, Minneapolis, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed June 6, 1966, Ser. No. 555,264

U.S. Cl. 260—567.6 **7 Claims**

Int. Cl. D06m *15/12;* **C07c** *93/04;* **D06c** *19/00*

Quaternary ammonium compounds, useful in fabric softeners, are prepared by quaternizing tertiary amines of the general formula $R_1(R_2)N(R_3O)_nH$, where R_1 and R_2 are aliphatic hydrocarbon radicals and R_3O is a heteric polyoxyalkylene chain, with an alkyl halide, acid, or the like.

3,428,683
STABILIZED POLYOXYETHYLENE ADDUCTS OF ALKYLAMINES AND METHOD FOR THE MANUFACTURE THEREOF

Robert A. Swenson, St. Louis Park, and Roscoe S. Smith, Minnetonka, Minn., assignors to Cargill Incorporated, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,598

U.S. Cl. 260—584 **15 Claims**

Int. Cl. C07c *91/02*

Adducts of alkylamines containing between about 6 and 24 carbon atoms and at least about 0.001 gram equivalents per 100 grams of adduct of a primary amine or secondary dialkylamine containing at least 1 hydroxyl group as a color stabilizer, and a method of manufacturing such adducts by adding at least about 0.002 gram equivalents of the color stabilizer per 100 grams of adduct during reaction of a partially formed adduct with ethylene oxide.

3,428,684
PURIFICATION OF ALKANOL AMINES

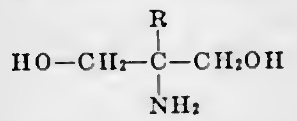
John B. Tindall, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,444

U.S. Cl. 260—584 **14 Claims**

Int. Cl. C07c *89/04*

1. A process for the purification of a malodorous alkanolamine containing color-producing impurities, said alkanolamines corresponding to the formula:



$$HO-CH_2-\underset{\substack{|\\NH_2}}{\overset{\substack{R\\|}}{C}}-CH_2OH$$

wherein R is hydrogen, an alkyl radical of 1 to 3 carbon atoms or hydroxymethyl, comprising contacting an aqueous solution of said alkanolamine with a resin capable of adsorbing said malodorous, color-producing impurities, said resin comprising a cross-linked copolymer of styrene with divinylbenzene, in an amount sufficient to effect substantial adsorption of said malodorous, color-producing impurities from said alkanolamine.

3,428,685
PRODUCTION OF DIALLYLAMINE

Albert B. Hall, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,068

U.S. Cl. 260—585 **2 Claims**

Int. Cl. C07c *85/02*

1. In the process of producing diallylamine by the reaction of allyl chloride with ammonia, the improvement of separating and converting the triallylamine formed as by-product to its hydrochloride salt, pyrolyzing the hydrochloride salt at about 180° to about 280° C. to form (a) diallylamine, which is recovered, (b) allyl chloride, which is recycled for reaction with ammonia, and (c) triallylamine, which is reconverted to the hydrochloride and recycled to the pyrolysis stage.

3,428,686
METHOD FOR PRODUCING ACROLEIN AND METHACROLEIN

Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,625

U.S. Cl. 260—604 **4 Claims**

Int. Cl. C07c *45/04*

Acrolein and methacrolein are prepared by reacting propylene and isobutylene respectively with air or oxygen in the presence of a platinum catalyst which is in the form of a metallic gauze at temperatures of from 750°–1000° C. for contact times of less than 0.1 second.

3,428,687
BIS(CHLORO-BROMOVINYL SULFOXIDES)

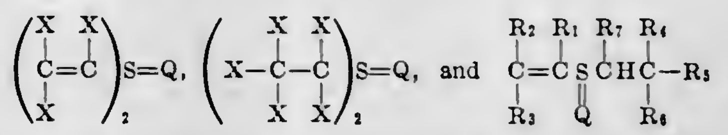
Paul C. Aichenegg, Prairie Village, Kans., and Carl D. Emerson, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Jan. 27, 1964, Ser. No. 340,504. Divided and this application June 21, 1965, Ser. No. 465,785

U.S. Cl. 260—607 **3 Claims**

Int. Cl. C07c *147/00;* **A01n** *9/14*

Compounds having the formulae



$$\left(\underset{\substack{|\\X}}{\overset{\substack{X\\|}}{C}}=\overset{\substack{X\\|}}{C}\right)_2 S=Q,\quad \left(X-\underset{\substack{|\\X}}{\overset{\substack{X\\|}}{C}}-\underset{\substack{|\\X}}{\overset{\substack{X\\|}}{C}}\right)_2 S=Q,\quad \text{and}\quad \underset{\substack{|\\R_3}}{\overset{\substack{R_2\\|}}{C}}=\overset{\substack{R_1\\|}}{C}\underset{\substack{\|\\Q}}{S}\overset{\substack{R_7\\|}}{C}H\underset{\substack{|\\R_6}}{\overset{\substack{R_4\\|}}{C}}-R_5$$

are prepared where at least two of the X groups are chlorine or bromine, two of R_1, R_2 and R_3 are chlorine or bromine and three of R_4, R_5, R_6 and R_7 are chlorine or bromine and the remaining X and R groups are hydrogen and Q is nothing or oxygen. The compounds are useful as nematocides and fungicides.

3,428,688
PREPARATION OF OLEFINIC SULFIDES

El-Ahmadi I. Heiba, Princeton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 30, 1965, Ser. No. 491,809

U.S. Cl. 260—609 **14 Claims**

Int. Cl. C07c *149/08, 149/10*

The preparation of organic sulfides containing a substituted or unsubstituted vinyl group by the vapor phase pyrolytic cleavage or organic vicinal bis-sulfides over adsorptive agents of high surface area as exemplified by the cleavage of 1,2-bis(phenylthio)-propane over activated carbon particles at 300 to 400° C. to form predominantly 2-phenylthiopropylene. Yields are improved by charging certain acetylenic or diolefinic compounds (e.g., allene) to the reaction to react additively with the mercaptan product of the primary reaction (e.g., benzenethiol) and form more of the vinyl sulfide products.

3,428,689
PEROXY COMPOUNDS

Thomas D. Manly, Luton, England, assignor to Laporte Chemicals Limited, Luton, England, a British corporation

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,473

Claims priority, application Great Britain, Sept. 21, 1963, 36,055/63

U.S. Cl. 260—610 **8 Claims**

Int. Cl. C07c *73/00, 73/08*

Organic peroxidic compounds can be stabilized by forming a composition which comprises at least one organic peroxide together with a stabilizing quantity of dipicolinic acid. The stabilization is particularly effective with hydroperoxides and ketone peroxides.

3,428,690
OXIDATION OF CYCLOHEXANE

Cyril Gardner, John Fraser Prescott, and Randal George Arthur New, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 18, 1964, Ser. No. 376,237

Claims priority, application Great Britain, June 21, 1963, 24,810/63

U.S. Cl. 260—610 **4 Claims**

Int. Cl. C07c *73/06*

1. In a process for the liquid phase oxidation of cyclohexane with a gas containing molecular oxygen in ferrous metal containing apparatus wherein the reaction product comprises a cyclohexane hydroperoxide, the improvement comprising oxidising said cyclohexane in the presence of a member of the group consisting of ethylenediamine tetraacetic acid and the alkali metal salts thereof, 8-hydroxy quinoline and 1:2-diaminocyclohexane tetraacetic acid and the alkali metal salts thereof.

3,428,691
AGE RESISTORS FOR RUBBER

Ronald B. Spacht, Kent, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,177

U.S. Cl. 260—613 **5 Claims**

Int. Cl. C08d *11/04;* **C07c** *43/22;* **C08c** *13/08*

1. A reaction product prepared by (1) reacting a mixture comprising (A) at least one chloromethylated diphenyl oxide selected from the group consisting of monochloromethylated diphenyl oxide, dichloromethylated diphenyl oxide and trichloromethylated diphenyl oxide and (B) at least one mol per replaceable chlorine atom in the chloromethylated diphenyl oxide of a mono- or dihydric phenolic compound having at least two free positions from the ortho and para positions and wherein the substituents are selected from the group consisting of hydrogen, methyl, ethyl, isopropyl, t-butyl, chloro and methoxy; at a temperature of from 30° C. to 150° C. and (2) subsequently reacting the first formed product with at least one mol of a tertiary olefinic compound containing from 4 to 8 carbon atoms per mol of the first formed product in the presence of an acidic alkylation catalyst and at a temperature of from 30° C. to 100° C.

3,428,692
PREPARATION OF NONIONIC DETERGENTS

Charles M. Starks and Eugene F. Kennedy, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,373

U.S. Cl. 260—613 **5 Claims**

Int. Cl. C07c *43/20*

Polyoxyethylene ether nonionic detergents of the general structure $R(OCH_2CH_2)_nOCH_2CH_2OH$ in which R is a detergent range alkyl or alkyl substituted phenyl radical is heated in the presence of nickel catalyst to provide a corresponding nonionic detergent wherein the terminal $—CH_2OH$ grouping is replaced with a hydrogen atom.

3,428,693
PREPARATION OF PENTAERYTHRITOL ALLYL ETHERS IN DIMETHYLSULFOXIDE

Thomas J. Prosser, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1963, Ser. No. 254,572

U.S. Cl. 260—615 **6 Claims**

Int. Cl. C07c *41/06, 41/10*

1. A process for the preparation of an ether selected from the group consisting of the tetraallyl ether of pentaerythritol, the tetraallyl ether of dipentaerythritol, the pentaallyl ether of dipentaerythritol and the hexaallyl ether of dipentaerythritol, which comprises contacting, in the presence of an oxide catalyst selected from the group consisting of alkali metal oxides and alkaline earth metal oxides and at a temperature of about 50° C. to about 110° C., an allyl halide with a polyhydric alcohol selected from the group consisting of pentaerythritol and dipentaerythritol, from about four to about eight moles of said allyl halide being employed for every mole of said polyhydric alcohol employed, in the presence of dimethylsulfoxide as the reaction solvent, wherein the amount of said oxide catalyst utilized is at least twice the amount required as catalyst and the excess oxide catalyst removes the water of reaction by reaction therewith.

3,428,694
1,1-DIALKOXY SUBSTITUTED ALKENES

Roman Marbet, Riehen, Switzerland, assignor to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 380,927, July 7, 1964. This application Dec. 6, 1967, Ser. No. 688,378

Claims priority, application Switzerland, July 18, 1963, 8,954/63

U.S. Cl. 260—615 **1 Claim**

Int. Cl. C07c *43/14*

γ,δ-Unsaturated aldehydes which are useful as odorants in the preparation of perfumes and other scented preparations.

3,428,695
HIGH TEMPERATURE, SHORT CONTACT-TIME PYROLYSIS OF DICHLOROFLUOROMETHANE WITH METHANE

John Richard Soulen, Narberth, and William Ford Schwartz, King of Prussia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,298

U.S. Cl. 260—653 **8 Claims**

Int. Cl. C07c *19/08, 21/18, 3/46*

A mixture of dichlorodifluoromethane and methane is pyrolyzed at a temperature within the range of about 1100° C. to about 2000° C. for a period of from 0.0003 to 0.05 second to produce fluoroethylenes and chlorofluoroethanes.

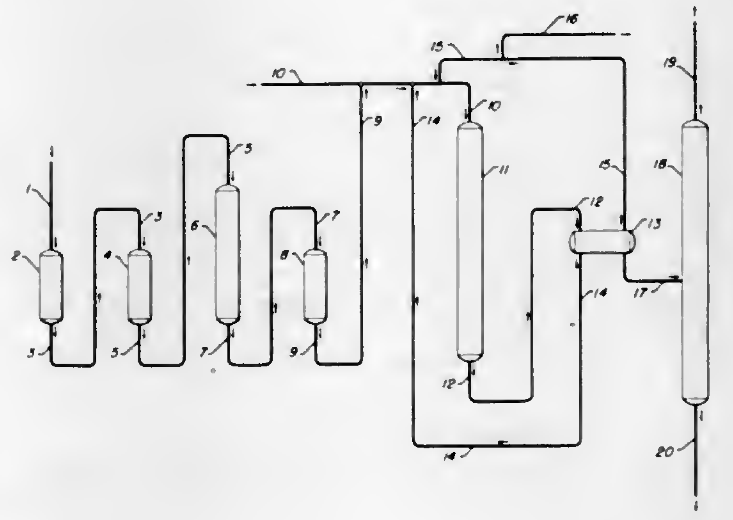
3,428,696
HYDROGENATION OF BENZENE TO CYCLOHEXANE

Newt M. Hallman, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 27, 1966, Ser. No. 604,739

U.S. Cl. 260—667 **13 Claims**

Int. Cl. C07c *3/42, 3/58, 5/10*



Process for the manufacture of cyclohexane utilizing a hydrogen feed contaminated with hydrocarbon vapors which comprises passing the hydrogen-rich feed stream into a conditioning zone under conditions sufficient to thermally or catalytically hydrocrack or hydrodealkylate the contaminants sufficiently to render the hydrogen-rich stream substantially free of C_6+ hydrocarbons, passing the conditioned hydrogen without intervening separation or withdrawal of hydrocarbon vapor into a hydrogenation zone with benzene, and receiving high purity cyclohexane.

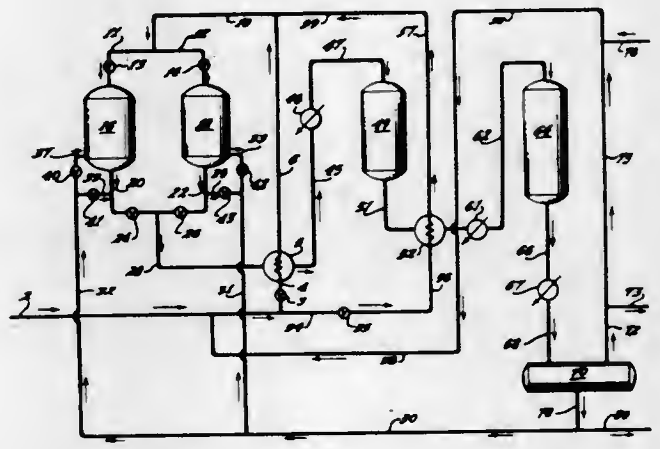
3,428,697
HYDROGENATION PROCESS

Javier Zulueta, Philadelphia, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed July 21, 1966, Ser. No. 566,815

U.S. Cl. 260—667 **8 Claims**

Int. Cl. C07c *5/10*



A process for hydrogenation of aromatic hydrocarbons to corresponding cycloaliphatic hydrocarbons in a series of three reaction zones is disclosed which is especially suitable for converting benzene to cyclohexane. All of the feed, as well as a hydrogen-containing gas stream passes through the reaction zones seriatim with space rates (i.e. # aromatic/hr./# catalyst) and degree of hydrogenation in each zone being predetermined within given limits. Reaction exotherms are controlled so that reaction temperatures in any zone do not exceed 500° F., by the admixture of a recycle stream of cycloaliphatic hydrocarbon with first zone effluent, by appropriate inter-zone cooling and by choice of parameters relative to space rate and degree of hydrogenation.

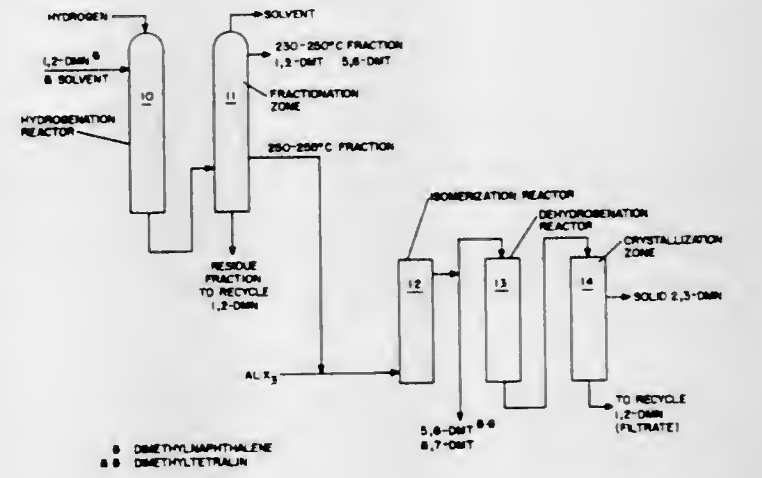
3,428,698
PRODUCTION OF 6,7-DIMETHYLTETRALIN AND 2,3-DIMETHYLNAPHTHALENE

Henry J. Peterson, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed July 28, 1967, Ser. No. 656,848

U.S. Cl. 260—668 **7 Claims**

Int. Cl. C07c *5/28, 7/02, 5/18*



Preparation of 2,3-dimethylnaphthalene from 1,2-dimethylnaphthalene comprising the partial reduction of 1,2-dimethylnaphthalene to 5,6-dimethyltetralin and 1,2-dimethyltetralin, fractionation of the mixture to recover 5,6-dimethyltetralin, isomerization of 5,6-dimethyltetralin in the presence of an aluminum halide catalyst to yield a mixture of 6,7-dimethyltetralin and 5,6-dimethyltetralin, dehydrogenation of the mixture to yield 2,3-dimethylnaphthalene and 1,2-dimethylnaphthalene and recovering pure 2,3-dimethylnaphthalene by crystallization and separation of 2,3-dimethylnaphthalene from 1,2-dimethylnaphthalene.

3,428,699
PROCESS FOR THE PREPARATION OF LIQUID, LOW-MOLECULAR WEIGHT UNSATURATED POLYMERS

Bernhard Schleimer, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Sept. 9, 1966, Ser. No. 578,136

Claims priority, application Germany, Sept. 21, 1965, C 36,928

U.S. Cl. 260—669 **4 Claims**

Int. Cl. C07c *3/10;* **B01j** *11/00*

The known production of polybutadienes involving polymerization with the aid of mixed catalysts is improved by the use of a catalyst system prepared by reacting (1) a solution of a nickel compound in an inert diluent with (2) an alkylaluminum halide compound and then (3) adding to the reaction product, as a modifier, a compound of an element of the main groups V and VI of the periodic system, said compound having free electron pairs derived from said element.

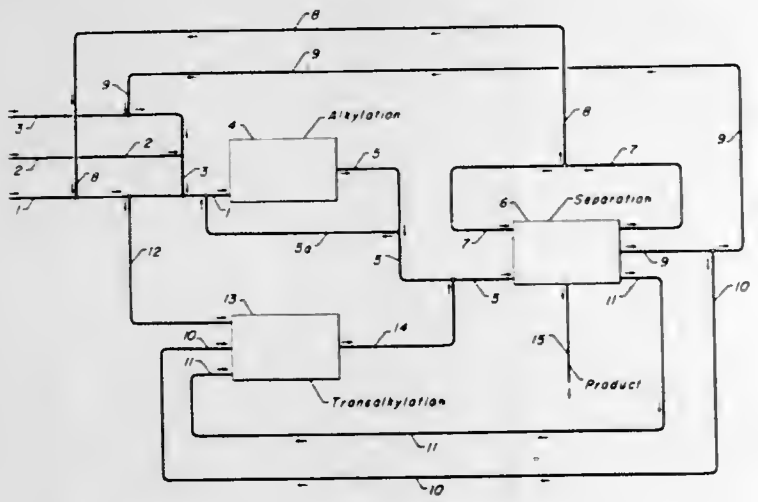
3,428,700
PREPARATION OF POLYCYCLIC HYDROCARBONS

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 2, 1966, Ser. No. 598,619
U.S. Cl. 260—670 **10 Claims**
Int. Cl. C07c *3/10*

Non-condensed polycyclic hydrocarbons can be prepared by treating an aromatic hydrocarbon with oxygen in the presence of a chain transfer agent and water, at elevated temperatures. Toluene can be converted to bibenzyl.

3,428,701
ALKYLATION-TRANSALKYLATION PROCESS

Dennis J. Ward, Lombard, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 556,943, June 13, 1966. This application Mar. 1, 1968, Ser. No. 712,333
U.S. Cl. 260—671 **10 Claims**
Int. Cl. C07c *3/56*



An aromatic compound is produced utilizing the steps of alkylation, transalkylation and separation.

3,428,702
DEHYDROCYCLIZATION OF 2,5-DIMETHYLHEXENE TO PARA-XYLENE

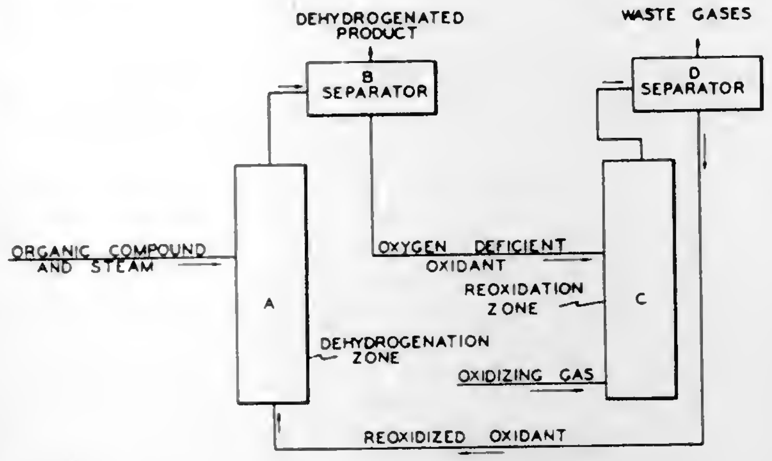
Ronald O. Downs, St. Louis, and Raymond A. Franz, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 14, 1966, Ser. No. 586,619
U.S. Cl. 260—673.5 **10 Claims**
Int. Cl. C07c *5/20, 5/24*

Para-xylene is made in an improved process by contacting 2,5-dimethyl hexene with a dehydrocyclization catalyst under dehydrocyclization conditions in the presence of a modifying agent selected from the group consisting of H_2S or compounds or elements which form H_2S under the reaction conditions.

3,428,703
DEHYDROGENATION PROCESS USING COBALT OR NICKEL FERRITE

Marvin Z. Woskow, Philip M. Colling, and Olin C. Karkalits, Jr., Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Jan. 27, 1967, Ser. No. 612,203
U.S. Cl. 260—680 **22 Claims**
Int. Cl. C07b *3/00*

Dehydrogenation of organic compounds by reacting hydrogen removed from the organic compound with oxygen to form water. Oxygen is supplied by comprising cobalt ferrite or nickel ferrite which releases oxygen and is thereby converted to a composition diminished in oxygen.



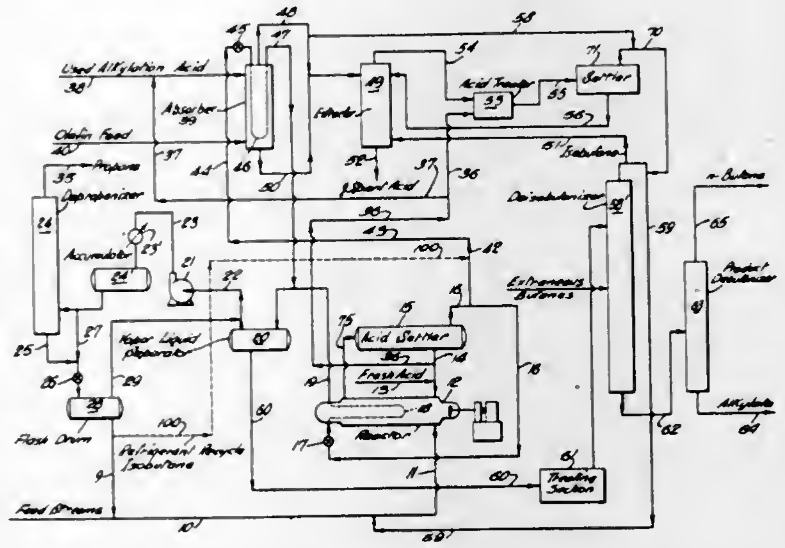
3,428,704
ISOMERIZATION PROCESS

Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed June 30, 1967, Ser. No. 650,200
U.S. Cl. 260—683.2 **10 Claims**
Int. Cl. C07c *5/28*

An olefinic hydrocarbon is isomerized utilizing a catalyst comprising a crystalline aluminosilicate containing at least one metal from Group VIII of the Periodic Table chemically combined with a metal subfluoride vapor.

3,428,705
ACID RECOVERY PROCESS-ALKYLATION PROCESS

Arthur R. Goldsby, Chappaqua, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of applications Ser. No. 510,904, Dec. 1, 1965, and Ser. No. 516,448, Dec. 25, 1965. This application Feb. 8, 1967, Ser. No. 614,695
U.S. Cl. 260—683.62 **16 Claims**
Int. Cl. C07c *3/54;* **F24j** *1/04*



This disclosure is directed to a combined alkylation process—acid recovery process—in which sulfuric acid is used in the alkylation process of an isoparaffin with an olefin and used sulfuric acid is fed into an absorption system to which there is introduced olefin to form dialkyl sulfate. An effluent comprising normally gaseous hydrocarbons in the form of a liquid under pressure is withdrawn from the alkylation process and eventually sent within a suitable coil or the like within or outside the absorption zone to effect indirect heat exchange thereby controlling the exothermic nature of the absorption reaction and lessening the load upon the alkylation phase of the process.

3,428,706
COMPOSITIONS COMPRISING ACID-CATALYZED AND ALKALINE-CATALYZED ORGANOPOLYSILOXANES

Amy L. Jasinski, Toledo, and Judith A. Walmsley, Sylvania, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,581

U.S. Cl. 260—825 **9 Claims**
Int. Cl. C08g *47/02*

1. A composition comprising
(1) about 100 parts by weight of an organopolysiloxane prepared from an acid-catalyzed hydrolysis and condensation product of a trialkoxy silane monomer having the formula:

$$R—Si(OR')_3$$

where R is an alkyl group of 1 to 2 carbon atoms or phenyl or mixtures thereof and R' is an alkoxy group of 1 to 6 carbon atoms and
(2) about ½ to 300 parts by weight of an alkaline catalyzed conjoint hydrolysis and condensation product of a propyltrialkoxy silane in which the alkoxy group has from 1 to 6 carbon atoms.

3,428,707
MODIFIED VINYL CHLORIDE POLYMER COMPOSITIONS

James L. Amos, Edward D. Baretta, and James J. Dahl, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 10, 1965, Ser. No. 454,735

U.S. Cl. 260—827 **7 Claims**
Int. Cl. C08f *29/18, 15/38;* **C08g** *47/10*

This invention relates to compositions, and a process for preparing the same, containing a vinyl chloride polymer as the major constituent in combination with minor amounts of certain elastomeric copolymer modifiers and small but highly effective amounts of certain diorganopolysiloxanes. These compositions are easily processable, flame-resistant and are further characterized by having exceptionally high impact strength values and are particularly well suited for use in the preparation of molten or extruded articles of the rigid, chemically resistant and flame resistant type such as pipes, tubing, sheeting and blown bottles and the like.

3,428,708
N,N-DIALKYLGLYCIDYLAMINE-CAPPED POLYOLS

William C. Kuryla, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 27, 1966, Ser. No. 568,147

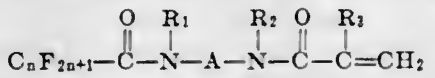
U.S. Cl. 260—830 **20 Claims**
Int. Cl. C08g *30/08, 22/14*

N,N-dialkylglycidylamine-capped polyols are prepared as novel compositions of matter by the base catalyzed reaction of a N,N-dialkylgylcidylamine with a hydroxyl terminated polyol. These compositions catalyze and enter into a polyurethane reaction and also react with an epoxide polymer.

3,428,709
POLYMERS OF N-PERFLUOROALKANOYLAMINO- AND N-PERFLUOROALKANOYLAMINOALKYL ACRYLAMIDES AND METHACRYLAMIDES

Eduard K. Kleiner, New York, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 22, 1966, Ser. No. 573,839
U.S. Cl. 260—836 **21 Claims**
Int. Cl. D06m *15/36;* **C08g** *45/04*

Polymers of compounds represented by the formula:



$$C_nF_{2n+1}—\overset{\overset{O}{\|}}{C}—\overset{\overset{R_1}{|}}{N}—A—\overset{\overset{R_2}{|}}{N}—\overset{\overset{O}{\|}}{C}—\overset{\overset{R_3}{|}}{C}=CH_2$$

wherein *n* is a whole number of from 1 to 18, A is $—(CH_2)_m$, *m* being from 0 to 4, R_1 and R_2, independently, are each hydrogen or alkyl of from 1 to 6 carbon atoms; or when taken together, R_1 and R_2 are

$$—CH_2CH_2—$$

when A is $—CH_2CH_2—$, and R_3 is hydrogen or methyl, are useful in providing oil- and water-repellent finishes especially for textiles as well as various other substrates.

3,428,710
SHAPED ARTICLES OF POLYAMIDE HAVING AN ANTISTATIC FINISH

Guenther Daumiller, Ziegelhausen, and Walter Lautenschlager, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 22, 1965, Ser. No. 474,151
Claims priority, application Germany, July 31, 1964, B 77,912
U.S. Cl. 260—857 **1 Claim**
Int. Cl. C08g *41/02, 41/04, 53/14*

Polyamide shaped articles possessing improved antistatic properties containing as an antistatic agent a reaction product of an unmodified or isocyanate-modified polyether polyol and a polyamide.

3,428,711
HINDERED POLYMERIC TERTIARY AMINES AS STABILIZERS FOR POLYURETHANES

Oliver Larry Hunt, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,891
U.S. Cl. 260—859 **7 Claims**
Int. Cl. C08g *41/04, 51/06*

Segmented polyurethanes are stabilized with polymeric tertiary-aminoalkyl acrylates and methacrylates. Bulky substituent groups are chosen to provide sterically hindered amines. Polyurethanes stabilized with these hindered amines are more resistant to degradation upon exposure to chlorine than are polyurethanes stabilized with similar amines which are not sterically hindered.

3,428,712
PROCESS FOR OBTAINING POLYBUTADIENE-MODIFIED STYRENE RESINS

Frederick E. Carrock, Wyckoff, Barna Toekes, Oakland, and Kenneth W. Doak, Woodcliff Lake, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Aug. 22, 1963, Ser. No. 303,940
U.S. Cl. 260—880 **8 Claims**
Int. Cl. C08f *33/02, 45/28, 45/70*

An improvement is described in the process of preparing rubber-modified polystyrenes by prepolymerizing a mixture containing styrene, a polybutadiene rubber and a chain regulator such as an alkyl mercaptan until a monomer conversion of 10 to 45% is achieved, dispersing the partially polymerized reaction mixture in an aqueous suspension and completing polymerization. The improvement involves adding additional chain regulator in at least one separate increment during the polymerization process in order to obtain a rubber-modified polymer having higher impact strength and hardness in comparison to products prepared employing a single addition of regulator having the same melt index.

3,428,713
ALKANOL AMINE SALTS OF PHOSPHATES

Philip Lee Bartlett, Wilmington, Del., and Charles Bedford Biswell, Woodstown, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 375,357, June 15, 1964. This application Jan. 13, 1965, Ser. No. 425,329

U.S. Cl. 260—924 **4 Claims**

Int. Cl. C07f *9/08;* **C10l** *1/26*

Alkanol amine salts of alkyl acid ortho-phosphates are used as anti-stalling agents for gasoline.

3,428,714
TRIARYL PHOSPHATES

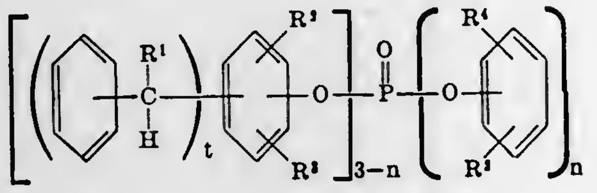
James S. Sconce, Lewiston, James J. Hodan, Williamsville, and William L. Schall, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara, Falls, N.Y., a corporation of New York

No Drawing. Filed May 24, 1965, Ser. No. 458,451

U.S. Cl. 260—966 **15 Claims**

Int. Cl. C07f *9/08*

Organic phosphates of the formula



wherein R^1 is alkyl of 1 to about 8 carbon atoms; R^2, R^3, R^4, and R^5 are independently selected from the group consisting of hydrogen, alkyl of 1 to about 18 carbon atoms, and chlorine; *n* is from 0 to 2; and *t* is from 1 to 3. These compounds are especially useful as plasticizers.

3,428,715
HALOGENATED PHOSPHATES AND PHOSPHONATES

Fred William West and John Thomas Gresham, Skillman, and Theodore Weil, Highland Park, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,543

U.S. Cl. 260—955 **5 Claims**

Int. Cl. C07f *9/08, 9/28*

1. A halogenated organophosphorus ester having at least one fluorine atom selected from the class consisting of

$$(CF_2BrCFBrCH_2O)_3P{=}O,\quad [(CXY_2)_2CRO]_3P{=}O$$

and

$$CXY_2CXHCY_2\overset{\overset{\displaystyle O}{\|}}{P}[OCH(CXY_2)_2]_2$$

wherein X is selected from the class consisting of chlorine and bromine, Y is selected from the class consisting of fluorine and hydrogen, and R is selected from the group consisting of hydrogen, $—CF_3$ and $—CFBrCF_2Br$.

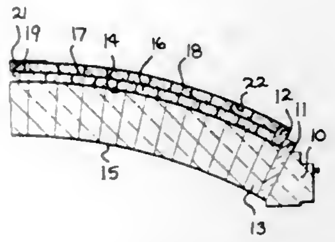
3,428,716
METHOD OF INSTALLING HIGH TEMPERATURE FURNACE INSULATION

Joseph V. Hughes, Jr. and Charles A. Squier, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Nov. 22, 1966, Ser. No. 596,218

U.S. Cl. 263—52 **14 Claims**

Int. Cl. F27d *1/00;* **F23m** *5/00*



Method for insulating the refractory brick crown structure of a high temperature furnace which includes laying a course of dry, particulate mortar on the crown structure such that upon heating the mortar sifts to fill the cracks and voids resulting from thermal expansion as the crown is heated.

3,428,717
METHOD OF EXTRUDING METALLIC CARBIDES AND IN PARTICULAR URANIUM MONOCARBIDE

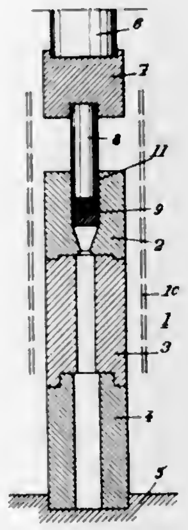
André Accary and Pierre Magnier, Paris, and Michel Marchal, Massy, France, assignors to Commissariat à l'Energie Atomique, Paris, France, an organization of France

Filed July 9, 1965, Ser. No. 470,738

Claims priority, application France, July 17, 1964, 982,141

U.S. Cl. 264—.5 **16 Claims**

Int. Cl. B29f *3/04*



The method of extrusion of a metal carbide piece comprises extruding this piece in the hot state through a graphite die of high mechanical resistance.

3,428,718
METHOD FOR THE LIQUID DISINTEGRATION OF METAL

Elis Erik Vilhelm Helin, Goteborg, and Yngve Lennart Lagerholm, Kungalv, Sweden, assignors to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a Swedish joint-stock company

Filed June 22, 1965, Ser. No. 466,028

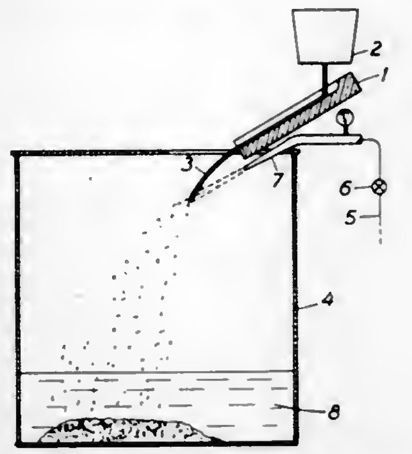
Claims priority, application Sweden, July 9, 1964, 8,363/64

U.S. Cl. 264—11 **9 Claims**

Int. Cl. B22d *23/08*

The method of disintegrating metal comprising the steps of projecting a stream of molten metal, projecting a stream of condensible vapor to a zone adjoining said

stream of molten metal, and causing the stream of vapor to condense rapidly in said zone, whereby a vigorous agitation is produced in said zone to disintegrate said stream of metal into a shower of discrete particles.



3,428,719
METHOD OF PRODUCING HIGH TEMPERATURE RESISTANT STRUCTURES

James A. Robertson, Levittown, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,099

U.S. Cl. 264—29 **14 Claims**

Int. Cl. C01b *31/30*

High temperature-resistant and erosion-resistant shaped structures formed by controlled heat treatments of a shaped structure comprising a cellulosic material and at least one polymerized glass-forming inorganic oxide each being present in its own continuous network in intimate contact with and intermingled with the network of the other. The heat treating steps are scheduled and controlled to provide a structure consisting essentially of (1) carbon and the inorganic oxide, or (2) the inorganic oxide, or (3) a carbide of the metal of the inorganic oxide. The shaped structures are of particulary utility in reinforcing high temperature resistant resins.

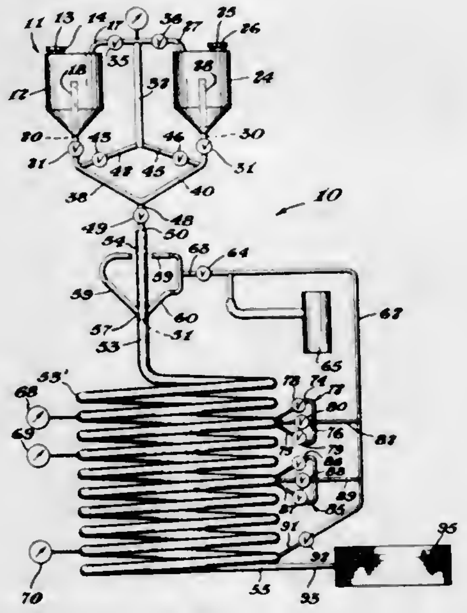
3,428,720
METHOD AND APPARATUS FOR SUPERATMOSPHERIC PREFOAMING OF EXPANDABLE SYNTHETIC RESINOUS PARTICLES

Keith R. Denslow, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 28, 1966, Ser. No. 582,671

U.S. Cl. 264—51 **14 Claims**

Int. Cl. B29h *7/00*



1. A method for the prefoaming of synthetic resinous particles under superatmospheric pressure, the steps of the method comprising

- continuously introducing the suspension of an unexpanded expandable particulate synthetic resinous material into an elongate restricting configuration,
- introducing steam at superatmospheric pressure into the elongate configuration,
- passing the expandable synthetic resinous particles and steam through the elongate configuration under superatmospheric pressure to thereby at least partially expand the expandable particles, and
- discharging in a continuous manner the expandable particles and steam from the elongate tubular configuration.

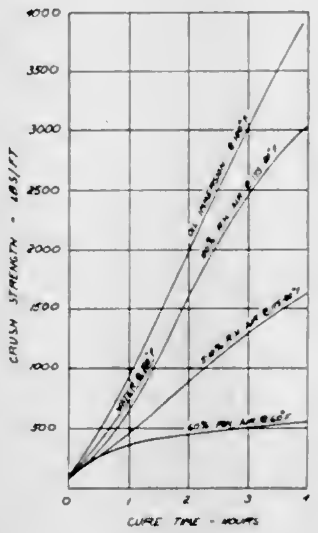
3,428,721
METHOD OF CURING HYDRAULIC CEMENT

Joseph C. Jackson, Ambler, and Willard R. Seipt, Glenside, Pa., assignors to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland

Filed Sept. 6, 1966, Ser. No. 577,386

U.S. Cl. 264—79 **14 Claims**

Int. Cl. C04b *41/30;* **C09k** *3/00*



Process for improved curing of articles made from hydraulic cement wherein the freshly formed cement article is immersed in a heated water-immiscible liquid bath and maintained in the bath for at least a period of time until the cement has set sufficiently for the article to become self-supporting, the heat of the liquid bath accelerating cement hydration, the water-immiscible liquid preventing the evaporation of water from the cement article.

3,428,722
METHOD AND APPARATUS FOR BLOW MOLDING HOLLOW THERMOPLASTIC ARTICLES

Richard Marion Chittenden, Grayslake, and Oscar Frederick Ecklund, Barrington, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 16, 1966, Ser. No. 580,064

U.S. Cl. 264—98 **7 Claims**

Int. Cl. B29d *3/00*

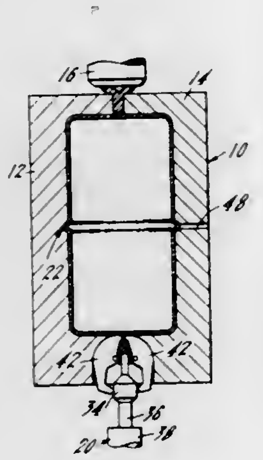
1. A process for blow molding hollow tubular plastic articles, comprising the steps of:

- extruding a tubular thermoplastic parison and locating it between a pair of opened mold halves and in surrounding relationship to a blow pin;
- closing said mold halves to press one end of the parison into tight conforming relationship to the exterior of the blow pin and to pinch closed the other end of said parison;

introducing blowing agent through said blow pin to expand said parison outwardly and into contact with the interior walls of said mold halves;

closing the end of said parison adjacent said blow pin to seal off communication between said blow pin and the interior of said parison;

pinching said expanded parison along a line coinciding with the surface of the mold, said pinching step producing a relatively thin web separating said expanded parison from the portion of said parison in contact with said blow pin;

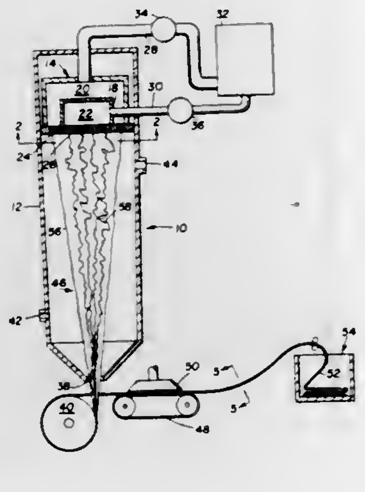


piercing said expanded parison at a selected location between its closed ends to release said blowing agent from within said expanded parison; and

opening said mold halves to eject the blown articles now formed by said expanded parison.

3,428,723
METHOD OF MAKING A CIGARETTE FILTER TOW

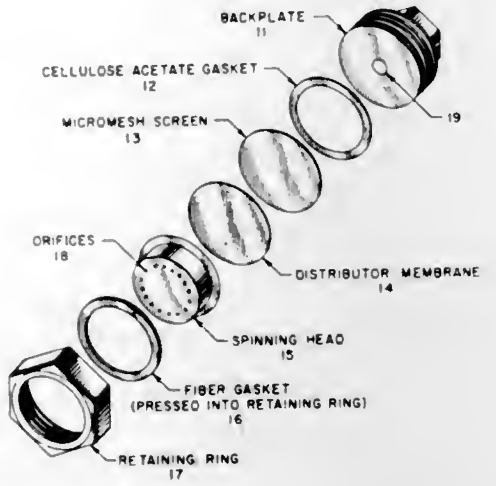
Robert C. Harrington, Jr., and Robert L. Ammons, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 15, 1965, Ser. No. 487,547
U.S. Cl. 264—207 **1 Claim**
Int. Cl. D01f *3/36;* **A24c** *5/50*



A process is provided for producing a cigarette filter tow which comprises spinning a solution of cellulose acetate into a core of filaments without exerting drawing tension and an outer layer of filaments with drawing tension thereby resulting in a tow of irregularly shaped unoriented filaments encased within an outer layer of smooth oriented filaments.

3,428,724
CELLULOSE ESTER SEALING MEANS FOR DRY SPINNING SPINNERET

John E. Billheimer, Pearisburg, Va., assignor to Celanese Corporation, a corporation of Delaware
Filed Jan. 4, 1966, Ser. No. 518,624
U.S. Cl. 264—207 **6 Claims**
Int. Cl. D01d *3/00*



An improved celluose ester gasket for use in a spinneret assembly for dry spinning cellulose acetate.

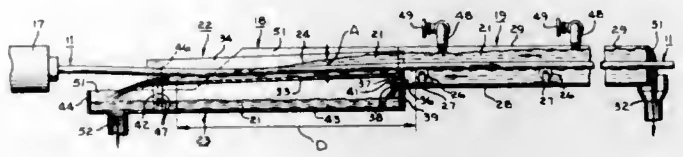
3,428,725
PROCESS OF CASTING A POLYURETHANE TO FORM A FLEXIBLE MOLD

John Delmonte, Glendale, and Paul L. Meadows, Burbank, Calif., assignors to Furane Plastics Incorporated, a corporation of California
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,766
U.S. Cl. 264—226 **8 Claims**
Int. Cl. B29c *1/02, 1/04*

A process for making a flexible polyurethane cavity mold cured at room temperature, which is strippable from the original model, and subsequently strippable from hardened castings formed therein; and the product of said process.

3,428,726
METHOD OF COOLING A JACKET FOR A STRAND

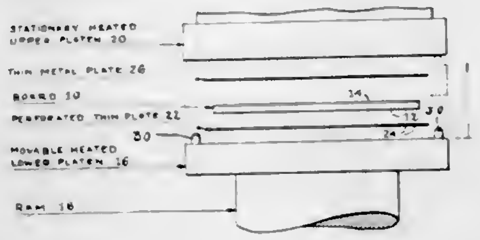
Joe B. Moss, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 30, 1965, Ser. No. 443,905
U.S. Cl. 264—237 **8 Claims**
Int. Cl. B29c *25/00*



In a method of cooling a jacket for a strand, the jacketed strand is advanced from jacketing apparatus into a body of cooling liquid which is open to the atmosphere, through an inclined surface of the cooling liquid so that it enters the cooling liquid at zero hydrostatic pressure and becomes progressively submerged in the cooling liquid, with the jacketed strand freely suspended between the jacketing apparatus and a first support point in the cooling liquid. The angle of inclination of the inclined surface of the cooling liquid is adjustable such that hydrostatic pressure does not press the jacket into firm contact with the strand to cause the jacket to adhere to and to melt portions of the strand, and such that by the time the jacketed strand reaches the first support point it has cooled and solidified to an extent that the supporting of the stand does not cause the jacket to tend to adhere to and to melt portions of the strand.

3,428,727
METHOD FOR PRODUCING AN IMPROVED MATRIX MOLDING BOARD

Sigfried Higgins, Montclair, N.J., assignor to Williamson & Company, Caldwell, N.J., a corporation of New Jersey
Filed Mar. 25, 1963, Ser. No. 267,540
U.S. Cl. 264—293 **1 Claim**
Int. Cl. B28b *11/10*



1. A method for producing an improved matrix molding board comprising:

heating to 170°–212° F. a board having at least 4% by weight of volatiles and comprising a base 0.1–0.3″ thick and a matte face layer of thermosetting resinous molding material 0.030–0.045″ thick, said base comprising fibrous material and thermosetting resin, said resin measuring about 33–45% by weight of said base, said base having a compression factor of about 43–48% at 1,000 pounds per square inch, and an apparent density of 0.88–0.94, said heating continued for 1–2 hours until the volatiles content of said board is reduced to 2.5–3% without adversely affecting the moldability of said board,

then sandwiching the board between a pair of platens and a pair of metal elements, one of said elements having a smooth continuous flat surface adjacent said matte face and the other element being perforated and adjacent to the other face of said board;

while being heated by one of said platens maintaining said smooth flat surface in contact with said matte face for 30–120 seconds to soften said face;

then while said surface is in said condition, and said platens are at elevated temperature of 250°–280° F. moving one of the platens with respect to the other a predetermined distance and then maintaining them in said relationship for a period to compress said board at 250–400 pounds per square inch, to reduce its thickness by approximately 15–25% and shallow sink knobs into said perforations and cause the escape of volatiles and said face is smooth and glossy without substantially advancing the cure of the resin in said layer and base so that the board is still moldable, then removing said sandwich from said platens and chilling same and removing the improved matrix molding board from said elements.

3,428,728
TIMED RELEASE SUBLINGUAL MEDICATIONS

Hans Lowey, Larchmont, N.Y.
(7 Deerfield Lane, Mamaroneck, N.Y. 10543)
No Drawing. Continuation-in-part of application Ser. No. 395,291, Sept. 9, 1964. This application Oct. 21, 1965, Ser. No. 500,157
U.S. Cl. 424—14 **4 Claims**
Int Cl. A61k *9/00;* **A61j** *3/06*

Pharmaceutical tablets capable of releasing an active ingredient under controlled conditions during a period of between 15–60 minutes are prepared by cooking a mixture of sorbitol and gum acacia until the solids content is 65%, adding at least one artificial sweetener for sweetening and absorption regulation, cooling to 90° F., adding the active ingredient, converting the mixture into sublingual oral unit dosage form and administering the product sublingually while being able to discontinue medication at will.

3,428,729
CONTROLLED RELEASE FORMULATION

William R. Anderson, 593 W. 6th St., San Pedro, Calif. 90731; Anthony Pescetti, 1201 Paseo Del Mar, San Pedro, Calif. 90731; and William V. Dakin, 4911 Matilija, Sherman Oaks, Calif. 91403
No Drawing. Filed Dec. 20, 1966, Ser. No. 603,104
U.S. Cl. 424—19 **4 Claims**
Int Cl. A61k *9/00, 27/00*

A unique formulation for controlled release of medication from subcutaneous implants in living animals wherein the presence of dibutylphthalate in a waxy medium and the temperature of the living animal are factors in accurately controlling the length of time of release of medication.

3,428,730
ANTIBACTERIAL MIXTURE OF O-CARBAMYL-D-SERINE AND D-4-AMINO-3-ISOXAZOLIDONE

Hamao Umezawa, 23 Kita-4-chome, Toyotama, Nerima-ku, and Nobuo Tanaka, Kaminumacho 3-909, Setagaya-ku, Tokyo, Japan
No Drawing. Continuation of application Ser. No. 418,535, Dec. 15, 1964. This application June 30, 1967, Ser. No. 650,552
U.S. Cl. 424—114 **3 Claims**
Int Cl. A61k *21/00*

A mixture of antibacterial agents which contains O-carbamyl-D-serine and D-4-amino-3-isoxazolidone in the ratio of 0.25–10 of the former to 1 of the latter and which exhibits stronger antibacterial activity than D-4-amino-3-isoxazolidone alone.

3,428,731
STABLE DISPERSIONS OF FINELY DIVIDED PHOSPHATE-PROCESS CUPRIC HYDROXIDE

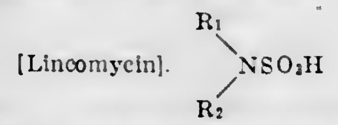
William H. Furness, deceased, late of Haddonfield, N.J., by Mary A. Furness, executrix, Haddonfield, N.J., assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 19, 1965, Ser. No. 498,153
U.S. Cl. 424—140 **20 Claims**
Int. Cl. A01n *11/04, 13/00*

This invention relates to stable aqueous dispersions of finely divided phosphate process cupric hydroxide having a pH from about 7 to 9.5.

3,428,732
LINCOMYCIN ALKYLSULFAMATES

Barney J. Magerlein, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 262,341, Mar. 4, 1963. This application Dec. 2, 1964, Ser. No. 415,485
U.S. Cl. 424—181 **8 Claims**
Int. Cl. A61k *21/00;* **C07g** *3/00*

1. A lincomycin salt of the formula:



$$[\text{Lincomycin}]\cdot\overset{R_1}{\underset{R_2}{\mathrm{NSO_3H}}}$$

wherein R_1 is alkyl and R_2 is a member selected from the group consisting of hydrogen and alkyl containing 1 through 24 carbon atoms.

3,428,733
PREVENTION OF LITTERING IN ANIMALS WITH DEHYDROEPIANDROSTERONE 3 - (2'-TETRAHYDROPYRANYL)ETHER

George O. Allen, Jr., Somerville, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Filed Dec. 22, 1966, Ser. No. 603,750

U.S. Cl. 424—241 **3 Claims**

Int. Cl. A61k *17/00*

The feeding of dehydroepiandrosterone 3-(2'-tetrahydropyranyl)ether to pregnant animals will reduce the size of or prevent litters.

3,428,734
SULFITE NEMATOCIDES

Bogislav von Schmeling, Hamden, and Rupert A. Covey, Wolcott, Conn., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

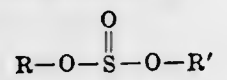
No Drawing. Continuation-in-part of application Ser. No. 532,085, Mar. 7, 1966. This application June 2, 1967, Ser. No. 643,056

U.S. Cl. 424—303 **12 Claims**

Int. Cl. A01n *9/14;* **C07c** *143/00*

1. The method of controlling nematodes which comprises contacting nematodes with a mixted sulfite diester of an acyclic alkynyl alcohol and an aliphatic alcohol or cycloaliphatic alcohol.

12. A compound of the formula



$$R-O-\overset{\overset{O}{\|}}{S}-O-R'$$

wherein R is alkyl or haloalkyl and R' is haloalkynyl.

3,428,735
METHOD OF TREATING DEPRESSION WITH 5-(3-DIMETHYLAMINOPROPYLIDENE)DIBENZO[a,d][1,4]CYCLOHEPTADIENE OR ITS NON-TOXIC SALTS THEREOF

Edward L. Engelhardt, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 855,981, Nov. 30, 1959. This application Aug. 24, 1967, Ser. No. 662,907

U.S. Cl. 424—330 **3 Claims**

Int. Cl. A61k *27/00*

The preparation of 5-(3-tertiaryaminopropyl) or 5-(3-tertiaryaminopropylidenyl)dibenzocycloheptadienes from dibenzocycloheptanone-5 is described. The compounds are used as anti-depressants in the treatment of mental disorders.

3,428,736
SYNERGISTIC COMBINATION CONTAINING AN OXIODINIUM COMPOUND AND BIS-(3,5,6-TRICHLORO-2-HYDROXYPHENYL)METHANE

William N. Cannon, Greenwood, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 338,025, Jan. 16, 1964. This application July 26, 1967, Ser. No. 656,067

U.S. Cl. 424—340 **4 Claims**

Int. Cl. A61k *27/02*

Synergistic combinations of bactericides containing bis-(3,5,6-trichloro - 2 - hydroxyphenyl)methane and a dibenz[be][1,4]oxiodinium salt are disclosed.

ELECTRICAL

ERRATUM

For Class 84—1.14 see:
Patent No. 3,427,911

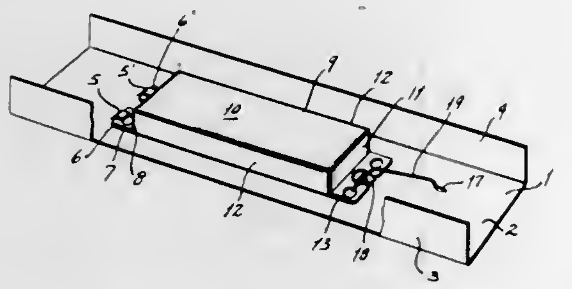
3,428,737
BALLAST MOUNTING

Dudley M. Pou, Memphis, Tenn., assignor to Light & Power Utilities Corp., Olive Branch, Miss., a corporation of Mississippi

Filed Nov. 9, 1967, Ser. No. 681,701

U.S. Cl. 174—52 **8 Claims**

Int. Cl. H05k *5/02*



A ballast for fluorescent light fixtures having flat flanges on its opposite ends which are of like construction; there being a central endwise opening recess in each flange for defining two end portions. The end portions on one flange are adapted for engagement with clip-like members stamped or otherwise struck from the fixture mounting plate; there being further provided a wire-form locking member being of right angular character having a transverse leg adapted for engaging a loop projecting upwardly from the plate and presented within the recess of the forward flange; and having a longitudinal leg engageable at its extremity with a receptacle-like protrusion integral with said plate.

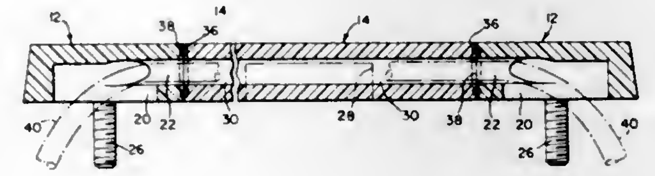
3,428,738
HINGE WITH CONDUCTORS PASSING THERETHROUGH

Edward Zychal, Cornwells Heights, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Delaware

Filed Mar. 17, 1966, Ser. No. 535,148

U.S. Cl. 174—70 **4 Claims**

Int. Cl. H02g *11/00;* **B60q** *1/36;* **E05d** *7/04*



A hinge between a pair of pivotally connected plates includes a recess in each of the plates and a channel in each of the plates coaxial with the axis about which pivoting occurs. The channel in each plate opens into the recess therein and extends toward the channel in the other plate terminating in facing lateral walls on the plates. A conductor passes into a recess in one plate, through both channels and out the recess in the other plate.

3,428,739
SEALED CRIMP-TYPE COAXIAL CABLE CONNECTION

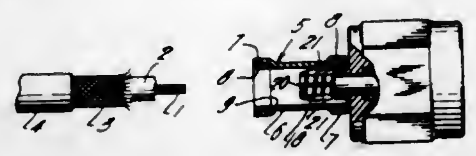
Samuel H. Jackson, Ardsley, N.Y., assignor to Kings Electronics Company Inc.

Filed Jan. 12, 1967, Ser. No. 609,282

U.S. Cl. 174—75 **6 Claims**

Int. Cl. H02g *15/04;* **H01r** *5/08*

A coaxial cable has an outer cylindrical sleeve having a uniform internal diameter, the sleeve having an elastomeric annulus in an internal recess. The outer face of the sleeve is compressed to distort the sleeve and is forced tightly against the outer conductor of the cable and to prevent entrance of moisture.



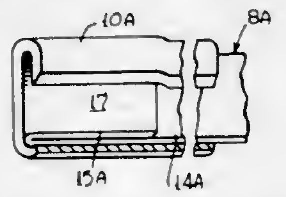
3,428,740
FLAT ELECTRICAL CONDUCTOR TERMINAL

Arthur Wayboer, Livingston, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 10, 1966, Ser. No. 586,326

U.S. Cl. 174—94 **5 Claims**

Int. Cl. H02g *15/08;* **H01r** *5/08*



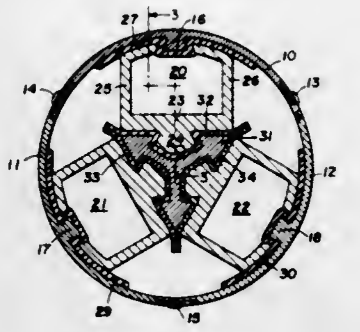
The terminal end of a flat conductor is folded inwardly from the two edges onto itself for a short length with a space between the edges along the center. A tubular contact pin fits over the folded end of the conductor and is deformed into contact therewith at the two levels provided by the folded edges and the space between, thereby providing a tight electrical and mechanical connection between the two elements without additional soldering or welding.

3,428,741
ANCHORED AND ENCLOSED BUS DUCT STRUCTURE

Helmuth W. Zuch, P.O. Box 122,
Austin, Tex. 78767
Filed Mar. 14, 1967, Ser. No. 623,062

U.S. Cl. 174—99 **9 Claims**

Int. Cl. H02g *5/06;* **H01b** *7/02*



A unitary, pre-assembled, pre-insulated bus assembly for three-phase, three- or four-wire power transmission in which contoured conductor channels are locked to, but insulated from, each other by structure including a central member with means for accommodating anchorage to a cylindrical tubular housing.

3,428,742
GUY GUARD AND CLIP

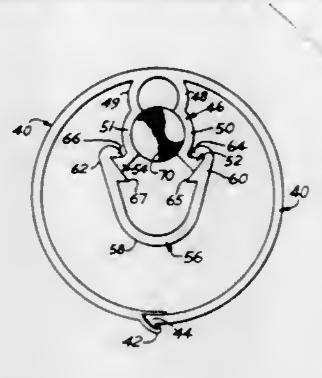
Billie L. Smith, Mount Airy, N.C., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Sept. 11, 1967, Ser. No. 666,647

U.S. Cl. 174—136 **3 Claims**

Int. Cl. H01b *7/24*

A flexible wire guard to protect an insulated wire against damage. A cylindrically shaped body portion of the guard has a longitudinal slit to permit the guard to be fitted over the wire. A cylindrically shaped grasping portion is attached to the interior of the body portion and adapted to fit snugly over the wire. Clip members hold the interior grasping portion on the wire while the sides of the cylindrical body portion engages each other and lock the guard onto the wire.

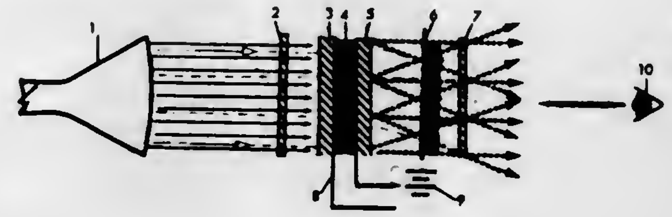


3,428,743
ELECTROOPTIC CRYSTAL CONTROLLED VARIABLE COLOR MODULATOR

Thomas F. Hanlon, 337 Tremont Ave.,
Fort Lee, N.J. 07024
Filed Feb. 7, 1966, Ser. No. 536,167

U.S. Cl. 178—5.4 **2 Claims**

Int. Cl. H04n *5/40, 5/48*



The electrooptic crystal controlled variable color modulator is a solid state device for producing additive color images in television reecivers, electrostatic copying machines and other photographic devices. It comprises a polarizer, a single electrooptic cell and a banded color filter with the primary colors, red, blue and green closely grouped in a repeated sequence with each other polarized at a different angle. Light entering the modulator is polarized in specific planes of transmission depending upon voltage potentials applied to the transparent electrodes of the modulator. Each color is selected by varying the voltage potential on the transparent electrodes of the modulator. Since each color is polarized at a different angle, light will pass through the selected color producing its color value and the unselected colors will be cross-polarized or darkend. Each color is selected in rapid sequence thus building an additive color image.

3,428,744
FACSIMILE LINE SKIPPING SYSTEM

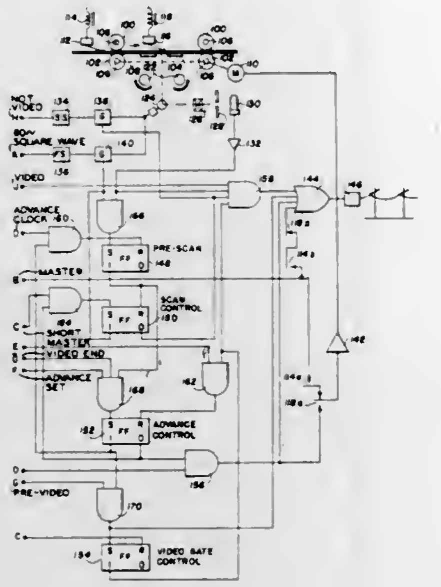
Leland D. Green, Pasadena, Robert W. Reynolds, Los Angeles, and Waldemar Saeger, La Canada, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed July 14, 1965, Ser. No. 471,799

U.S. Cl. 178—6 **10 Claims**

Int. Cl. H04n *1/04, 7/00*

A facsimile graphic communication system wherein blank lines are automatically skipped at both the transmitter and receiver. The scanner in both the transmitter and receiver has a fast and slow scan capability. Every elemental line of the document or the like which contains information is scanned twice, first with a rapid scan and then with a slow scan, during which video signals are transmitted. Lines bearing no information are merely scanned rapidly once. If a black area is detected during a fast scan, the scanning action reverts to the slow mode.



If information is detected during the retrace, then a further slow scan is made and the paper advance signal is withheld until the end of the slow scan.

3,428,745

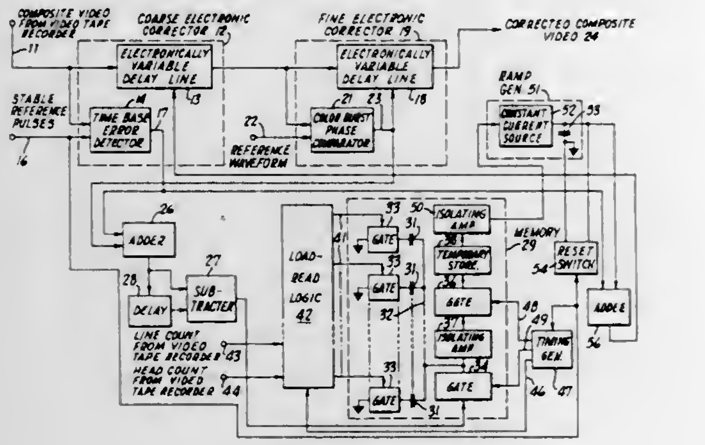
HEAD-TO-TAPE VELOCITY ERROR COMPENSATOR FOR ROTARY HEAD VIDEO TAPE RECORDERS

Charles H. Coleman, Jr., Belmont, and Robert P. MacKenzie, Los Altos, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Mar. 24, 1966, Ser. No. 537,116

U.S. Cl. 178—6.6 **11 Claims**

Int. Cl. H04n *5/78*



In a head-to-tape velocity error compensator for rotary head video tape recording, a system employing means for continuous compensation of phase shift of the color subcarrier of the playback signal occurring within the horizontal line as the line traverses from left to right in the reproduced picture. The system includes means for generating a stepped error signal having steps of levels proportional to the time difference between horizontal synchronizing pulses of the video signals and reference pulses. The duration of each level corresponds to the time of a horizontal line. Memory means store potentials representative of the step level differences between successive steps until such times as the same heads are next reproducing the same lines. Ramp generating means respond to the polarity and magnitude of the stored signals and generate responsive ramp signals. Means responsive to said ramp signals and said stepped signal in turn produce a continuous error signal to control an electrically variable delay line within a time base error corrector receiving the video signal.

3,428,746

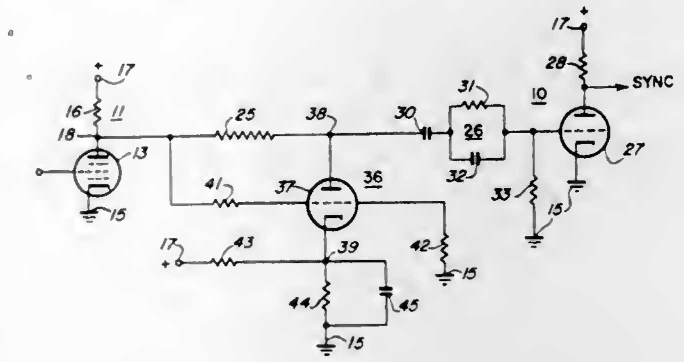
NOISE GATING CIRCUIT FOR SYNCHRONIZING SIGNAL SEPARATOR

David F. Graf, Morton Grove, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware

Filed Jan. 10, 1966, Ser. No. 519,709

U.S. Cl. 178—7.3 **5 Claims**

Int. Cl. H04n *5/48*



A noise gating circuit for a synchronizing signal separator in a television receiver has an electron device shunted across the signal path to the separator and normally held in a non-conductive condition. On the occurrence of a high amplitude noise pulse the electron device is rendered conductive, clamping the components video signal to prevent the noise from reaching the sync separator.

3,428,747

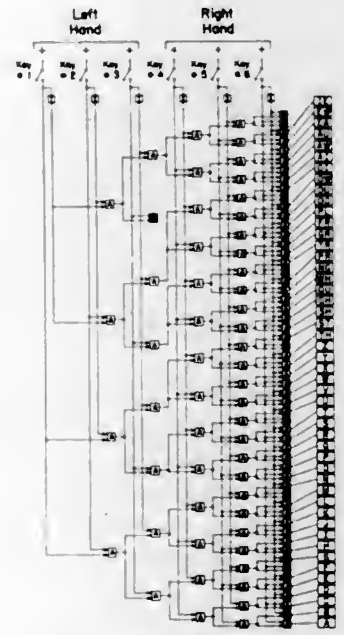
MAN TO MACHINE COMMUNICATION KEYBOARD DEVICE

Nicholas Alferieff, 38 Cross Ridge Road, Chappaqua, N.Y. 10514

Filed Mar. 22, 1965, Ser. No. 441,704

U.S Cl. 178—17 **38 Claims**

Int. Cl. H04l *15/12, 15/16*



A communication device comprised of a support enclosure having an array of a plurality of key-units and of an auxiliary unit containing a converter, a decoder and a recording device. The key units are comprised of two or three keys which are operated by a single human digit which will generate diverse numbers of signals depending upon the manner in which the keys are actuated. In the preferred embodiment, the communication device is provided with two arrays of five key units which are interconnected by the signal generation and transmission system to permit 282×10^6 discrete unambiguous signals to be produced with the eight fingers and two thumbs of the human hands to produce limitedly and simultaneously several elements of human speech either in the conventionally spelled form or in its natural phonetic form, but in both cases permitting the transmission of whole words by a single stroke.

3,428,748

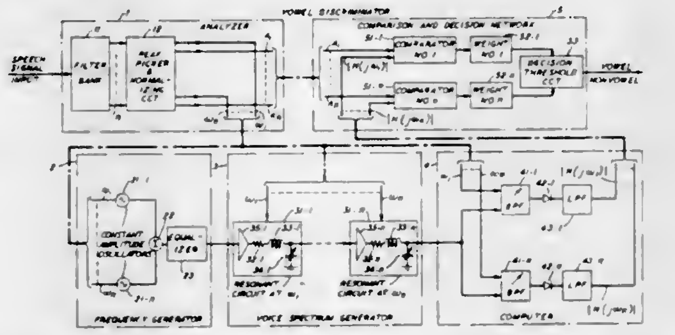
VOWEL DETECTOR

James L. Flanagan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 28, 1965, Ser. No. 517,004

U.S. Cl. 179—1 **8 Claims**

Int. Cl. H04m *1/24*



Vowel sounds are indicated by extracting from the speech wave a selected number of formants, generating an artificial vowel spectrum in the form of a complex wave with its maxima occurring at the formant frequencies of the speech wave, and comparing at each formant frequency, the actual amplitude of the speech wave with the specially created amplitude of the vowel spectrum wave using the difference between the two to indicate a vowel or a nonvowel.

3,428,749

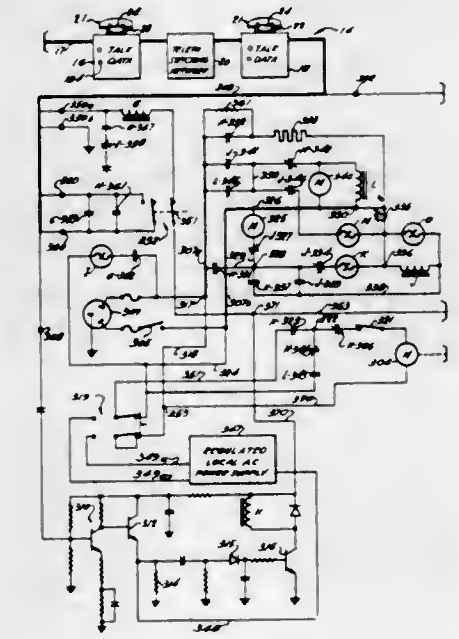
FACSIMILE SYSTEM

Dudley Gray, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

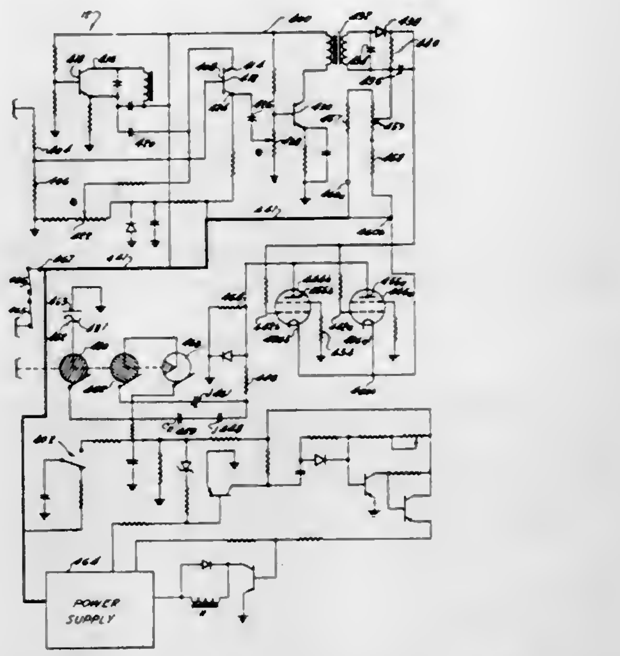
Filed Sept. 10, 1963, Ser. No. 307,844

U.S. Cl. 179—4 **29 Claims**

Int. Cl. H04m *11/06*



A facsimile system for use in transmitting facsimile data over the normal telephone switching networks. The system includes circuits in the transmitter for transporting the original document to the scanner during the initial phasing period as well as control circuits in the receiver for transporting moist recording paper to the marking means during the phasing period. Also disclosed are means for the automatic operation of the receiver responsive to a facsimile transmission call from a facsimile transmitter station. Means for maintaining the marking electrodes of the receiver recorder at proper electrical operating levels is also shown.



3,428,750

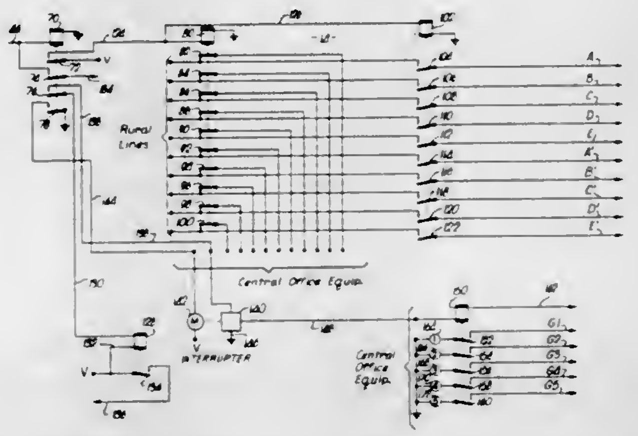
SEQUENTIAL CODED RINGING OF PARTY LINE TELEPHONES

Jerrold D. Hoffman, Udall, Kans. 76364

Filed May 12, 1964, Ser. No. 366,810

U.S. Cl. 179—5 **5 Claims**

Int. Cl. H04m *11/04;* **H04q** *5/00*



In a party line telephone system, the various ringing generators are sequentially coupled with each line of the system by automatic switching circuitry which is initiated to notify the subscribers of the existence of an emergency condition. The output of each ringing generator is repeatedly interrupted in a predetermined pattern during each interval that such generator is coupled to a line, in order to provide a special ringing code which is identifiable by the subscriber as an emergency warning rather than a call.

3,428,751

COIN TELEPHONE ANTIFRAUD CIRCUIT

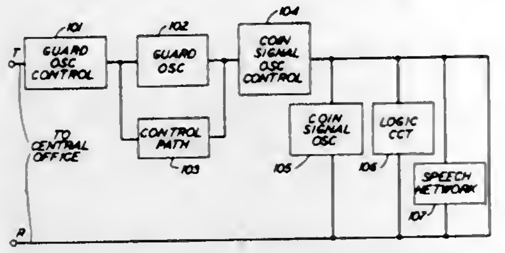
John E. Edington, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 28, 1966, Ser. No. 523,594

U.S. Cl. 179—6.3 **10 Claims**

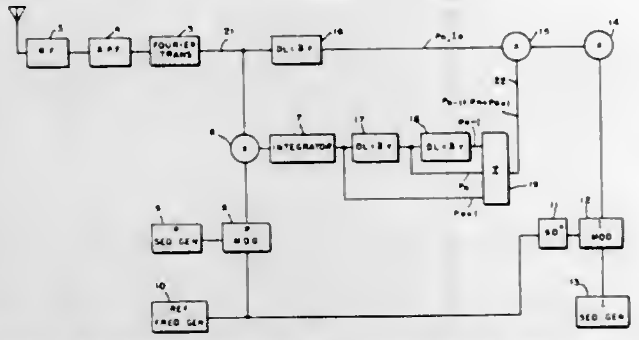
Int. Cl. H04m *17/02*

This invention relates to coin operated telephones using voice-frequency tones for dialing and for indicating the value of coins inserted. Fraudulent or accidental misregistering of dial frequencies as deposit frequencies is prevented by following each dial frequency with a measured burst of a specified guard frequency, thereby identifying all dial-originated frequencies.



3,428,752
PILOT PROCESSING FOR PHASE SHIFT KEYED RECEIVER

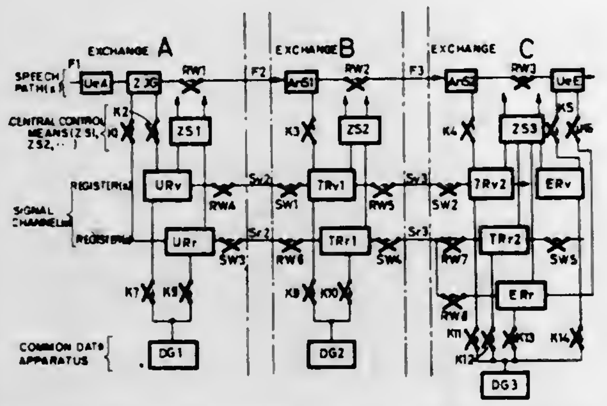
Mark S. Zimmerman, Bala-Cynwyd, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 14, 1965, Ser. No. 496,200
U.S. Cl. 179—15 3 Claims
Int. Cl. H04j *1/04*



A high frequency phase shift keyed receiver is shown in which frequency multiplexed signals are received. Each channel comprises a pilot of reference phase and an information component of variable phase. The received signals are converted to time multiplexed format and then the pilot component is separated from the information component by integration. In order to improve the quality of the pilot reference, the pilot signals from a given channel plus the channels on either side thereof are summed to provide a composite reference pilot of greater accuracy.

3,428,753
LONG-DISTANCE TELEPHONE SYSTEM

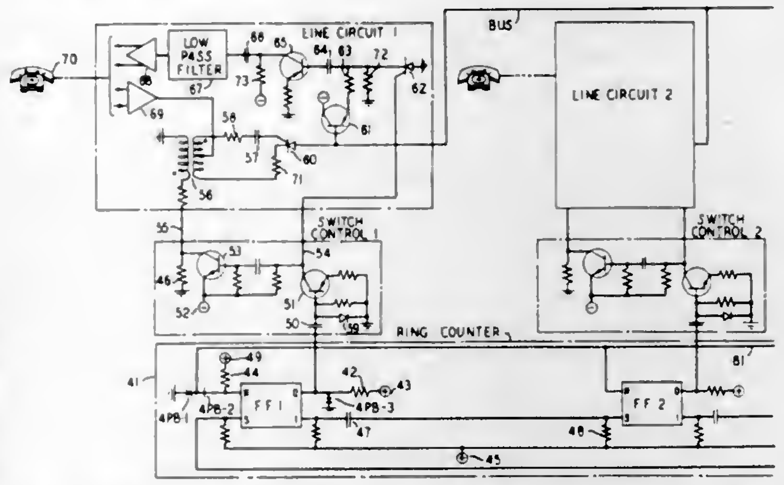
Friedrich Pfleiderer, Munich-Solln, Heinz Mertel, Hohenschaftlarn, and Erik Hoffmann and Ekkehard Seidel, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Oct. 12, 1964, Ser. No. 403,063
Claims priority, application Germany, Oct. 22, 1963, S 87,973
U.S. Cl. 179—18 8 Claims
Int. Cl. H04m *7/00*



A method of long-distance dial telephone communication having register-controlled exchange systems. Call connection demands are processed and supervised by exchanges over both speaking paths and signal channels common to several speaking paths, associated with each exchange. Each exchange includes a central control system and registers for the processing of call connection demands. Line signals including, for example, seizure, start, and stop signals are transmitted over the signal channels and register signals including, for example, dial, dial termination, and busy signals are transmitted over the speaking paths. The condition of seizure of the speaking paths is recorded in the central control means, so that a path finding process is not necessary. No signal conductors or seizure conductors are required.

3,428,754
CONFERENCE SYSTEM WHEREIN TRANSMITTING AND RECEIVING TERMINALS ARE SEPARATELY CONNECTED TO A TALKING BUS

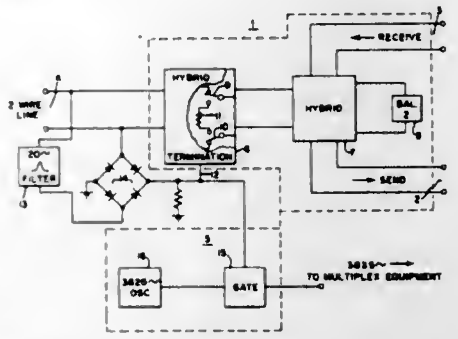
Robert C. Hoyler, New Shrewsbury, and Anthony Koscinski, Sayreville, N.J., and William B. Perkinson, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 6, 1965, Ser. No. 477,709
U.S. Cl. 179—18 2 Claims
Int. Cl. H04m *3/56*



A conference arrangement for a large number of telephone lines is disclosed. The transmitting portion of each line circuit is connected to a common talking bus only in a discrete time slot of a recurrent cycle while the receiving portion of that line circuit is connected to the bus only during all other time slots of the cycle. A ring counter defines the time slots and enables PNPN switches to connect the transmitting and receiving portions to the bus.

3,428,755
HYBRID TERMINATION SWITCH RESPONSIVE TO RINGING SIGNAL

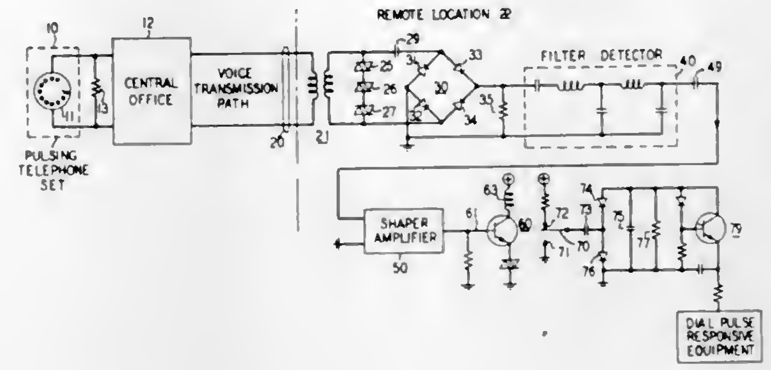
Cosby A. Draper, Jr., and Walter L. Gallion, Lynchburg, Va., assignors to General Electric Company, a corporation of New York
Filed Nov. 22, 1965, Ser. No. 508,926
U.S. Cl. 179—84 8 Claims
Int. Cl. H04m *1/76*



An electrically controlled switch, responsive to ringing signal, which terminates the two and four-wire lines while maintaining the proper impedance balance and signal isolation.

3,428,756
DIAL PULSE TRANSIENT DETECTOR

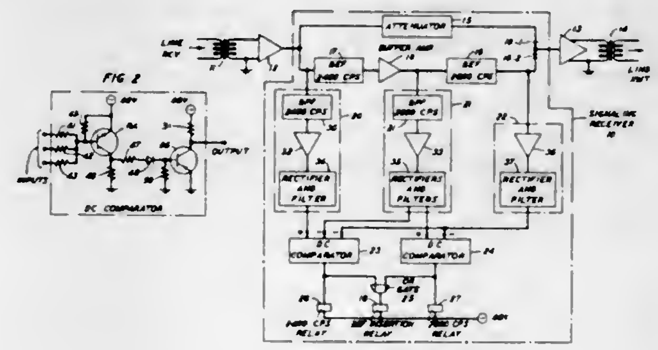
Barry M. Epstein, Parsippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,830
U.S. Cl. 179—84 6 Claims
Int. Cl. H04m *1/28, 3/02*



Circuit for detecting dial pulse transients transmitted over a telephone voice transmission path. Pulse time duration is predetermined.

3,428,757
MULTIFREQUENCY INBAND TELEPHONE SIGNALING SYSTEMS

Lawrence C. J. Roscoe, North Brunswick, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,338
U.S. Cl. 179—84 4 Claims
Int. Cl. H04m *1/50*

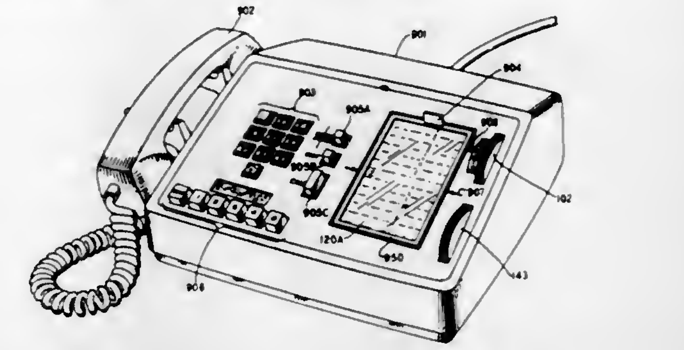


The invention relates to receivers for voice-frequency control signals in which talk-off is prevented by means of a guard circuit. The level of the signal at the signal frequency is compared with the level of the sum of the guard signal and other signal frequencies of higher frequency.

3,428,758
AUTOMATIC GROUP SELECTOR TAPE INDEXING MECHANISM

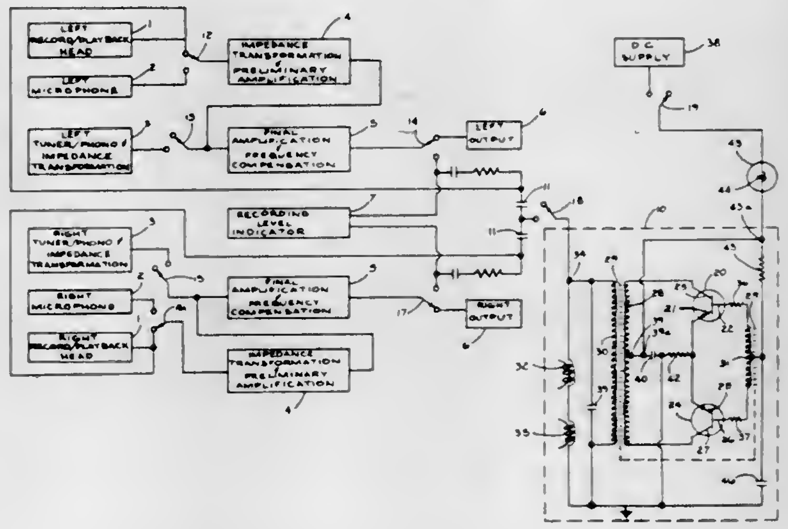
Norris R. Hall and Terry B. Prince, Indianapolis, and James F. Ritchey, Carmel, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 14, 1965, Ser. No. 487,264
U.S. Cl. 179—90 6 Claims
Int. Cl. H04m *1/46*

In a repertory dialer telephone set an automatic group selector indexing mechanism is employed for positioning the name display tape with respect to the display window and the recording tape with respect to the record-reproduce head at a central position in a preselected group of names, such as the group comprising all names with a common initial letter. A motor drive is started by positioning a group selector indicator and is stopped automatically at the selected group. Vernier adjustment means may be manual, motor driven step, or motor driven slow continuous scan.



3,428,759
PUSH-PULL OSCILLATOR AND INDICATING MEANS FOR A STEREO MAGNETIC TAPE RECORDER

Gerard C. Wolters, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 2, 1964, Ser. No. 401,207
U.S. Cl. 179—100.2 1 Claim
Int. Cl. G11b *5/44*

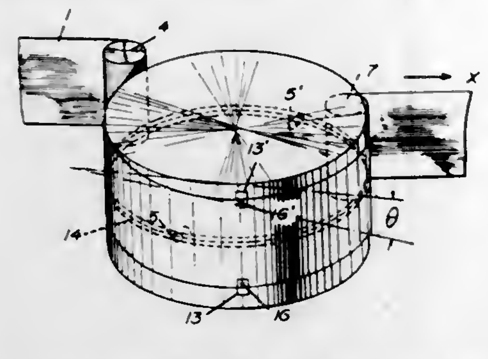


An improved transistorized oscillator for a stereo magnetic tape recorder, wherein an electric light bulb is placed in series with the oscillator circuit to provide (1) an indication of the oscillator condition and (2) protection against short-circuiting currents.

3,428,760
TAPE GUIDE DRUM FOR HELICAL SCAN MAGNETIC RECORDING WITH STATIONARY HEADS MOUNTED IN SAID DRUM

Ichitaro Hayashi and Yoshiro Nishiwaki, Yokohama, Japan, assignors to Victor Company of Japan Ltd., Kanagawa-ku, Yokohama, Japan
Continuation-in-part of application Ser. No. 144,267, Oct. 10, 1961. This application June 15, 1965, Ser. No. 464,109
U.S. Cl. 179—100.2 5 Claims
Int. Cl. G11b *5/00*

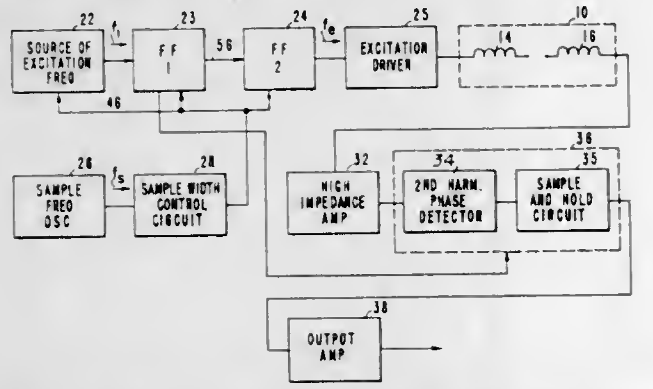
A magnetic tape guide drum for use in a device for recording and reproducing a wide band signal, such as a television signal, on a magnetic tape. The guide drum for magnetic tape has a peripheral surface spirally guiding said magnetic tape. A rotary disk is housed in said drum and at least one rotatable magnetic head is mounted on said rotary disk and exposed through said drum to record and reproduce said wide band signal diagonally on the magnetic tape. At least one stationary magnetic head for recording and reproducing a control signal is mounted



in said drum and exposed on said surface, said stationary magnetic head being in contact with the edge area of said tape moving around said magnetic tape guide drum.

3,428,761
EXCITATION AND DETECTION CIRCUITRY FOR A FLUX RESPONSIVE MAGNETIC HEAD

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of David A. Ehrenfeld, Pasadena, Calif.
Filed Apr. 26, 1966, Ser. No. 546,142
U.S. Cl. 179—100.2 **10 Claims**
Int. Cl. G11b *5/24, 5/30*

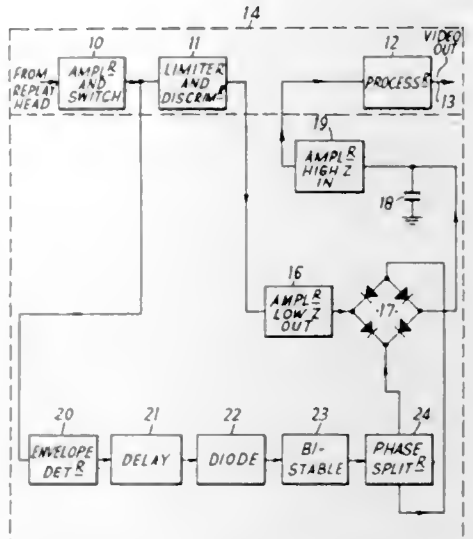


1. A circuit for use with a flux responsive magnetic reproduction head having an excitation winding and a signal winding wound thereabout and defining a gap for providing an output signal in response to an excitation signal in said excitation winding as a function of magnetic flux in a magnetic member adjacent said gap, said circuit comprising:
a source of excitation signals of a preselected excitation frequency;
first means for supplying said excitation signals to the excitation winding of said head;
second means for defining successive sampling periods at a predetermined sampling frequency;
third means for limiting the supply of said excitation signals to said excitation winding to said sampling periods; and
output means for detecting the output signals induced in said signal winding during said sampling periods.

3,428,762
DROPOUT COMPENSATOR WITH SINGLE-LEVEL SIGNAL STORAGE

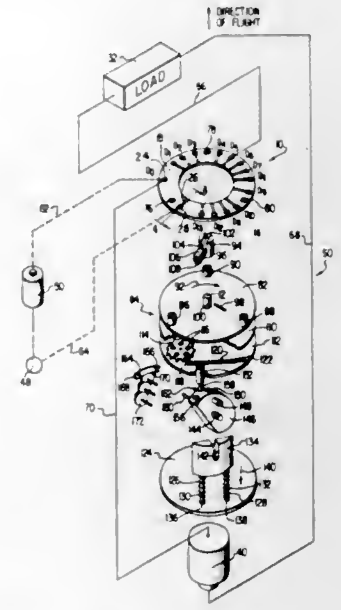
William Keith Elliott Geddes, Kenley, and Eric Raymond Rout, Lower Kingswood, England, assignors to The Marconi Company Limited and Standard Telephones and Cables Limited, London, England
Filed Dec. 8, 1965, Ser. No. 512,364
Claims priority, application Great Britain, Dec. 10, 1964, 50,389/64
U.S. Cl. 179—100.2 **3 Claims**
Int. Cl. G11b *5/04;* **H04n** *5/78*

1. Apparatus for the reproduction of signals from magnetic records, comprising a replay head for generating from a magnetic record an oscillation frequency-modulated by recorded signals, an amplitude limiter coupled to said replay head and adapted to remove amplitude variations from said frequency-modulated oscillation, a frequency discriminator coupled to said amplitude limiter for deriving a modulation signal from said frequency-modulated oscillation from said amplitude limiter, an output terminal for receiving said modulation signal, means coupling said frequency discriminator to said output terminal, storage means for storing a voltage dependent on the instantaneous amplitude of said modulation signal, switch means included in said coupling means, and means for operating said switch means between two conditions in dependence upon the signal level at a part of said apparatus preceding said amplitude limiter, said switch means in one of said conditions causing said modulation signal to be applied to said output terminal and in the other of said conditions causing the voltage at said output terminal to be determined by the voltage in said storage means.



3,428,763
DELAY TIMER WITH SELECTOR SWITCH

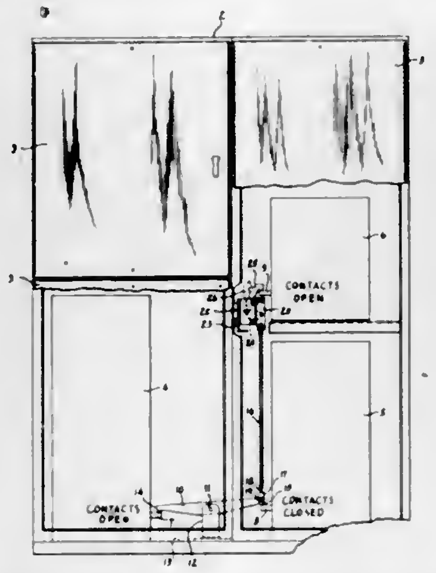
Ralph G. Eshleman and James W. Farmer, Lancaster, Pa., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 445,550, Apr. 5, 1965. This application May 29, 1967, Ser. No. 642,243
U.S. Cl. 200—33 **12 Claims**
Int. Cl. H01h *43/10*



Disclosed is a sequential timing switch particularly suited for igniting rocket motors. A spring driven clock mechanism drives an escapement controlled wiper arm over a series of contacts to complete one or more load circuits after a predetermined time. Important features include an arrangement for accurately zeroing the switch, a solenoid brake for automatically stopping the switch at its zero setting, a short delay clock for releasing the brake, and utilization of a set-back mass for starting the switch in response to acceleration forces.

3,428,764
INTERLOCKING MECHANISM FOR ELECTRICAL CONTROLLERS

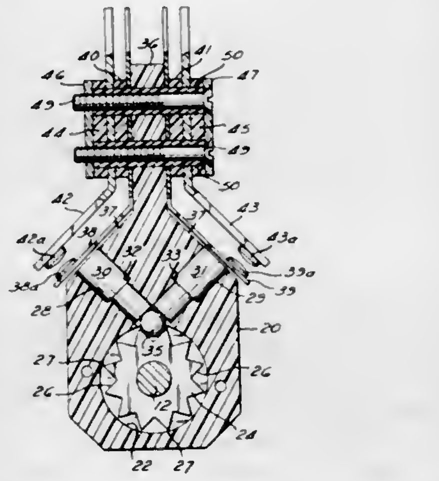
John F. Drees and Elmer M. Kunath, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,065
U.S. Cl. 200—50 **4 Claims**
Int. Cl. H01h *9/24, 33/52*



An interlocking mechanism for three electromagnetically operated contactors, each of which has an open and closed position. The interlock comprises a lever for preventing the simultaneous closure of the first two of the contactors and further comprises a single connecting rod and multiple lever system for preventing closure of the third contactor while either of the first two contactors are closed and preventing closure of either of the first two contactors while the third contactor is closed.

3,428,765
SIGN SENSING SWITCH FOR NUMERICAL CONTROL SYSTEM

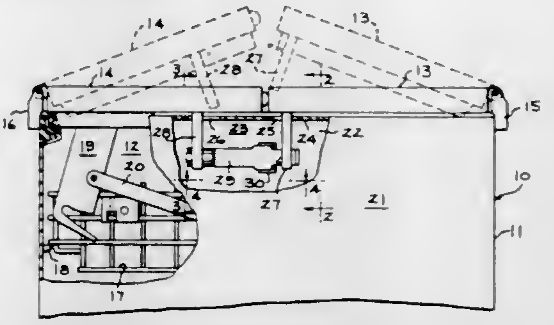
Albert R. Ludwig, Timberlake, Ohio, assignor to Zagar, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 7, 1966, Ser. No. 555,782
U.S. Cl. 200—61.39 **10 Claims**
Int. Cl. H01h *3/10*



An electrical switch which is responsive to the direction in which the switch is turned, comprising a housing, a shaft rotatable in the housing, a cam carried by the shaft and having a cam follower engaged by the cam for operating first and second switches through first and second switch actuating means. If the shaft is rotated in a first direction, the first switch is operated and, similarly, if the shaft is rotated in a second direction, the second switch is operated.

3,428,766
SWITCH MECHANISM FOR CABINET

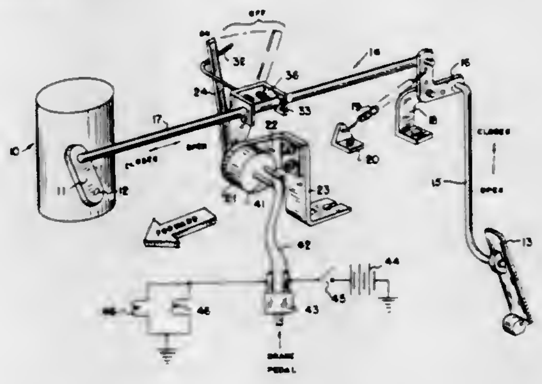
Melvin R. Kauffman, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 1, 1966, Ser. No. 598,398
U.S. Cl. 200—61.69 **4 Claims**
Int. Cl. H01h *3/16*



A switch mechanism for a cabinet having two doors. a carrier pivotally supported by the cabinet is moved into an operative position by the closing of one door. A switch, supported by the carrier, is actuated by closing of the other door only when the carrier is in said operative position. Thus, the switch is actuated only when both doors are closed.

3,428,767
AUTOMOTIVE WARNING SWITCH

Donald C. Pfeifer, Westland, Mich., assignor to Perfection Automotive Products Corporation, Detroit, Mich.
Filed Feb. 23, 1967, Ser. No. 617,876
U.S. Cl. 200—61.89 **6 Claims**
Int. Cl. H01h *3/14*

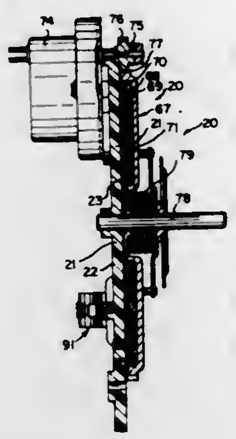


An automotive vehicle warning light switch mechanism for automatically actuating the rear lights when the accelerator pedal is not depressed, including a switch, mounted near the throttle control rod, operated by a swingable lever which is contacted and moved by an arm mounted upon the throttle control rod, with the arm and the switch mounting means being adapted to permit mounting upon any type of conventional vehicle engine.

3,428,768
VACUUM OPERATED ELECTRICAL SWITCH CONSTRUCTION

Robert L. Golden and Clarence Wantz, Greensburg, Pa., and Harold W. Rice, Fullerton, Roland D. Beck, Anaheim, and Reed A. Palmer, Los Alamitos, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Original application Mar. 5, 1963, Ser. No. 262,885, now Patent No. 3,284,589. Divided and this application Aug. 29, 1966, Ser. No. 611,781
U.S. Cl. 200—83 **19 Claims**
Int. Cl. H01h *35/40*

This disclosure relates to vacuum operated electrical switch constructions mounted on the rear side of a base plate having a movable program member disposed on the front side thereof, the movable program member being adapted to sequentially interconnect a pneumatic source to the vacuum operated switches to control the same.



Each switch construction includes a flexible diaphragm having its outer periphery secured to the rear side of the base plate to define a chamber therebetween, the flexible diaphragm being operatively interconnected to associated switch blades and the like to control the same.

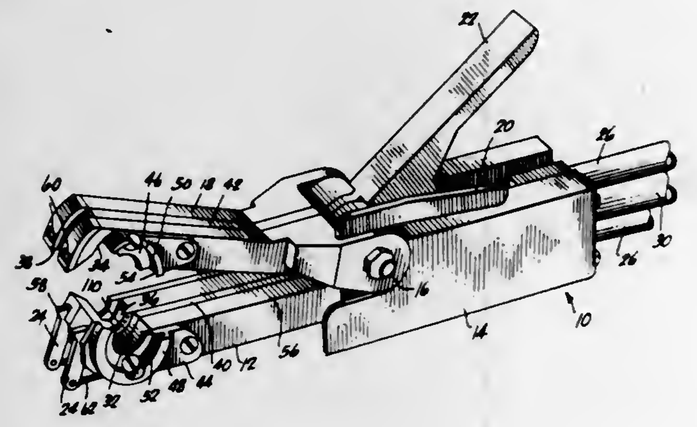
3,428,769
INDUCTION HEATING TOOL

Joseph F. Ciszewski, Surfside, Masashi Hayase, Fountain Valley, and Norman F. Robinson, Manhattan Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed July 26, 1966, Ser. No. 567,944

U.S. Cl. 219—9.5 **7 Claims**

Int. Cl. B23k *13/02*



An induction heating tool for welding or brazing tubes and their associated couplings and connectors wherein a split single turn inductor forms a heating chamber when the jaws are closed and locked.

3,428,770
INDUCTION FURNACE

Alain Briand, Grenoble, France, assignor to Commissariat à l'Energie Atomique, Paris, France

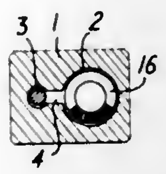
Filed Dec. 16, 1965, Ser. No. 514,250

Claims priority, application France, Jan. 20, 1965, 2,627

U.S. Cl. 219—10.49 **1 Claim**

Int. Cl. H05b *5/02, 9/02*

An induction furnace suitable for use in a nuclear reactor channel provides high temperature to the specimens being studied and has high heat dissipating power. The furnace is a mass of material having low electrical resistivity with a first bore therein containing an induction coil connected to an alternating current voltage source. A second bore is provided in the mass adjacent the first bore in which the test specimen is located. A gap communicates between the two bores. The induced current at the surface of the first bore flows around the gap and the second bore thus producing an alternating field.



3,428,771
PLASMA PRODUCING APPARATUS

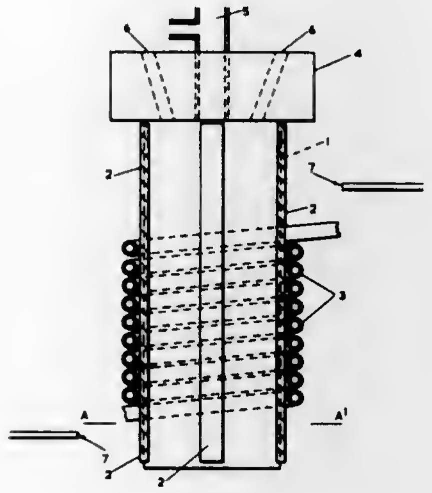
Denis Cleaver, Saltburn, England, assignor to British Titan Products Company Limited, Billingham, Durham, England, a corporation of the United Kingdom

Filed Nov. 2, 1965, Ser. No. 506,109

Claims priority, application Great Britain, Nov. 20, 1964, 47,328/64

U.S. Cl. 219—10.51 **10 Claims**

Int. Cl. H05b *5/08, 9/02*



In devices for the production of hot gaseous plasmas by induction heating, the gas confining tubes are generally constructed of electrically-insulating and heat-resisting materials such as silica. Metal tubes would be desirable for any of a number of reasons but due to the resulting eddy currents in the operation of the plasma forming apparatus, metal tubes become unduly heated and are, therefore, unsatisfactory. It has now been found that by longitudinally dividing electrically-conducting gas confining tubes by electrically-insulating materials and by constructing the wall of such thickness that excessive heating is avoided, electrically-conducting tubes e.g. metal tubes may be employed in plasma forming processes and apparatus.

3,428,772
MICROWAVE OVEN WITH ROTATABLE SHELF

Karl Hans Wallenfels, Freiburg im Breisgau, Germany, assignor to Fritz Hellige & Co. G.m.b.H., Freiburg im Breisgau, Germany

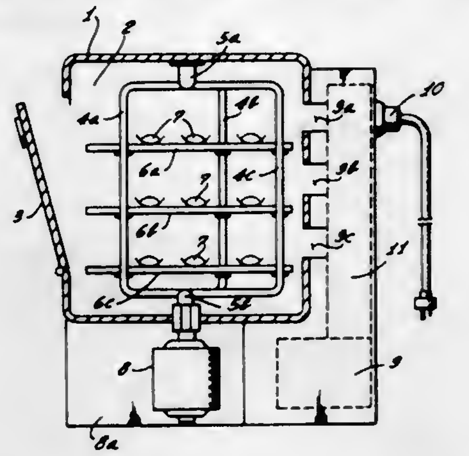
Filed Dec. 2, 1966, Ser. No. 598,794

Claims priority, application Germany, Dec. 10, 1965, H 57,927

U.S. Cl. 219—10.55 **7 Claims**

Int. Cl. H05b *9/06*

A microwave oven including apparatus for homogenizing the microwave field within the cavity of said microwave oven. Motorized shelf means rotatably mounted within said cavity comprise vertically spaced shelves for receiving food to be heated and shelf supporting means which include a plurality of vertical rods each of which extends a predetermined distance between the top and bottom of said cavity for supporting said shelf means, said rods additionally include horizontal top and bottom portions.



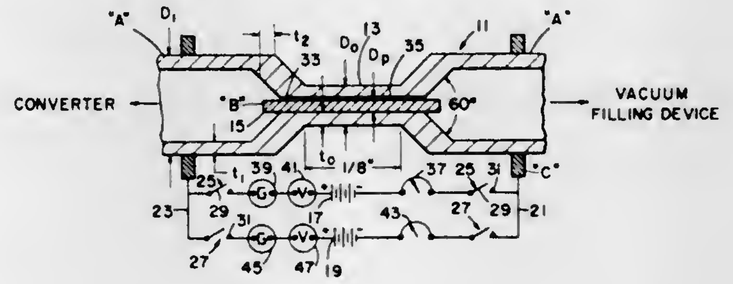
3,428,773
IN-LINE, HIGH TEMPERATURE, HIGH VACUUM CLOSURE

Algerd Basiulis, Redondo Beach, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 4, 1967, Ser. No. 658,994

U.S. Cl. 219—50 **2 Claims**

Int. Cl. H05b 3/*18, 3/48, 7/12*



In the manufacture of high temperature, low pressure devices, such as thermionic converters, an in-line method of closing and severing a tube connecting the converter and an evacuating and/or filling device therefor by sequentially passing electrical resistance heating currents of constant and increasing values through a high electrical resistance, circuit breaking, fusible venturi link in a nickel tube adapted on its outside to be exposed to a vacuum and on its inside containing a gas passage forming copper wire, thereby sequentially to form a nickel-copper solid solution alloy that seals across the venturi and then breaks the heating current circuit across the middle of the venturi so as to permit the effective evacuation and/or filling of the converter followed by the separating of the converter from the filling and/or evacuating device while maintaining the material and pressure in the converter and a stable temperature equilibrium therein.

3,428,774
METHOD AND APPARATUS FOR OVERLAY WELDING

Hans-Dieter Faust and Wolfgang Rossner, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

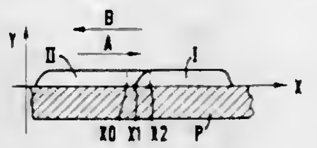
Filed June 8, 1965, Ser. No. 462,254

Claims priority, application Germany, June 11, 1964, S 91,465

U.S. Cl. 219—76 **14 Claims**

Int. Cl. B23k *9/04, 9/10*

Arc welding method for depositing weld material upon base material by means of an electrode and a cold wire feeding device oscillatively driven conjointly by a cardioid cam includes oscillating the electrode along its oscillation amplitude in a direction toward the side of a previously deposited weld and in a reverse direction, simultaneously feeding cold wire along the oscillation amplitude in an amount fully meltable by current passing through the electrode, and periodically switching the cold wire feeding device on and off when the fed cold wire is at respectively different locations of the oscillation amplitude between and including a location (X_0) spaced from a junction location (X_1) of succeeding welds and an oscillation reversing location (X_2) at the end of an overlapping distance (X_1-X_2) between the succeeding welds; and apparatus for carrying out the method.



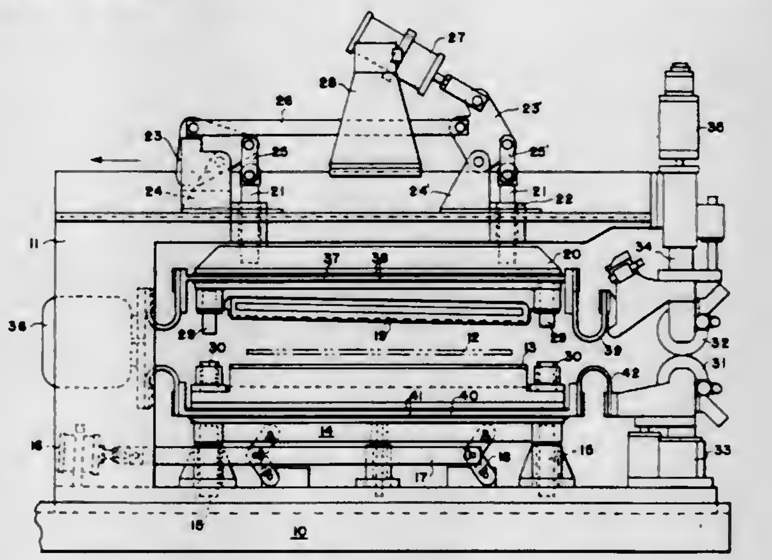
3,428,775
INTERLEAVED SHEAR AND SEAM WELDER

Melvin M. Seeloff, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio

Filed May 9, 1966, Ser. No. 548,543

U.S. Cl. 219—82 **7 Claims**

Int. Cl. B23k *11/06*



Apparatus of the type for joining metal strip in end-to-end relationship by overlapped seam welding wherein a shear and a pair of welding wheels are mounted side-by-side in a frame movable transversely of the strip. The improvement comprises incorporation of the current-conductive secondary circuit connectors in the upper and lower shear carriers in insulated relationship therewith in order to provide a very short path in substantially straight line relationship with and between the welding transformer and the welding wheels, both of which are connected by flexible current-conductive bands to the ends of said connectors. Very high welding currents are thus conducted and the assembly is made very compact and relatively inexpensive.

3,428,776
METHOD AND APPARATUS FOR EXTRACTING A CHARGED PARTICLE BEAM INTO A HIGHER PRESSURE ATMOSPHERE

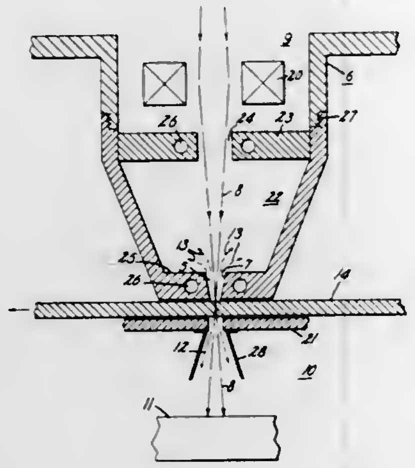
Lynn H. Stauffer, Pattersonville, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 28, 1966, Ser. No. 523,583

U.S. Cl. 219—121 **12 Claims**

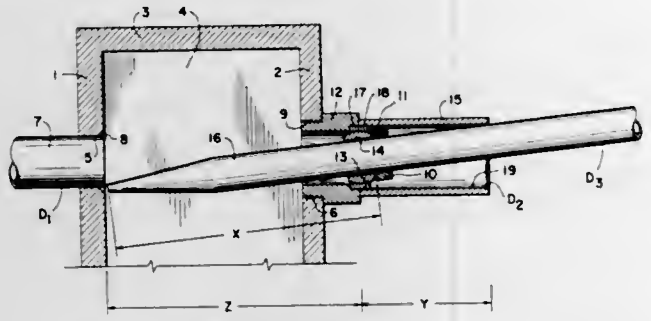
Int. Cl. B23k *15/00, 9/16*

A charged particle beam such as an electron beam issuing from a low pressure gaseous environment into a high pressure gaseous environment is transmitted to a workpiece therein without substantial loss in beam power and with minimum beam scattering by a process of vaporizing a highly condensible and nondecomposable metallic vapor supplied to the beam exit aperture at a controlled rate. The material to be vaporized is supplied to the aperture in the solid or liquid state. The vaporized material generates a first jet of the vapor directed outwardly from the aperture to displace the external high pressure gaseous environment in the region of the aperture. The vaporized material also generates a second jet directed inwardly into the aperture and this jet condenses on an inner wall thereof to function as a getter of undesired gases and also to constrict the aperture and completely seal it when the intensity of the beam is reduced below a critical value.



3,428,777
WELDING APPARATUS

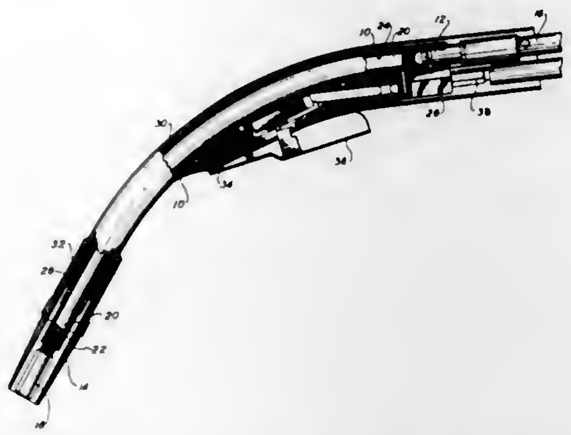
George M. Certain, Tulsa, Okla., assignor to Cooling Products, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 13, 1966, Ser. No. 520,499
U.S. Cl. 219—125 **2 Claims**
Int. Cl. B23k *9/12*



A welding apparatus for providing a weld of a predetermined size and shape on the surface of one of two parallel members by means of an elongated welding gun which extends through a hole in the other member including a hollow plug received in the hole, a spherical bearing mounted in the plug and having an opening which permits the insertion of the welding gun through the bearing towards the first member; a stop means including a collar which is adjustably mounted on the welding gun and is engaged with the spherical bearing for locating the tip of the welding gun in proper relation to the welding area on the first member; the apparatus also includes a guide means defined by a hollow sleeve of predetermined length and diameter extending outwardly from the plug in coaxial relation therewith. During the welding operation, the welding gun is urged against and along the hollow sleeve whereby the tip of the welding gun will describe a circle or other path corresponding to the size and shape of the weld.

3,428,778
ARCUATE CLUB TYPE WELDING GUN

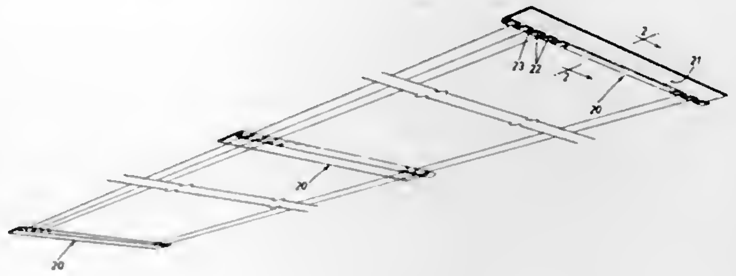
Paul R. Blackman, Cranford, and Edmund T. Sullivan, Jersey City, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,628
U.S. Cl. 219—130 **1 Claim**
Int. Cl. B23k *9/12;* **H05b** *31/20*



An improved welding gun of the arcuate club type which has a barrell of a fixed radius of curvature and forming means associated therewith to conform electrode wire received from a supply to said fixed radius of curvature so that feed of the wire through the gun is facilitated.

3,428,779
MEANS FOR MOUNTING ELECTRICAL RADIANT HEATING WIRES

William Theodore Davidson, Hamilton, Ontario, Canada, assignor to Canadian General Electric Company Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed July 18, 1966, Ser. No. 565,920
U.S. Cl. 219—213 **5 Claims**
Int. Cl. H05b *3/16;* **F24h** *9/08*



A nonconductive support strip of a U-shaped cross-section, having one leg of the U adapted for mounting the strip onto a surface and the other leg of the U crenelated to form a plurality of hooks from which an electric heating wire may be suspended in a series of continuous loops, displays the crenelations in angularly inclined position with respect to the main axis of the strip.

3,428,780
ELECTRIC IRON

Pierre L. Decrouez, Swarthmore, Pa., assignor, by mesne assignments, to Proctor-Silex Incorporated, Philadelphia, Pa., a corporation of New York
Filed Jan. 11, 1966, Ser. No. 519,863
U.S. Cl. 219—256 **18 Claims**
Int. Cl. D06f *15/28*

An electric iron is provided having a heating element with terminals and a handle with a socket having the terminals therein. An electric cord extends into a connector which is positionable in the socket. Wires of the

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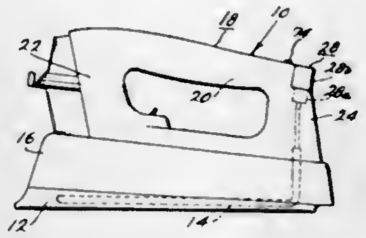
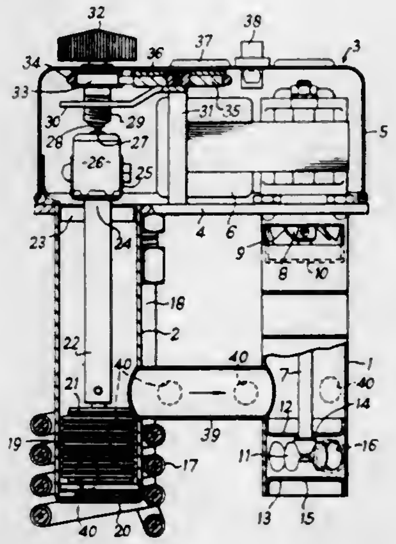
cord are connected to terminal means supported by the connector, the terminal means being adapted to contact the terminals of the heating element. Releasable latch means is supported by the handle for engaging and holding the connector in the socket, whereby upon release of the latch means the connector can be removed from the socket and reversed in position to cause the cord to extend to either side of the handle.



3,428,781
LIQUID HEATING AND CIRCULATING UNIT

Alfred S. Goodwin, London, England, assignor to Baird and Tatlock (London) Limited, Heath, England, a company of Great Britain
Filed Feb. 7, 1966, Ser. No. 525,456
Claims priority, application Great Britain, Feb. 8, 1965, 5,352/65
U.S. Cl. 219—331 **3 Claims**
Int. Cl. F24h *1/08*

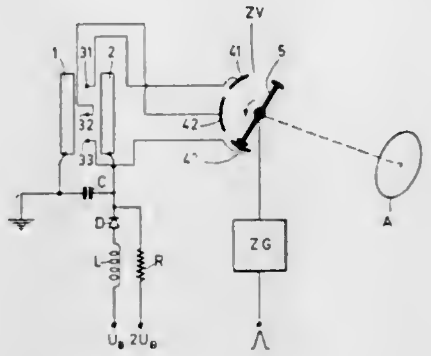


A portable liquid heating and circulating unit for maintaining a laboratory liquid bath at a constant temperature has a pair of interconnected housings adapted to be partially immersed in the bath. The first housing is provided with a thermostatically controlled electric heater and the second housing has associated therewith means for circulating the liquid heated in the first housing. The second housing and the interconnection between the housings are provided with means remote from the region of the heater for diluting the heated liquid from the first housing prior to discharge into the bath, thereby avoiding concentration of heat caused by high output short period operation of the heater.

3,428,782
ELECTRODE ASSEMBLIES WITH SEQUENTIALLY OPERATED, CLOSELY ADJACENT SPARK GAPS

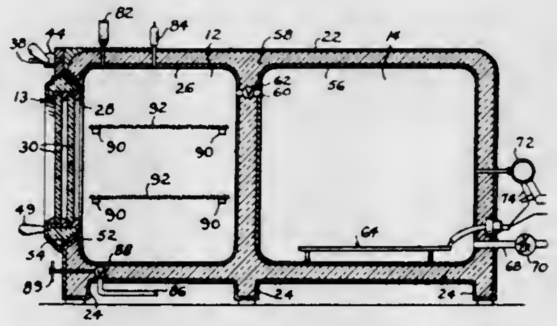
Siegfried Schmidt, Hamburg, Germany, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed July 27, 1966, Ser. No. 568,212
Claims priority, application Germany, July 31, 1965, P 37,370
U.S. Cl. 219—383 **6 Claims**
Int. Cl. H05b *7/18, 7/14;* **G01d** *15/08*

An electrode assembly for a spark gap printer where a DC electric field having an intensity below the ionization potential of the surrounding medium is produced between two adjacent main electrodes. Electric pulses having an intensity above the ionization potential are distributed to a plurality of closely spaced ignition electrodes positioned within the field produced by the main electrodes to discharge the main electrodes in the area of the energized ignition electrode.



3,428,783
PRESSURE COOKING APPARATUS

Vergil A. Niles, 403½ Main St., Yukon, Okla. 73099
Filed Feb. 27, 1967, Ser. No. 618,967
U.S. Cl. 219—399 **3 Claims**
Int. Cl. H05b *3/04;* **F24c** *7/04*



A pressure cooking apparatus having a sealed oven, a hot air pressure chamber and a conduit with a valve connecting said pressure chamber with said oven for providing said oven with hot air under pressure. A motor driven compressor for supplying air under pressure to the pressure chamber and an electric heater in said pressure chamber for heating said air.

3,428,784
MODULATING CONTROL APPARATUS

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 5, 1966, Ser. No. 584,566
U.S. Cl. 219—486 **10 Claims**
Int. Cl. H05b *1/02*

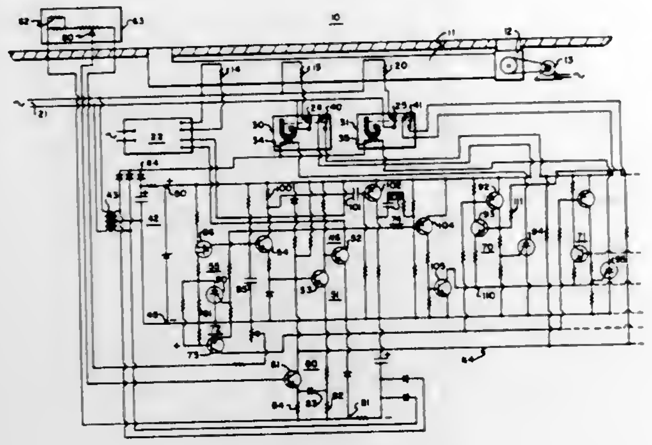
1. Modulating control apparatus for use in controlling a plurailty of condition changing means under the control of condition responsive means, the modulating control apparatus comprising:

modulating controller means adapted to energize a first condition changing means,

means adapted to connect the condition responsive means to control said modulating controller means to vary an output of the first condition changing means in a modulating manner from a low level to a high level.

on-off controller means adapted to energize a second condition changing means,

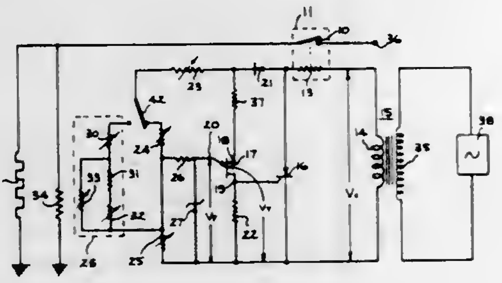
connection means connecting said modulating controller means to said on-off controller means to control said on-off controller means to energize the second condition changing means when said modulating controller means energizes the first condition changing means at the high level of output, and



means to modify said modulating controller means to produce a predetermined level of output of the first condition changing means when the second condition changing means is energized.

3,428,785
SOLID STATE OVEN TEMPERATURE CONTROL

Stanley B. Welch, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 26, 1966, Ser. No. 553,207
U.S. Cl. 219—501 **10 Claims**
Int. Cl. H05b *1/02*

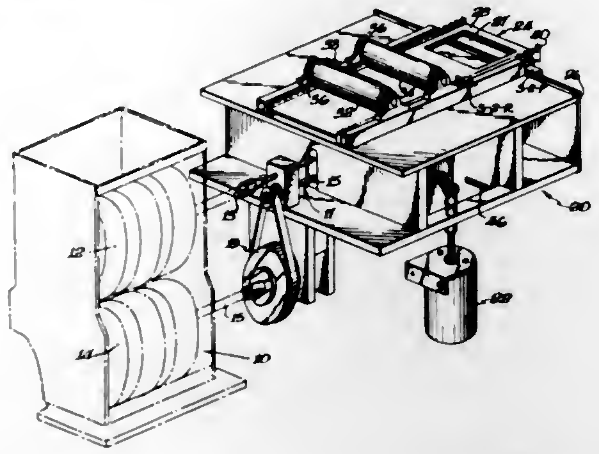


1. A control circuit for a load circuit which includes relay contacts in circuit with heating means and a power source, said control circuit being adapted to be connected to a voltage source and including:

(a) actuating means;
(b) controllable switching means in a circuit with said actuating means and capable of assuming a conductive state during which said actuating means is energized or a non-conducting state during which said actuating means is de-energized;
(c) active means having conductive and non-conductive modes of operation for controlling the state of said controllable switching means; and
(d) temperature dependent biasing means for determining the mode of operation of said active means, said biasing means including:
  (1) a first resistive portion having a magnitude proportional to the temperature being sensed,
  (2) a first impedance circuit for use in a normal cooking mode,
  (3) a second impedance circuit for use in a heat cleaning mode, and
  (4) switch means for selectively connecting said first resistive portion to said first impedance circuit or to said second impedance circuit to establish the mode in which the circuit is to function.

3,428,786
TICKET PRINTER

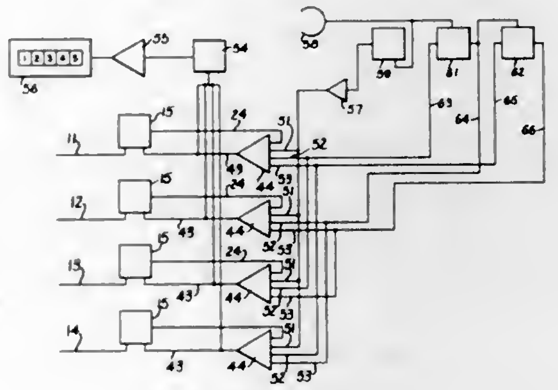
Edward L. Copony and William J. Gerstenmaier, Salisbury, Md., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed May 7, 1964, Ser. No. 365,828
U.S. Cl. 235—61.9 **12 Claims**
Int. Cl. G06k *1/12, 3/00*



A fluid dispenser having a computer for indicating the cost and quantity of dispensed fluid and a reset device for zeroizing its indicating elements before a subsequent dispensing operation incorporates a ticket printer having indicating elements connected to the computer indicated elements for operation thereby with printer reset means for the printer indicating elements. A reversible motor is connected to the printing mechanism and to the printer reset device for operating the printing mechanism in one direction of the motor and operating the printer reset device in its other direction.

3,428,787
MULTIPLE CHANNEL INDICATING APPARATUS

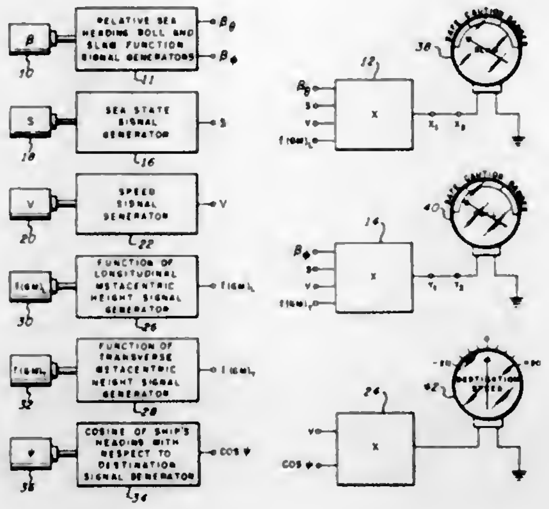
Michael C. Mayerl, Twin Lakes, Wis., assignor to Mangood Corporation, a corporation of Illinois
Filed Oct. 20, 1965, Ser. No. 498,341
U.S. Cl. 235—92 **1 Claim**
Int. Cl. G06f *7/38;* **G06g** *7/00*



An indicating apparatus for multiple channels, each having individual memory units which are successively scanned by a timing mechanism for transmittal of information to a counting apparatus. The memory units include time-delay mechanisms to prevent accidental transmission due to contact bouncing or other disturbances in the system. A detector unit for each memory unit actuates the counting apparatus upon simultaneous reception of a first control signal from a respective memory unit, and second and third control signals from the timing mechanism.

3,428,788
SHIP'S MOTION PREDICTOR

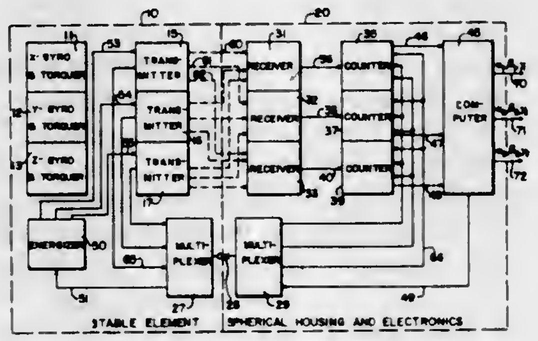
Gerald E. Fisher, Thomas F. Noble, and Virgel E. Williams, Charlottesville, Va., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,809
U.S. Cl. 235—150.2 **2 Claims**
Int. Cl. G06f *7/78, 15/50*


RELATIVE SEA HEADING ROLL AND SLAM FUNCTION SIGNAL GENERATORS
SEA STATE SIGNAL GENERATOR
SPEED SIGNAL GENERATOR
FUNCTION OF LONGITUDINAL METACENTRIC HEIGHT SIGNAL GENERATOR
FUNCTION OF TRANSVERSE METACENTRIC HEIGHT SIGNAL GENERATOR
COSINE OF SHIP'S HEADING WITH RESPECT TO DESTINATION SIGNAL GENERATOR

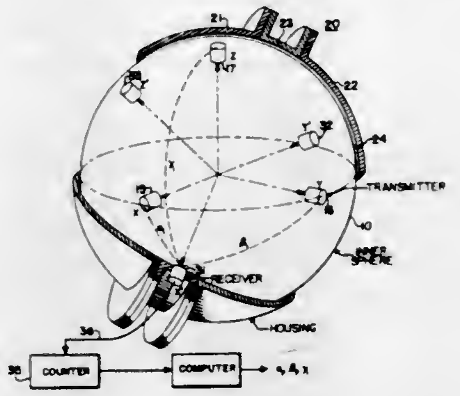
A ship's motion predictor in which electrical signals representative of those variables which affect the tendency of a ship to slam and/or roll dangerously, viz velocity of the ship with respect to the sea, relative heading of the ship with respect to the heading of the sea, and roughness of the sea; together with electrical signals representative of factors related to ship's inherent stability, viz the ship's transverse and longitudinal metacentric heights; are multiplied to give a meter output which indicates dangerous or incipiently dangerous conditions. Means are provided for manually varying those electrical signals representative of ship's velocity and ship's heading, without actually changing ship's velocity or heading, to predict the effect of velocity and heading changes on the tendency of the ship to slam or roll.

3,428,789
CONTROL APPARATUS

Gordon L. Richard, Eau Gallie, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,446
U.S. Cl. 235—150.25 **8 Claims**
Int. Cl. G06g *7/78*

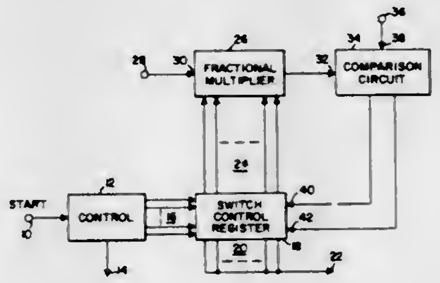


An attitude pick-off for an inertial platform in the form of a floated sphere. Transmitter means are placed at the surface of the sphere in a given angular relationship and receiver means are placed at the inner surface of the housing in a given angular relationship. When a transmitted pulse reaches the receiver means through the floatation fluid, the angular distance of the receiver means from the transmitter means is measured and the angular relationship (attitude) of the sphere and the housing can be computed.



3,428,790
ANALOG-DIGITAL HYBRID DIVIDER APPARATUS USING FRACTIONAL ARITHMETIC

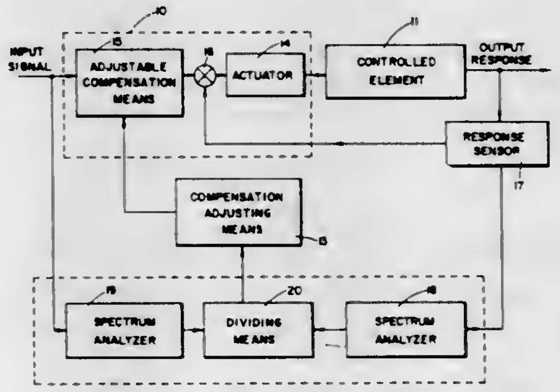
Don E. Aitchison, Duarte, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,974
U.S. Cl. 235—150.5 **3 Claims**
Int. Cl. G06j *1/02*



A hybrid divider which uses fractional arithmetic to divide one analog signal by another analog signal and which provides a digital output signal.

3,428,791
NON-INJECTION SELF-ADAPTIVE CONTROLLER

Robert E. Chandos, Anaheim, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,335
U.S. Cl. 235—151.1 **6 Claims**
Int. Cl. G06f *15/46;* **G06g** *7/66*



1. In a control system responsive to an input signal for controlling a controlled element the combination comprising

a controller having an adjustable response characteristic,

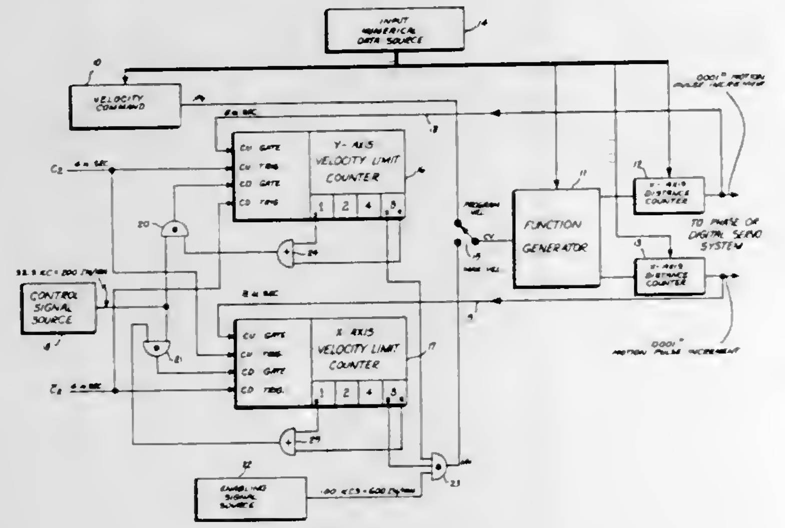
means for measuring the spectral characteristic of each of the control system input signal and the response of the controlled element respectively for a preselected plurality of concomitant discrete frequencies,

means responsive to said first mentioned means for indicating the spectral characteristic of the ratio of said controlled element response to said input signal, and

means responsive to said second mentioned means for adjusting the response of said controller to achieve a predetermined spectral characteristic of said ratio.

3,428,792
VELOCITY CONTROL SYSTEM

Leroy U. C. Kelling, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed June 21, 1965, Ser. No. 465,425
U.S. Cl. 235—151.11 8 Claims
Int. Cl. G06f *15/46;* **G06g** *7/64*

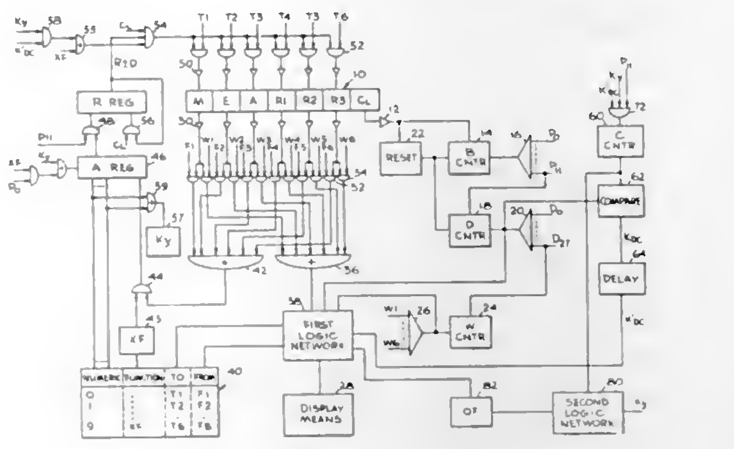

INPUT NUMERICAL DATA SOURCE
VELOCITY COMMAND
Y-AXIS VELOCITY LIMIT COUNTER
X-AXIS VELOCITY LIMIT COUNTER
FUNCTION GENERATOR
CONTROL SIGNAL SOURCE

In accordance with the invention, a feedback controlled velocity regulator circuit is provided to insure that the output pulse rate on each of the axes of a machine can never exceed a selectable maximum velocity rate. This is accomplished by providing a reference or control signal source which provides pulse signals, the rate of which is equal to that which will produce the maximum velocity desired. This control pulse rate is compared with the pulse rate on each output axis of the machine and in accordance with the results of the comparison, the function generator is controlled so as to run at its maximum rate as long as the output pulse rates on each axis are equal to or less than the control pulse rate. However, when such output pulse rates attempt to rise above the control pulse rate, the maximum velocity control circuit functions to periodically turn the function generator OFF and ON so that the output velocity on the highest speed axis will exactly equal the desired maximum velocity.

3,428,793
CALCULATING APPARATUS WITH DISPLAY MEANS

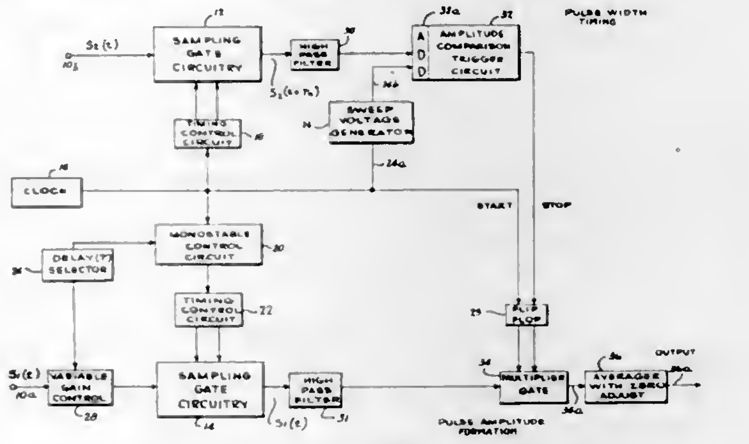
Thomas J. Scuitto, Malibu, Calif., assignor to Wyle Laboratories, El Segundo, Calif., a corporation of California
Filed July 27, 1964, Ser. No. 385,203
U.S. Cl. 235—160 2 Claims
Int. Cl. G06f *6/44*

A calculator apparatus including a plurality of multi-digit number storage registers together with means for continually displaying the contents of said registers. Keyboard means are also provided which enable an operator to initiate selected operations with respect to the displayed numbers. Such operations may generate overflows which are recognized and which cause an overflow symbol to be displayed in association with the overflowed number. Means are also provided for displaying symbols identifying registers and stages "from" which or "to" which digits are to be transferred.



3,428,794
TIME CORRELATION COMPUTERS

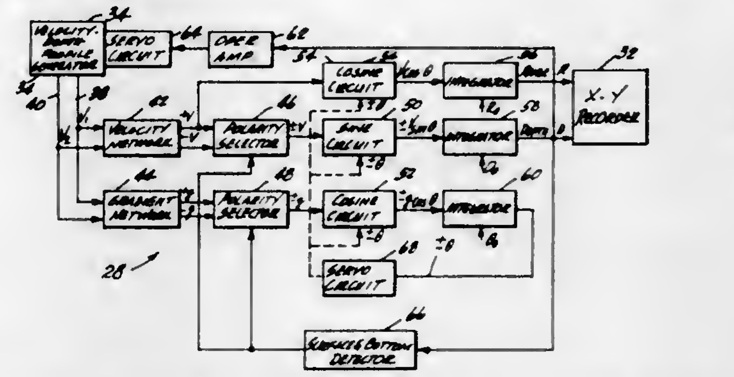
Keith Harvey Norsworthy, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,830
U.S. Cl. 235—181 18 Claims
Int. Cl. G06f *15/34;* **G06g** *7/19*



Various improvements in analog time correlation computers are disclosed, generally directed to improving the operation of correlators employing the pulse-amplitude, pulse-duration type of multiplier. The improvements include a sampling technique wherein the voltage on the sample storage capacitor actually "tracks" the input signal for a significant portion of its cycle during a conductive interval of the sampling circuit and thereafter holds the input signal value as of the time the sampling circuit is switched to its nonconductive state, and a "double sampling" arrangement which frees one sampling circuit to sample again during the time its previous sample is being multiplied. The improved correlators further include multipliers which: permit accurate multiplication of samples even though they decay significantly from their initial values during the multiplication interval; include high-pass filter circuits for eliminating the effects of small D-C and low-frequency components resulting from the finite sampling rate and finite averaging time constant; or employ dual output channel arrangements which cancel from the output signal voltage components which are linearly related to the input signals and would otherwise tend to mask the desired correlation signal.

3,428,795
SONIC RAY TRACER

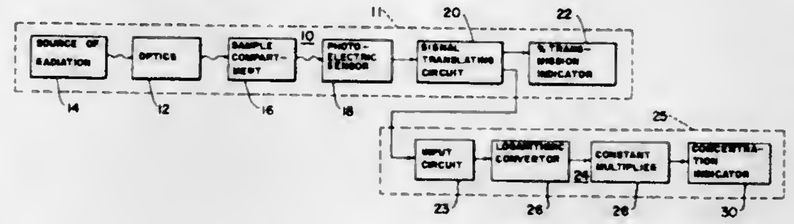
William R. Moreland, Torrance, and Alonzo W. Phillips, Azusa, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Dec. 28, 1964, Ser. No. 421,200
U.S. Cl. 235—184 14 Claims
Int. Cl. G06g *7/78*



A sonic ray tracer including an analog computer having certain arrangements and combinations of regular computing components to provide a continuous solution to system equations derived on the basis of Huygens' principle on wave fronts, and an X–Y recorder which is driven by the output of the computer to plot accurate traces representing the continuous solution to the system equations.

3,428,796
CONCENTRATION COMPUTER WITH LOGARITHMIC COMPUTATION OF PHOTOMETRIC APPARATUS READINGS

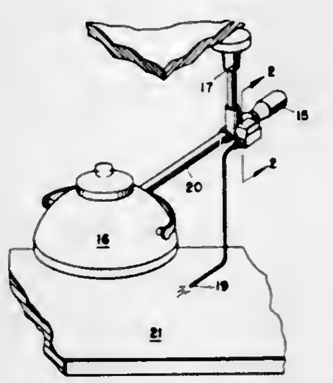
Alexander E. Martens, Greece, and Bernard J. Sullivan, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Aug. 31, 1966, Ser. No. 576,381
U.S. Cl. 235—193 9 Claims
Int. Cl. G06g *7/24*



A semiconductor logarithmic conversion circuit is disclosed for connection to a photometer for converting electrical signals corresponding to transmission to readings in concentration.

3,428,797
SURGICAL LIGHT

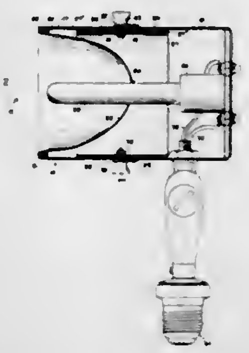
Howard Haynes, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1965, Ser. No. 499,320
U.S. Cl. 240—1.4 3 Claims
Int. Cl. A61g *13/00*



The device disclosed herein is a combination of a surgical light having a reflector supported on a yoke and an optical fiber arrangement made up of an elongated flexible optical fiber bundle. A light source for the optical fiber is attached to the yoke and to the optical fibers. Thus, the reflector can be supported over a patient on an operating table and the physician can use the optical fiber for local light concentrated on a local area of the patient.

3,428,798
ELECTRICAL LIGHTING FIXTURES WITH HEAT-COLLECTING AND HEAT-DISSIPATING MEANS

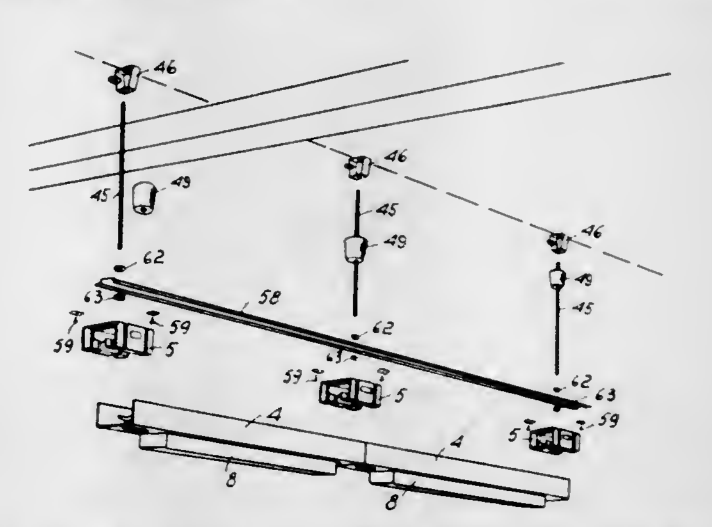
Hy Hilzen, 40 Gateway Road, Yonkers, N.Y. 10703
Filed Mar. 13, 1967, Ser. No. 622,619
U.S. Cl. 240—3 8 Claims
Int. Cl. F21p *5/00*



A supporting casing has a dished reflector closing its front end. From near its rear wall, the casing has mounting means therein from which a lamp extends forwardly through a suitable opening in the reflector. A tubular member is positioned concentrically within the casing, slightly spaced therefrom so it is enveloped by a very thin annular layer of air. The rim ends in this inner tubular member are free in space within the casing. The inner member surrounds most of the reflector. The casing has a plurality of openings intermediate the ends of the inner tubular member. The casing is preferably made of a front tube and a rear shell in telescopic relation. A headed screw fitted in a notch and hole in the respective casing parts, is threadedly engaged in a nut secured on the inner tubular member, to maintain the assembly; the nut also serving as the spacer for the inner tubular member. Contact of the spaced members is away from the end regions of the tubular member, and preferably at about mid region of the tubular member.

3,428,799
ELECTRICITY DISTRIBUTING LINES

Ermanno Bassani, Corso Porta Vittoria, 9, Milan, Italy
Filed Dec. 7, 1965, Ser. No. 512,608
Claims priority, application Italy, Apr. 12, 1965, 8,134/65
U.S. Cl. 240—9 10 Claims
Int. Cl. F21s *1/14, 3/14*



A branched electricity-distributing system comprises a plurality of connectable grooved profile elements, and joint means for connecting such profile elements in longitudinal alignment with one another and to a supporting surface.

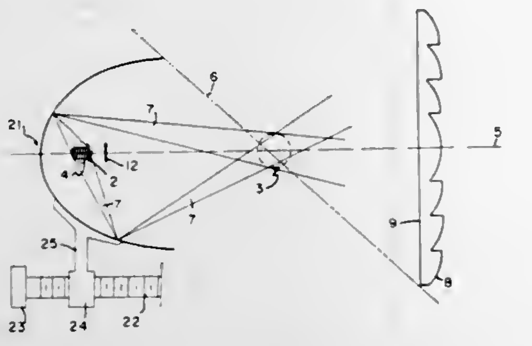
3,428,800
SPOTLIGHT LAMP

Robert E. Levin, Hamilton, and Thomas M. Lemons, Marblehead, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 10, 1965, Ser. No. 512,913

U.S. Cl. 240—41.3 **2 Claims**

Int. Cl. F21v *13/04*



An optical system for projection lamps comprising a light source positioned at one focus of an ellipsoidal reflector to form an image at the other focus and a Fresnel lens to project a beam of light from the image of the source and, in some cases, from the actual source. The light source and reflector are movable as a unit with respect to the lens. The reflector extends beyond the light source far enough so that the rays from the end of the reflector fall on the rim of the lens. Zones can be cut out of the reflector so that an oval image may be projected.

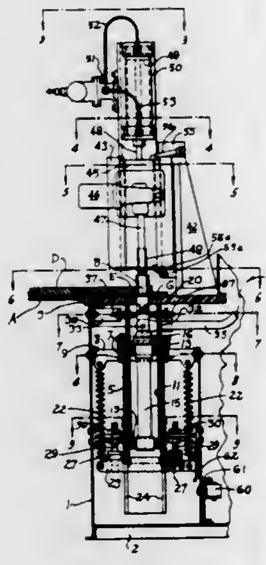
3,428,801
APPARATUS FOR TREATING THE SURFACE OF PLASTIC BOTTLES WITH AN ELECTRICAL SPARK DISCHARGE

Charles Christopher Leach, University City, and Ralph Lee Williams, Maplewood, Mo., assignors, by direct and mesne assignments, to Ralph L. Williams, doing business as Lectro Engineering Company, St. Louis, Mo.

Continuation of application Ser. No. 377,461, June 19, 1964. This application Feb. 16, 1966, Ser. No. 541,868

U.S. Cl. 250—49.5 **26 Claims**

Int. Cl. H01j *37/20, 37/30*



1. Apparatus for treating the exterior surfaces of plastic objects to improve their adherency to and compatibility with inks and adhesives comprising a pair of electrodes spaced apart from each other, means including a source of electric current of sufficient intensity to produce a spark discharge across the gap between said electrodes, electrical conducting means connecting said electrodes and said source, and means for positioning the objects in the gap between said electrodes, said electrodes being arranged with regard to the size and configuration of the objects to provide a nearly direct electron path around the objects whereby desired portions of the object surfaces may be passed over by the spark discharges during the passage of the latter along said path from electrode to electrode.

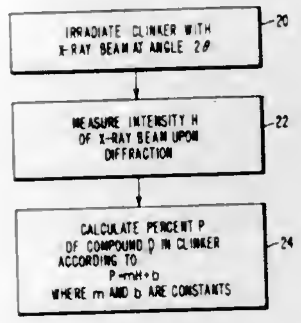
3,428,802
EXTERNAL STANDARD METHOD OF X-RAY DIFFRACTION ANALYSIS FOR DETERMINING THE PERCENTAGE OF COMPOUNDS IN CEMENT CLINKER

Povindar K. Mehta, Albany, and Manesh J. Shah, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 11, 1966, Ser. No. 541,822

U.S. Cl. 250—51.5 **6 Claims**

Int. Cl. G01n *23/20*


IRRADIATE CLINKER WITH X-RAY BEAM AT ANGLE 2θ
20
MEASURE INTENSITY H OF X-RAY BEAM UPON DIFFRACTION
22
CALCULATE PERCENT P OF COMPOUND D IN CLINKER ACCORDING TO P=mH+b WHERE m AND b ARE CONSTANTS
24

A method of determining the percentages of four compounds in cement clinker. The method includes an X-ray diffraction analysis coupled with a physical determination according to the formula:

$$P=mH+b$$

where:

P=percentage of compound; m and b=constants for that compound;

H=intensity of the diffracted beam.

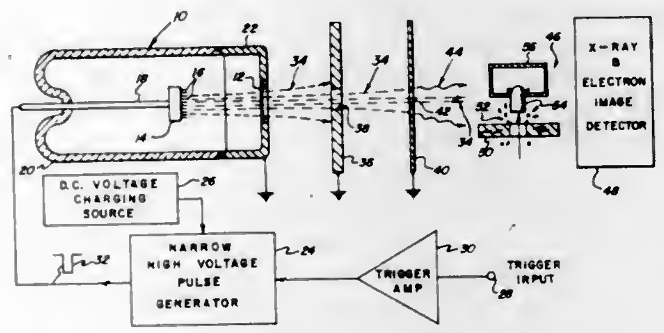
3,428,803
APPARATUS FOR SIMULTANEOUSLY PRODUCING X-RAY AND ELECTRON RADIOGRAPHS OF THE SAME OBJECT

Walter P. Dyke, Frank J. Grundhauser, and John P. Barbour, McMinnville, Oreg., assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon

Filed Aug. 23, 1965, Ser. No. 481,660

U.S. Cl. 250—65 **8 Claims**

Int. Cl. G01n *23/04;* **H01j** *37/22;* **H05g** *1/02*


10
22
34
44
46
X-RAY & ELECTRON IMAGE DETECTOR
48
D.C. VOLTAGE CHARGING SOURCE
26
NARROW HIGH VOLTAGE PULSE GENERATOR
24
TRIGGER AMP
30
TRIGGER INPUT
28
32
20
14
36
40

An apparatus for simultaneously producing an X-ray image and an electron image of the same object and recording such images, is described in which a portion of an electron beam bombards a target to produce X-rays and such X-rays, as well as another portion of the electron beam, are transmitted through the same portion of the object. The resulting composite radiograph including superimposed X-ray and electron images has high contrast and contains more information, such information being easy to interpret since the X-ray image and electron image coincide with each other in space and time. The electron beam source includes a pulsed electron radiation tube having a field emission cathode, while the X-ray emitting target is a plate positioned outside such tube and having a central aperture for passing the portion of the electron beam which penetrates the object.

3,428,804
METHOD OF AND APPARATUS FOR STABILIZING THE GAIN OF NUCLEAR PULSE SPECTROMETERS

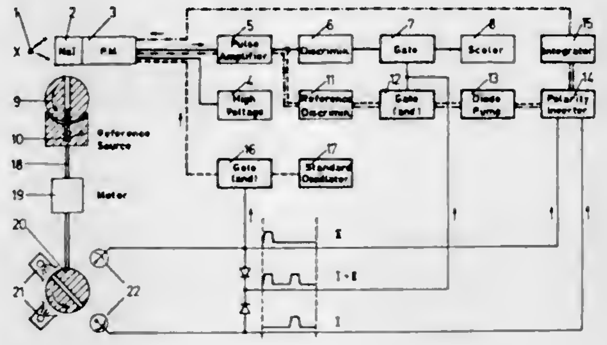
Angelo Comunnetti, Binningen, Basel, Switzerland, assignor to Gesellschaft zur Forderung der Forschung an der Eidgenossischen Technischen Hochschule, Zurich, Switzerland

Filed June 1, 1965, Ser. No. 460,273

Claims priority, application Switzerland, June 4, 1964, 7,402/64

U.S. Cl. 250—71.5 **11 Claims**

Int. Cl. G01t *1/20*



A method of stabilizing the overall gain of nuclear spectrometers and particularly those of the scintillation type wherein a mechanically chopped reference source is used to control the system gain by pulse-difference feedback in such manner that complete separation of the reference spectrum from the spectrum to be analyzed is obtained.

3,428,805
RADIO DIAGNOSTIC SCANNER WITH SEPARATELY MOVING SCINTILLATOR DETECTORS

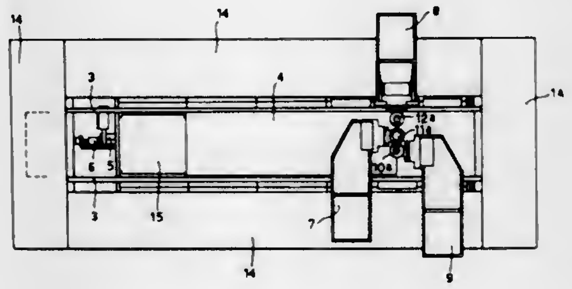
Luigi Donato, Gianni Gennaro, and Roberto Giordani, Pisa, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium, and Pisa, Italy

Filed Aug. 11, 1966, Ser. No. 571,892

Claims priority, application Italy, Aug. 17, 1965, 18,547/65

U.S. Cl. 250—71.5 **8 Claims**

Int. Cl. G01n *23/20;* **G01t** *1/20;* **H01j** *37/20*



A radio diagnosis apparatus comprising at least three pairs of coaxially opposed scintillators. Each pair of scintillators is mounted with its axis parallel to that of the other pairs and is carried by an individual carriage. Automatically operated motion control means provide for synchronous movement of all carriages, as well as for individual control means for each carriage.

3,428,806
APPARATUS FOR MEASURING THE HUMIDITY AND MASS OF SOILS

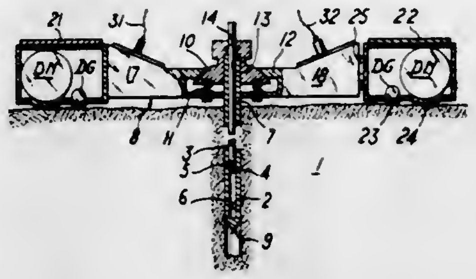
Bernard François Wack, St.-Martin-d'Heres, Isere, France, assignor to Electricite de France (Service National), Paris, France

Filed July 25, 1966, Ser. No. 567,484

Claims priority, application France, July 30, 1965, 26,679

U.S. Cl. 250—83.1 **5 Claims**

Int. Cl. H01j *39/32*



1. Apparatus for measuring the humidity and mass of a soil comprising a fast neutron source on one side of a volume of the soil, means for selective detection of neutrons of an energy greater than thermal neutrons on the opposite side of the volume of soil, said neutron detecting means comprising a filter passing fast epithermal neutrons and a neutron detector, said filter being disposed between the volume of soil and said detector, moderator material surrounding said detector, a gamma-ray source closely adjacent said fast neutron source and at least one gamma-ray detector immediately adjacent said neutron detecting means and in the solid angle formed by said fast neutron source, said gamma-ray source and said neutron detecting means.

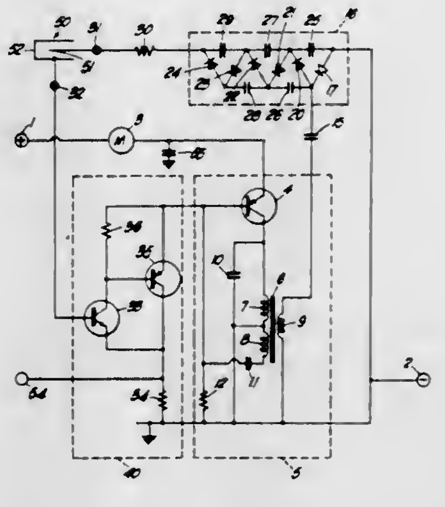
3,428,807
HIGH VOLTAGE SUPPLY FOR RADIATION DETECTING EQUIPMENT

Alun R. Jones, Deep River, Ontario, and Dale A. Gedcke, Edmonton, Alberta, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Mar. 1, 1965, Ser. No. 436,161

U.S. Cl. 250—83.6 **3 Claims**

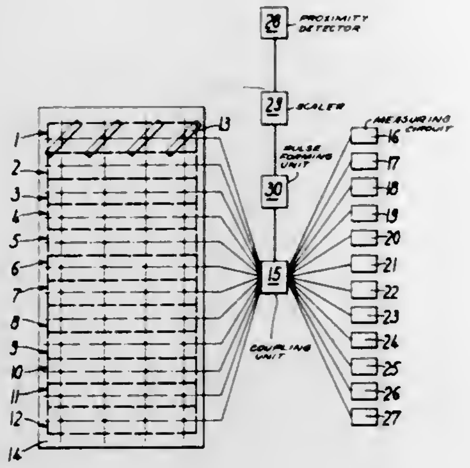
Int. Cl. G01t *1/18*



A transistorized high voltage supply for radiation detector tubes in which the high voltage is produced by the multiplication and rectification in a Cockcroft-Walton multiplier of an AC signal produced by a blocking oscillator whose free-running frequency is low, and a control circuit is used which accelerates the frequency of operation of the blocking oscillator each time a pulse in the tube occurs by varying the resistance of the RC circuit which determines the oscillator's free-running frequency.

3,428,808
DEVICE FOR DETECTING RADIOACTIVE CONTAMINATION OF A SURFACE

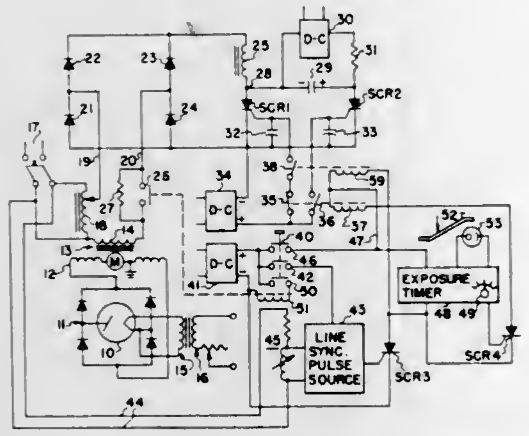
Stanislas Cottignies, Bagnols-sur-Ceze, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Dec. 6, 1965, Ser. No. 511,635
Claims priority, application France, Dec. 10, 1964, 998,238
U.S. Cl. 250—83.6 **3 Claims**
Int. Cl. G01t *1/18*



The radioactive contamination of a surface is determined by sweeping each portion of the surface by a series of detectors in turn and by measuring and adding the radiations detected successively by each detector over a same portion of the surface.

3,428,809
SCR CIRCUIT FOR TERMINATING AN X-RAY EXPOSURE AT A PRECISE POINT

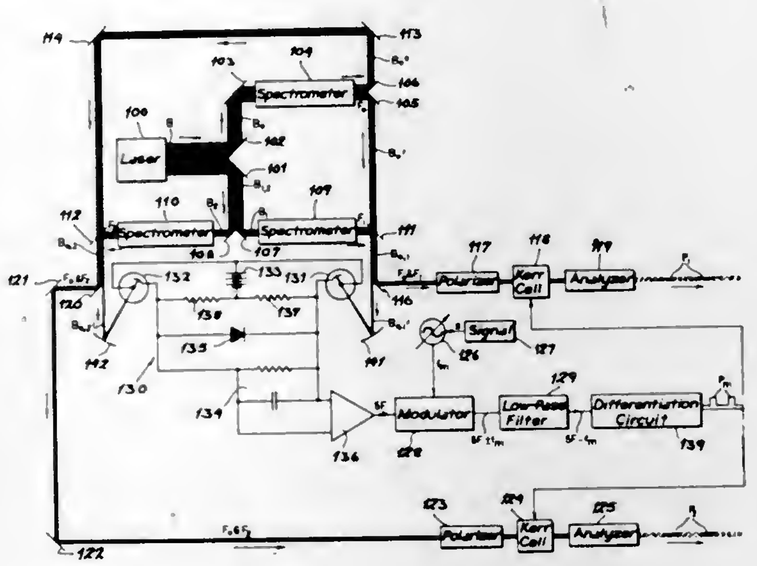
Herbert E. Daniels, Brown Deer, and Donald E. Graves, Wauwatosa, Wis., assignors to General Electric Company, a corporation of New York
Filed Aug. 18, 1966, Ser. No. 573,355
U.S. Cl. 250—95 **4 Claims**
Int. Cl. H05g *1/28, 1/38*



A circuit for terminating an X-ray exposure at a precise point has the primary winding of an X-ray transformer connected in the A–C input line of a diode bridge. An output line from the bridge has an inductor and a first controlled rectifier (SCR) in series and constitutes a unidirectional return line to the bridge. A large capacitor is connected between the anode of the first SCR and the anode of a second SCR. The capacitor is held charged by a D–C source. The first SCR is made nonconductive, to terminate an exposure, by removing its gate voltage and applying a signal to the gate of the second SCR which then conducts to apply reverse biasing voltage of the capacitor across the first SCR. The transformer load current is then diverted from the first SCR to the capacitor to let the first SCR recover its nonconductive state. A damped oscillation demagnetizes the transformer core.

3,428,810
MODULATION AND DEMODULATION OF HIGH-FREQUENCY RADIATION

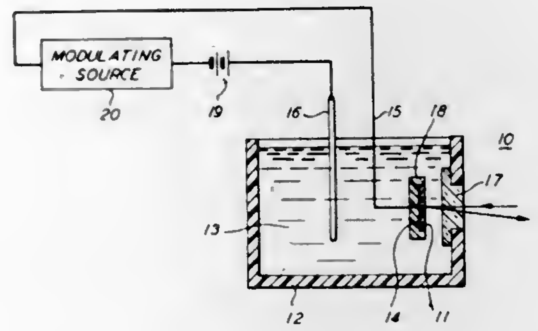
Karl F. Ross, 5121 Post Road, New York, N.Y. 10471
Filed Jan. 27, 1965, Ser. No. 428,498
U.S. Cl. 250—199 **20 Claims**
Int. Cl. H04b *9/00*



Two high-frequency oscillations—one of fixed frequency F_r, the other of variable frequency F_r+f_m where f_m is a small fraction of F_r—are compared by deriving a train of control pulses from one oscillation and sampling the other oscillation in step with these control pulses to produce a train of amplitude-modulated output pulses from which it is possible to reconstitute a modulating signal represented by the frequency excursions of f_m. The fixed-frequency reference oscillation F_r may be the beat frequency of two concurrently transmitted waves of still higher frequencies; with transmission of wave energy at extremely high frequencies (e.g. via laser beams), cascading of beats may be used to establish first a pair of primary difference frequencies ΔF, $\Delta F+\delta F$, the secondary difference frequency δF thereof constituting the reference oscillation F_r.

3,428,811
OPTICAL MODULATION BY REFLECTION FROM A FERROELECTRIC SEMICONDUCTOR

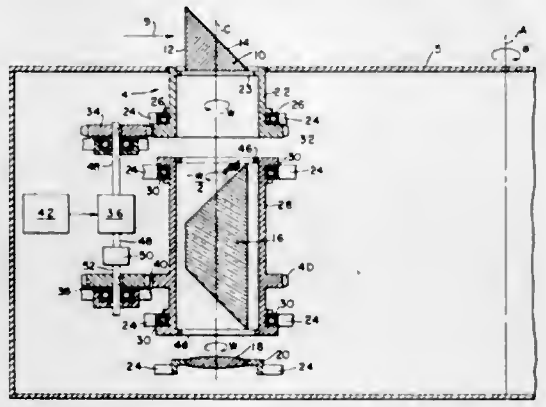
Philip J. Boddy, Short Hills, and Andrea F. Frova, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 21, 1966, Ser. No. 536,033
U.S. Cl. 250—199 **10 Claims**
Int. Cl. H04b *9/00*



An optical modulator in which light to be modulated is made incident on the surface of a ferroelectric semiconducting crystal, such as potassium tantalate and a surface rectifying barrier is provided at such surface. Modulation is achieved in the light reflected from such surface by modulating the electric field associated with the rectifying barrier.

3,428,812
OPTICAL SPIN COMPENSATOR

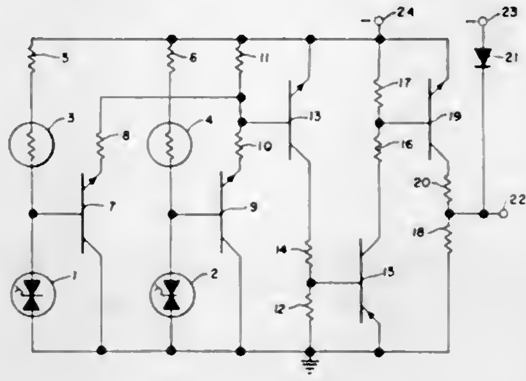
Joseph R. Burke, Alexandria, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 22, 1965, Ser. No. 502,740
U.S. Cl. 250—203 **3 Claims**
Int. Cl. G02b *17/00, 23/02*



On a spinning satellite having a spatially stabilized directional radiation receiving axis, such stabilization accomplished by known despin techniques, means for rotating the received radiation at a precise rate which is synchronized to the rate of spin of the satellite so as to eliminate relative rotational motion between the received beam and a fixed sensor on the satellite so that radiation projected onto the sensing means is stationary with respect to the sensing means thereby enhancing clarity of reception.

3,428,813
PHOTODIODES AND HEAT SENSITIVE RESISTORS IN SERIES CONTROLLING THE SAME CIRCUIT

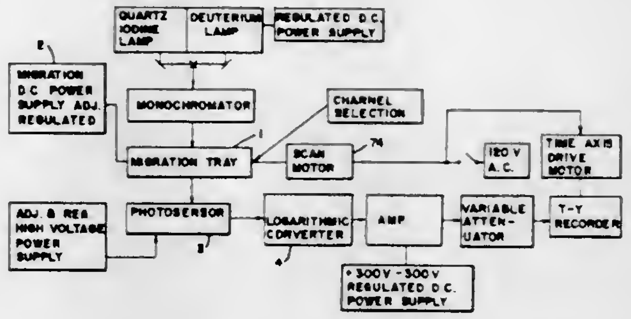
Konrad J. Hofmeister, Mount Lebanon, and Louis J. Olcsan, Jr., Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 4, 1966, Ser. No. 547,490
U.S. Cl. 250—209 **2 Claims**
Int. Cl. H01j *39/12*



The apparatus utilizes two photodiodes having negative resistance-temperature characteristics, each connected in series with a thermistor having a negative resistance-temperature characteristic like that of its associated photodiode, and a source of voltage. The thermistors are mounted close to the photodiodes, and the latter are equally spaced from the source of radiation. The outputs of the two photodiodes are combined and amplified.

3,428,814
PHOTOELECTRIC SYSTEM FOR MEASURING OPTICAL DENSITY

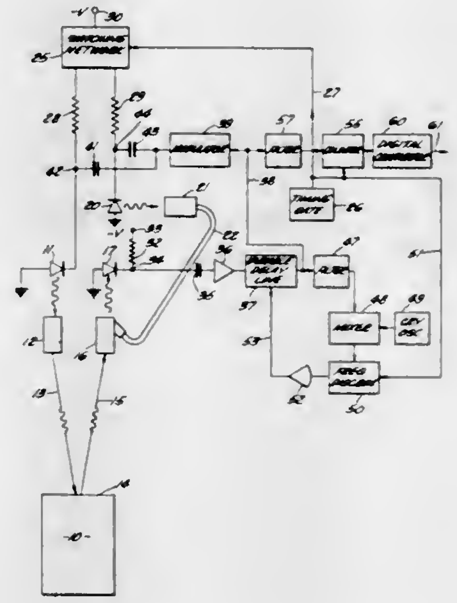
Douglas D. Doonan, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 26, 1965, Ser. No. 458,964
U.S. Cl. 250—214 **11 Claims**
Int. Cl. H01j *39/12*



A photoelectric system is disclosed for measuring optical density including a logarithmic converter circuit. The output of the converter circuit is connected to an indicator to provide a reading corresponding to the density and/or integral of density.

3,428,815
DISTANCE MEASURING SYSTEM USING INFRARED RING-AROUND OSCILLATOR WITH A REFERENCE LOOP HAVING A LIGHT CONDUCTING ROD

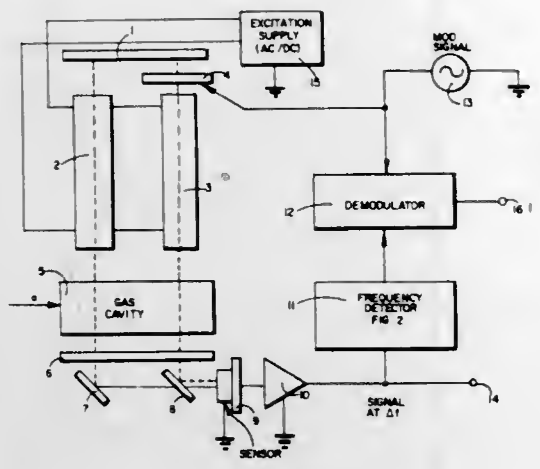
John R. Thompson, Los Angeles, Calif., assignor to Electronic Industrial Engineering, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 22, 1965, Ser. No. 502,161
U.S. Cl. 250—217 **18 Claims**
Int. Cl. G02f *1/34*



A distance measuring system utilizing electro-magnetic radiation for measuring the distance between objects. Sending and receiving transducers, such as those responsive to infrared energy, direct and receive radiation with respect to a movable object, such as an elevator car. The wave path of radiation is in an electronic oscillation circuit, the output of which may be measured to determine the distance between the transducers and the movable object. A compensation circuit is integrally coupled with the system to compensate for or correct drifts and delay times in the system itself for reducing errors. The circuit includes an additional sending transducer which directs radiant energy to the receiving transducer over a fixed path.

3,428,816
SIGN DETECTOR

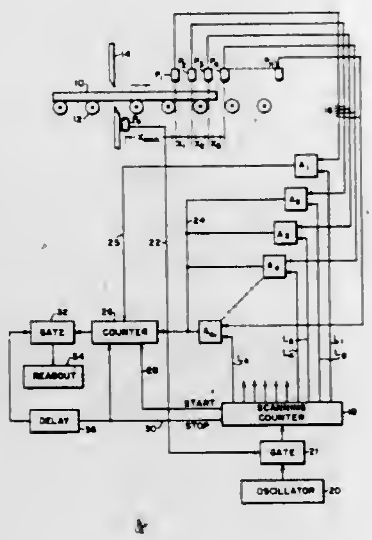
Earl D. Jacobs, Tustin, and William H. Quick, La Mirada, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Mar. 25, 1965, Ser. No. 442,648
U.S. Cl. 250—218 **5 Claims**
Int. Cl. G01n *21/26*



A device for detecting the amplitude and sign difference between two laser beams wherein the optical path length of one laser beam is modulated and then compared against the second beam which has been modulated by a gas cavity which changes its index of refraction upon sensing acceleration. The two modulated laser beams are then frequency detected and demodulated to determine both the sign and amplitude of the frequency difference between the two beams.

3,428,817
LENGTH MEASURER WITH PLURALITY OF PHOTOCELLS WHICH ARE SEQUENTIALLY GATED

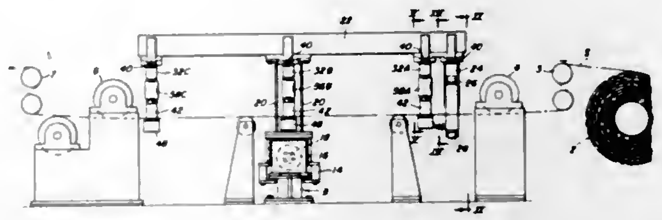
Konrad J. Hofmeister, Pittsburgh, and Robert A. Sylvester, Coraopolis, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 27, 1964, Ser. No. 414,071
U.S. Cl. 250—219 **15 Claims**
Int. Cl. G01n *21/30*



Described is a system for continually measuring a dimension of an object by means of a plurality of article sensing devices, such as photocells, spaced along the dimension being measured with at least a portion of the article sensing devices extending beyond an edge of the article when the dimension is being measured. This is accomplished by connecting the outputs of sensing devices to a counter through gates which are sequentially enabled repeatedly, the counter being reset each time the gates are enabled in sequence.

3,428,818
METHOD AND APPARATUS FOR DETERMINING CAMBER IN A MOVING STRIP

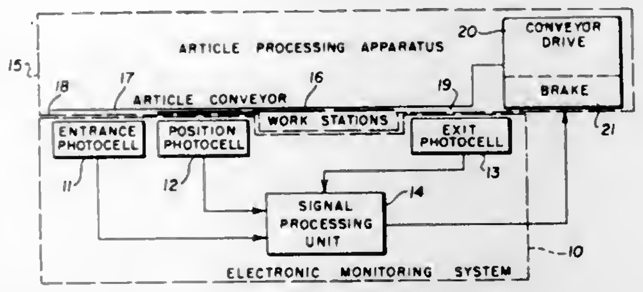
Chauncey L. Grebe, 3116 Athene Court, Concord, Calif. 90220; Ralph S. Minor, Jr., 3313 Las Huertas Road, Lafayette, Calif. 94025; and Raymond G. Shelden, Rte. 1, Box 264B, Oakley, Calif. 94561
Filed Mar. 4, 1965, Ser. No. 437,068
U.S. Cl. 250—219 **13 Claims**
Int. Cl. G01n *21/30*



A method and apparatus for determining camber in a longitudinally moving strip in which three longitudinally spaced apart aligned stations are arranged adjacent one edge of the moving strip and the transverse distance of that edge from each station is measured. Each station includes a light source and a photo sensitive device located on opposite sides of the strip with the photo sensitive device being in an enclosure with an aperture in the enclosure on the side adjacent the strip, the apertures at the three stations being equally spaced from the longitudinal center of the strip. Means responsive to the light on the photo sensitive device measures the transverse distance of the said edge from each of the stations. Means are also provided to compare these transverse distances.

3,428,819
ELECTRONIC MONITORING SYSTEM FOR APPARATUS HAVING MULTI-STATIONS WHICH HAS A SEPARATE MEMORY CELL FOR REGISTERING THE STATUS OF EACH STATION OF THE APPARATUS

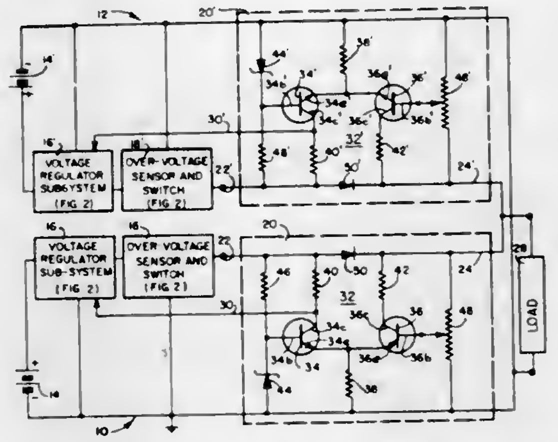
Richard M. Quinn and Donny W. Candioto, Muncie, Ind., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
Filed Apr. 18, 1966, Ser. No. 543,295
U.S. Cl. 250—223 **11 Claims**
Int. Cl. H01j *39/12*



1. A system for monitoring articles successively transferred to a plurality of stations, said system comprising: entrance sensing means for sensing the entrance of each article conveyed to the first of said plurality of stations and providing an indication thereof; indication retaining means for retaining each article entrance indication received from said entrance sensing means at least until the time each said article is to exit from the last of said plurality of stations; exit sensing means for sensing the exit of each article from the last of said plurality of stations and providing an indication thereof; and fault determining means for receiving indications from said condition retaining means and said exit sensing means and producing a fault indication whenever an indication is received only from said indication retaining means with respect to a given article.

3,428,820
ELECTRORESPONSIVE CONTROLS

Gary F. Lyon, Tempe, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 19, 1966, Ser. No. 551,269
U.S. Cl. 307—64 **9 Claims**
Int. Cl. H02j *9/06*

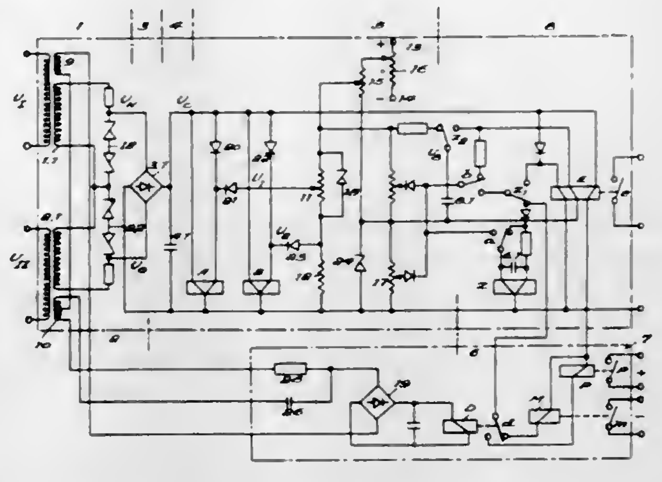

VOLTAGE REGULATOR SUBSYSTEM (FIG 2)
OVER-VOLTAGE SENSOR AND SWITCH (FIG 2)
VOLTAGE REGULATOR SUB-SYSTEM (FIG 2)
OVER-VOLTAGE SENSOR AND SWITCH (FIG 2)
LOAD

1. An electroresponsive switching network for a system to be selectively deactivated, which system includes means for supplying an electrical voltage indicative of system operation and control means for deactivating such system in response to a control signal, and activating the system in response to a second control signal, the improvement includes, in combination:

- controlling voltage supply means adapted to receive current when a voltage amplitude applied thereto exceeds a certain threshold and to supply current when such voltage applied is below such threshold; and
- an electroresponsive network including, in combination:
- voltage comparison means having an internal input connected to the system voltage supply means, and an external input connected to said controlling voltage supply means for supplying and receiving current therefrom, and a control output connected to the control means and being responsive to signals on said inputs such that an output signal is provided on the control output indicative of the relationship of the voltages on said inputs,
- a unilateral current conducting device connecting the inputs and arranged to conduct current from one input towards another input and to block current tending to flow towards said one input from said another input,
- said comparison means being operative to supply the first signal for causing the control means to deactivate the system whenever a voltage on said external input has a magnitude relationship to a voltage on said internal input indicative that the system is to be deactivated and further having a hysteresis characteristic such that the system when deactivated is not supplied to the second signal and reactivated until the voltage magnitude on the inputs have a relationship different than that required for deactivating an active system, and
- when said system is deactivated the unilateral device is non-conductive for isolating said voltage supply means one from the other.

3,428,821
PARALLEL SWITCHING DEVICE

Léon Ruffieux, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Oct. 17, 1966, Ser. No. 587,254
Claims priority, application Switzerland, Oct. 18, 1965, 14,328/65
U.S. Cl. 307—87 **4 Claims**
Int. Cl. H02j *3/08*



1. Apparatus for connecting two alternating voltages in parallel comprising means for converting each of said voltages into substantially rectangular pulse form, means comparing said voltages in pulse form to obtain the difference voltage pulse, means rectifying said difference voltage pulse to obtain a direct control voltage pulse the width of which constitutes a measure of the displacement in phase between said alternating voltages, means integrating said control pulse to obtain a control voltage, first and second differential relays, one winding of each said differential relay being connected to said control voltage and the other winding of each said differential relay being connected respectively to reference voltages of different magnitude thereby to effect a sequential actuation of said relays, means producing a master time reference interval, means comparing the actual time interval between successive actuation of said relays with said master time interval reference to produce a difference time interval, relay means for switching said alternating voltages in parallel, relay means for effecting a change in frequency of one of said alternating voltages, and means for actuating said parallel switching-in means or said frequency changing means dependent upon the sense of said difference time interval.

3,428,822
CIRCUIT CAPABLE OF PRODUCING A CONDITION OF INCOMPATIBILITY BETWEEN TWO OR SEVERAL LOGIC VARIABLES

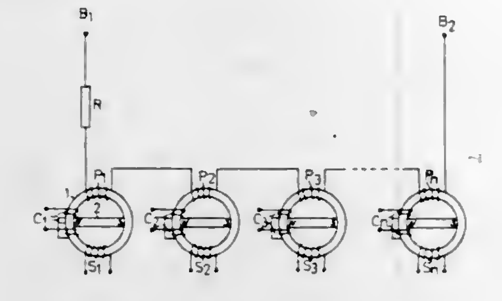
Jean Demeur, Leeuw-St.-Pierre, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Charleroi, Belgium
Filed Jan. 25, 1966, Ser. No. 522,938
Claims priority, application Belgium, Jan. 28, 1965, 8,273, Patent 658,930
U.S. Cl. 307—88 **1 Claim**
Int. Cl. H01f *29/14;* **H03k** *17/82*

1. A circuit capable of providing incompatibility between two or more logic variables comprising:

(a) at least two elements, each having:
   - a magnetic circuit;
   - a permanent magnet presaturating said circuit;
   - a primary A.C. winding and a secondary winding wound around said magnetic circuit, and
   - a D.C. desaturation winding so arranged that, when excited, allows the induction of a secondary voltage by the primary winding; the exciting direct currents of the said desaturation windings representing said logic variables;

(b) a resistance and an A.C. source;

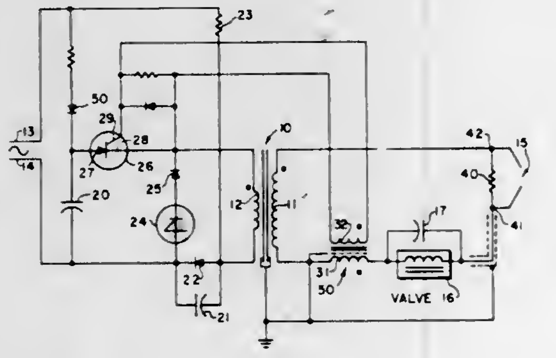
(c) the primary windings of said elements being connected in series through said resistance to said A.C. source;



(d) said resistance and the impedances of said element primary winding being so proportioned that when the desaturation windings of at least two of said elements are energized, the secondary voltages induced in the corresponding secondary winding are sufficiently weak to affect the logic circuits to which they are applied.

3,428,823
SPARK IGNITER

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 677,992
U.S. Cl. 307—106 **10 Claims**
Int. Cl. F23n *5/00;* **H03k** *3/00*

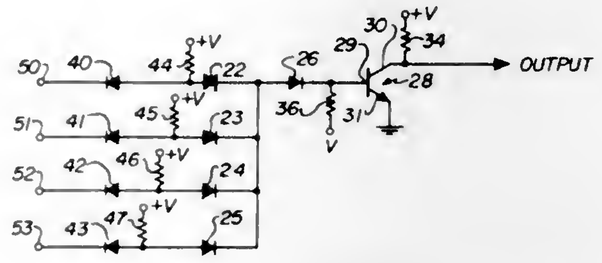


A spark igniter having a step-up ignition transformer whose secondary winding is connected in a closed series circuit with the primary winding of a second transformer, the winding of a valve, and a high impedance resistor across which spark ignition electrodes are connected; having a low voltage source connected to apply a low-voltage checking pulse to the primary winding of the ignition transformer to cause a circulating current to flow through the above mentioned series circuit if circuit continuity exists; and having a high-voltage ignition pulse source connected to be controlled by the secondary winding of the second transformer to apply a high voltage pulse to the primary winding of the ignition transformer only if circuit continuity exists.

3,428,824
LOGIC CIRCUITS

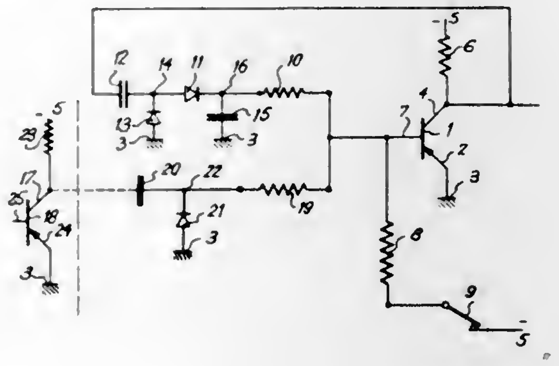
Stathis G. Linardos and Richard F. Elmhurst, Clearwater, and William A. Elmhurst, Largo, Fla., assignors to Lykes Bros., Inc., Tampa, Fla., a corporation of Florida
Filed Aug. 26, 1965, Ser. No. 482,737
U.S. Cl. 307—215 **3 Claims**
Int. Cl. H03k *19/34, 19/36*

A logic circuit for permitting the use of both NAND and NOR gates for implementing products of sums and sums of products functions within the same logic system, whether positive or negative logic is used throughout the logic system, in a manner such as to minimize the required logic and to thereby provide a substantial reduction in required hardware in comparison to those logic systems using only NAND gates or NOR gates.



3,428,825
SAFETY LOGIC CIRCUIT OF THE AND TYPE

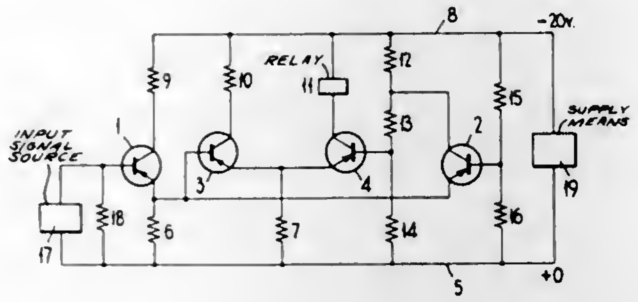
Gerard Martin, Noisy-le-Sec, France, assignor to Société Anonyme dite Compagnie des Freins et Signaux Westinghouse, Paris, France, a French society of France
Filed Mar. 26, 1965, Ser. No. 442,930
Claims priority, application France, Apr. 3, 1964, 969,618
U.S. Cl. 307—218 **6 Claims**
Int. Cl. H03k *19/22, 19/30*



An electronic memory for use with automatic signaling devices having a transistor with first and second circuit control means. The first control circuit has an input connected to a pulse generator and its output connected to the transistor, which output also corresponds to the output of the memory and is connected to the input of the second control circuit. The other input of the memory is connected to a triggering circuit.

3,428,826
HIGH AND LOW VOLTAGE LEVEL THRESHOLD CIRCUIT EMPLOYING TWO DIFFERENTIAL AMPLIFIER COMPARATORS

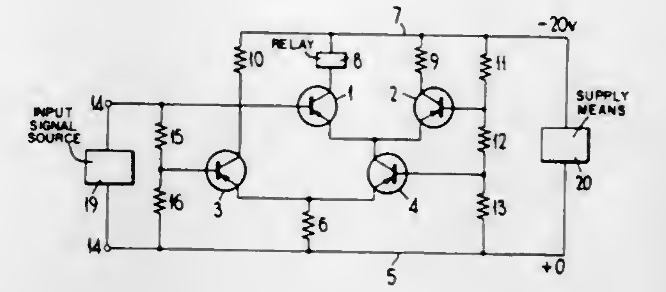
Allan David Berry, Coventry, England, assignor to The General Electric Company Limited, London, England
Filed July 1, 1965, Ser. No. 468,740
Claims priority, application Great Britain, July 3, 1964, 27,551/64
U.S. Cl. 307—235 **4 Claims**
Int. Cl. H03k *5/20*



A high and low voltage level threshold circuit comprising first and second emitter-coupled pairs of transistors, the first pair being connected to compare an input voltage with a constant reference voltage and the second pair being connected to compare the voltage at the emitter electrodes of the first pair with a voltage derived from the collector circuit of one transistor of the first pair. The output of the circuit is derived from an electromagnetic relay connected in the collector circuit of one of the second pair of transistors.

3,428,827
HIGH AND LOW VOLTAGE LEVEL THRESHOLD CIRCUIT EMPLOYING TWO DIFFERENTIAL AMPLIFIER COMPARATORS

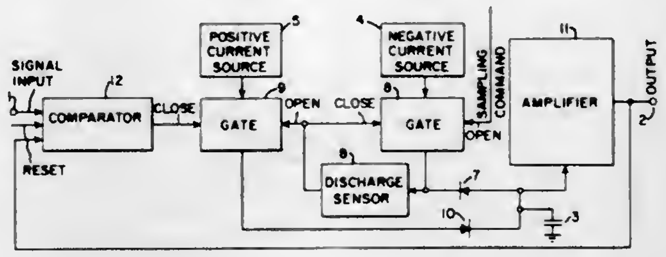
Allan David Berry, Coventry, England, assignor to The General Electric Company Limited, London, England
Filed July 1, 1965, Ser. No. 468,865
Claims priority, application Great Britain, July 3, 1964, 27,552/64
U.S. Cl. 307—235 **6 Claims**
Int. Cl. H03k *5/20*



A high and low voltage threshold circuit comprising first and second emitter-coupled pairs of transistors, the inter-connected emitter electrodes of the second pair being connected to the collector electrode of one of the first pair of transistors, the first pair of transistors being connected to compare a portion of an input signal voltage with a first reference voltage, the second pair of transistors being connected to compare said input signal voltage with a second reference voltage, and the output of the circuit being derived from an electromagnetic relay that is responsive to current flow in the collector circuit of one of the second pair of transistors.

3,428,828
SAMPLE AND HOLD CIRCUIT

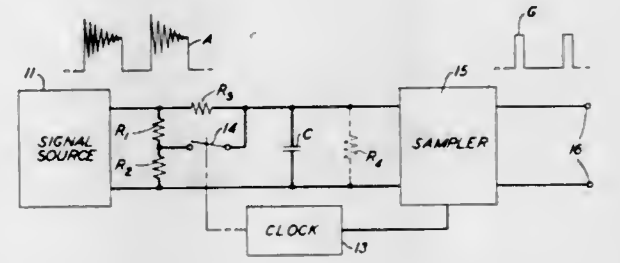
Sam M. Korzekwa, Baldwinsville, and Hans R. Schindler, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 27, 1965, Ser. No. 483,197
U.S. Cl. 307—235 **3 Claims**
Int. Cl. H03k *5/20*



Circuit for sampling an analog electrical signal and accurately storing the value over an appreciable period, including gated current sources for charging and discharging the capacitor, means sensing discharge to a given level for terminating the discharge and commencing the charge, and a comparator to which are applied the circuit output and sampled voltages for terminating the charge upon these voltages becoming equal.

3,428,829
SIGNAL AMPLITUDE MEASURING SYSTEM

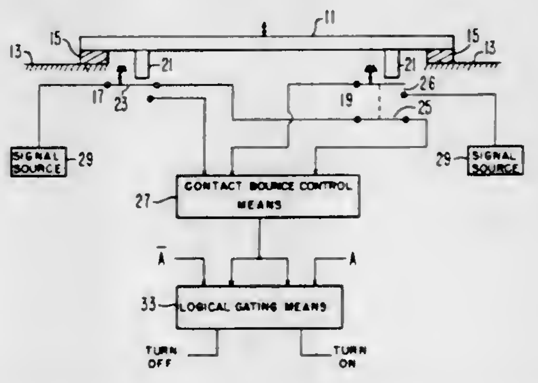
Gerald D. Haynie and Peter E. Rosenfeld, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 516,032
U.S. Cl. 307—235 **5 Claims**
Int. Cl. H03k *5/20, 17/28;* **H03b** *1/04*



Accurate measurement of the amplitude of a pulsive signal, subject to transient fluctuations and random noise spikes, is made by selectively sampling a signal representative of the pulse which is developed across a storage element. Errors, possible because of the transient fluctuations, are minimized by initially charging the storage element through a circuit having a small value time constant. After the transients have subsided, the time constant of the circuit is altered to minimize possible errors because of the random noise. The pulse amplitude is sampled at a predetermined time after the alteration in the time constant of the circuit.

3,428,830
START-STOP LOGICAL SWITCHING SYSTEM

John C. McEvoy, Livonia, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 25, 1965, Ser. No. 427,610
U.S. Cl. 307—247 **7 Claims**
Int. Cl. H03k *17/00*



1. A push-push start-stop switching system for controlling an electric circuit in an apparatus as a function of the operating off-on state of the apparatus comprising:

an elongated movably supported actuating member,

a plurality of functionally interrelated switching means responsive to the movement of said actuating member in a predetermined direction,

bistable control means responsive to the actuation of at least one of said switching means for generating a single output pulse, and

logical gating means responsive to the off-on state of the apparatus and said output pulse from said control means for initiating the reversal of the off-on state of the apparatus.

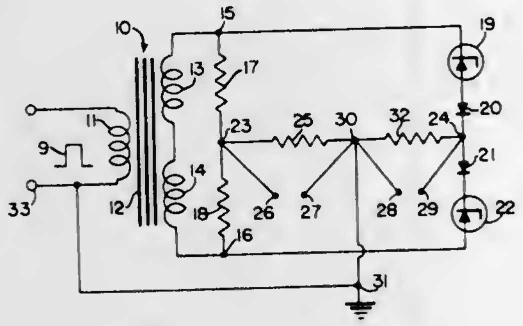
3,428,831
ZENER-DIODE BOX CAR SWITCH WITH RESISTIVE DIVIDERS FOR BALANCED CIRCUIT OPERATION

Erhard O. Ressler, West Chester, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,188

U.S. Cl. 307—257 **1 Claim**

Int. Cl. H03k *17/62*



This is a bidirectional gate circuit of the type enabled by a control circuit. A first resistive divider provides control signal input terminals across which is connected the secondary of an input transformer. The center of the first resistive divider is a null point. Between the input terminals and a second null point are connected series pairs of elements, each pair comprising a Zener breakdown diode and a blocking diode. A second resistive divider with a grounded center tap is connected between the null points. The second resistive divider comprises two resistors of which either one may serve as the data input and the other as the data output. The values of the two resistors in the first divider are equal and are proportioned to neutralize inequality of the breakdown voltages of the Zener breakdown diodes.

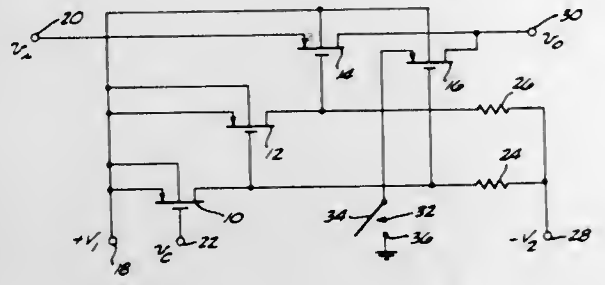
3,428,832
ELECTRONIC SWITCHING CIRCUIT EMPLOYING INSULATED GATE FIELD EFFECT TRANSISTORS

Edward A. Abbott, Jr., Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of California

Filed Apr. 21, 1966, Ser. No. 544,225

U.S. Cl. 307—251 **4 Claims**

Int. Cl. H03k *17/60*



The disclosed switching circuit includes first and second voltage level shifting insulated gate transistors each having its source-drain path and a load resistor coupled in series between a pair of power supply terminals. The source-drain path of a series switching insulated gate transistor is connected between input and output terminals for the circuit, while the source-drain path of a shunt switching and transient suppressing insulated gate transistor is connected between the output terminal and a series-shunt mode selection switch. The respective gate electrodes of the second level shifting and shunt switching transistors are connected to the drain electrode of the first level shifting transistor, while the gate electrode of the series switching transistor is connected to the drain electrode of the second level switching transistor. The voltage applied to the input terminal is passed to the output terminal only during the presence of a control voltage applied to the gate electrode of the first level shifting transistor.

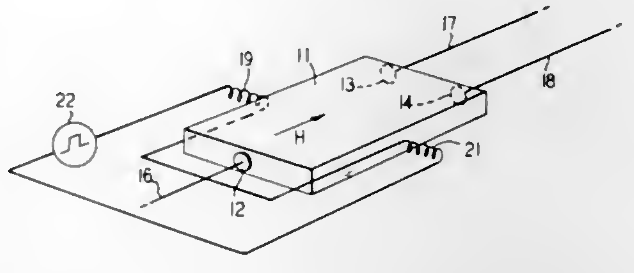
3,428,833
HIGH SPEED MAGNETORESISTIVE SWITCHING DEVICE

Alan G. Chynoweth, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 14, 1965, Ser. No. 513,779

U.S. Cl. 307—309 **8 Claims**

Int. Cl. H03k *17/00*



1. In combination, a member of magnetoresistive material, said member having a first conductive contact on one surface thereof and one or more other conductive contacts on another surface thereof, means for establishing a magnetic fields through the material between the said surfaces, and means for completing an electrical circuit between said first contacts and at least one of said other contacts comprising means for producing a magnetic field in said member at an angle to the first mentioned field, the total magnetic field in said member being sufficient to produce a ratio of transverse magnetoresistance to longitudinal magnetoresistance of 10^2 or more.

3,428,834
COMPOSITE ELECTRODE FOR MAGNETOHYDRODYNAMIC GENERATOR

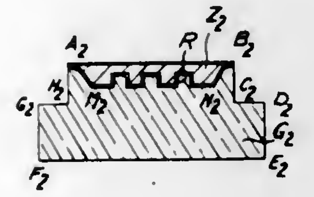
David Yerouchalmi, Issy-les-Moulineaux, France, assignor to Commissariat a l'Energie Atomique, Paris, France

Filed July 1, 1965, Ser. No. 468,761

Claims priority, application France, July 2, 1964, 980,392

U.S. Cl. 310—11 **5 Claims**

Int. Cl. G21d *7/02;* **H02k** *45/00*



A composite electrode for an MHD device. A gas contacting thermoionic plate of refractory oxide is bonded to a monolithic graphite base member by an intermediate layer comprised of a boride or a carbide of the refractory oxide. The top of said base member is formed with slots or holes arranged to receive elongate bars or cylinders depending from the bottom of the thermoionic plate. The gas contacting surface of the plate is covered with a thin layer of a boride.

3,428,835
MAGNETOHYDRODYNAMIC MACHINE

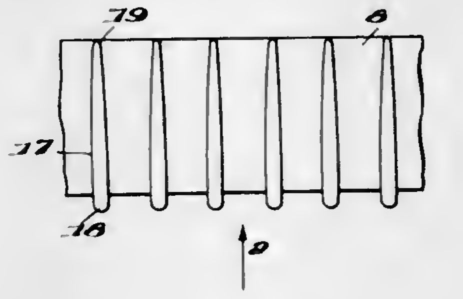
Lang Shuen Dzung, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Mar. 28, 1966, Ser. No. 537,809

Claims priority, application Switzerland, Apr. 27, 1965, 5,866/65

U.S. Cl. 310—11 **9 Claims**

Int. Cl. G21d *7/02;* **H02k** *45/00*



1. A magnetohydrodynamic machine comprising a duct of electrical insulating material through which a hot ionized gas is passed in a longitudinal direction, means for producing a magnetic field extending across said duct and perpendicularly to the direction of gas flow through said duct, and a plurality of electrodes located within said duct and arranged parallel to said magnetic field and embedded in the duct walls, said electrodes being grouped electrically in pairs spaced longitudinally along the duct with each pair consisting of positive and negative electrodes located respectively in opposite walls of said duct, and said electrodes being provided with ribs extending parallel to the direction of gas flow and projecting into the path of gas flow.

3,428,836
ELECTRIC CURRENT GENERATORS OF THE MAGNETOHYDRODYNAMIC TYPE

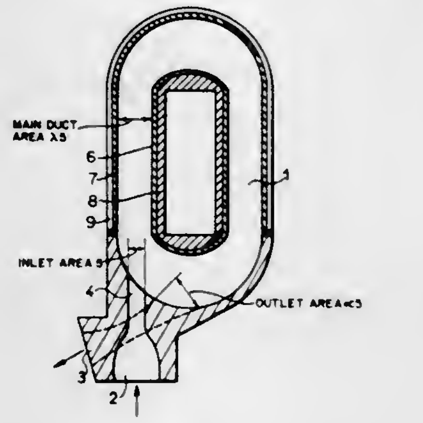
Georges Klein, Paris, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France

Filed July 20, 1965, Ser. No. 473,398

Claims priority, application France, July 28, 1964, 983,283; Mar. 16, 1965, 9,402

U.S. Cl. 310—11 **5 Claims**

Int. Cl. H02k *45/00*



A magnetohydrodynamic generator having an annular duct positioned in a magnetic field, an inlet in the form of a convergent-divergent nozzle connected to the outer wall of said duct in substantially the same plane as an outlet pipe transverse to the central axis of the annular duct.

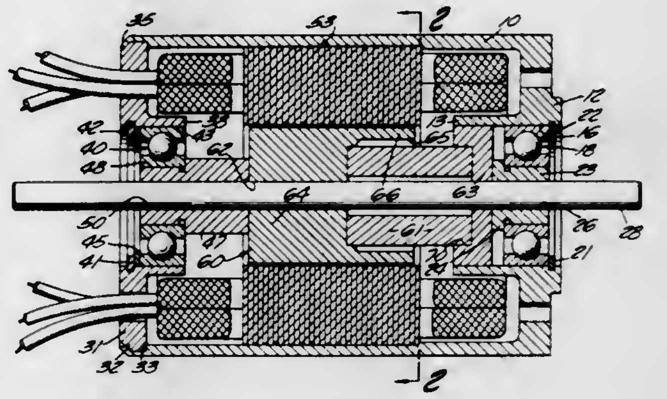
3,428,837
SMALL ANGLE STEPPING MOTOR WITH OFFSET PERMANENT MAGNET ROTOR HAVING AXIALLY LOCATED POLE SHOES

Anthony P. Morreale, Whittier, and Zdzislaw R. Summers, Long Beach, Calif., assignors to IMC Magnetics Corp., a corporation of California

Filed Apr. 21, 1966, Ser. No. 544,191

U.S. Cl. 310—49 **14 Claims**

Int. Cl. H02k *37/00*



An electrical motor of the stepper type that operates in small discrete steps. The rotor comprises a cylindrical permanent magnet having pole shoes in the form of end caps at the ends. The permanent magnet itself is offset axially with respect to the stator, one pole shoe having teeth being directly within the bore of the stator. With this pole shoe configuration the magnetic field extends through part of the motor housing as well as the stator.

The stator poles and one rotor pole shoe are provided with teeth in relative numbers to produce a motor having two hundred discrete steps per revolution, having a magnitude of 1.8 degrees. The stator is provided with eight poles having two windings with a total of 16 windings wired in four phases, there being four series connected windings in each of the four phases.

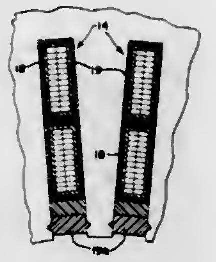
3,428,838
WEAR DETECTOR FOR FLUID-COOLED ELECTRIC MACHINE

Chester C. Carson, Ballston Spa, and Edward E. Gibbs and Lloyd P. Grobel, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Sept. 15, 1966, Ser. No. 579,568

U.S. Cl. 310—56 **8 Claims**

Int. Cl. H02k *9/26*



1. In an electric machine having a pair of adjacent parts therein subject to cyclic forces during operation of the machine tending to produce relative motion therebetween, one of said parts serving to insulate the windings of the machine,

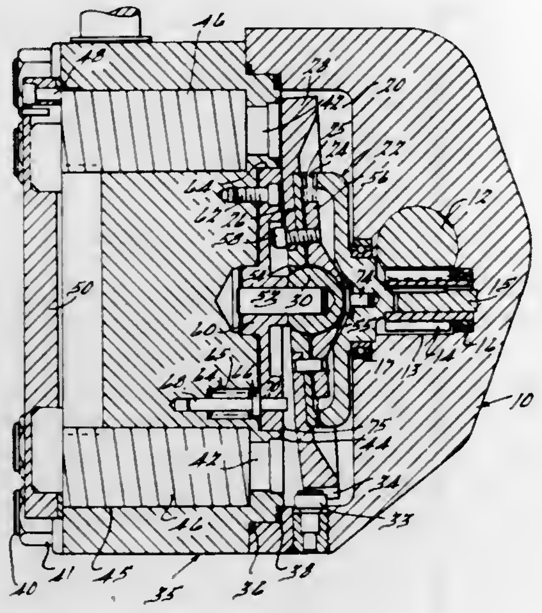
means circulating fluid coolant through the machine and over the parts,

one of said parts including a layer of material substantially noncontributive to the primary function of the part and having physical attributes distinguishable from the material of the insulating parts, said layer being disposed at the location where the parts touch one another, means withdrawing a test portion of the fluid coolant from the machine, and

detector means arranged to provide an indication external to the machine when material from said layer is present in the fluid coolant.

3,428,839
NUTATING-TYPE ACTUATOR

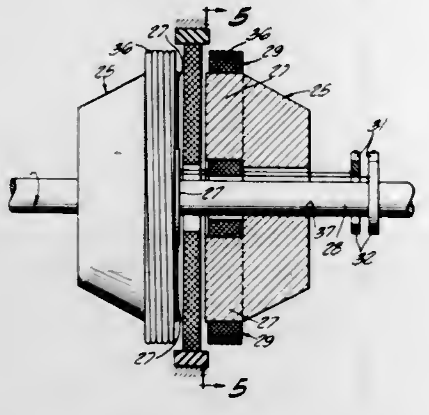
John C. Singleton and Donald H. McCullough, Lancaster, and Raymond J. Hartz, Cuyahoga Falls, Ohio, assignors to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Filed June 6, 1966, Ser. No. 555,413
U.S. Cl. 310—82 **12 Claims**
Int. Cl. H02k *7/06*



A control rod drive of the rack and pinion type is powered by a nutating electric motor having an integrated nutating gear and armature centered on the extended axis of the pinion and contained in a sealed enclosure but powered by electromagnetic means, all of the electrical elements being accessible outside the enclosure.

3,428,840
AXIAL AIR GAP GENERATOR WITH COOLING ARRANGEMENT

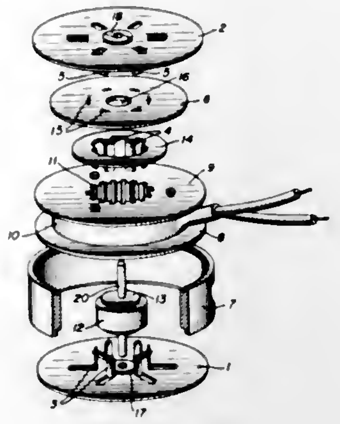
William Kober, Rolling Hills, Calif., assignor to The Garrett Corporaion, Los Angeles, Calif., a corporation of California
Filed Jan. 9, 1967, Ser. No. 608,013
U.S. Cl. 310—114 **38 Claims**
Int. Cl. H02k *21/10*



Axial air gap generator with cooling arrangement includes two rotors spaced from each other to receive a stationary stator therebetween. Each rotor is provided with a plurality of inwardly facing, removable poles each of which is surrounded with the spirally wound layers of ribbon-like conducting material for producing the electromagnetic force. Cooling means for each rotor is provided either by fan blades or by cooling fluid. Stator includes a plurality of conductive sheet-metal strips which are joined together at their radially extending edges. The electrical output of the above mentioned arrangement assumes a substantially sinusoidal wave form.

3,428,841
SYNCHRONOUS ELECTRIC MOTOR

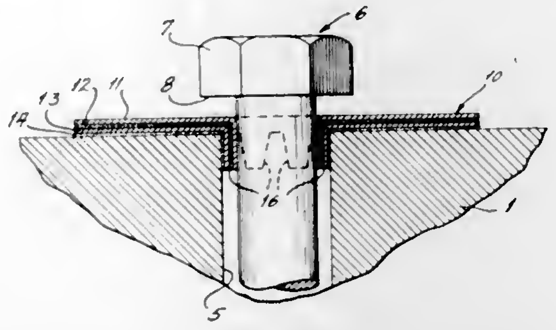
Paul Bossard and Jean Monie, Cluses, France, assignors to Etablissements Carpano and Pons, Cluses, France
Filed Mar. 16, 1966, Ser. No. 534,876
Claims priority, application France, Mar. 19, 1965, 9,922/65
U.S. Cl. 310—164 **1 Claim**
Int. Cl. H02k *21/04*



A small synchronous electric motor including a permanently magnetized rotor, a stator having an energizing coil surrounding the rotor, a cage of stator poles disposed between the rotor and the coil and projecting on either side along two flanges placed on either side of the coil and connected magnetically by a ring surrounding the coil and along the inner edge of a magnetizable ring independent of the flanges and placed between one of them and the coil, one pole of this flange and one pole of the magnetizable ring being each time placed side by side between two poles of the opposed flange, a short circuiting ring between the magnetizable ring and the flange near the ring, the distance between neighbouring poles of the same polarity being greater than the distance between the poles of opposed polarity, the diameter of the magnetizable inner ring being smaller than the diameter of the two flanges in such a way that the magnetic flux passing through the poles of the ring be less than that of the poles of the two flanges.

3,428,842
BASE-MOUNTED MOTOR

Robert L. Harris, Ferguson, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Jan. 5, 1967, Ser. No. 607,410
U.S. Cl. 310—217 **5 Claims**
Int. Cl. H02k *5/22*

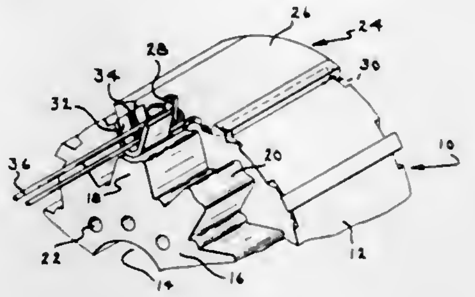


In a base-mounted motor with a stator bolted to a base with through-bolts, a laminated electrically insulating washer interposed between the stator and the head of each through-bolt. The washer has a metal sheet contiguous the through-bolt head, a tongue projecting between successive axially projecting ends of slot wedges, and a hole defined by fingers extending into a through-bolt hole in the stator to locate the washer, center the through-bolt, and hold the through-bolt shank away from the stator at the head end.

The steps of adhering the metal sheet and an insulating sheet. coating the exposed surface of the insulating sheet with a heat curable adhesive, forming the washer described, bonding the washer to the upper radial face of the stator and thereafter inserting and tightening the through-bolt.

3,428,843
COMMUTATOR TERMINATION

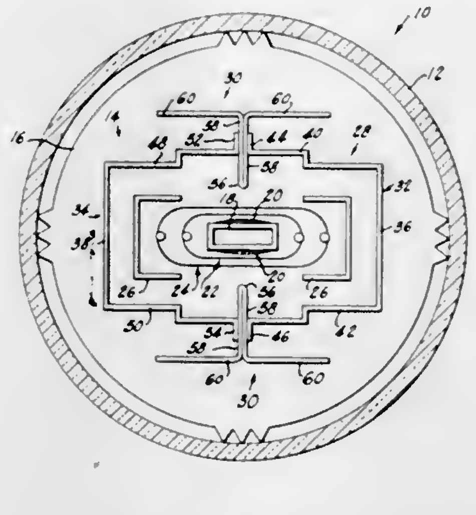
Joseph Richard Keller, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 13, 1965, Ser. No. 495,417
U.S. Cl. 310—234 **6 Claims**
Int. Cl. H01r *39/32*



A commutator assembly of an armature comprising an insulating member having a cylindrical portion and an integral coaxial hub. The cylindrical portion receives an armature shaft and the hub has radially spaced anvil elements for supporting extensions of the commutator segments to thereby connect the segments to the commutator leads.

3,428,844
ELECTRON DISCHARGE DEVICE ANODE FIN INSERT WITH INTEGRAL RADIATING WINGS

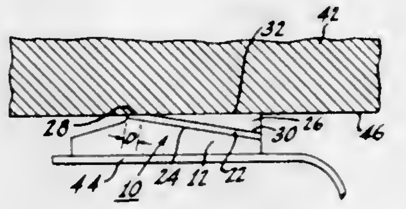
Cyril Droppa, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,299
U.S. Cl. 313—39 **4 Claims**
Int. Cl. H01j *1/46, 61/52;* **H01k** *1/58*



An electron discharge device having a cathode and a grid is provided with an anode surrounding the cathode and grid electrode. By providing a heat dissipating means projecting inwardly from the anode to a point closer to the cathode than any part of the anode improved heat dissipating capabilities are achieved, thereby enhancing the operating characteristics of the device.

3,428,845
LIGHT-EMITTING SEMICONDUCTOR HAVING RELATIVELY HEAVY OUTER LAYERS FOR HEAT-SINKING

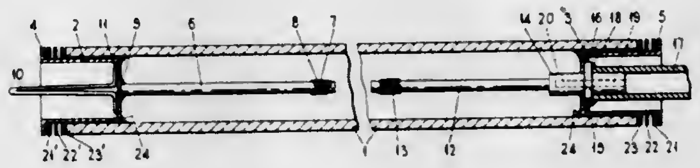
Herbert Nelson, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,696
U.S. Cl. 313—108 **8 Claims**
Int. Cl. H01j *1/62*



A gallium arsenide laser diode is provided comprising first and second regions of mutually different conductivity types with a PN junction therebetween. A third semiconductor layer is disposed on all but a small area of the second layer. The third layer forms and ancillary PN junction with the second layer. A relatively massive electrode which acts as a heat sink is disposed on the third layer and the small exposed area of the second layer. The ancillary PN junction is reversed biased by a voltage applied to the electrode, while the first PN junction is forward biased. The lateral resistance of the second layer is relatively high, so that the reverse biased ancillary junction limits the current flow across the first PN junction to substantially the region underlying the small exposed area which is directly contacted by the electrode.

3,428,846
CLOSURE OF TUBES OF REFRACTORY OXIDE MATERIAL

Sydney A. R. Rigden, Bushey Heath, and John B. Whiscombe, Ealing, London, England, assignors to The General Electric Company Limited, London, England, a British company
Filed Dec. 30, 1965, Ser. No. 517,737
Claims priority, application Great Britain, Jan. 7, 1965, 741/65
U.S. Cl. 313—284 **1 Claim**
Int. Cl. H01j *1/96*



An open end of a refractory oxide tube is closed by inserting within the tube a closely fitting hollow cylindrical closure member formed of refractory metal having a coefficient of thermal expansion closely matching that of the tube material, the closure member being closed at the inner end and having at its outer end a flange overlying the end surface, and possibly part of the outer surface, of the tube wall, and forming a hermetic seal only between the flange and that portion of the tube wall which it overlies. The method is applicable to the closure of tubular alumina envelopes of alkali metal vapour electric discharge lamps, using niobium closure members and a bonding medium consisting of at least one of the metals titanium, zirconium, vanadium, hafnium, possibly with niobium and/or beryllium.

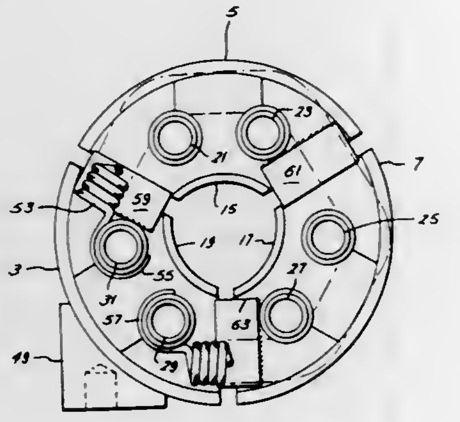
3,428,847
WATER COOLED CONTACTOR FOR ANODE IN CARBON ARC MECHANISM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Ronald E. Enstrom, Skillman, and W. F. Schacht, Cherry Hill, N.J.

Filed Feb. 17, 1967, Ser. No. 617,783

U.S. Cl. 314—129 **6 Claims**

Int. Cl. H05b *31/18;* **B23k** *9/28*



The operational life of contacting devices for carbon arc rod holders suitable for use in high intensity, arc type illumination systems may be extended by utilizing a resiliently biased, radially expansible, three jaw configuration having silver-tungsten contact inserts secured to hollow housings. Inlet and outlet fluid conduits are provided for each hollow housing for flushing liquid coolant therethrough.

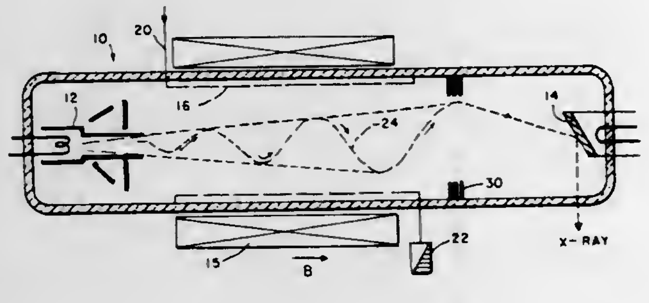
3,428,848
SYNCHRONOUS WAVE LINEAR ACCELERATOR WHEREIN THE SLOW WAVE CIRCUIT COUPLES ONLY TO THE POSITIVE SYNCHRONOUS WAVE

Bruno W. Zotter, Belmar, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 8, 1966, Ser. No. 578,440

U.S. Cl. 315—3.5 **4 Claims**

Int. Cl. H01j *25/36*



1. In a travelling wave particle accelerator having means for projecting an axial electron beam within an evacuated enclosure at a constant drift velocity, means for accelerating the beam velocity, said accelerating means comprising, a transverse-field slow wave circuit in coupling relationship to said beam, means for propagating a microwave signal of relatively high power along said transverse-field slow wave circuit whereby said signal interacts with said beam to excite a positive synchronous wave thereon, said slow wave circuit coupling only to said positive synchronous wave whereby said electron beam energy is continuously accelerated as it couples with said slow wave circuit.

3,428,849
SYSTEM FOR OPERATING PICKUP TUBES

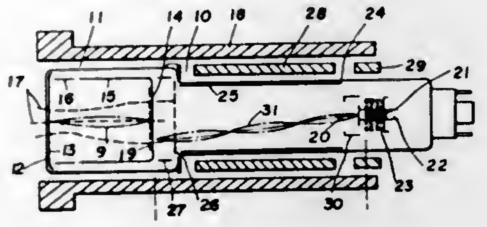
Hiroshi Watanabe and Tomoya Okuda, Kamakura-shi, and Yoshio Takamura, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Dec. 7, 1964, Ser. No. 416,205

Claims priority, application Japan, Dec. 6, 1963, 38/65,319; Dec. 26, 1963, 38/69,796

U.S. Cl. 315—11 **6 Claims**

Int. Cl. H01j *31/48*



A television camera tube having an electron beam producing means and a photocathode arranged respectively at both ends of an envelope, a target provided between said means and photocathode in the envelope, means to generate a magnetic field intensity disposed to surround said envelope so that the field intensity becomes minimum on the surface of the target and maximum on the surface of said photocathode, and means to produce such a magnetic field intensity that the beams form only three or less focussing loops between said target and said electron beam producing means.

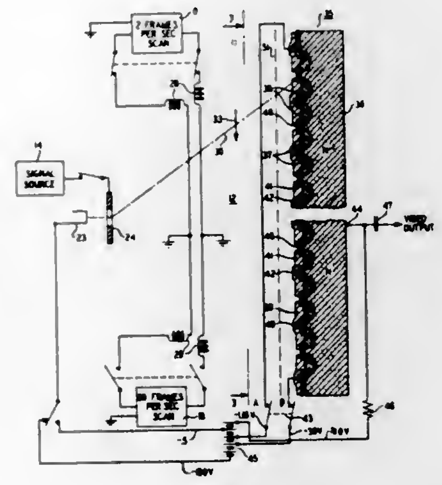
3,428,850
CATHODE RAY STORAGE DEVICES

Merton H. Crowell, Morristown, and Jack A. Morton, South Branch, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Sept. 12, 1967, Ser. No. 667,167

U.S. Cl. 315—12 **16 Claims**

Int. Cl. H01j *29/41*



The target structure of a cathode ray storage tube comprises a semiconductive sheet upon which is defined an array of PNN+ semiconductor elements, only the P and N+ regions of which are exposed to the electron beam. During its scan, an intensity modulated "write-in" electron beam selectively switches the voltages of the elements from a "0" to a "1" state, depending on the beam modulation at impingement. After a complete scan by the write-in beam, the spatial distribution of switched semiconductor elements constitutes a recording of a single transmitted frame. A "read-out" beam generates a pulse output from the N substrate only if the semiconductor element is in the "1" state. Another embodiment is a light sensitive camera tube in which light that exceeds a threshold intensity switches selective elements for write-in.

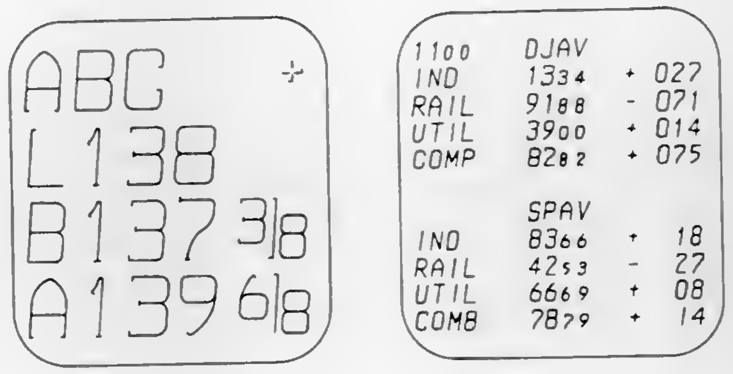
3,428,851
DATA DISPLAY SYSTEM

Carl Greenblum, Stamford, Conn., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Jan. 16, 1967, Ser. No. 609,381

U.S. Cl. 315—19 **15 Claims**

Int. Cl. H01j *29/70*



A data display system of the type wherein data is displayed in a format having at least one data line, where a separate sweep of a viewing screen is provided for each of the data lines, and including circuitry for permitting the display format to be varied by altering various parameters of the sweep circuitry and the timing controls.

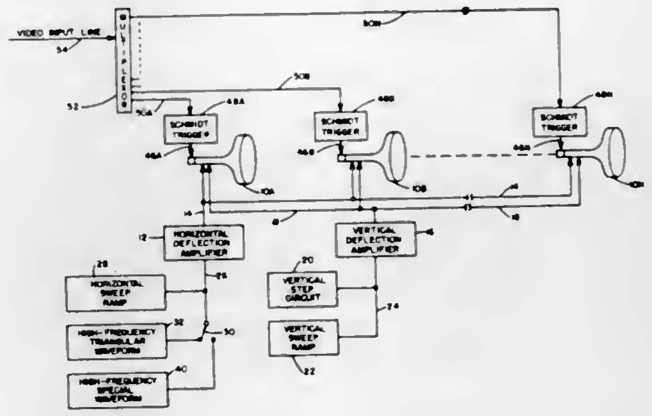
3,428,852
DISPLAY SYSTEM

Carl Greenblum, Stamford, Conn., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Jan. 20, 1967, Ser. No. 610,562

U.S. Cl. 315—22 **16 Claims**

Int. Cl. H01j *29/72*


VIDEO INPUT LINE
SCHMITT TRIGGER
HORIZONTAL DEFLECTION AMPLIFIER
VERTICAL DEFLECTION AMPLIFIER
HORIZONTAL SWEEP RAMP
HIGH-FREQUENCY TRIANGULAR WAVEFORM
HIGH-FREQUENCY SPECIAL WAVEFORM
VERTICAL STEP CIRCUIT
VERTICAL SWEEP RAMP

A display system of the type which provides a plurality of writing strokes for each sweep of a viewing screen including circuitry for intensifying the image on the viewing screen by increasing the width of each writing stroke by a controlled amount. This increase may be accomplished by superimposing a high frequency waveform at right angles to the writing stroke. Where there are a plurality of viewing screens, further intensification is achieved by converting short video input pulses into longer pulses which control the display devices.

3,428,853
ELECTRON BEAM DEFLECTION DEVICE FOR USE IN CONNECTION WITH CATHODE-RAY TUBES OF TELEVISION RECEIVERS AND THE LIKE

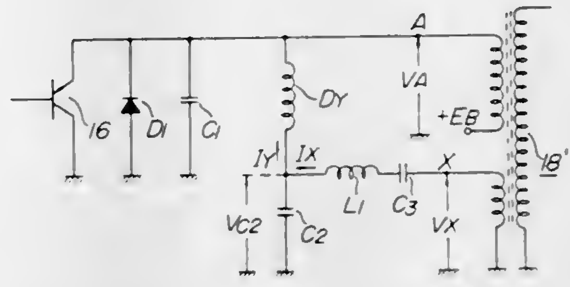
Mitsuharu Akatsu, Yokohama, Japan, assignor to Hitachi, Ltd., Tokyo, Japan

Filed Apr. 2, 1965, Ser. No. 445,222

Claims priority, application Japan, Apr. 4, 1964, 39/18,902

U.S. Cl. 315—27 **2 Claims**

Int. Cl. H01j *29/74*



Electron beam deflection device including a transistor, a horizontal deflecting coil, first and second capacitances, and an inductance in which a series connection of the deflecting coil and the first capacitance is connected across the output terminal of the transistor and ground, and a fly-back pulse generated during a cut-off period of the transistor is supplied to the first capacitance through a series connection of the second capacitance and the inductance to thereby increase the terminal voltage of the first capacitance with the lapse of time.

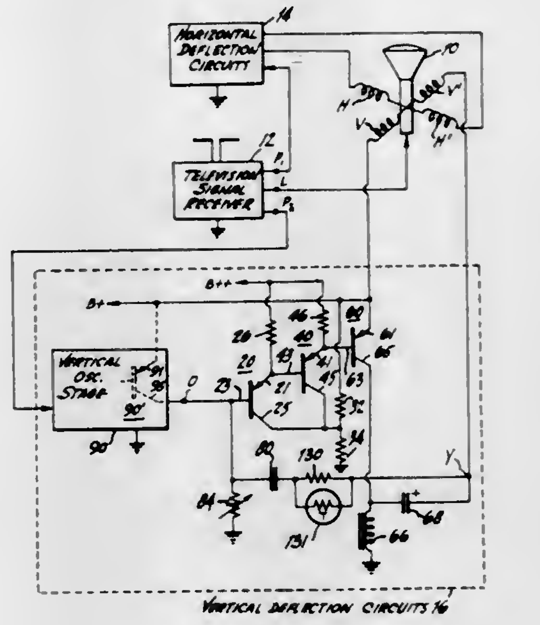
3,428,854
TEMPERATURE COMPENSATION OF DEFLECTION CIRCUITS

James A. McDonald, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,685

U.S. Cl. 315—27 **4 Claims**

Int. Cl. H01j *29/70*


HORIZONTAL DEFLECTION CIRCUITS
14
10
12
TELEVISION SIGNAL RECEIVER
B+
VERTICAL OSC. STAGE
90
20
23
25
130
131
84
64
66
VERTICAL DEFLECTION CIRCUITS 16

Deflection circuit involves sawtooth voltage waveform generation across a capacitor in a negative feedback path looped around a high current gain transistor amplifier. Changes in the characteristics of the feedback amplifier transistors can have an adverse effect on deflection linearity, particularly at picture top; compensation is provided through automatic adjustment of the voltage on the feedback capacitor at the beginning of the trace interval, as by use of a thermistor in the capacitor discharging current path. Driving circuit for output transistor is disposed in a manner ensuring ability to overcome the most adverse leakage current condition so that output transistor cutoff during retrace (capacitor discharging) interval is guaranteed. Danger of thermal runaway is thereby precluded.

3,428,855

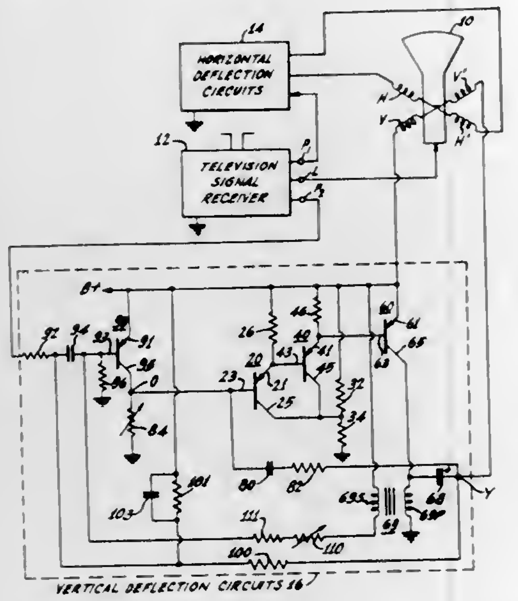
TRANSISTOR DEFLECTION CONTROL ARRANGEMENTS

James A. McDonald, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,730

U.S. Cl. 315—27 **10 Claims**

Int. Cl. H01j *29/70*


HORIZONTAL DEFLECTION CIRCUITS
TELEVISION SIGNAL RECEIVER
VERTICAL DEFLECTION CIRCUITS 16

Feedback from output stage of "Miller Integrator" sawtooth generator to a switching transistor establishes astable multivibrator action to render deflection circuit oscillatory. To ensure accurate synchronization of the oscillations, an auxiliary waveform is additionally fed back to switching transistor. Spiked sawtooth wave from output stage is integrated to develop at switching transistor input a generally parabolic voltage waveform, having a steep slope in the vicinity of the trace interval end; its presence renders timing of the turn-on of the switching transistor substantially insensitive to extraneous factors, such as noise or circuit parameter changes. Vertical hold control is effected via variable resistor in feedback path controlling slope steepness. Retrace pulses developed across the deflection winding are doubly integrated by a pair of RC integrators in cascade to develop a supplemental waveform for feedback to input of Miller circuit to provide desired S-shaping of the current through the winding.

3,428,856

TELEVISION HIGH VOLTAGE REGULATOR

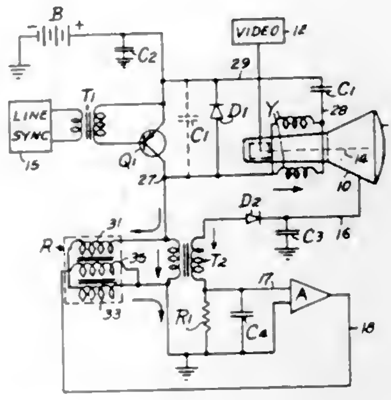
Joel Grayson Jones, Glendora, Calif., assignor to Conrac Corporation, Duarte, Calif., a corporation of New York

Filed May 24, 1965, Ser. No. 458,304

U.S. Cl. 315—27 **11 Claims**

Int. Cl. H01j *29/70*

The ultor voltage supply for a television cathode ray tube is stabilized against increased load caused by abnormally high electron beam intensity by producing a corresponding increase in the energy stored electromagnetically during horizontal trace time and/or by discharging the stored energy into the high voltage system more rapidly and hence at a higher voltage. In one embodiment a saturable reactor is connected effectively in parallel with the horizontal deflection yoke, and its control winding is supplied with a current that varies directly with the long term variations in the electron beam current, preferably in a suitably nonlinear manner. Alternatively, a conventional choke coil may be employed, connected in series with an impedance that is varied inversely with the electron beam intensity. Useful stabilization is obtainable merely by designing the high voltage transformer so that its core becomes progressively saturated with increasing ultor load by the direct current component of the primary current.



3,428,857

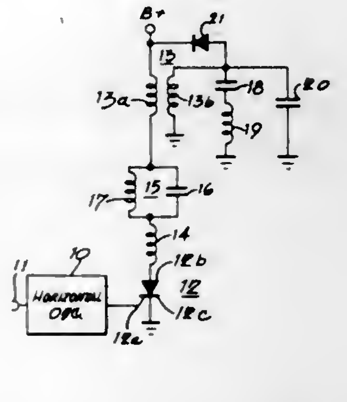
STEP-RECOVERY DAMPER DIODE FOR RETRACE DRIVEN HORIZONTAL DEFLECTION CIRCUITS

Richard C. Lemmon, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,388

U.S. Cl. 315—27 **5 Claims**

Int. Cl. H01j *29/72*



A television type deflection waveform generating circuit employing a damping circuit which includes a step-recovery diode. The diode is coupled to the deflection winding and conducts throughout the trace interval with a portion of the deflection current passing through the diode in the reverse direction. A switch is closed during the retrace interval to supply energy to the circuit.

3,428,858

COLOR DISPLAY SYSTEM

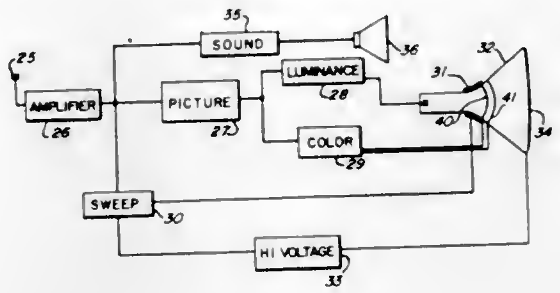
Nicholas D. Glyptis, 16 W. 148 Timber View Drive, Elmhurst, Ill. 60126

Continuation-in-part of application Ser. No. 697,240, Nov. 18, 1957. This application Sept. 7, 1965, Ser. No. 485,369

U.S. Cl. 315—30 **10 Claims**

Int. Cl. H01j *29/52*

A cathode ray color display having a single gun with a phosphor responsive to a condition of the electron beam to vary the color of light output. The condition is established by an auxiliary field having a boundary adjacent the deflection zone, between the zone and the phosphor screen, and generally at right angles to the path of the electron beam throughout a scan pattern.



3,428,859

MAGNETRON ANODE HAVING TEMPERATURE COMPENSATING MEMBERS WITHIN THE CAVITIES OF A DIFFERENT COEFFICIENT OF THERMAL EXPANSION FROM THE CAVITIES

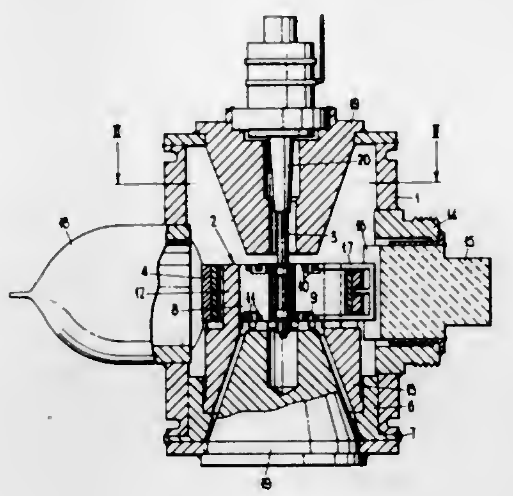
Vincent Albert Heathcote, London, England, assignor to The M-O Valve Company, London, England, a British company

Filed Mar. 15, 1966, Ser. No. 534,314

Claims priority, application Great Britain, Mar. 23, 1965, 12,353/65

U.S. Cl. 315—39.51 **3 Claims**

Int. Cl. H01j *25/50*



A magnetron having a multicavity anode in each of which cavities there is disposed a member consisting of a material whose coefficient of thermal expansion differs from that of the material of the anode so as to compensate for the thermal expansion of the cavity in which it is disposed, thereby to reduce the magnitude of changes in the frequency of operation of the magnetron with temperature.

3,428,860

ABLATING LAMP WITH IMPROVED GAS EVOLVING APPARATUS

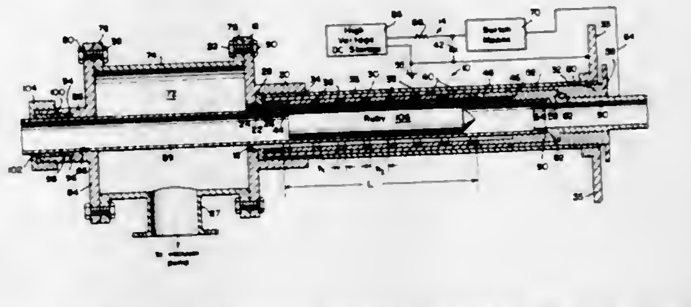
Frithjof N. Mastrup, Manhattan Beach, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Oct. 25, 1966, Ser. No. 589,454

U.S. Cl. 315—111 **9 Claims**

Int. Cl. H01j *7/24*

An ablating lamp having a pair of spaced anode and cathode electrodes with a passage extending from one of the electrodes to the other having wall portions of electrical insulating and conducting materials, the insulating material being electric discharge arc responsive for releasing gas under pressure emitting radiation substantially corresponding to that of a black body having a temperature of the order of at least 20,000° K. when subjected to electrical discharge arcs between the electrodes through the passage. An electric circuit is provided for periodically applying electrical potential energy between the electrodes to develop a voltage drop and electrical discharge arcs therebetween within the passage. Gas evacuation apparatus is provided for providing a pressure substantially lower than atmospheric in the passage prior to each successive electrical discharge arc generated.



3,428,861

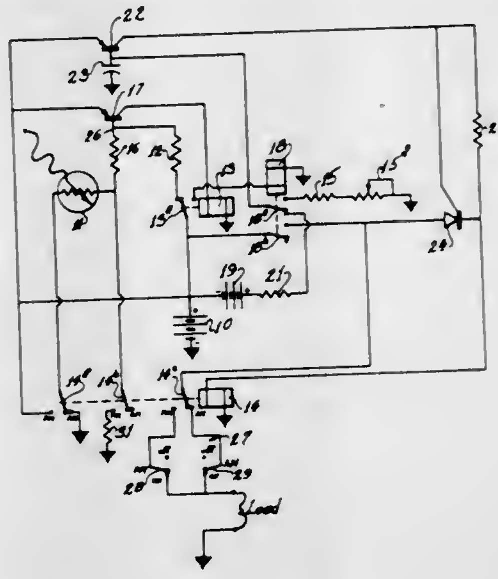
PHOTO-ELECTRIC TIMER CONTROL

Herbert G. Zinsmeyer, 2996 Donita Court, Birmingham, Ala. 35243

Filed Oct. 1, 1965, Ser. No. 492,105

U.S. Cl. 315—159 **2 Claims**

Int. Cl. H05b *37/02, 39/04, 41/36*



A photo timer in which there is provided a deactivating circuit which turns off the output to the load after a preselected time. Such circuit holds the device off even though the initiating light conditions prevail, and resets only after the light conditions reverse. For example, if set to operate with illumination, the device operates in the morning at about sunrise, and after the preset interval a deactivating circuit switches off the output and holds it off the remainder of the day while daylight prevails. When daylight ebbs, a deactivating circuit drops out and the entire circuit is reset to repeat the operation when light returns the following morning.

3,428,862

A.C. CONTROL CIRCUIT FOR ARC DISCHARGE LAMPS

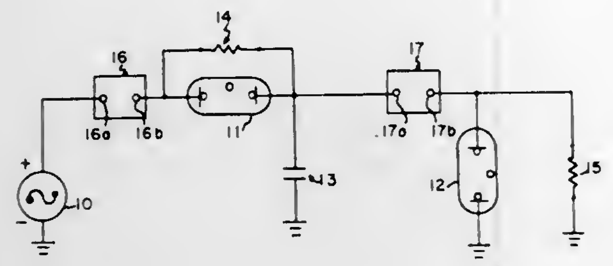
Sandford C. Peek, Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 30, 1965, Ser. No. 517,542

U.S. Cl. 315—195 **13 Claims**

Int. Cl. H05b *41/36*

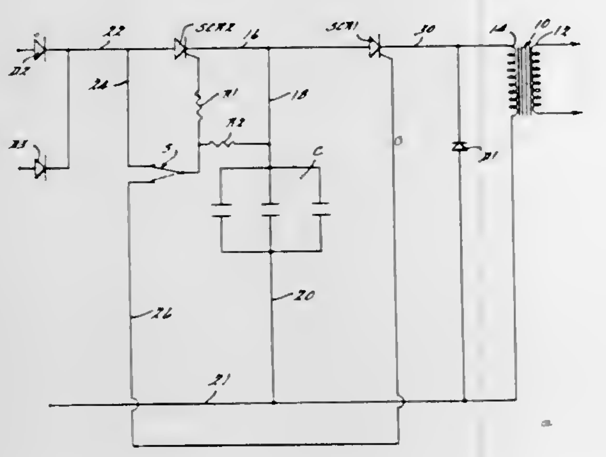
An alternating current electronic ballast for a pair of arc discharge lamps in which electronic switching devices charge and discharge a condenser, during different parts of the alternating current cycle, whereby a first arc discharge lamp is lighted while the condenser is charging



and a second arc discharge lamp is lighted while the condenser is discharging.

3,428,863
CAPACITIVE WELDING CIRCUIT

Kenneth D. Wright, Pontiac, Mich., assignor, by mesne assignments, to Ebbert Engineering Company, Troy, Mich., a corporation of Michigan
Filed Nov. 18, 1965, Ser. No. 508,455
U.S. Cl. 315—241 **11 Claims**
Int. Cl. H05b *41/14*



A welding circuit utilizing a capacitive discharge for providing pulses of welding current, as well as trigger pulses for solid state control apparatus, and including a switch mechanically operable to one position to charge the capacitor and to a second condition for discharging the capacitor into the welding circuit.

3,428,864
MULTIPHASE VOLTAGE MONITORING SYSTEM

Harold G. Barber, Irving, and William G. Redmond, Arlington, Tex., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,299
U.S. Cl. 317—31 **6 Claims**
Int. Cl. H02h *3/28*

1. A system for monitoring an A-C power source having multiple phases for over- and under-voltages, said system comprising:

a bus;

a plurality of rectifiers each connecting a respective phase of the power supply to the bus for conducting positive pulses of the power supply thereto;

first and second relays each having a winding;

first and second voltage-responsive current-control devices each having first and second electrodes between which electrical current flows when the device conducts, current flow being from the first to the second electrode, and a control electrode for receiving a control voltage controlling curent flow through the device;

a first, surge-limiting resistor having first and second ends;

an isolating rectifier connected between the first resistor first end and the bus;

a first capacitor connected between the first resistor second end and ground;

a first lead connecting the first current-control device first electrode to the first resistor second end through the first relay winding;

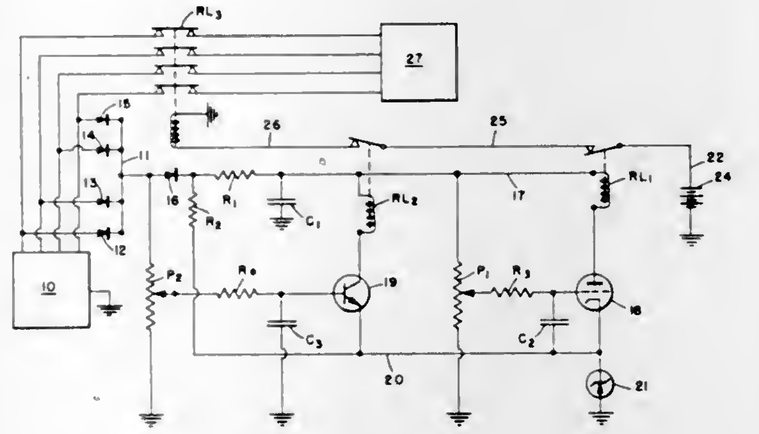
a second resistor having first and second ends, the first end being connected to the first resistor first end;

a second lead connecting the second resistor second end directly to the respective second electrodes of the first and second current-control devices;

a voltage-regulating device connected between ground and the second lead for maintaining a substantially constant positive reference voltage thereon;

a first potentiometer having a resistance element connected between the first lead and ground and further having a wiper;

means connecting the wiper to the first current-control device control electrode and including a third resistor;



a second capacitor connected between the first current-control device control electrode and the second lead;

means connecting the second current-control device first electrode through the second relay winding to the first lead;

a second potentiometer having a wiper and further having a resistance element connected between the bus and ground;

a fourth resistor connecting the second potentiometer wiper to the second current-control device control electrode;

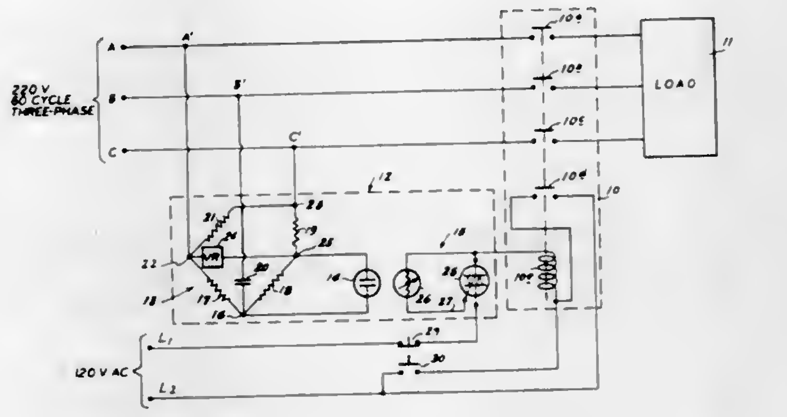
and a third capacitor connected between the second current-control device control electrode and ground, the fourth resistor and third capacitor being of relative electrical values such that they coact to convert positive pulses from the bus into a substantially direct-current voltage.

3,428,865
DEVICE FOR MONITORING MULTI-PHASE ELECTRIC POWER SUPPLY SYSTEM AND PROVIDING CONTROL SIGNAL IN RESPONSE TO PROPER OPERATION OF SUCH SYSTEM

Henry L. Opad, 245 Bennett Ave., New York, N.Y. 10040
Filed Feb. 7, 1967, Ser. No. 614,488
U.S. Cl. 317—31 **10 Claims**
Int. Cl. H02h *3/28*

A sensing circuit has a resistive-capacitive network connected in shunt to a three-phase power supply to provide

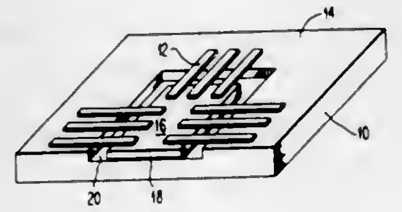
a voltage drop across a sensing resistor of the network which exceeds the ignition and maintaining voltage of a neon lamp in parallel with such resistor only when at least a predetermined voltage appears on all phases of the power supply in correct sequence, and a control circuit energizable from an independent power supply includes a light-dependent resistor activated by illumination from the neon lamp to provide a low resistance path for a gating current which triggers a bi-directional triode semi-conductor switch from a blocking state to a conducting state so that current can pass therethrough from the independent current supply, for example, to a contactor for connecting a load to the three-phase power supply. A non-linear resistance, preferably in the form of a varistor, is connected between resistive legs of the resistive-capacitive network to ensure that the voltage across the sensing resistor is sufficiently reduced to extinguish the neon lamp when a voltage failure occurs on the phase to which the capacitive leg of the network is connected.



3,428,866
SOLID STATE DEVICE INCLUDING ELECTRICAL PACKAGING ARRANGEMENT WITH IMPROVED ELECTRICAL CONNECTIONS

Charles Chiou, Wappingers Falls, and Joseph R. Garcia, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

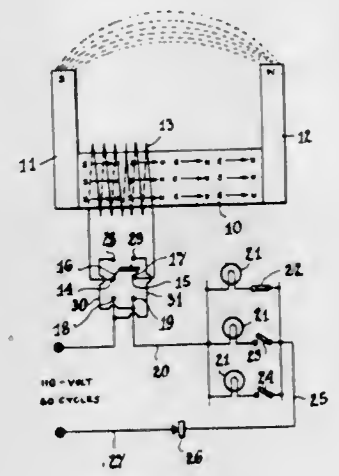
Original application June 23, 1965, Ser. No. 466,182, now Patent No. 3,325,882, dated June 20, 1967. Divided and this application Dec. 12, 1966, Ser. No. 623,158
U.S. Cl. 317—101 **6 Claims**
Int. Cl. H02b *1/04*



An electrical packaging arrangement having a substrate preferably of a ceramic insulating material wherein a solid state device is supported by the substrate with a surface of the solid state device being spaced from the substrate surface. The top surface of the solid state device is substantially in the same plane with the top surface of the substrate. A plurality of electrically conductive lands extend from the surface of the solid state device across the space to the surface of the substrate.

3,428,867
METHODS AND APPARATUS FOR CONTROLLING THE USEFUL MAGNETOMOTIVE FORCE OF A PERMANENT MAGNET

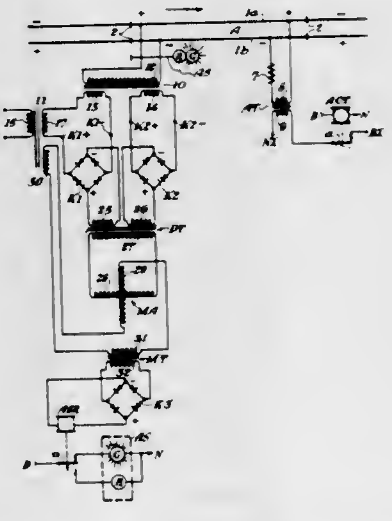
Maximilian C. Becker, 22 Roosevelt Blvd., Florham Park, N.J. 07932
Continuation-in-part of application Ser. No. 425,588, Apr. 26, 1954. This application Feb. 12, 1959, Ser. No. 792,729
U.S. Cl. 317—123 **10 Claims**
Int. Cl. H01h *47/00, 47/02;* **H01f** *13/00*



The useful magnetomotive force of a permanent magnet is controlled by modifying the magnetic field between the ends of the magnet.

3,428,868
CODE DETECTING APPARATUS

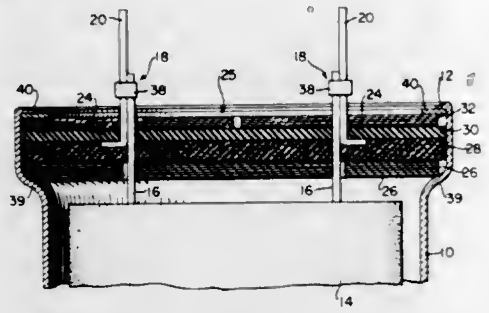
Harry Duckitt and Kenneth G. King, London, England, assignors to Westinghouse Brake and Signal Company Limited, London, England
Filed Feb. 15, 1966, Ser. No. 527,417
U.S. Cl. 317—134 **10 Claims**
Int. Cl. H01h *47/02*



This disclosure relates to a code detecting apparatus for railway signaling systems comprising a phase sensitive apparatus which includes a track transformer, an auxiliary transformer, and a first and a second rectifier feeding a decoding transformer. The decoding transformer is coupled to the control winding of a magnetic amplifier which has its main winding connected to the primary winding of a matching transformer. The secondary winding of the matching transformer is coupled through a third rectifier to a signal relay which is picked up when and only when the decoding transformer is oppositely and alternately energized at a preselected code rate.

3,428,869
HERMETICALLY SEALED ELECTROLYTIC CELL

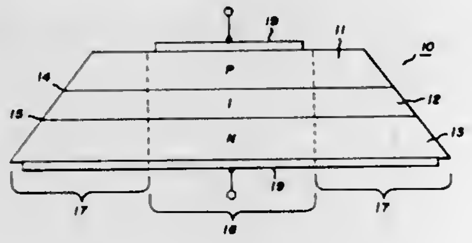
William E. Gilbert, Grand Island, N.Y., assignor to Spaulding Fibre Company, Inc., Tonawanda, N.Y.
Filed Oct. 12, 1966, Ser. No. 586,202
U.S. Cl. 317—230 **4 Claims**
Int. Cl. H01g *9/08*



An electrolytic cell has container laminated with a shoulder on the wall near the open end. A laminated seal cap comprises two substantially rigid insulative discs with a sandwich layer of cold-flow insulative caulking material between them. The seal cap fits into the open end of the container against the shoulder and the terminals of the cell project through it. A marginal lip around the end of the container is spun over against the edge of the cap, and the pressure thus exerted laterally expands the caulking material into sealing engagement with the wall of the container and around terminals.

3,428,870
SEMICONDUCTOR DEVICES

Calvin M. Davis, Auburn, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 29, 1965, Ser. No. 475,775
U.S. Cl. 317—234 **7 Claims**
Int. Cl. H01l *3/00, 5/00*

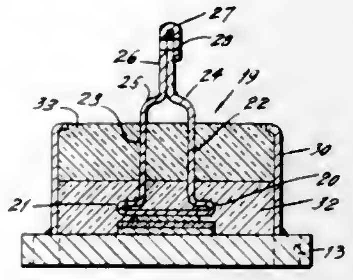


1. A semiconductor device including a semiconductor body having at least first and second layers of opposite conductivity type contiguous with and separated by a third layer, said third layer being of uniform thickness, in parallel relation with said first layer and said second layer along their contiguous planes, and having first and second zones each contiguous with said first and second layers, said first zone comprising a central part of said third layer and said second zone comprising a peripheral part of said third layer surrounding said first zone, said second zone having a higher resistivity than said first zone.

3,428,871
SEMICONDUCTOR HOUSING STRUCTURE HAVING FLAT STRAP WITH RE-ENTRANT BENDS FOR ONE TERMINAL

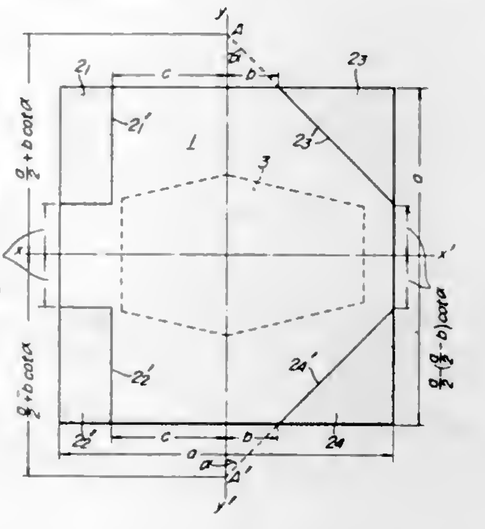
Angus A. Scott, Palos Verdes Estates, John L. Boyer, El Segundo, and Richard A. Hartman, Palos Verdes Estates, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Apr. 14, 1966, Ser. No. 542,639
U.S. Cl. 317—234 **6 Claims**
Int. Cl. H01l *5/02*

A semiconductor housing consisting of a flat conductive base for receiving a semiconductor wafer; a housing cylinder; and a flat conductive strap having a generally U shape with re-entrant bends in each leg of the U. The base of the strap is connected to the top of a wafer positioned atop the flat conductive base. The wafer is encapsulated with a resilient potting compound and a rigid epoxy covers the top of the resilient potting compound and between the spaced U-shaped legs of the conductive strap.



3,428,872
BODY COMPRISING A MARK FOR INDIRECT DETECTION OF AN OBJECTIVE PART AND METHOD OF DETECTING THE POSITION OF SAID OBJECTIVE PART

Hisashi Yoshida, Yuzaburo Sakamoto, Takeshi Hosaka, and Toshio Numakura, Kodaria-shi, and Kenichi Isoda, Kokubunji-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 29, 1966, Ser. No. 568,916
Claims priority, application Japan, July 31, 1965, 40/46,439
U.S. Cl. 317—234 **12 Claims**
Int. Cl. H01l *3/00, 5/00*

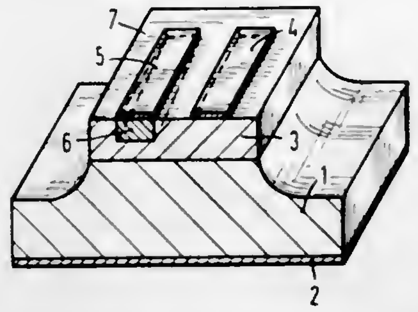


Body comprising a mark for indirect detection of an objective part wherein there is provided at a place which lies on one principle surface of a body to be detected and which is separated from an objective part whose position is to be detected, a detection mark comprising at least one straight line perpendicular to an imaginary center line passing through said objective part and lying on said principle surface, and at least one straight or arcuate line intersecting said imaginary line obliquely, by which mark the said objective part can be detected indirectly, and method of detecting the position of said objective part.

3,428,873
HIGH FREQUENCY TRANSISTOR WITH SLOPING EMITTER JUNCTION

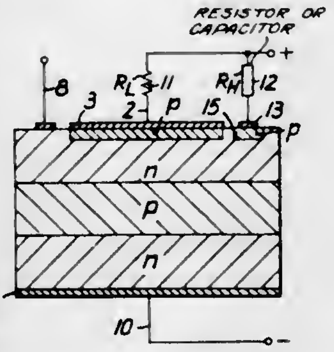
Winfried Meer and Hans Hargasser, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Nov. 30, 1965, Ser. No. 510,720
Claims priority, application Germany, Dec. 1, 1964, S 94,397
U.S. Cl. 317—235 **7 Claims**
Int. Cl. H01l *5/02*

Described is a semiconductor device comprising a semiconductor body having on one side a diffused base region and an emitter region alloyed into said base region to form an emitter p-n juction therewith, respective base and emitter electrodes at the surface of said body on said one side, and a collector region located near the opposite side of said body and forming a collector p-n junction with said base region. The zone of the base region intermediate the two junctions comprises at least one portion having a thickness continuously increasing in a direction parallel to the surface of a semiconductor body, and at least one other portion having a thickness continuously decreasing in said direction.



3,428,874
CONTROLLABLE SEMICONDUCTOR RECTIFIER UNIT

Willi Gerlach, Frankfurt am Main, Eschersheim, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt, Germany
Filed May 16, 1966, Ser. No. 550,361
Claims priority, application Germany, May 14, 1965, L 50,706
U.S. Cl. 317—235 **8 Claims**
Int. Cl. H01l *11/00*

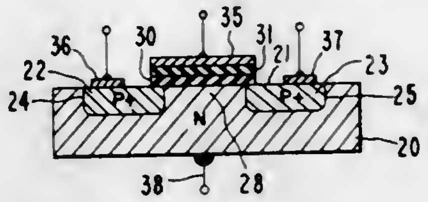


In a controllable semiconductor rectifier composed of a semiconductor body having four successive zones of alternately opposite conductivity types and a further zone having the same conductivity type and disposed on the same side of the body as one of the outermost of the successive zones, and a load having one end ohmically connected to the one outermost zone, means for decreasing the switching time of the thyristor including at least one auxiliary electrode ohmically connected to the further zone and at least one impedance element having one end connected to a respective auxiliary electrode and its other end connected to the other side of the load.

3,428,875
VARIABLE THRESHOLD INSULATED GATE FIELD EFFECT DEVICE

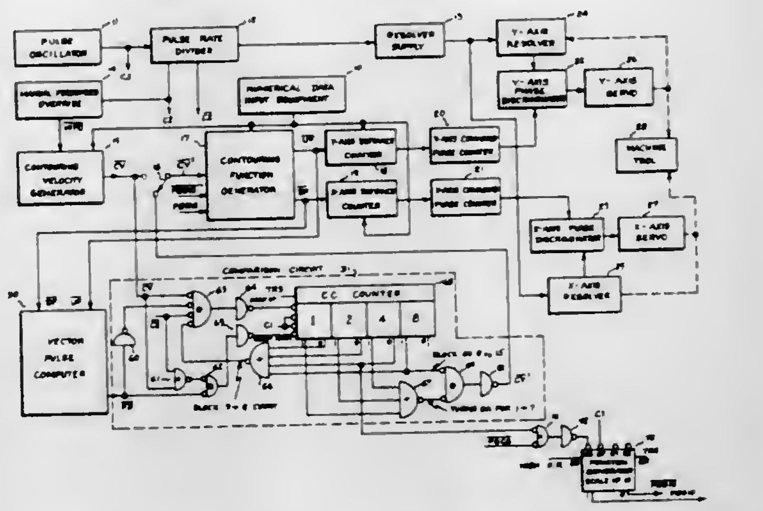
Edward H. Snow, Mountain View, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,896
U.S. Cl. 317—235 **10 Claims**
Int. Cl. H01l *11/14*

The threshold voltage of a MOS capacitor or transistor is precisely varied by placing two layers of nonferroelectric dielectric material between the body of semiconductor material and the gate electrode—the outer layer having a higher thermally activated conductivity than the inner layer—and then heating the resulting structure in the presence of a selected bias voltage. This produces a substantially permanent space charge at the interface between the two dielectric layers which in turn controls the threshold voltage of the MOS device.



3,428,876
ABSOLUTE FEEDRATE VELOCITY CONTROL FOR MULTIAXES PULSE RESPONSIVE SERVO USING ALL DIGITAL CIRCUITRY

Leroy U. C. Kelling, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 18, 1965, Ser. No. 426,343
U.S. Cl. 318—18 **10 Claims**
Int. Cl. G05b *15/02, 11/14*

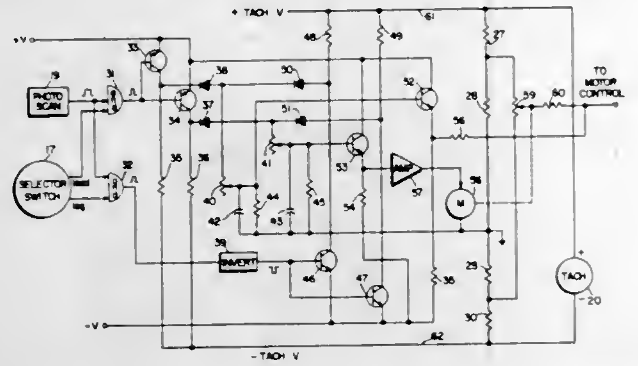


This invention concerns a numerical multiaxes feedrate velocity controlled machine tool. In systems of this type, sequential blocks of numerical information provide pulse rates to each axis which determines the velocity of each axis for each block. If the square root of the sum of the squares of all axes pulse rates is taken, this will provide absolute feed rate which may exceed a safe limit. Therefore, the absolute rate is compared with a fixed reference to limit it to a safe value. This system is an improvement over prior systems since the absolute feedrate is determined and limited by digital means.

3,428,877
SYNCHRONIZER FOR REGISTER CONTROL

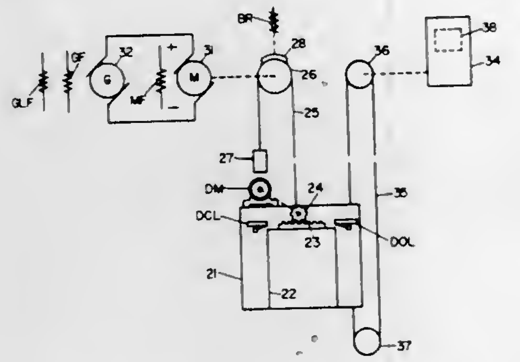
Rex C. Campbell, Fishersville, and Earle B. McDowell, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed Dec. 1, 1965, Ser. No. 510,744
U.S. Cl. 318—85 **6 Claims**
Int. Cl. H02p *7/80;* **H02k** *27/20;* **G05b** *5/01*

A synchronizer for register control to provide a space correction which is proportional to position error between two moving elements regardless of the relative speed with respect to each other of the two moving elements and to provide a velocity correction which remains a constant percentage of the relative speed for a given position error as the relative speed varies. A motor-operated potentiometer is utilized to provide a permanent memory of errors in the instantaneous relationship between the two moving elements and to provide a velocity correction signal which is proportional to the stored errors and which is also a constant percentage of relative speed for a given error as the relative speed varies.



3,428,878
CONTROL OF ELEVATOR HOIST AND DOOR MOTORS

Henry August Stainken, New York, N.Y., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed May 4, 1964, Ser. No. 364,602
U.S. Cl. 318—103 **12 Claims**
Int. Cl. H02p *1/58*

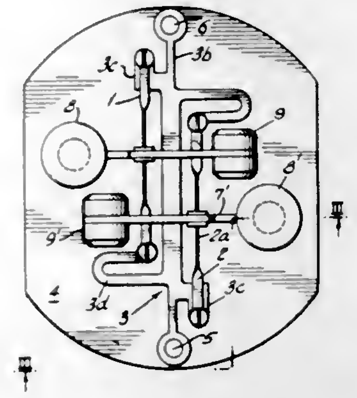


An elevator system including an elevator car, a hoist motor for raising and lowering said car, said hoist motor having an armature and a field winding, a supply of substantially constant unidirectional voltage to which said hoist motor field winding is connected, a continuously rotating generator having an armature and a principal field winding and a levelling field winding, means interconnecting said armatures of said hoist motor and said generator, a door on said car, a door motor for opening and closing said door, said door motor having an armature and a field winding, said door motor field winding being connected to said supply, a unidirectional voltage source of variable magnitude, a plurality of control circuits selectively connectable to said source for varying the output voltage thereof as a different predetermined function of time, and switch means for selectively connecting either said door motor armature and one of said control circuits to said source or said principal field winding and another of said control circuits to said source and for connecting said levelling field winding to said supply.

3,428,879
OSCILLATOR DEVICE FOR TIMEPIECE MECHANISMS

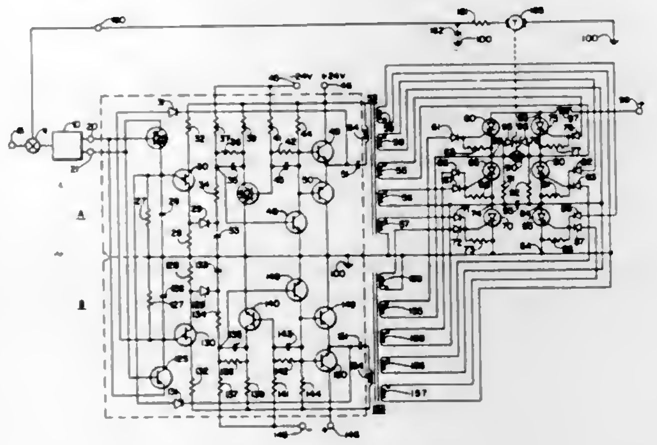
Fritz Marti, La Chaux-de-Fonds, Switzerland, assignor to Portescap, Le Porte-Echappement Universal S.A., La Chaux-de-Fonds, Switzerland
Filed Oct. 7, 1966, Ser. No. 585,129
Claims priority, application Switzerland, Oct. 7, 1965, 13,857/65
U.S. Cl. 318—128 **9 Claims**
Int. Cl. H02k *33/04*

1. In a timepiece, an oscillator device, said device comprising, in combination, at least one pair of elongated torsion flexure members, a support member, said torsion flexure members being secured to said support member, a pair of oscillation arms, each being secured to one of said flexure members intermediate its ends and being aligned transversely to the longitudinal axis of the flexure member to which it is secured, means for cyclically oscillating each of said arms about the longitudinal axis of the flexure member to which it is secured, the directions of oscillation being opposite at all times, said oscillating device being constructed with its parts arranged symmetrically with respect to a centerline in a plane containing both of said flexure members, and the torsion forces in one of said flexure members being equal and opposite to those in the other of said flexure members.



3,428,880
MOTOR REVERSING AND SPEED CONTROL APPARATUS

Karl Heinz Muller, Neu-Isenburg, Germany, assignor to Honeywell G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 20, 1967, Ser. No. 617,386
Claims priority, application Germany, Feb. 26, 1966, H 58,659
U.S. Cl. 318—257 **8 Claims**
Int. Cl. H02p *5/16*

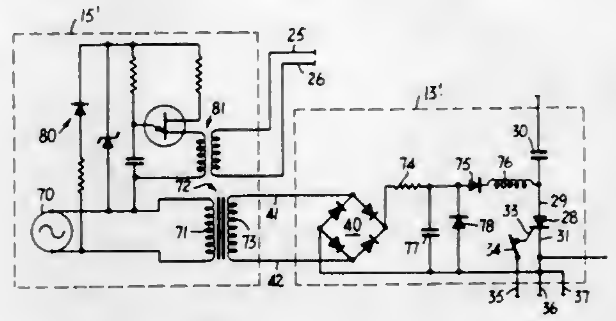


A control circuit for a DC shunt motor incorporating a double bridge controlled rectifier circuit for contact-free regulation of the motor speed and direction.

3,428,881
D.C. MOTOR SPEED CONTROL SYSTEM

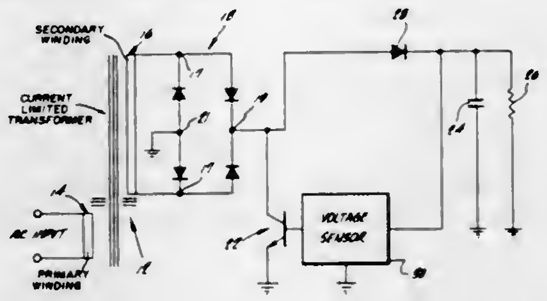
Louis E. Cote, Quaker Hill, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 576,962
U.S. Cl. 318—341 **5 Claims**
Int. Cl. H02p *5/16, 7/24, 7/58*

A speed control system is provided for a D.C. motor operated from a battery comprising a silicon controlled rectifier between the battery and the motor. A reference frequency source periodically activates the silicon controlled rectifier, and an oscillator whose charge-up time is adjustable operates a silicon controlled rectifier which operates to block off the first rectifier. Means are provided in the reference frequency source to permit a short circuit across the secondary winding to shut off the first rectifier. Switch means are also provided for shutting off the first rectifier completely or enabling it to go full on for maximum operation of the motor.



3,428,882
SHUNT-SWITCHING VOLTAGE REGULATED POWER SUPPLY

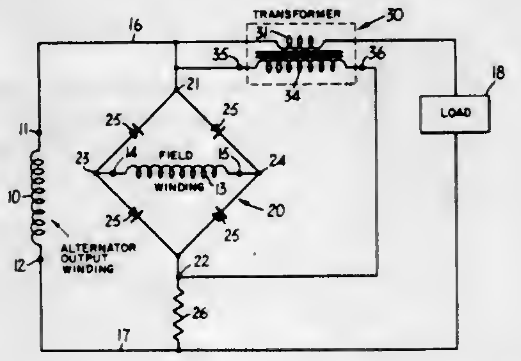
John A. Gilbert, Upland, Calif., assignor to Unitek Corporation, Monrovia, Calif., a corporation of California
Filed Aug. 23, 1965, Ser. No. 481,562
U.S. Cl. 321—18 **20 Claims**
Int. Cl. G05f *1/38;* **H02m** *5/12*



A regulated DC power supply utilizing a switching element connected in parallel circuit relationship with the supply load and a voltage sensor for providing the regulating function. The power supply utilizes a transformer having a current-limited secondary winding with the switching element being arranged to provide a "short circuit" across the terminals of the secondary winding when the voltage supplied to the load exceeds the regulation level.

3,428,883
ALTERNATING CURRENT GENERATOR VOLTAGE REGULATOR

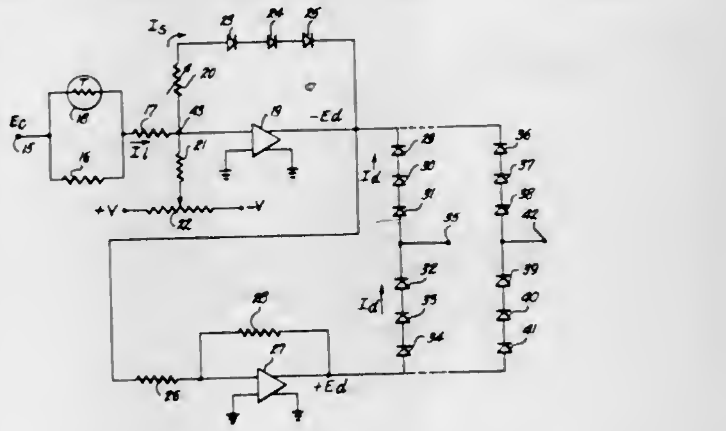
Joseph B. Gag, Stamford, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed July 11, 1966, Ser. No. 564,273
U.S. Cl. 322—28 **6 Claims**
Int. Cl. H02p *9/10, 9/14, 11/00*



A voltage regulating system for an alternator having an armature and a field comprises a full wave rectifier having input terminals connected to the armature of the alternator and output terminals connected to the field, a current transformer having a first winding connected in series with the alternator load and a second winding connected to the input of the rectifier and a resistance connected between the armature and the rectifier to balance impedances of the circuit.

3,428,884
LINEAR VOLTAGE VARIABLE RESISTANCE NETWORKS

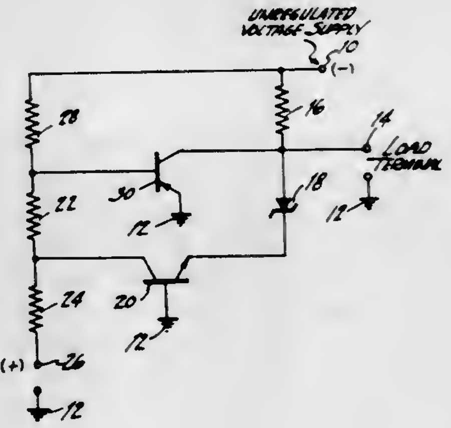
John G. Nordahl, Lexington, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,407
U.S. Cl. 323—19 **8 Claims**
Int. Cl. G05f *1/44, 1/56*



A voltage-controlled variable resistance circuit in which the magnitude of the controlled resistance is inversely proportional to the magnitude of the control voltage. The circuit has for each output terminal, two series circuits each including a plurality of diodes, the two diode circuits being connected in opposite polarity relationship with respect to the terminal. A control voltage is applied to a high gain operational amplifier having nonlinear feedback, the amplifier being used to compute the voltage drive required to cause a current proportional to the control voltage to flow through one of the diode series circuits. An inverting operational amplifier applies an opposite polarity voltage of the same magnitude to the other diode series circuit. Transient and other undesirable effects are thereby balanced out of the system.

3,428,885
VOLTAGE REGULATED POWER SUPPLY INCLUDING A BREAKDOWN DEVICE AND MEANS TENDING TO KEEP THE CURRENT FLOW THERETHROUGH CONSTANT

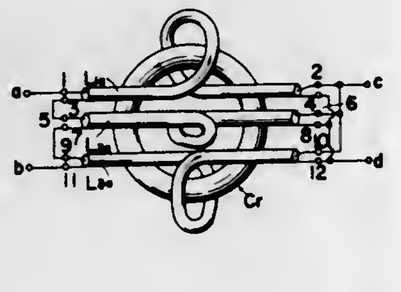
David Wilson Hall II, North Palm Beach, Fla., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,849
U.S. Cl. 323—22 **7 Claims**
Int. Cl. G05f *1/40*



A voltage regulated power supply is obtained by applying the voltage developed across a breakdown device after breakdown to a load. Since the voltage across the breakdown device varies as the current therethrough varies, the current through the breakdown device is sensed and in response thereto the current through a shunt circuit around the breakdown device is varied to keep the current through the breakdown device, and therefore the voltage thereacross, substantially constant.

3,428,886
BROAD FREQUENCY BAND TRANSFORMER

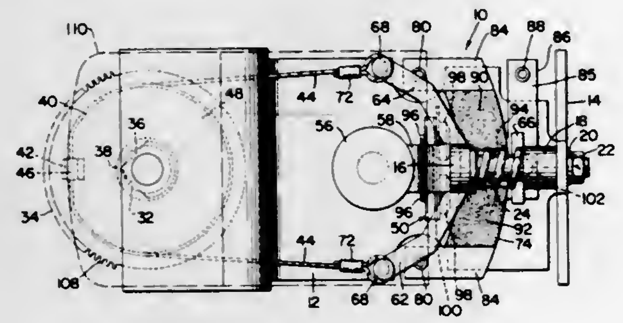
Masao Kawashima and Yushi Katagiri, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki-shi, Kanagawa-ken, Japan
Filed Apr. 14, 1966, Ser. No. 542,591
Claims priority, application Japan, Apr. 15, 1965, 40/22,340
U.S. Cl. 333—33 **5 Claims**
Int. Cl. H03h *7/38*



A broad-band impedance-ratio transformer of the balanced or unbalanced type. A plurality of pairs of transmission lines are wound about a magnetic core and another pair is not so wound. Either the input or output terminals of the lines are series connected, while the other terminals are parallel connected. The number and direction of the turns are set to control the impedance ratio.

3,428,887
COMBINATION SWITCH AND VARIABLE RESISTOR SYSTEM

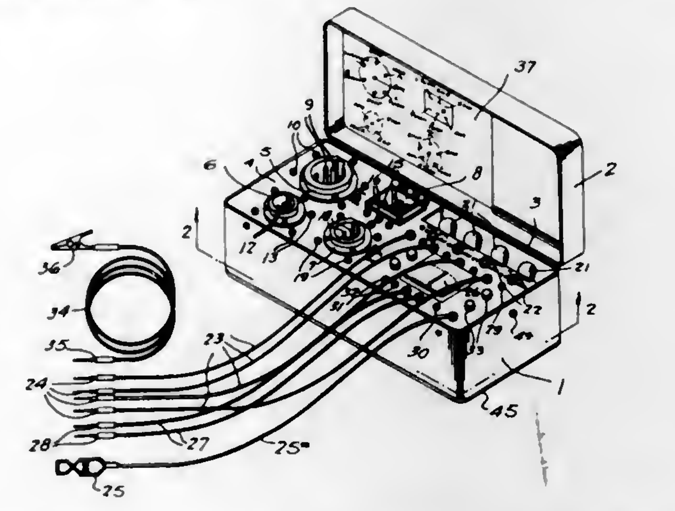
Ronald C. Miller, Norristown, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,907
U.S. Cl. 323—94 **9 Claims**
Int. Cl. H02p *13/08;* **H01c** *5/08*



A spring loaded switch and variable resistor is shown having an arcuate impedance element contacted by a wiper arm which is spring loaded and urged toward the center of the element. Each end of the impedance element connects to a source of potential while the center thereof is connected to a reference potential and provided with a detent to disengage the arm from contact with the impedance element. Manual adjustment of the wiper arm overcomes the urging of the spring for producing an increased or decreased output potential depending on the direction and amount of manual activation. The spring returns the wiper arm to the center of the impedance element when manual adjustment ceases.

3,428,888
ELECTRICAL CIRCUIT TESTER FOR TRACTOR-TRAILER CABLE

Irvin William Nolte, 348 Fairmont Ave., Wheeling, W. Va. 26003
Filed Feb. 1, 1966, Ser. No. 524,080
U.S. Cl. 324—51 **7 Claims**
Int. Cl. G01r *31/02*



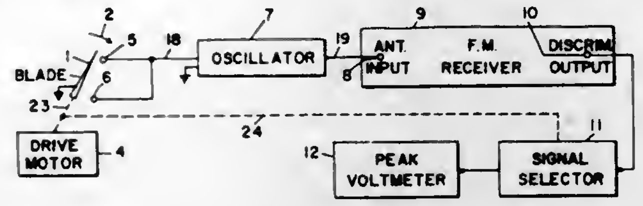
This invention relates to an apparatus for testing the continuity of electrical connections between a tractor and a trailer for lighting and control purposes. The trailer has a number of different lighting circuits such as stop, left turn, right turn, and marker, and the operativeness of each of these circuits must be checked. The usual cable connected between the tractor and the trailer is provided with a socket and a plug which engage corresponding parts on the tractor and the trailer, and the present testing apparatus tests the continuity of the circuits therein involved. Different trailers may have different kinds of load circuits and terminal connections and require different kinds of cable connections.

The testing apparatus provided is contained in a box mounted on the rear portion of the tractor. This includes different groups of sockets connected to a plurality of test indicating lamps, and to a two-range voltmeter, a plurality of resistances, and two-way switches for selectively inserting or removing the resistances in the circuit and selecting the desired range of the voltmeter. A number of different kinds of sockets are provided to receive different kinds of plugs on a particular cable. Plugs are connected to wires leading to each of the test indicating lamps. A plurality of sockets with pins are provided which are adapted to receive any particular one of a variety of different kinds of terminal plugs on the cable connecting the tractor and the particular trailer.

The test lamps and the voltmeter scales of the testing apparatus point out the location of any open circuits of imperfect high resistance connections.

3,428,889
APPARATUS FOR MEASURING BLADE-DIE SPACING IN A PELLETIZER INCLUDING A ROTATING CAPACITOR BLADE

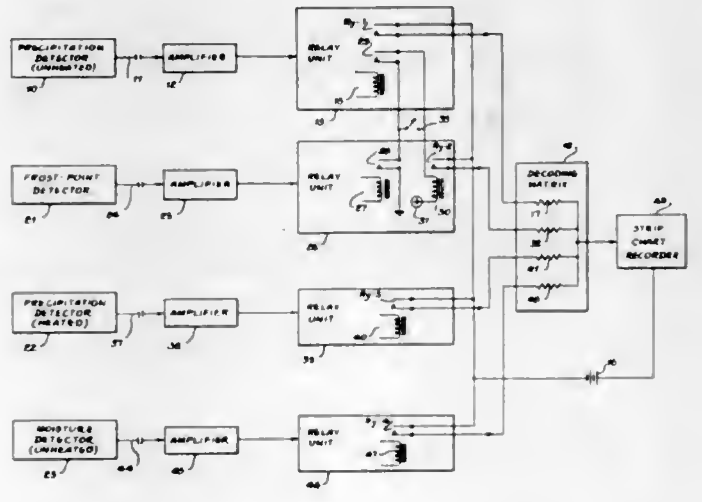
Robert Mayer, Ardmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Mar. 16, 1966, Ser. No. 534,688
U.S. Cl. 324—61 **2 Claims**
Int. Cl. G01r *27/26*



The spacing between a rotating blade and a stationary surface over which the blade passes is measured by mounting one or more electrodes in the surface, and by coupling these electrodes and the blade to the frequency-determining circuit of an oscillator, to frequency modulate the oscillator as the blade passes over the electrodes.

3,428,890
SYSTEM FOR DETERMINING THE TYPE OF ATMOSPHERIC PRECIPITATION BY DETECTING METEOROLOGICAL PARAMETERS

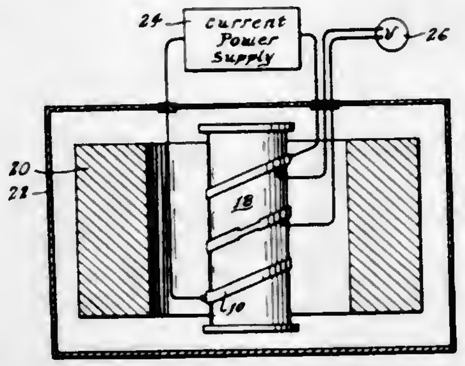
Richard C. Peck and Elbert W. Atkins, Herndon, Va., assignors to the United States of America as represented by the Secretary of Commerce
Filed May 23, 1966, Ser. No. 552,645
U.S. Cl. 324—61 **3 Claims**
Int. Cl. G01r *27/26*



Four parameters are detected to determine the presence of six types of atmospheric precipitation. Detectors sense the presence of all forms of precipitation, of the frost point, or rain, snow or sleet, and the presence of all liquid precipitation. The output of the detectors are used to indicate light dew, heavy dew or drizzle, frost, rain, snow, and freezing rain or melting snow.

3,428,891
METHOD FOR EVALUATING THE STABILITY AND OPERATING CHARACTERISTICS OF COMPOSITE SUPERCONDUCTORS

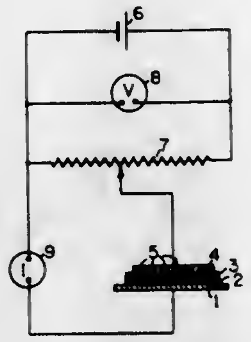
John R. Purcell, Downers Grove, and John M. Brooks, Lemont, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 22, 1967, Ser. No. 625,917
U.S. Cl. 324—64 **6 Claims**
Int. Cl. G01r *27/14;* **H01f** *7/22*



A method for evaluating the stability of composite superconductors by passing a variable current through a short sample of the composite superconductor wherein the superconductor has been made discontinuous and measuring the voltage drop along the coating of the composite superconductor from one side of the discontinuity.

3,428,892
ELECTRONIC OLFACTORY DETECTOR HAVING ORGANIC SEMICONDUCTOR BARRIER LAYER STRUCTURE

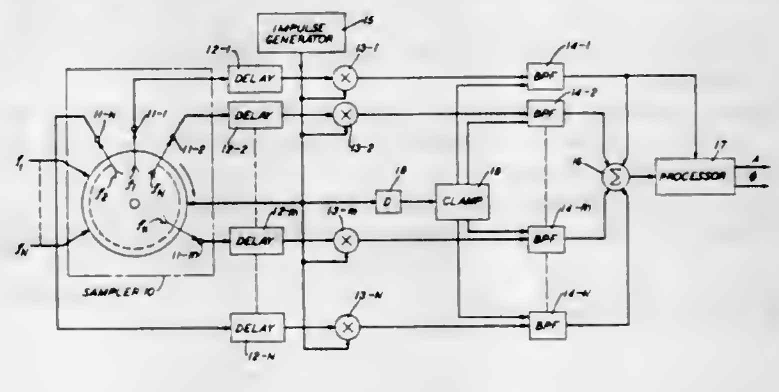
James E. Meinhard, 12472 Ranchwood Road, Santa Ana, Calif. 92705
Filed Sept. 20, 1965, Ser. No. 488,711
U.S. Cl. 324—71 **6 Claims**
Int. Cl. G01n *27/52*



An electronic sensor device for the detection and measurement of an ambient gas, scent, chemical, or trace molecular component. The sensor consists of an organic rectifying structure incised or perforated so as to expose organic layers to the ambient substance while the sensor is under electrical bias. An array of differently constituted organic rectifying structures yields a pattern of reverse currents in unique response to each ambient component sensed. Sensor discrimination is extended through selective application of thermal or radiant energy while simultaneously under electrical bias and exposure to an ambient component. Organic semiconductive rectifying structures meet the two requirements of reversible adsorption and variety of composition, neither of which are possible with inorganic semiconductors. The lack of high conductivity and of high frequency response of organic semiconductors does not preclude their use in sensor applications.

3,428,893
SPECTRUM ANALYZER

Bruce P. Bogert, Morris Township, Morris County, and Peter Hirsch, Parsippany, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,955
U.S. Cl. 324—77 **6 Claims**
Int. Cl. G01r *23/18*



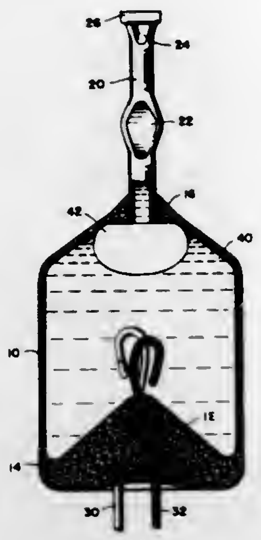
Samples of a waveform segment to be spectrum analyzed are stored and used to drive an equal number of bandpass filters adjusted to resonate at selected frequencies. The instantaneous phases of the output signals from these filters are such that their sum, when processed, yields the amplitude and phase spectrums of the waveform segment.

Multiplexing apparatus permits one spectrum analyzer to analyze sequentially, in real time, many waveform segments.

3,428,894

REVERSIBLE ELECTROCHEMICAL COULOMETER

Gordon E. Boettcher, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 2, 1966, Ser. No. 591,657
U.S. Cl. 324—94 **8 Claims**
Int. Cl. G01r *27/22*

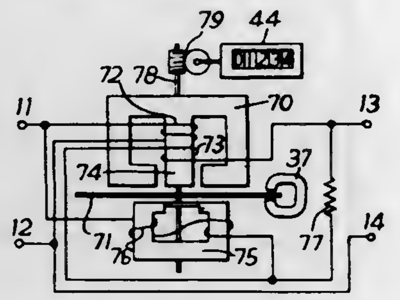


1. An electrochemical coulometer comprising, in combination, a tubular chamber, a base portion, a generally conical portion extending into the chamber from the base portion, said base and conical portions providing a closure for one end of the chamber, an upwardly sloping portion generally parallel to the conical portion extending from the tubular chamber providing a closure for another end of the chamber, an aperture in the upwardly sloping portion, a fill tube extending from the aperture for filling said chamber with an electrolyte, at least a pair of electrodes extending through said conical portion and into said chamber, one of said electrodes having a predetermined amount of metal plated thereon for transfer to the electrolyte and from the electrolyte to the other electrode, an electrolyte substantially filling said chamber for conducting electrolysis between the electrodes, and forming an expansion bubble within said chamber for preventing damage to the coulometer due to expansion of the electrolyte, and said conical portion and said upwardly sloping portion preventing said bubble from contacting the electrodes in any orientation of the coulometer.

3,428,895

ELECTRICAL METERING APPARATUS FOR MEASURING ELECTRICAL ENERGY IN THE FORM OF KILOWATT-HOURS AND AMPERE-SQUARED HOURS

Henry Joseph Lovegrove, Barnet, England, assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,830
Claims priority, application Great Britain, Aug. 20, 1963, 32,957/63
U.S. Cl. 324—116 **2 Claims**
Int. Cl. G01r *15/10, 11/02, 19/16*

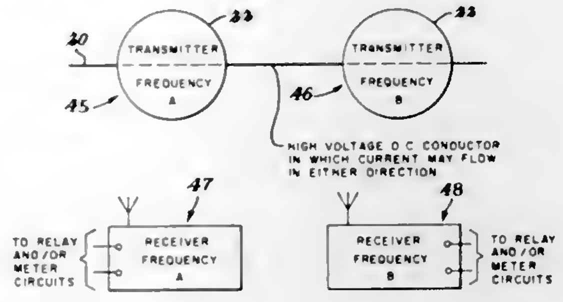


Electric power metering system designed to take into account excessive consumption at irregular intervals by domestic and other consumers, in which the metering arrangement embodies a kilowatt-hour metering means for measuring the actual energy consumed and further metering means which concurrently registers the square of the total current flow multiplied by time. The second metering means effectively introduces a square law term into the data upon which the levied charges are calculated and by which each consumer pays an increasing amount for any power which he consumes at a rate which is beyond a predetermined value and also ensures that a charge is made for the reactive current component of the energy supplied.

3,428,896

SYSTEM FOR TRANSMITTING TO A REMOTE POINT A SIGNAL THAT VARIES AS A FUNCTION OF THE CURRENT FLOW IN A HIGH VOLTAGE CONDUCTOR

Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062
Filed Aug. 14, 1963, Ser. No. 302,197
U.S. Cl. 324—126 **3 Claims**
Int. Cl. G01v *33/00*

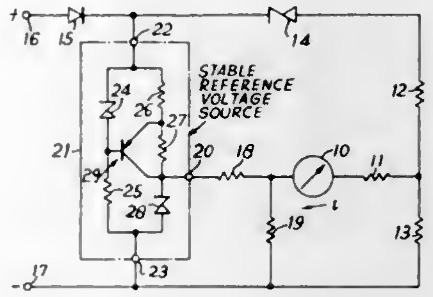

20
TRANSMITTER
FREQUENCY A
22
TRANSMITTER
FREQUENCY B
23
45
46
HIGH VOLTAGE D.C. CONDUCTOR IN WHICH CURRENT MAY FLOW IN EITHER DIRECTION
47
48
TO RELAY AND/OR METER CIRCUITS
RECEIVER FREQUENCY A
RECEIVER FREQUENCY B
TO RELAY AND/OR METER CIRCUITS

A radio transmitter is mounted on a high voltage electric power transmission line, is energized by power derived from current flow in the conductor, and is modulated in accordance with the current flow which may be alternating or direct current. For direct current, two transmitters are used, one for each direction of current flow. The transmitter is energized by employing the voltage drop along the conductor with current limiting means therebetween and is modulated by a circuit employing an inductor with a saturable magnetic core.

3,428,897

ELECTRIC VOLTAGE MEASURING APPARATUS INCLUDING A CURRENT-REGULATED ZENER DIODE FOR ZERO SUPPRESSION

Ian Arthur Rew, Robert Valentine Bell, and Raymond Cooper, Enfield, England, assignors to Weston Instruments, Inc., Newark, N.J., a corporation of Texas
Filed Jan. 22, 1965, Ser. No. 427,357
Claims priority, application Great Britain, Jan. 27, 1964, 3,424/64
U.S. Cl. 324—131 **6 Claims**
Int. Cl. G01r *1/02*

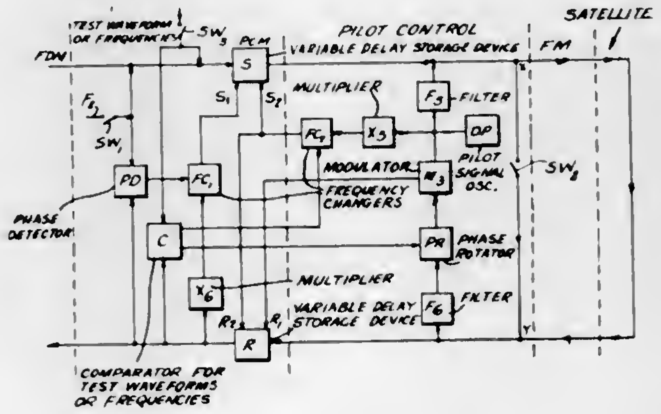


A D.C. voltmeter of the suppressed zero type is described which includes a current-regulated reference voltage source and an electrical meter or electrical meter movement. The current-regulated reference voltage source includes first and second input terminals for receiving the voltage to be measured, a first Zener diode having its cathode connected to the first input terminal, a transistor, the base of which being connected to the anode of the first Zener, and a first resistor connected to the cathode of the first Zener and to the emitter of the transistor. The base of the transistor is connected to the anode of this Zener so that the current flow between the emitter and collector of the transistor is regulated by this Zener and the first resistor. Also included as a portion of this source is a second Zener diode having its cathode connected to the collector of the transistor and its anode connected to the second input terminal to form at its cathode an output terminal for the reference voltage source.

3,428,898

PILOT SIGNAL CONTROL SYSTEM THAT PRECOMPENSATES OUTGOING SIGNALS FOR DOPPLER SHIFT EFFECTS

Bent Bulow Jacobsen and Frederick Ormesher Roe, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,312
Claims priority, application Great Britain, Nov. 27, 1964, 48,246/64
U.S. Cl. 325—15 **18 Claims**
Int. Cl. G01v *13/42*



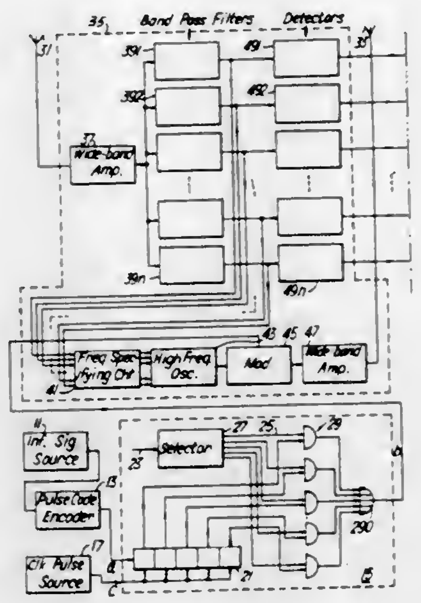
Frequency compensation for Doppler shift effects on signals transmitted between two terminal stations by a satellite is accomplished by transmitting a pilot signal having a given frequency from one station, receiving the returned pilot signal at the originating station after passing through the other station, or after passing through only the satellite, and utilizing the Doppler shifted returned pilot signal and the transmitted pilot signal to precompensate the frequency of information signals before transmission and to compensate the frequency of received information signals after reception by controlling the read-out and read-in frequency of variable delay storage devices.

3,428,899

SELECTIVE COMMUNICATION SYSTEM WHEREIN EACH INFORMATION PULSE IS ADDRESS CODED FOR TRANSMISSION ON A SELECTED IDLE CARRIER FREQUENCY

Tadahiro Sekimoto, Washington, D.C., assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 29, 1965, Ser. No. 505,661
Claims priority, application Japan, Dec. 28, 1964, 39/74,361
U.S. Cl. 325—38 **4 Claims**
Int. Cl. H04b *7/00, 1/04;* **H04l** *5/00*

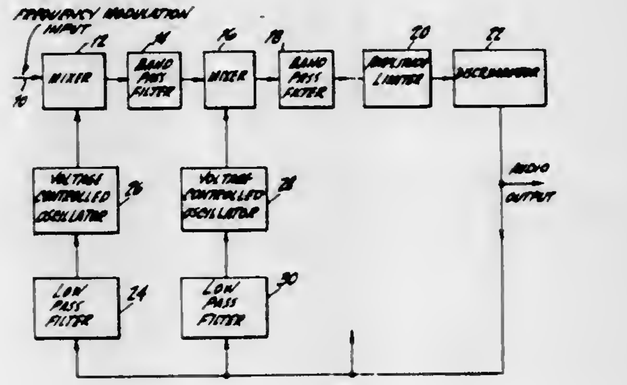
The improvement in a pulse communication system where a plurality of stations communicate with one another. Each station includes apparatus for converting each pulse in an information pulse train into a binary coded signal representing the called station. A carrier selector determines the allotted frequency to be used in communicating and it is this frequency which is modulated with a transformed code train.



3,428,900

DISTRIBUTED FEEDBACK FREQUENCY COMPRESSION IN FREQUENCY MODULATION RECEPTION

Arnold Newton, Forest Hills, N.Y., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,827
U.S. Cl. 325—346 **6 Claims**
Int. Cl. H04b *1/26*



In a frequency modulation receiver, a loop feeding back a controlled frequency to a plurality of mixers for the purpose of increasing sensitivity.

3,428,901

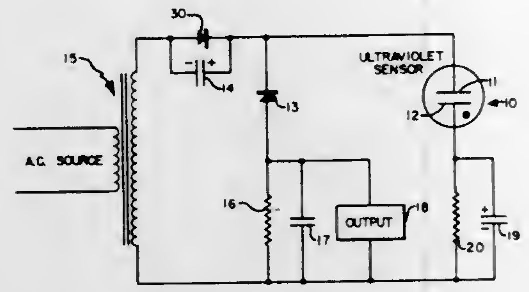
CONDITION DETECTING APPARATUS, INCLUDING CAPACITOR IN SERIES WITH SENSOR MEANS, FOR SHORT CIRCUIT PROTECTION

James C. Blackett, Rosemount, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 573,892
U.S. Cl. 328—1 **9 Claims**
Int. Cl. G08b *21/00*

1. Condition detecting apparatus comprising:

first circuit means adapted to be connected to a source of AC voltage and including in a series circuit first electrical energy storage means, first unidirectionally conductive means, and output means, second unidirectionally conductive means connected in parallel with said first storage means, said second unidirectionally conductive means being poled to pass current in a direction opposite to said first unidirectionally conductive means,

variable impedance condition sensing means having a high impedance in the absence of a condition to which it is sensitive and having a low impedance when subjected to said condition,



and second circuit means connected in parallel with said series connected first unidirectionally conductive means and output means, said second circuit means including in a series circuit said condition sensing means and second electrical energy storage means.

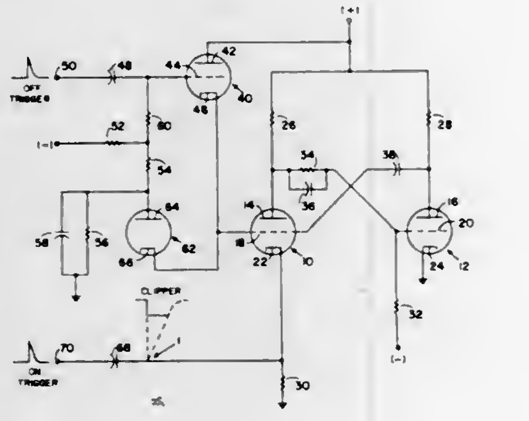
3,428,902
MONOSTABLE WIDE RANGE MULTIVIBRATOR

Alexander A. Gorski, Cinnaminson, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Oct. 27, 1965, Ser. No. 505,435

U.S. Cl. 328—58 **3 Claims**

Int. Cl. H03k *5/04*



A wide range vacuum tube monostable multivibrator that has the ability to be retriggered back to the stable condition before the normal cycle of regenerative action occurs through the regular time constants. The normally conducting tube is adapted to receive a positive pulse at its cathode for triggering the normally conducting tube off. The two tubes of the monostable multivibrator are triodes and are wired with a parallel resistor-capacitor circuit connected from the plate of the normally conducting tube to the grid of the normally nonconducting tube. The grid of the normally nonconducting tube is connected through a resistor to a negative voltage source. The cathode of the normally nonconducting tube is connected directly to ground. The cathode of the normally conducting tube is connected to the positive pulse source and further on to ground through a resistor. Both plates are connected to a positive voltage source through separate voltage dropping resistors. A capacitor is connected between the plate of the normally nonconducting tube to the grid of the normally conducting tube.

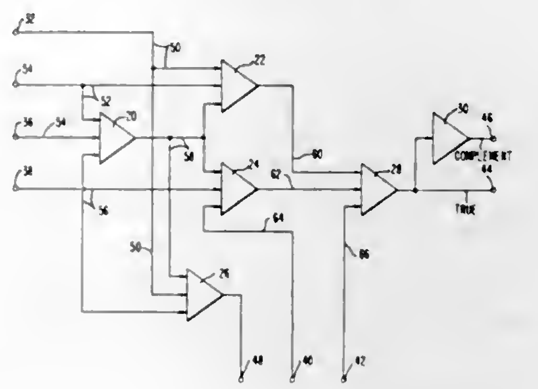
3,428,903
MULTIPURPOSE LOGIC CIRCUIT FOR PERFORMING 254 OUT OF 256 DISCRETE LOGICAL COMBINATIONS OF THREE VARIABLES

Donald C. Forslund, Wappingers Falls, and Ronald Waxman, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Aug. 2, 1965, Ser. No. 476,397

U.S. Cl. 328—92 **4 Claims**

Int. Cl. H03k *19/36, 19/12;* **G06f** *7/38*



A universal logical block capable of performing 254 out of 256 discrete logical combinations of three variables is provided via the use of six discrete logical circuits. The multipurpose circuit is provided with six inputs, a true and a complement output and an interior terminal which may either be connected to other terminals or not as required for the performance of a logical function. Through the ability to permute any of the three variables to any of the inputs of the logical circuit in either the true or complement form and additionally to provide preset bias levels to any of the circuit's inputs, the multipurpose logic circuit is enabled to carry out the above stated large number of unique logical functions.

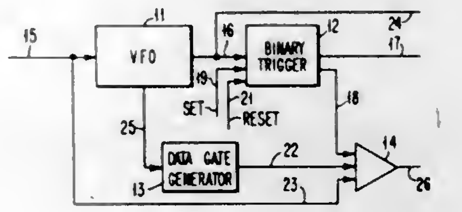
3,428,904
DATA DETECTOR FOR MAGNETIC STORAGE DEVICE

Rahmat A. Aziz, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 24, 1966, Ser. No. 560,244

U.S. Cl. 328—110 **7 Claims**

Int. Cl. H03k *5/20*



In the detection circuit of a digital data processing system employing double frequency modulation, a variable frequency oscillator (VFO) is phase locked to input clock and data signals. The detection circuit which serves to separate the data from clock pulses, includes a data gate generator responsive to and operating in synchronism with the VFO, a binary trigger that produces full period and half period clock pulse trains, and a three input AND gate responsive to the trigger and gate generator.

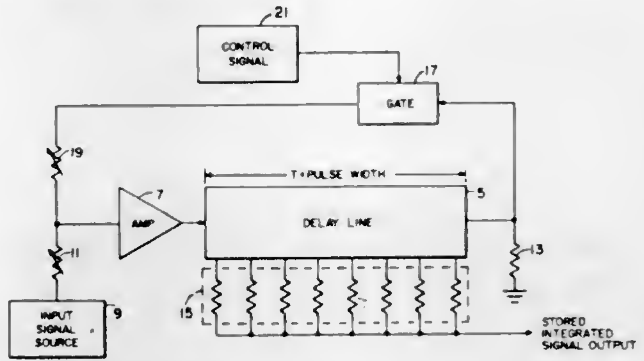
3,428,905
TAPPED DELAY LINE INTEGRATOR

Stanley A. Fierston, Swampscott, and William C. Towle, Sudbury, Mass., assignors, by mesne assignments to the United States of America as represented by the Secretary of the Army

Filed May 26, 1965, Ser. No. 459,127

U.S. Cl. 328—127 **7 Claims**

Int. Cl. G06g *7/18*



An integrator circuit having a tapped delay line type integrator and a feedback circuit connected in parallel. The feedback circuit is used for recirculating and storing the integrator input signal until a sample is taken off a tap of the tapped delay line integrator. The feedback circuit is connected from the output of the delay line back to an amlifier that is connected in common with both the input signal and the recirculated signal. A gate circuit is connected in the feedback circuit for controlling the sampling time of the integrated signal. A terminating impedance is connected to ground from a point in common with the feedback circuit at the output of the delay line. The impedance value of the feedback circuit is much lower than the terminating impedance so that the recirculating signal is not affected by the terminating impedance during recirculation. The input signal is recirculated through the feedback circuit a predetermined number of times depending on the amount of storage time desired for integration of the input signal.

3,428,906
WIDE BAND FREQUENCY MODULATED SIGNAL DETECTOR

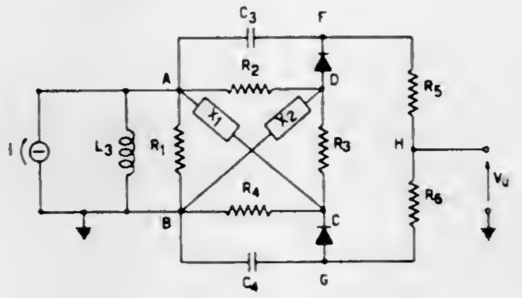
Mario Pozzetti, Monza, Italy, assignor to Societá Italiana Telecommunicazioni Siemens S.p.A.

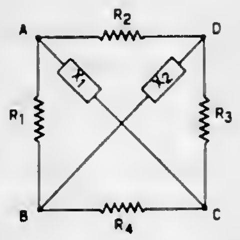
Filed Nov. 22, 1965, Ser. No. 509,074

Claims priority, application Italy, Nov. 20, 1964, 24,984/64

U.S. Cl. 329—163 **16 Claims**

Int. Cl. H03d *1/18*





A discriminator circuit for the reception of frequency modulated signals comprises a bridge circuit having four resistance arms one of which is the input. Two reactance circuits are connected between opposite corners of the bridge and form the two diagonals of the bridge. Each reactance has at least two individual points the first of which is a pole and the second of which is a zero with respect to a peak of the desired discrimination characteristic. The pole of one reactance corresponds to the zero of the second reactance and vice versa. Thus, the output voltage of the discriminator is obtained by the difference between the absolute values of the voltage across the ends of the bridge sides adjacent to the side on which the input voltage is applied.

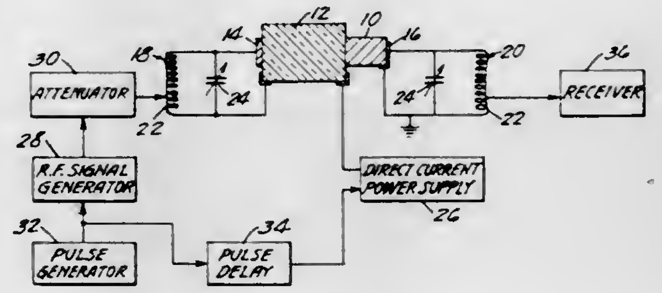
3,428,907
PIEZOELECTRIC SEMICONDUCTOR ACOUSTIC WAVE SIGNAL DEVICE

Dale F. Crisler, Rice Lake, Wis., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 24, 1966, Ser. No. 588,997

U.S. Cl. 330—5.5 **16 Claims**

Int. Cl. H03f *3/04, 15/00*



A zinc oxide piezoelectric semiconductor acoustic amplifier and delay line with a high resistivity and a relatively high Hall mobility each of which varies inversely as a function of temperature.

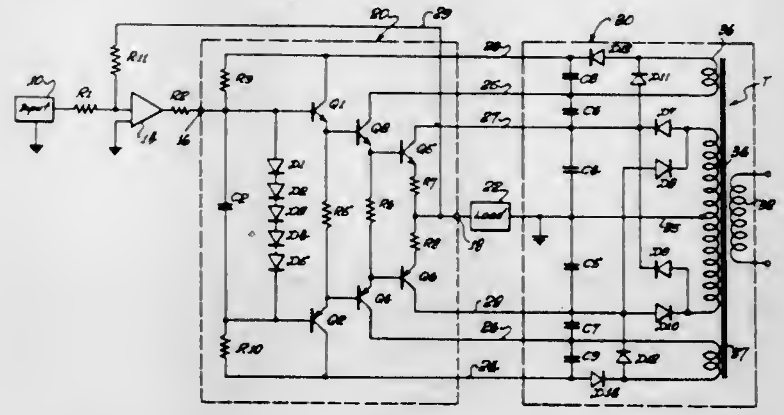
3,428,908
MULTI-STAGE, DIRECT-COUPLED TRANSISTOR AMPLIFIER HAVING COMPLEMENTARY SYMMETRY

Bart N. Locanthi, Altadena, Calif., assignor to James B. Lansing Sound, Inc., Los Angeles, Calif., a corporation of California

Filed Feb. 3, 1966, Ser. No. 524,882

U.S. Cl. 330—13 **6 Claims**

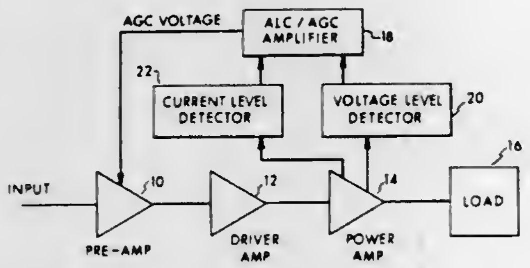
Int. Cl. H03f *3/18*



Each amplifier stage comprises two transistors of complementary symmetry with their emitters connected together through small biasing resistances, and with each emitter directly coupled to the base of the corresponding transistor of the following stage. Base-emitter bias for all transistors is provided by a string of diodes connected between the bases of the transistors of the first stage. Power is supplied from a center-tapped source directly to the collectors of the respective stages at voltages that are higher for preceding stages. The additional voltage supply for a preceding stage is obtained from additional secondary windings on the power transformer and additional rectifying circuits connected between the power terminals for the output stage and the collectors of the preceding stage.

3,428,909
AUTOMATIC CONTROL OF DRIVE FOR LINEAR POWER AMPLIFIER

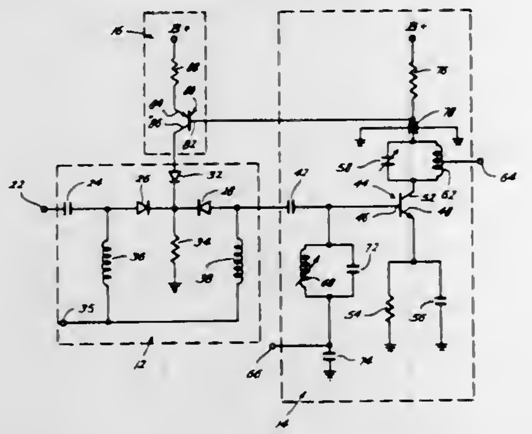
George H. Kam, Tonawanda, and Michael Rubin, Cheektowaga, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,584
U.S. Cl. 330—15 **11 Claims**
Int. Cl. H03g *3/30;* **H04b** *1/04;* **H03f** *3/26*



An automatic driver power control circuit including a set of detectors for respectively sensing output voltage and current threshold exceedences of a power amplifier and a control amplifier for combining these sensings to provide a single control signal for regulating the drive level applied to the power amplifier.

3,428,910
AUTOMATIC GAIN CONTROL SYSTEM

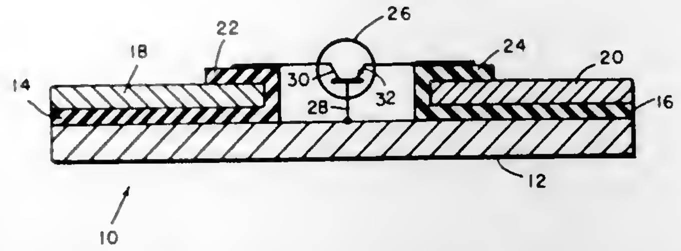
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Stanley H. Black, Phoenix, Ariz.
Filed Dec. 23, 1965, Ser. No. 516,154
U.S. Cl. 330—29 **3 Claims**
Int. Cl. H03g *3/30;* **H03f** *1/30*



An automatic gain control system for attenuating input signals over a wide range of signal levels to prevent overloading the output stage of a receiver system. R.F. input signals are coupled to a diode network attenuator, the output of which is coupled to a reflex amplifier. A D.C. control voltage proportional to the signal amplitude in the last amplifier of the receiver in which AGC system is to be used is coupled to a D.C. input terminal of the reflex amplifier. The D.C. output voltage of the reflex amplifier is applied through an L-C network to an AGC control amplifier, the output of which is coupled to a control terminal of the attenuator for varying the attenuation level of the attenuator network. The R.F. output signal is taken from R.F. output terminal of the reflex amplifier. As the amplified D.C. control voltage is varied, the system operates to keep the R.F. output voltage of the last stage relatively constant by causing more or less attenuation to be inserted by the electrically controlled attenuator.

3,428,911
RESONANT-LINE TRANSISTOR AMPLIFIER

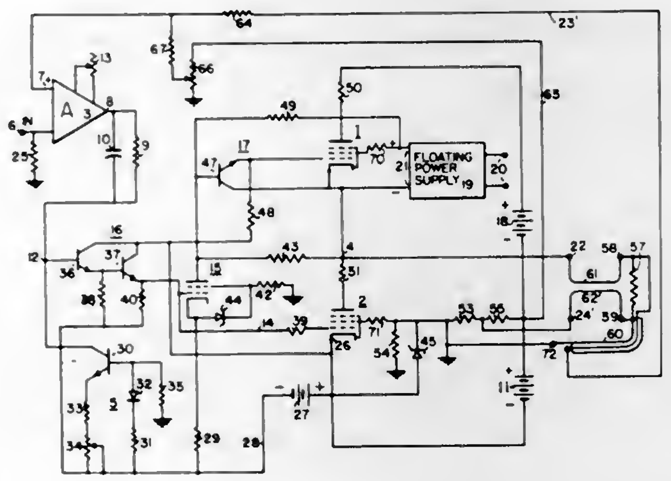
George E. Hambleton, Wall, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 4, 1966, Ser. No. 534,288
U.S. Cl. 330—31 **2 Claims**
Int. Cl. H03f *3/60;* **H03h** *7/38;* **H01p** *3/08*



A resonant-line amplifier including a microwave transistor and a strip transmission line having a common ground plane and two spaced center conductors insulated from the ground plane. The strip-line insulating material extends over and overlaps respective portions of the spaced center conductor strips. The emitter and collector electrodes of the microwave transistors are connected respectively to the overlapped portions to provide capacity coupling to the strip-line. For a given frequency, the α-phase shift through the transistor is electrically combined with the respective capacitance couplings to provide a half-wavelength resonator.

3,428,912
WIDE-BAND DIRECT-CURRENT AMPLIFIER HAVING SERIES-CONNECTED OUTPUT VACUUM TUBES

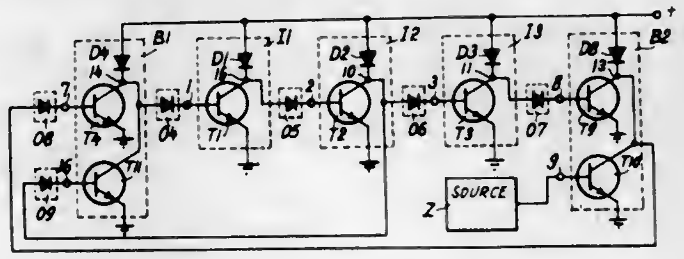
Henry O. Wolcott, Chatsworth, Calif., assignor to Optimation, Inc., Sun Valley, Calif., a corporation of California
Filed Jan. 22, 1968, Ser. No. 699,570
U.S. Cl. 330—74 **10 Claims**
Int. Cl. H03f *1/32*



A wide-band direct-current feedback amplifier having a pair of power output vacuum tubes with the cathode of the first ("upper") tube connected to the anode of the second ("lower") tube. This output connection is arranged to provide zero D.C. potential. An operational amplifier provides a high-gain and a differential input stage. It drives a D.C. level-shifting network which includes a constant current source. This results in minimum signal attenuation. The constant current source also cancels power supply ripple and variations acting at the cathode of the second tube by impressing these in-phase at the grid of the same tube. Transistors, which may be Darlington connected, act as couplings between the output of the level-shifting network and the grid of the second tube, as well as to an inverter stage vacuum tube, and also between that tube and the first power tube. These transistors act to minimize the Miller effect of the power output tubes and to provide low impedance driving circuits. They are energized by the voltage drop between the grid and cathode of each power tube. A positive current feedback connection in the amplifier gives it an effective zero output resistance. By floating the midtap of the power supply and sensing negative voltage feedback at the load, zero output resistance is made to be effective at a remote load.

3,428,913
TRANSISTOR LOGIC OSCILLATOR

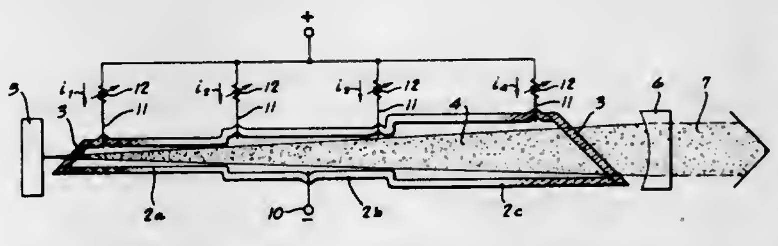
Miroslav Pechoucek, Prague, Czechoslovakia, assignor to Vyzkumzy Ustav Matematickych stroju, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed Mar. 1, 1967, Ser. No. 619,823
Claims priority, application Czechoslovakia, Mar. 12, 1966, 1,667/66
U.S. Cl. 331—57 **6 Claims**
Int. Cl. H03b *5/20;* **H03k** *23/08*



A logic oscillator is formed by cascading odd numbers of transistor inverters into a plurality of groups that define overlapping closed loops. The normal delay in the inverters of each group due to carrier storage effects is adjusted so that positive feedback is established around each closed loop. Selected pairs of the inverters are connected together to form two-input NOR elements, with the separate inputs of each element being included in mutually distinct portions of a pair of overlapping closed loops and the output of the element being included in the common portions of the last-mentioned closed loops.

3,428,914
GAS LASERS WITH PLASMA TUBE HAVING VARIABLE CROSS-SECTION AND DISCHARGE CURRENT

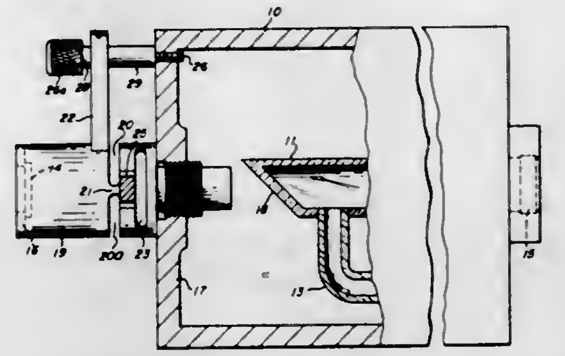
William E. Bell, Palo Alto, Calif., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California
Filed Jan. 25, 1965, Ser. No. 427,821
U.S. Cl. 331—94.5 **4 Claims**
Int. Cl. H01s *3/22;* **H01j** *61/30;* **H01k** *1/28*



A gas laser in which a curved-reflector resonator establishes intra-resonator radiation in a pattern having a cross-section which varies substantially along the length of the resonator. The plasma tube containing the active gaseous laser medium has a cross-section which varies along the length of the tube in substantial conformance with variations in the cross-section of the intra-resonator radiation pattern, and a discharge current in the plasma tube is established with different values in portions of the tube having different cross-sections.

3,428,915
MIRROR SUPPORTING STRUCTURE FOR LASERS

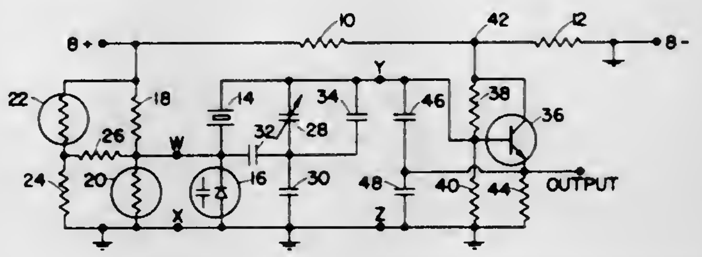
James E. Leone, Sudbury, and Ernest C. Wettstein, Acton, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,458
U.S. Cl. 331—94.5 **13 Claims**
Int. Cl. H01s *3/02;* **G02b** *7/18;* **G02f** *1/34*



A laser structure comprising a resonant cavity having reflecting means at each end, one of the reflecting means comprising a mirror positioned in the path of radiation, the mirror being supported by adjustable means whereby the mirror may be angled as desired with respect to the path of said radiation.

3,428,916
COMPENSATED CRYSTAL OSCILLATORS

La Vern B. Hovenga and Ivan E. Hardt, Davenport, Iowa, Ronald D. Kidman, Jackson, Mich., and Harold E. Gruen, Santa Barbara, Calif., assignors to The Bendix Corporation, a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 630,955
U.S. Cl. 331—116 **3 Claims**
Int. Cl. H03b *5/30*



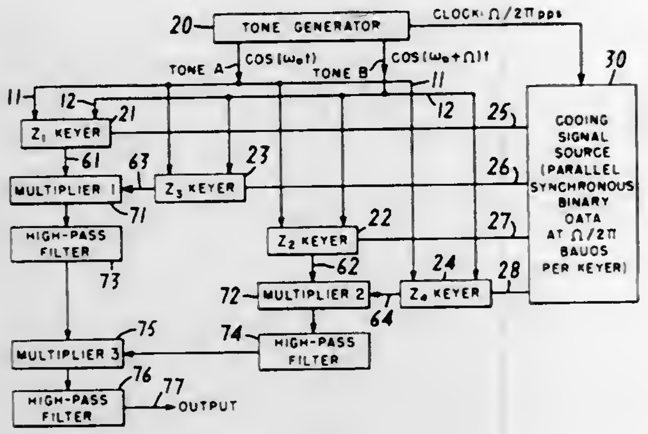
A crystal oscillator is shown in which provision is made for controlling oscillator frequency in accordance with a condition, specifically for maintaining frequency constant despite crystal temperature change, and for compensating for crystal and circuit aging. Control is accomplished by altering voltage applied to a voltage controlled capacitor in series with the crystal. Compensation for aging is accomplished with minimum effect on frequency control by trimmers connected with the crystal and the voltage controlled capacitor in one of several circuit configurations which are described.

3,428,917
SIGNALLING BY ANGLE CODING

Herbert B. Voelcker, Jr., Rochester, N.Y., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed May 13, 1966, Ser. No. 550,030
U.S. Cl. 332—11 **2 Claims**
Int. Cl. H03k *7/08;* **H03c** *3/00*

1. Apparatus comprising, source means of a signal wave characterized in each of predetermined periods of

time by a pattern of complex zeros, source means of a permutable coding signal, and encoder means responsive to different permutations of said coding signal to angle code said wave by conjugating said zeros in a discrete permutative manner so as to provide for said wave during different ones of said periods a plurality of different standardized complex zero patterns of which each corresponds to a respective one of said different permutations of said coding signal.



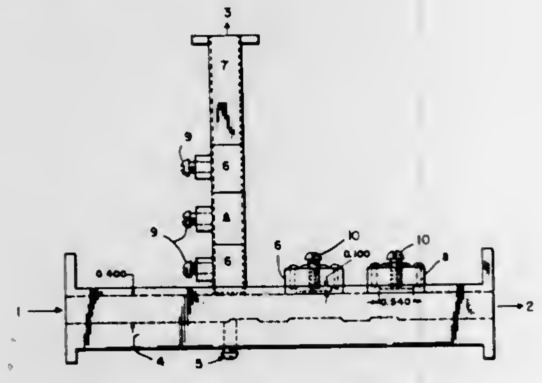
3,428,918
MULTIPLEXER CHANNEL UNITS

George L. Matthaei, Santa Barbara, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 26, 1966, Ser. No. 553,604

U.S. Cl. 333—6 **1 Claim**

Int. Cl. H01p *5/12*



A microwave multiplexer is disclosed. Microwave multiplexers are required to take many signals of different frequencies which are propagating on a single transmission line and separate them out onto a number of transmission lines according to their frequencies. The multiplexer disclosed in this application consists of a plurality of identical channel units connected in cascade. Each channel unit has a band-pass and a band-stop filter. The multiplexer channel units can be constructed from stripline elements or waveguide elements. A novel iris coupled resonator used with the waveguide multiplexer is also disclosed.

3,428,919
SIGNAL MULTIPLEXER

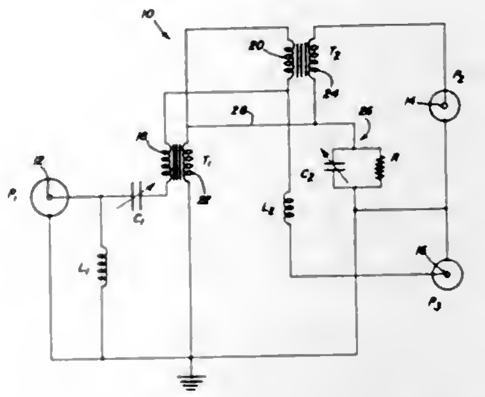
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert C. Kinsel, Cincinnati, Ohio

Filed Feb. 9, 1966, Ser. No. 526,664

U.S. Cl. 333—8 **2 Claims**

Int. Cl. H01p *5/12*

A passive device for coupling a signal into a plurality of similar outputs wherein each output will have the same impedance as the input, where said impedance is adjustable, and where the input loop comprises a series connected circuit including the primary of a first transformer the primary of a second transformer and the secondary of said first transformer.



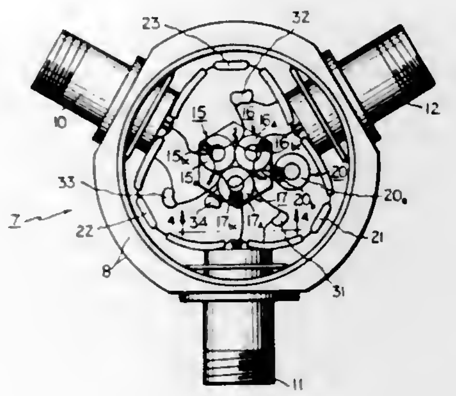
3,428,920
n-WAY ELECTRICAL POWER DIVIDER WHEREIN n IS AN ODD NUMBER

Joseph Oleksiak, North Grosvenor Dale, Conn., assignor to Adams-Russell Co., Inc., Waltham, Mass., a corporation of Massachusetts

Filed Nov. 29, 1966, Ser. No. 597,650

U.S. Cl. 333—8 **9 Claims**

Int. Cl. H01p *5/12*



An electrical network for summing or dividing high-frequency electrical power. Any odd number of high-frequency electrical power inputs can be summed and the sum will appear at a single output port or, alternatively, a single high-frequency input can be divided into any odd number of outputs, each appearing at one of a plurality of ports. The network achieves a high degree of isolation between the plurality of ports as well as close coupling between the single port and each of the plurality of ports. These ends are attained by utilizing a plurality of transformers, each having two windings, the two windings consisting of a pair of insulated wires, each twisted about the other and the toroidally wound around a ferromagnetic core. The windings are connected to each other in such a way as to bring about net cancellations of electrical signals tending to transfer between the plurality of ports and net reinforcements of electrical signals tending to transfer between each of the plurality of ports and a common terminal.

ERRATUM

For Class 333—33 see:
Patent No. 3,428,886

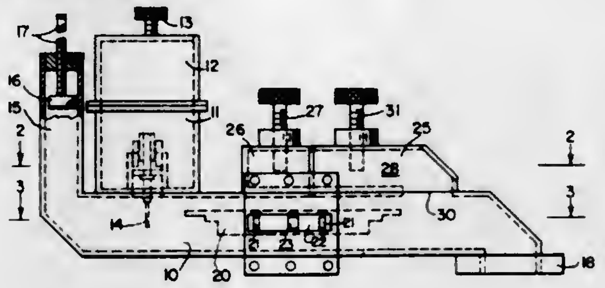
3,428,921
WAVE GUIDE COUPLING STRUCTURE WITH TUNING MEANS

Robert N. Hargis, Wheaton, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 524,948, Mar. 3, 1966. This application Feb. 2, 1968, Ser. No. 709,852

U.S. Cl. 333—33 **11 Claims**

Int. Cl. H03h *7/38*



A resonant cavity is coupled to the output wave guide of a klystron oscillator to linearize the frequency response of the klystron. The impedance change versus frequency change is optimized by tuning the resonant cavity and changing the QK factor of the resonant cavity.

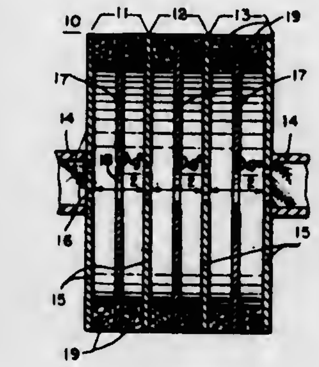
3,428,922
MODE TRAP BAND-PASS FILTERS

George L. Matthaei, Santa Barbara, Calif., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 9, 1964, Ser. No. 402,979

U.S. Cl. 333—73 **3 Claims**

Int. Cl. H03m *7/10;* **H01h** *7/10*



Cavity-type band-pass filters for use in waveguide systems are disclosed. The filter consists of one or more resonators. Each resonator is a half-wave length long and has iris plates at each end. A mode-trap plate having a hole through the center is placed in the center of each resonator. The outer perimeter of the space between the iris plates is sealed with a lossy material. The filter is capable of providing high Q circular TE_{011} mode resonance to yield a good pass band while suppressing all other mode resonances that could occur in the usual forms of TE_{011} mode resonators. The resonators disclosed are most easily driven by cylindrical terminating guides carry the circular TE_{01} mode; however, rectangular guides can also be used.

3,428,923
BROADBAND CHOKE FOR ANTENNA STRUCTURE

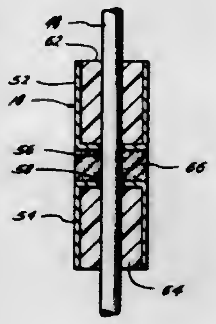
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Otis L. Bishop, Glen Burnie, and Conway A. Bolt, Jr., Pasadena, Md.

Filed Feb. 15, 1967, Ser. No. 617,022

U.S. Cl. 333—97 **4 Claims**

Int. Cl. H01p *1/00*

A support structure containing a coaxial line feed system is used to connect a pair of arrays for radiating circularly polarized waves which produces a doughnut shaped field pattern. Mounted on the support structure are a pair of quarter wavelength shaped chokes whose shorted ends are connected by an absorbing type material. At the center frequency of interest, the quarter wavelength chokes present open circuits to the currents induced on the support structure. At frequencies off center, those currents which are not suppressed by the choke are absorbed by the absorbing material. Thus, the resulting field pattern is not affected by currents induced in the support structure.



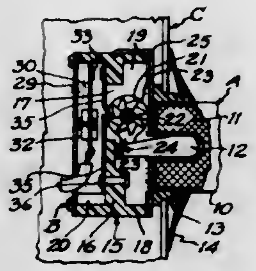
3,428,924
SOLENOID OPERATED IMPULSE RELAY

Wilhelm W. Brockway, 16188 Meadowcrest Road, Sherman Oaks, Calif. 91403

Filed May 8, 1967, Ser. No. 636,778

U.S. Cl. 335—196 **5 Claims**

Int. Cl. H01h *1/28*



A double-pole relay wherein a spring blade, carrying laterally-spaced dual contacts on its free end, is actuated by a star wheel which in turn is rotated in steps by successive strokes of a solenoid armature. For purposes of assembly and compact design, the spring blade is aligned with one of the contacts and the other contact is offset laterally from the axis of the blade.

3,428,925
SUPERCONDUCTOR HAVING INSULATION AT ITS EXTERIOR SURFACE WITH AN INTERMEDIATE NORMAL METAL LAYER

Günther Bogner, Erlangen, and Richard Dötzer, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

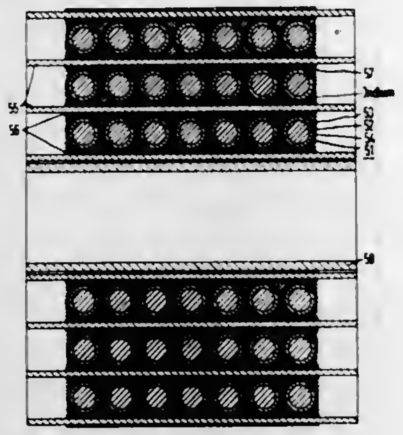
Filed Feb. 16, 1967, Ser. No. 616,652

Claims priority, application Germany, Feb. 18, 1966, S 102,095

U.S. Cl. 335—216 **15 Claims**

Int. Cl. H01f *7/22*

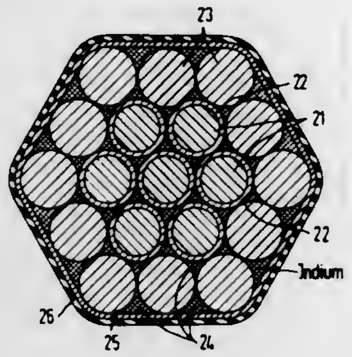
A superconductor which is provided at its exterior surface with an insulator in the form of an oxide of a metal selected from the group consisting of aluminum and beryllium, this insulator having an outer surface directed away from and an inner surface directed toward the superconductor and being in the form of an oxide only through a part of its depth extending from the outer surface toward but terminating short of its inner surface. This layer of insulation may directly surround the superconductor which may take the form of a wire made of a high-field superconductor material, so that the insulator has next



to the superconductor a non-oxidized metallic layer and spaced from the superconductor by this latter layer an outer layer of the oxide of aluminum or beryllium.

8,428,926
SUPERCONDUCTOR CABLE SURROUNDED BY A PLURALITY OF ALUMINUM WIRES

Günther Bogner, Erlangen, and Richard Dötzer, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Feb. 16, 1967, Ser. No. 616,675
Claims priority, application Germany, Feb. 18, 1966, S 102,047
U.S. Cl. 335—216 **17 Claims**
Int. Cl. H01f *7/22*

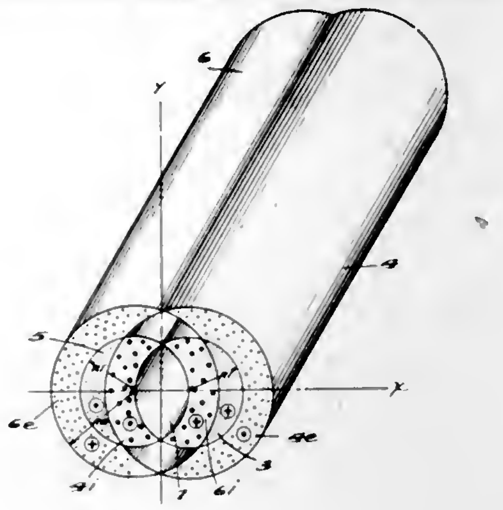


A superconductor in the form of a cable composed of a plurality of wires of high-field superconductor material respectively covered with coatings of ultrapure aluminum and a plurality of additional wires also of ultrapure aluminum. The wires of the cable are enclosed within an insulating sheath of aluminum oxide. The ultrapure aluminum wires and the ultrapure aluminum coatings of the high-field superconductor wires are all welded to each other by being cold-pressed against each other.

3,428,927
ARRANGEMENT FOR PRODUCING HOMOGENEOUS MAGNETIC FIELDS WITH VERY HIGH FIELD STRENGTH

Jacques Rene Favereau, Montmorency, France, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Dec. 23, 1965, Ser. No. 515,908
Claims priority, application France, Jan. 9, 1965, 1,382
U.S. Cl. 335—299 **2 Claims**
Int. Cl. H01f *5/00;* **H01b** *5/00*

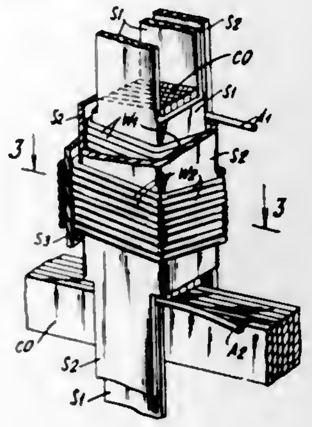
Arrangement for producing homogeneous magnetic fields with very high field strengtbs in which the stray flux in the outside space is eliminated by an electromagnetic effect. A homogeneous field having a very high field strength is produced in the space between two parallel conductors which are traversed by currents of opposite direction and the outer magnetic field is eliminated by means of



substantially annular, cylindrical outer conductors the respective cross sections of which and the axial currents assigned to them are correspondingly adapted.

3,428,928
TRANSFORMER INCLUDING BORON NITRIDE INSULATION

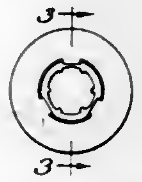
Robert Q. Maines, Wilton, Conn., assignor to Ovitron Corporation, Cheshire, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 402,400, Oct. 8, 1964. This application Nov. 18, 1966, Ser. No. 595,379
U.S. Cl. 336—61 **11 Claims**
Int. Cl. H01f *27/22*



A transformer includes boron nitride sheets interspersed between adjacent winding layers and extending longitudinally to the housing to provide a medium for the longitudinal transfer of heat.

3,428,929
COIL RECEIVING STRUCTURE

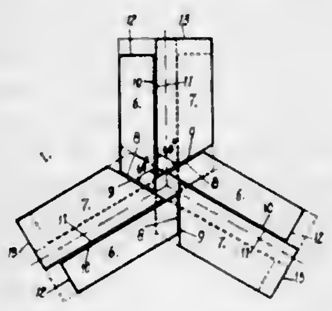
Maurice H. Brown, Palos Heights, and George F. Linning, Des Plaines, Ill., assignors to Amerline Corporation, a corporation of Illinois
Filed May 12, 1967, Ser. No. 638,069
U.S. Cl. 336—129 **9 Claims**
Int. Cl. H01f *21/04*



A coil receiving structure having a core, a pair of integral spaced flanges fixedly mounted on the core, and a bobbin slidably mounted on the core. A coil is carried between the integral flanges and another coil is carried on the slidable bobbin. The bobbin is adjustable on the core so that the spacing between the two coils may be readily controlled. The coil and bobbin assembly is locked in position on the core at a predetermined spacing from the coil between the integral flanges.

3,428,930
LAMINATED MAGNETIC CORE STRUCTURES FOR TRANSFORMERS OR CHOKE COILS OF GREAT POWER

Antonius H. Th. J. Sliepenbeek, Nijmegen, Netherlands, assignor to Smit Nijmegen Electrotechnische Fabrieken N.V., Nijmegen, Netherlands, a company of the Netherlands
Filed Jan. 16, 1968, Ser. No. 698,319
Claims priority, application Netherlands, Jan. 26, 1967, 6701226
U.S. Cl. 336—212 **2 Claims**
Int. Cl. H01f *27/24*

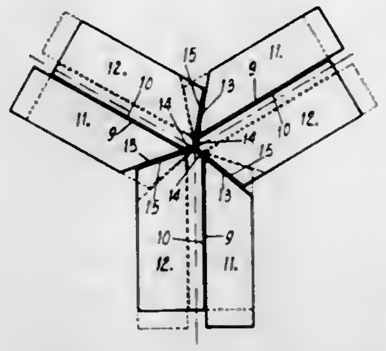


A laminated magnetic core has three leg members extending with their central longitudinal axes in the longitudinal edges of an equilateral prism, two star-shaped yoke members, each of which consists of three abutting yoke arms enclosing angles of 120°, and coupling members, each of which connects an end of a leg member with the free end of a yoke arm. Each yoke arm has a central longitudinal axis which intersects, at a common point, the longitudinal axes of the remaining two yoke arms of a yoke member. In at least a part of the total number of layers of laminations of the yoke members, each yoke arm abuts the two other yoke arms with two straight end edges enclosing an angle of 120°. The projections of said end edges on a line extending in the direction of the width of the yoke arm have unequal lengths. In the said layers each yoke arm consists of two laminations extending side-by-side and abutting each other with longitudinal edges which are parallel to the central longitudinal axis of the relevant yoke arm. Each one of said laminations is bounded at its end facing another yoke arm by a straight edge only, so that said laminations have widths which are equal to the said projections of said end edges, and the abutting longitudinal edges of the said two laminations of each yoke arm are in offset relation to each other in the direction of said longitudinal edges.

3,428,931
LAMINATED MAGNETIC CORE STRUCTURES FOR TRANSFORMERS OR CHOKE COILS OF GREAT POWER

Antonius H. Th. J. Sliepenbeek, Nijmegen, Netherlands, assignor to Smit Nijmegen Electrotechnische Fabrieken N.V., Nijmegen, Netherlands, a company of the Netherlands
Filed Jan. 18, 1968, Ser. No. 698,819
Claims priority, application Netherlands, Jan. 26, 1967, 6701227
U.S. Cl. 336—212 **1 Claim**
Int. Cl. H01f *27/24*

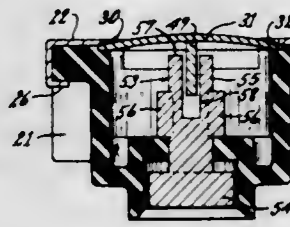
A laminated magnetic core structure has three leg members extending with their central longitudinal axes in the longitudinal edges of an equilateral prism, two star-shaped yoke members, each of which has three abutting yoke arms enclosing engles of 120°, and coupling members, each of which connects an end of a leg member with the free end of a yoke arm. Each yoke arm has a central longitudinal axis which intersects, at a common point, the longitudinal axes of the remaining two yoke arms of a yoke member. In at least a part of the total number



of layers of laminations of the yoke members, each yoke arm abuts the two other yoke arms with two straight end edges defining an angular point of 120° which coincides with said common point of intersection. In the said layers, one end edge of each yoke arm encloses an angle of 60°+α and the other end edge thereof encloses an angle of 60°−α with the central longitudinal axis of the relevant yoke arm.

3,428,932
THERMOSTATIC CONTROL DEVICE AND PARTS THEREFOR

Siegfried E. Manecke, 1704 Church St., Indiana, Pa. 15701
Continuation of application Ser. No. 548,280, May 6, 1966, which is a division of application Ser. No. 361,141, Apr. 20, 1964, now Patent No. 3,272,946. This application Nov. 20, 1967, Ser. No. 684,562
U.S. Cl. 337—348 **7 Claims**
Int. Cl. *37/20*

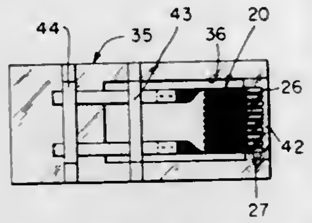


This disclosure relates to a high limit thermostatic switch construction which will open the electrical circuit passing therethrough when a certain temperature is sensed by a control element of the device, the device having a reset member for resetting the control member back to its circuit closing position once the circuit has been opened by the control member snapping over center and remaining over center when sensing an unsafe temperature. However, the reset member will not cause the control member to move back over center unless the control member senses a safe temperature, the reset member preventing a false closing of the circuit during an attempted resetting operation if the control member will not snap back over center because the same is still sensing an unsafe temperature.

3,428,933
STRAIN GAGE UNIT AND METHOD OF APPLYING THE GAGE

Egon Gerstenberger, Phoenixville, Pa., assignor, by mesne assignments, to Automation Industries, Inc., a corporation of California
Filed Aug. 29, 1966, Ser. No. 575,765
U.S. Cl. 338—2 **11 Claims**
Int. Cl. G01l *1/22;* **H01c** *17/00;* **B32b** *31/00*

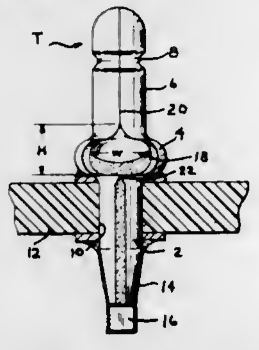
A metal foil electrical resistance strain gage with tab leads welded at the factory and shipped in condition for simple installation. The gage unit is mounted on a frame card of thin, transparent material with pressure sensitive adhesive on its lower side covered by a protective sheet. The frame card has a window encompassing the entire gage unit. The gage unit is supported in the window by the handling tabs at one end engaging the pressure sensitive adhesive and with the tab leads supported by adhesive tape secured strips. In use, the gage unit is cemented to the work surface through the window. The card portion holding the handling tabs and the tape secured strips are removed, enabling removal of the frame card. The handling tabs are then removed, and the gage unit is connected in circuit.



3,428,934

ELECTRICAL CONNECTOR FOR PRINTED CIRCUIT BOARD

George Sylvester Reider, Jr., Highspire, and Edward Lamonte Seitz, Jr., Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 28, 1967, Ser. No. 619,392
U.S. Cl. 339—17 **8 Claims**
Int. Cl. H05k *1/00;* **H01r** *5/04*

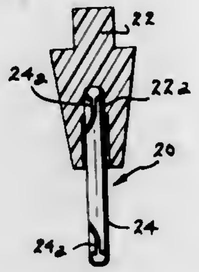


An electrical terminal securable in a printed circuit board or the like by solder which has a configuration to prevent collection of solder on the connection area.

3,428,935

PROGRAMMING SYSTEM

Winfield Warren Loose, Reading, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Mar. 22, 1965, Ser. No. 441,700. Divided and this application July 25, 1967, Ser. No. 669,329
U.S. Cl. 339—19 **5 Claims**
Int. Cl. H01r *31/08, 17/18, 11/22*

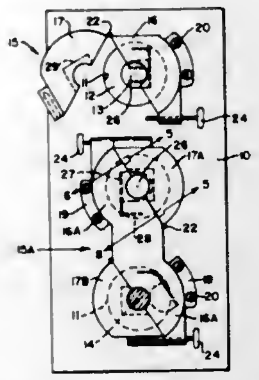


A pin member for electrical pinboards is disclosed which features a one-piece stamping of sheet metal of tubular configuration having the seam thereof oriented in three different planes to provide a spring action which is independent in different length segments of the pin to facilitate a use in spaced, fixed wall contact strips. A diode pin version includes separate axially spaced spring portions insulated by a dielectric sleeve shaped to hold the ends of the spring portions against displacement interfering with pin insertion into spaced, fixed wall contact strips.

3,428,936

SAFETY COVER FOR AN ELECTRICAL OUTLET RECEPTACLE

Albert Arnao, Jr., 3920 Laurie St., Jacksonville, Fla. 32206
Filed Sept. 1, 1967, Ser. No. 665,033
U.S. Cl. 339—39 **2 Claims**
Int. Cl. H01r *13/44, 13/54*

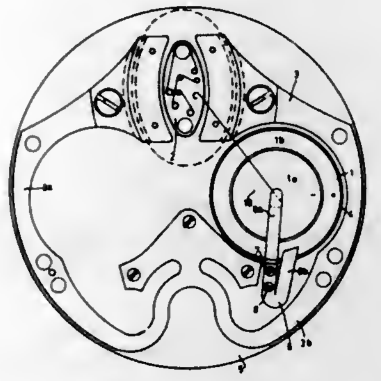


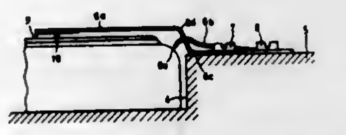
A dome-shaped safety cover is mounted on an escutcheon plate over a plate aperture which receives or exposes an electrical outlet receptacle having plug-in openings to receive the prongs of an electrical plug. The cover is composed of complementary halves, which cooperate to provide it with an open mouth at its inner end to encircle said plate aperture, with an interior large enough to house a plug having its prongs in the receptacle openings and with a smaller outer end opening to accommodate the cord of a housed plug. One half of the cover is hinged for movement toward and away from the other half between a cover-closed position, in which the cover may house a plug, to a cover-open position in which a plug to be housed may be inserted into the cover and plugged into the receptacle or removed therefrom. The hinged half is releasably secured in the cover-closed position. A biased disc normally closes the outer end opening of a closed unoccupied cover to prevent access to its interior.

3,428,937

DEVICE FOR SECURING A BATTERY IN A WATCH

Max Hetzel, Bienne, Henri Haring, Tavannes, and Henri Robert, La Chaux-de-Fonds, Switzerland, assignors to Centre Electronique Horloger S.A., Neuchatel, Switzerland, a corporation of Switzerland
Filed Sept. 20, 1966, Ser. No. 580,812
Claims priority, application Switzerland, Sept. 27, 1965, 13,332/65
U.S. Cl. 339—95 **5 Claims**
Int. Cl. H01r *11/00;* **G04c** *3/00;* **H01m** *1/04*



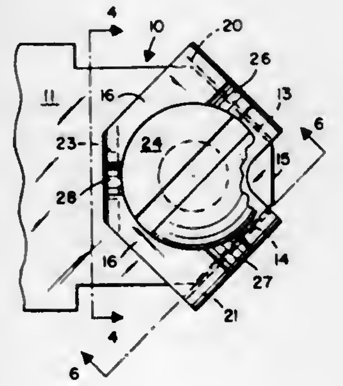


This disclosure concerns a device for securing a wafer-type battery cell to the base plate of an electrical assembly, such as an electrical watch. The device consists of a conductive spring electrically connected to the assembly and secured on the base plate, the spring having two resilient arms, one having an insulated under surface pressing a conductor forming part of the electrical assembly against one pole of the battery and a second resilient arm pressing against the other pole of the battery. The spring may be mounted for movement relative to the battery so that when it is moved out of contact with the battery, the same can fall out by simply overturning the electrical assembly.

3,428,938

ELECTRICAL CONNECTOR

Andrew Kulick, Columbus, Ohio, assignor to Ranco Incorporated, Franklin County, Ohio, a corporation of Ohio
Filed Dec. 2, 1966, Ser. No. 598,804
U.S. Cl. 339—266 **4 Claims**
Int. Cl. H01r *7/08, 13/24, 7/16*

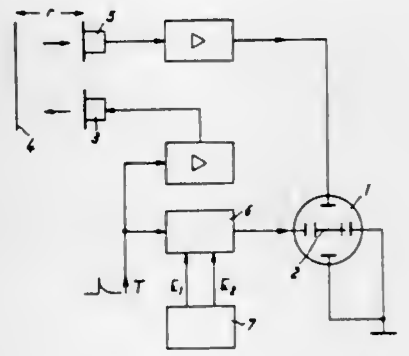


A terminal bar has end edges angled to one another and a clamp plate has depending flanges extending along the edges and a lug engaging the bar. Ridges project from the plate to grip wires inserted between the bar and plate when the plate is clamped to the bar by a screw. Wires can be inserted between the adjacent ends of the flanges and the adjacent ends of the flanges and lug.

3,428,939

APPARATUS FOR DIGITAL ANALOGOUS CONVERSION, ESPECIALLY FOR THE TIME DEVIATION IN DISTANCE MEASURING DEVICES

Klaus Dieter Witt, Bremen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Oct. 9, 1967, Ser. No. 673,850
Claims priority, application Germany, Oct. 19, 1966, B 89,439
U.S. Cl. 340—1 **8 Claims**
Int. Cl. G01s *9/68*

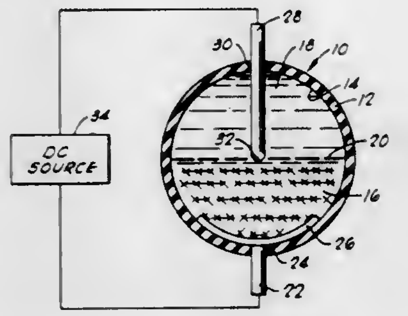


Distance measuring device employing reflected waves and including variable elements in the circuit for adjusting the device to different distances to be measured. Digital signals representing the desired measuring range and the speed of sound are supplied to a switching arrangement which varies the deflection speed of the beam in a cathode ray tube used to display the echo signals.

3,428,940

SONIC TRANSMITTER

William B. Huckabay, 4225 Greenbrier, Dallas, Tex. 75225
Filed Feb. 20, 1967, Ser. No. 617,263
U.S. Cl. 340—12 **13 Claims**
Int. Cl. H04b *13/02*

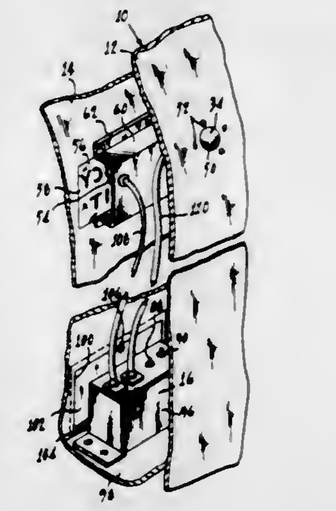


A sonic transmitter for use in distance measuring utilizing two solid electrodes connected by a liquid metal conductor in such a manner that a minor portion of the liquid metal is converted to a gaseous state when a breakdown potential is imposed across the solid electrodes to generate sonic waves, and the liquid metal is contained to promptly recomplete the circuit between the solid electrodes for a subsequent cycle of operation.

3,428,941

COMBINED CRASH LOCATOR AND EMERGENCY EXIT LAMP DEVICE FOR AIRCRAFT

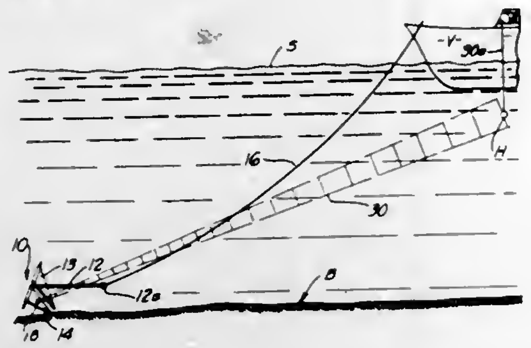
Basil Victor Hewes, College Park, Ga. 30022
Continuation-in-part of application Ser. No. 493,145, Oct. 5, 1965. This application Apr. 7, 1966, Ser. No. 540,993
U.S. Cl. 340—27 **10 Claims**
Int. Cl. G08b *5/36, 21/00*



A source of electricity has a pair of conductors, through one of which power is supplied to a high-intensity crash-locator lamp, mounted in the outer wall of an aircraft fuselage adjacent an emergency exit, to permit swift location of a crashed aircraft, and in particular an emergency exit thereof. Power is supplied through the outer conductor to a lamp mounted in the inner wall of the fuselage and directing a muted light inwardly to indicate to passengers the exit location. Both lamps are energized responsive to a predetermined deceleration force. Means is provided to manually close or open the lamp circuit should this become important.

3,428,942
MARINE ANCHOR ALARM

Walter P. Isaacson, 521 S. Jasmine St., Brea, Calif. 92621
Continuation-in-part of application Ser. No. 345,610, Feb. 18, 1964. This application May 6, 1966, Ser. No. 548,322
U.S. Cl. 340—29 **8 Claims**
Int. Cl. G08g *3/00*



1. Means for sensing and indicating dragging of a marine anchor past bottom material at the bottom of a body of water, comprising:

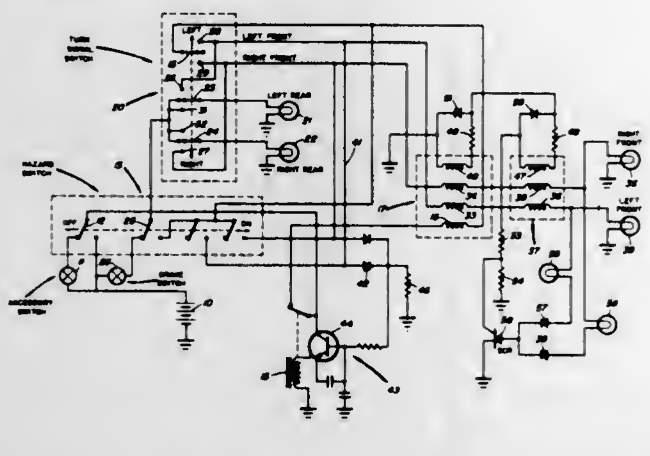
first means, including a marine anchor, and means for applying force to the anchor in a direction tending to effect dragging of the anchor, said first means including means providing a walled passage through which bottom material is forced incident to dragging of the anchor through bottom material;

second means, including rotary means disposed in and retained in said passage by said first means, said rotary means being arranged to be rotated by passage of bottom material through said passage; and

third means, includig means for detecting and providing an indication of rotation of said rotary means relative to said first means, whereby dragging of the marine anchor past the bottom material at the bottom of a body of water is sensed and indicated incident to passage of bottom material through said passage.

3,428,943
AUTOMOBILE TURN SIGNAL WITH LAMP FAILURE INDICATOR

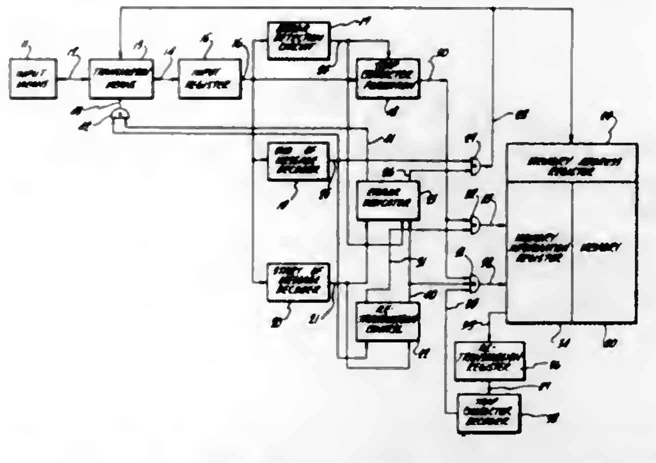
Ralph W. Carp, Winford B. Carruth, and Michael Slavin, Baltimore, Md., assignors to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,774
U.S. Cl. 340—80 **6 Claims**
Int. Cl. B60q *1/34, 3/04*



A signal system for automobiles, including a brake switch, hazard switch, and turn signal switch, and in which a lamp failure indicator is controlled by a silicon controlled rectifier which is, in turn, controlled by the combined output of a pair of current responsive elements coupled, respectively, in the circuits to the front and rear signal lamps and to the front lamps.

3,428,944
ERROR CORRECTION BY RETRANSMISSION

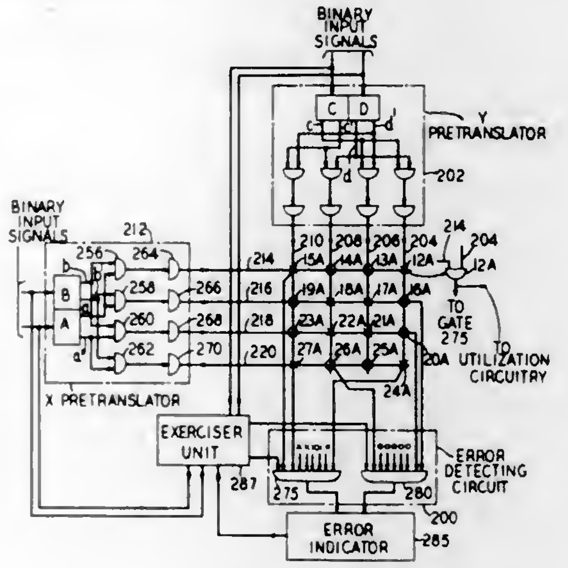
George T. Shimabukuro, Monterey Park, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 8, 1965, Ser. No. 437,779
U.S. Cl. 340—146.1 **10 Claims**
Int. Cl. G08b *29/00;* **G06f** *11/08*



A system for correcting transmission errors appearing in digital information in which characters of a message being transmitted are checked for errors at the recording end and are stored, as transmitted, in a memory if no error is detected. Circuit means, responsive to detection of an error, effects the storage of a particular character designated a "trap character" in the memory at the location provided for the erroneous character. Upon retransmission of the message, a retransmitted character is stored in memory responsive to both a determination that it has been correctly transmitted and a determination that a "trap character" is stored in the memory at the location provided for the particular character. A complete error-free message will accordingly be stored in the memory so long as each character of the message is correctly received at least once during the initial transmission and subsequent retransmissions of the message.

3,428,945
ERROR DETECTION CIRCUITS

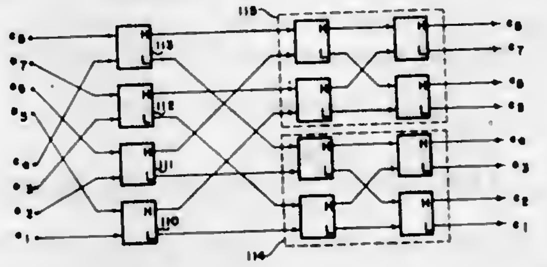
Wing N. Toy, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 20, 1965, Ser. No. 457,406
U.S. Cl. 340—146.1 **8 Claims**
Int. Cl. G08c *25/00*



Circuits are respectively connected to various types of N-crosspoint translation arrays to detect and indicate the occurrence of double outputs from the arrays. Each such circuit includes two error-detecting gates each connected in a selected manner to N/2 different crosspoints of the associated array. For one general type of array, all single-fault occurrences in the crosspoints themselves are automatically detected by the error-detecting gates during actual operation of the array. For another general type of array, many double-output error occurrences therefrom are detected by the gates during actual operation of the array but a complete check of the condition of the crosspoints is carried out during a test cycle of operation. For both types of arrays, the error-detecting and indicating circuits themselves are also checked during a test cycle of operation.

3,428,946
MEANS FOR MERGING DATA

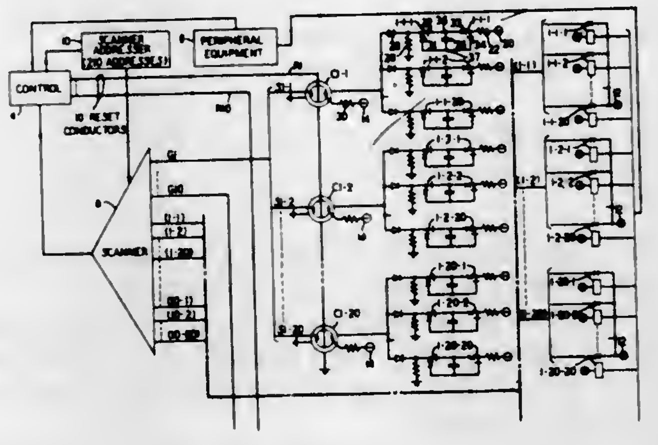
Kenneth E. Batcher, Akron, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 482,695, Aug. 26, 1965. This application Sept. 19, 1967, Ser. No. 668,809
U.S. Cl. 340—146.2 **5 Claims**
Int. Cl. G08b *5/00*



This invention relates to a merging means, and more particularly to a unique arrangement of basic elements each adapted to receive two data, compare their magnitudes, and present the greater of the two at one output, the lesser at another output, and whereby data in random order, or ordered sequences of various numbers, can be arranged into one sequence in ascending order.

3,428,947
SCANNING CIRCUIT FOR SCANNING ALL OF A GROUP OF POINTS IF ONE POINT HAS A CHANGE OF STATE

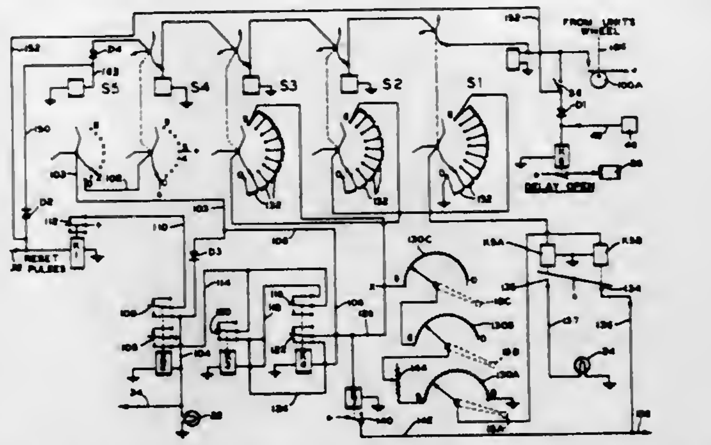
William B. Macurdy, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 31, 1965, Ser. No. 444,128
U.S. Cl. 340—147 **4 Claims**
Int. Cl. H04q *1/00*



A scanning arrangement for a data processor is disclosed wherein a group of binary scan points is scanned only when there is a change-of-state of a scan point within that group. This is accomplished by connecting a number of devices, each sensitive to a change-of-state in either direction of any connected scan point, to all of the scan points within a respective scan point group. Scanning of these devices informs the data processor if there has been any scan point change-of-state and, if so, in which scan point group. The data processor may then scan that particular group in the usual manner.

3,428,948
POSTAGE METERING SYSTEM

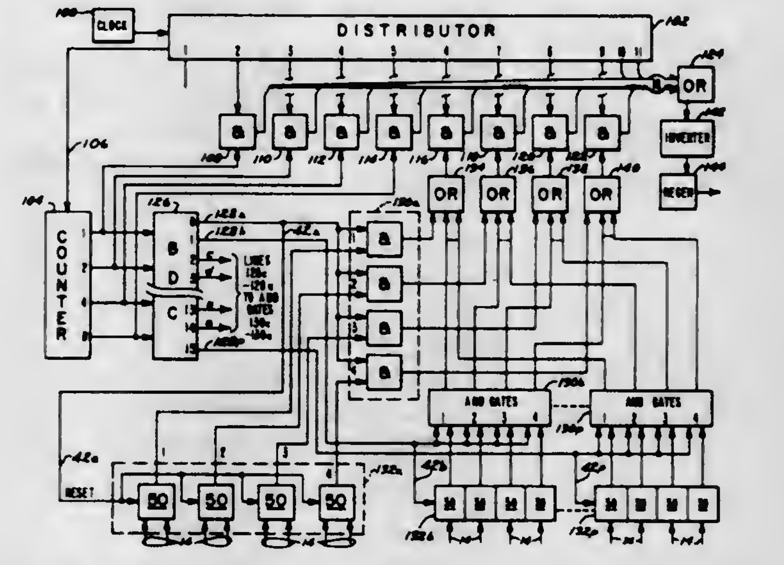
Luther G. Simjian, Greenwich, Conn., assignor to General Research, Inc., Greenwich, Conn., a corporation of Connecticut
Filed Dec. 13, 1965, Ser. No. 513,322
U.S. Cl. 340—147 **17 Claims**
Int. Cl. H04l *23/00;* **H04m** *11/08*



A postage meter includes a credit register settable by an electrical signal. Responsive to the receipt of a coded electrical signal from a remote central station and sent via a data link the register is set to reflect a predetermined credit increment. Image recording means are provided and actuated to record periodically numerical values indicative of the status of the register, thus producing a documentary record. Signaling means are actuated when the available credit falls below a predetermined amount.

3,428,949
DISTRIBUTOR SYSTEM FOR MONITORING POSITION AND STATUS OF A NUMBER OF POINTS

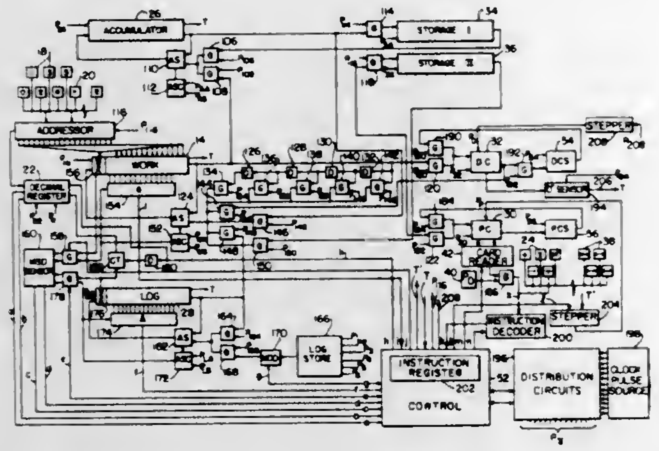
Jacob Lightsey Wallace, Jr., Springfield, Va., assignor to The Susquehanna Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 502,086
U.S. Cl. 340—147 **6 Claims**
Int. Cl. H04q *3/50, 5/16*



An encoder for a data collecting or monitoring system is described. The distributor in the system scans two groups of AND gates. The first group provides the location of the remote points being monitored on that scan. The second group provides the status information of the remote monitored points. Accordingly, the generated output pulse train contains two types of pulse-coded information, one relating to position and the other relating to status or condition. A regenerative repeater is connected at the encoder output to provide undistorted or unmutilated output signals.

3,428,950
PROGRAMMABLE CALCULATING APPARATUS

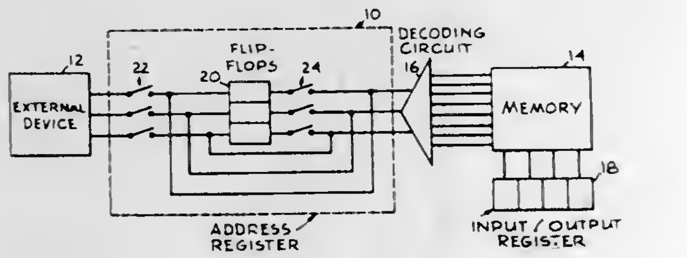
Ned Chang, Arlington, Mass., Prentice I. Robinson, Hudson, N.H., and An Wang, Lincoln, Mass., assignors to Wang Laboratories Inc., Tewksbury, Mass., a corporation of Massachusetts
Filed Mar. 22, 1966, Ser. No. 536,416
U.S. Cl. 340—172.5 **9 Claims**
Int. Cl. G11b *13/00*



A calculator includes a keyboard for entering numerical values into an arithmetic unit and issuing instructions to control the operation of the arithmetic unit. A card reader is also coupled to the arithmetic unit and can enter numerical values and issue control instructions also. A program counter normally addresses the card reader in a predetermined sequence. The logic responsive to the card reader causes a branch in the program sequence in response to a series of three instructions, the first two entering numerical values in the work (input) register of the arithmetic unit and the third transferring the contents of the arithmetic unit to the program counter.

3,428,951
MEMORY ADDRESSING APPARATUS

Edward Lindell, Woodland Hills, Calif., assignor to Ampex Corporation, Culver City, Calif., a corporation of California
Original application Feb. 28, 1963, Ser. No. 261,721, now Patent No. 3,284,640, dated Nov. 8, 1966. Divided and this application Aug. 2, 1966, Ser. No. 569,733
U.S. Cl. 340—172.5 **4 Claims**
Int. Cl. G11c *7/00;* **G06f** *13/06*



An improved memory addressing means including a plurality of information storage locations, an external device capable of generating a plurality of unique address signal sets for identifying a unique location, decoding circuit means responsive to said generated signals for selecting the location identified thereby and address register including storage means for storing said unique signals and by-pass means for sequentially initially applying a generated signal to the storage means and to the decoding means and subsequently applying all the output of the storage means to the decoding means.

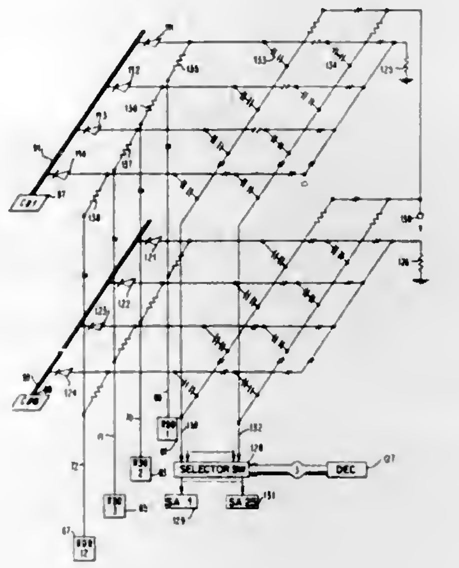
3,428,952
METHOD OF THERMALLY RECORDING, AND ELECTRICALLY RETRIEVING INFORMATION

Robert M. Gold, Brooklyn, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 2, 1964, Ser. No. 401,211
U.S. Cl. 340—173 **4 Claims**
Int. Cl. G11b *13/00*

Selectively heating areas of a thermoplastic polymer layer above the glass transition temperature of the polymer and cooling the thus heated areas without disturbing the surface thereof creates corresponding invisible, nondeformed areas in the layer, which areas differ in their electrical properties from the unheated areas. The resulting pattern of different electrical properties in the layer may at a later time be sensed by a capacitive probe and will provide a read-out electrical signal which corresponds to the original thermal signal applied to the polymer layer.

3,428,953
CARD CAPACITOR STORAGE SELECTION SYSTEM

Duane W. Baxter, Rochester, Minn., Bruce C. Felton, Saugerties, N.Y., Harold W. Hill, Takoma Park, Md., and Harry S. Hoffman, Jr., Saugerties, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 14, 1965, Ser. No. 471,849
U.S. Cl. 340—173 **12 Claims**
Int. Cl. G11b *9/06*

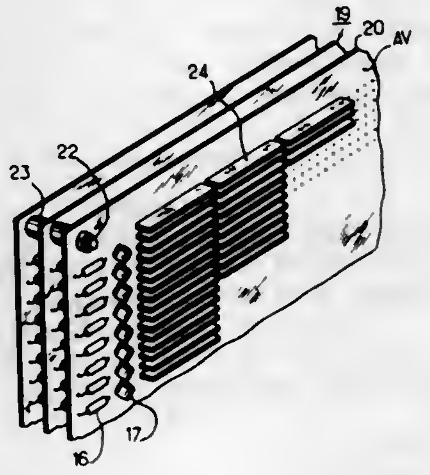


11. A three dimensional selection system for a card capacitor memory comprising in combination
- a plurality of cards disposed in groups of decks, each of said decks comprising a plurality of stacked cards,
- each of said cards having spaced intersecting drive and sense lines thereon,
- means for selectively providing capacitive coupling between said drive and sense lines at the intersections thereof,
- said means comprising a metallized data card having data manifesting perforations therein, the pattern of said data card forming a plurality of coupling capacitors at the said selected intersections,
- means for selectively reading a word from said memory means,

- said means being responsive to decoded address signals representative of a selected deck and row to charge capacitors associated with the selected row and deck,
- means responsive to decoded address signals representative of the card address to discharge those charged capacitors in the selected card,
- a plurality of sense amplifiers, and
- means for coupling the resulting signals to said sense amplifiers to represent the information stored in said address.

3,428,954
ELEMENT FOR RESISTIVE PERMANENT MEMORY

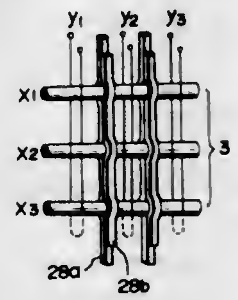
Charles Antoine Marius David, Charenton, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Mar. 7, 1966, Ser. No. 532,172
Claims priority, application France, Apr. 2, 1965, 11,758
U.S. Cl. 340—173 **7 Claims**
Int. Cl. H01f *40/00*



4. As an article of manufacture, a permanent memory block unit composed of a plurality of stacked memory planes, which has a first set of M "word" conductors extending in a first direction, a second set of N "bit" conductors extending in a second transverse direction and resistive couplings at some cross-points of these conductors, each of said memory planes comprising:
- an insulating plate bearing on a first face printed circuit parts, the latter including
  - a number N of printed conductive strips extending in said second direction and arranged in several groups each of *p* strips, a number $M \times N$ of printed soldering studs grid-like arranged so that each column of M studs is adjacent to one of said strips, each single stud surrounding a hole through said plate, and M series of printed double soldering studs disposed between said groups of strips, each double stud surrounding two holes through said plate;
  - a number M of groups of resistive elements disposed on the side of the second face of said plate, each resistive element including *p* resistive deposits on an insulating slab, $p+2$ parallel conductive wires soldered so that there are *p* wires connected each to a deposit end and the two other extreme wires are connected in common to the other end of said deposits, one extremity of each of said extreme wires passing through a hole and being soldered to a double stud, and one extremity of each of said *p* wires passing through a hole and being soldered to a single stud,
- and some of said single studs being electrically connected to an adjacent strip at each point where a resistive coupling is to be made.

3,428,955
WOVEN WIRE MEMORY MATRIX

Shintaro Oshima, Musashino-shi, and Tetsusaburo Kamibayashi, Kitaadachi-gun, Saitama-ken, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha (also known as Kokusai Denshin Denwa Co., Ltd.), Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Sept. 17, 1963, Ser. No. 309,470
Claims priority, application Japan, Oct. 15, 1962, 37/44,727; Jan. 28, 1963, 38/3,078; May 6, 1963, 38/23,314; May 13, 1963, 38/23,925; June 22, 1963, 38/31,234; Aug. 22, 1963, 38/44,163, 38/44,164, 38/44,165; Sept. 4, 1963, 38/46,509
U.S. Cl. 340—174 **21 Claims**
Int. Cl. G11c *11/10*

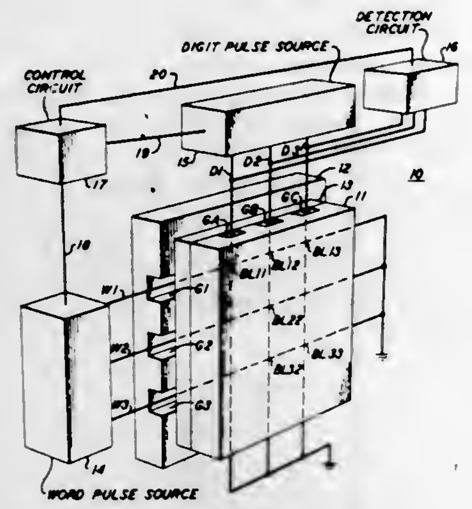


1. A magnetic matrix memory apparatus comprising a set of row conductive wires juxtaposed to one another and a set of column conductive wires arranged substantially orthogonal to and insulatively against said row conductive wires, each of said row conductive wires being composed of a conductive wire coated with a ferromagnetic thin film having a substantially rectangular hysteresis characteristic and an inherent anisotropy, the set of said row conductive wires and the set of said column conductive wires being associated, in a woven state, with one another, said ferromagnetic thin film of each row conductive wire forming closed circumferential magnetic circuits with respect to flux caused by current which is passed through the corresponding row conductive wire, means for applying an information signal to at least one conductive wire of one of the sets of said row and column conductive wires, means for applying an exciting signal to at least one conductive wire of the other set of said row and column conductive wires, the inherent anisotropy of the thin film being established in a plane substantially orthogonal to the axis of conductor to be employed for applying the information signal, and said row conductive wires being encompassed, at the spaces between intersection points of said two sets of the conductive wires, with short ring means of loop conductors for magnetically isolating adjacent parts of said ferromagnetic thin film which is disposed only around adjacent intersection points, whereby a bit of information is stored in the ferromagnetic film disposed around at least one selected intersection point between said two sets of the conductive wires in the state of the direction of the residual magnetism of said magnetic thin film when selection is effected by energizing, with the information signal and the exciting signal, at least one selected row conductive wire and at least one selected column conductive wire, and a bit of information stored is read out, from at least one selected conductive wire employed for applying the information signal, as an output signal having either of opposite polarities determined in accordance with the direction of the residual magnetism.

3,428,956
ROTATIONAL MODE MEMORY CIRCUIT HAVING FLUX CLOSURE PATHS

Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 3, 1964, Ser. No. 408,520
U.S. Cl. 340—174 **3 Claims**
Int. Cl. G11b *5/00*

Continuous flux closure paths for flux switched between first and second directions along an easy axis of magnetization in an anisotropic magnetic film in a rotational mode of operation.



3,428,957

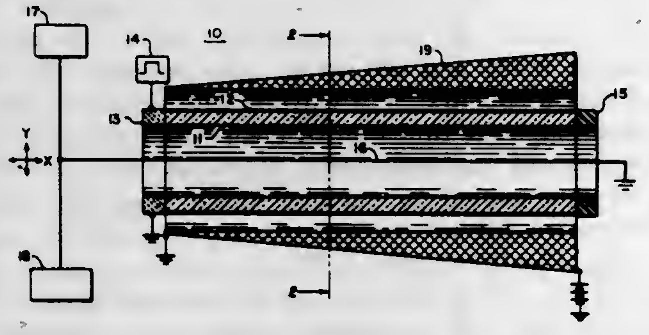
DATA STORAGE DEVICE USING SONIC WAVE PROPAGATION

David Rodney Hadden, Jr., Cold Spring Harbor, N.Y., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 27, 1965, Ser. No. 428,589

U.S. Cl. 340—174 **5 Claims**

Int. Cl. G11b *5/00*



A magnetic memory device including an anisotropic thin magnetic film having a circumferential easy axis is deposited on a tubular nonmagnetic substrate. A sonic transducer is mounted at one end of the substrate and an absorbing medium is mounted at the other end of the substrate. A conductor passes through the center of the tubular substrate with one end grounded and the other end connected to a current generator and a current detector. A coil is mounted coaxially with respect to the substrate, the film, and the conductor. The number of turns in the coil increases from the end adjacent the transducer to the end adjacent the absorber. The increase in strength of the steady magnetic field produced by the coil is proportional to the rate of dissipation of the sonic wave in the substrate.

3,428,958

NON-DESTRUCTIVE READ-OUT MEMORY AND CONSTANT CURRENT DRIVER

Harry Putterman, Elizabeth, N.J., assignor to General Precision Systems Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 450,346, Apr. 23, 1965. This application Sept. 24, 1965, Ser. No. 489,997

U.S. Cl. 340—174 **2 Claims**

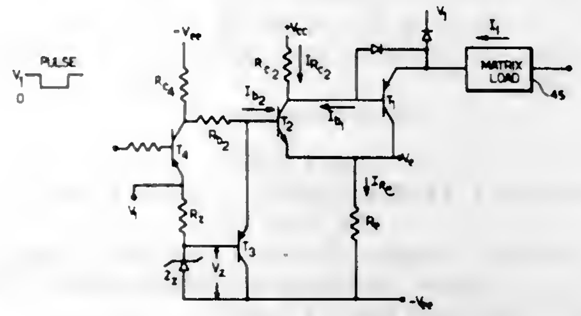
Int. Cl. G11b *5/00*

1. A non-destructive read-out memory for storing a particular program therein, comprising in combination:

a matrix of magnetic cores with *x* and *y* lines driver windings therethrough to provide coincident current;

a reset winding through said matrix, said reset winding being coupled only to those cores to be read out for said program and including separate enabling means;

x and *y* selection matrices to select one of the *x* and *y* lines of the memory matrix, each selection matrix including a flip-flop address register, transistor AND gates acted on by said address register flip-flops, the enabling of two AND gates serving to select one of said *x* and *y* lines; and



a constant-current driver connected to said transistor AND gates to apply a drive pulse thereto, including a switching transistor whose emitter is connected to said transistor AND gates, the collector of which is connected to a load resistor, an emitter follower transistor pair acting on the base of said switching transistor, the current variations in the switching transistor and emitter-follower pair being equalized by a Zener diode, and its resistor in parallel with a complementary transistor to the emitter-follower pair.

3,428,959

DEVICE FOR THE AUTOMATION OF CASH STATIONS IN SALES ESTABLISHMENTS

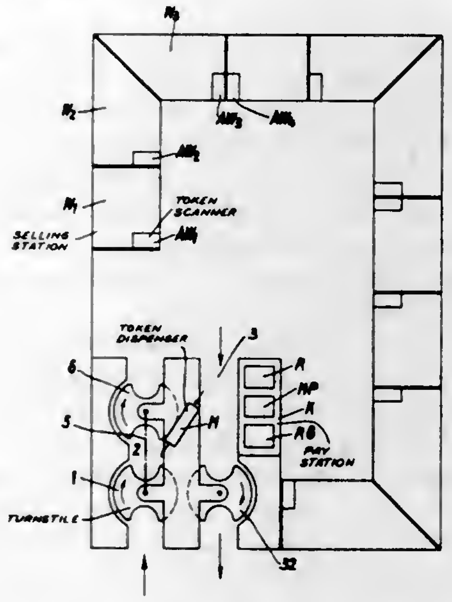
Norbert Karl Acker, Oelmuhlenweg 27a, Konigstein, Taunus, Germany

Filed Mar. 22, 1966, Ser. No. 536,436

Claims priority, application Germany, Apr. 2, 1965, A 48,818

U.S. Cl. 340—172.5 **31 Claims**

Int. Cl. G11b *13/00*

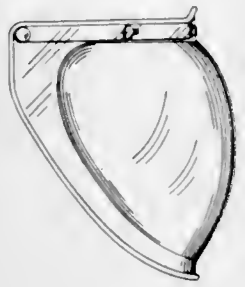


A system for recording and charging costs-entailing transactions made by customers in a selected one of a plurality of selling stations in which a specific token or similar identifying article is supplied to each customer. The customer uses such token to activate a selling station selected for a purchase. Thereupon the token is automatically returned by the station to the customer for use in another selected selling station, if any. A storage means in each selling station records all purchases made by the customer in the respective selling station and then forwards such recordings to a common payment station in which the records pertaining to all purchases made by a customer are accumulated separately for each customer. When now the customer surrenders the token to the payment station the total bill is issued but the token is retained for further use by another customer.

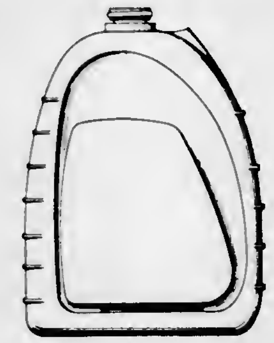
DESIGNS

FEBRUARY 18, 1969

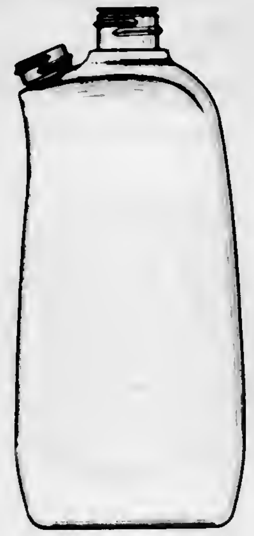
213,303
FACE SHIELD
Paul R. Jones, Long Beach, Calif., assignor to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed May 15, 1967, Ser. No. 7,125
Term of patent 14 years
U.S. Cl. D2—233
Int. Cl. D2—*03*



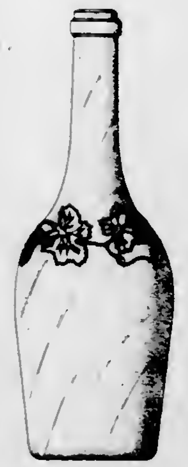
213,304
BOTTLE
Wilburn Q. Smith, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 9,096
Term of patent 14 years
U.S. Cl. D9—45
Int. Cl. D9—*01*



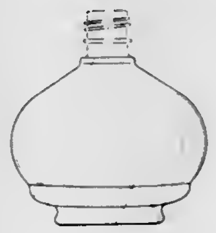
213,305
BOTTLE
Kevin M. O'Brien, Westport, Conn., and Denis H. Burns, Port Chester, N.Y., assignors, by direct and mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 9,370
Term of patent 14 years
U.S. Cl. D9—60
Int. Cl. D9—*01*



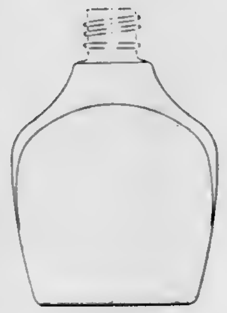
213,306
BOTTLE
Ottavio Riccadonna, Canelli, Asti, Italy, assignor to Ottavio Riccadonna S.p.A., Canelli, Asti, Italy
Filed July 26, 1966, Ser. No. 3,218
Term of patent 7 years
U.S. Cl. D9—77
Int. Cl. D9—*01*



213,307
BOTTLE
Stephen J. Kneapler, Miami, Fla., assignor to Richford Corporation, Farmingdale, N.Y., a corporation of New York
Filed Feb. 21, 1968, Ser. No. 10,681
Term of patent 14 years
U.S. Cl. D9—115
Int. Cl. D9—*01*

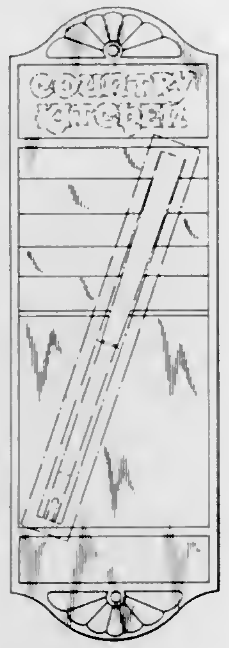


213,308
BOTTLE
Stephen J. Kneapler, Miami, Fla., assignor to Richford Corporation, Farmingdale, N.Y., a corporation of New York
Filed Feb. 21, 1968, Ser. No. 10,679
Term of patent 14 years
U.S. Cl. D9—143
Int. Cl. D9—*01*



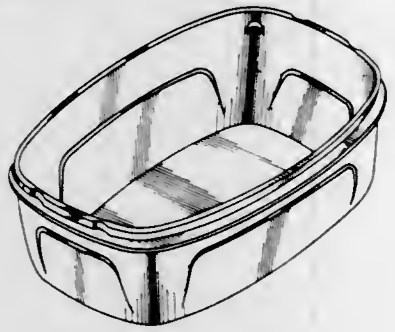
213,309
BLISTER DISPLAY CARD

Mel Appeal, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey
Filed Mar. 26, 1968, Ser. No. 11,141
Term of patent 14 years
U.S. Cl. D9—192
Int. Cl. D9—*04*



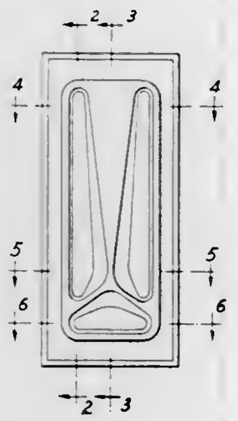
213,310
PACKAGING CONTAINER OR THE LIKE

Stafford D. Collie, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 15, 1966, Ser. No. 5,047
Term of patent 14 years
U.S. Cl. D8—138
Int. Cl. D9—*04*



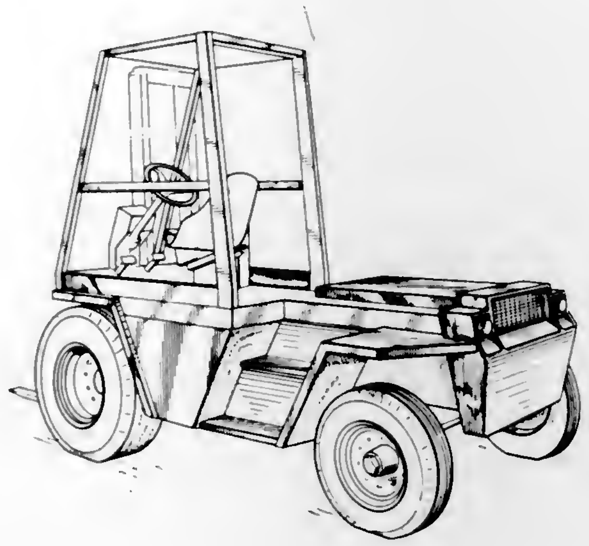
213,311
BUILDING PANEL

Charles Michael Dansey Peters, "Blida" Muckridge, Youghal, County Cork, South Ireland
Filed Dec. 20, 1967, Ser. No. 9,864
Claims priority, application Great Britain July 13, 1967
Term of patent 14 years
U.S. Cl. D13—1
Int. Cl. D25—*01*



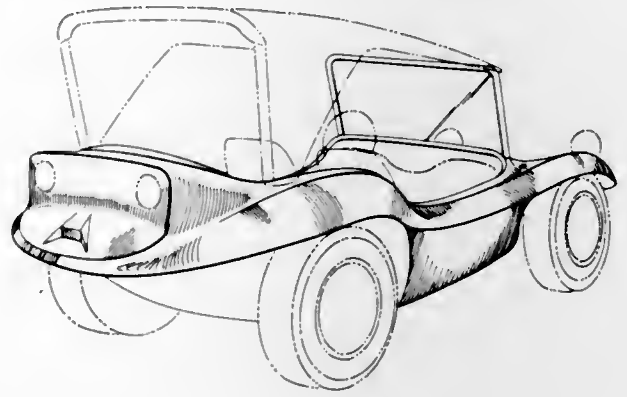
213,312
TRACTOR

Bruce L. Renquist, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 15, 1968, Ser. No. 10,161
Term of patent 14 years
U.S. Cl. D14—3
Int. Cl. D12—*09*



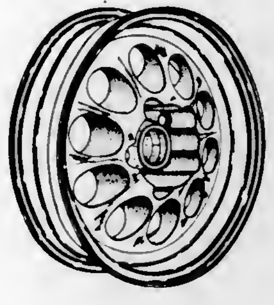
213,313
VEHICLE

Donald F. Haskin, 11416 Miranda St., North Hollywood, Calif. 91601, and Max Becker, 14058 Valley Heart Drive, Apt. 3, Sherman Oaks, Calif. 91403
Filed Apr. 22, 1968, Ser. No. 11,562
Term of patent 14 years
U.S. Cl. D14—3
Int. Cl. D12—*08*



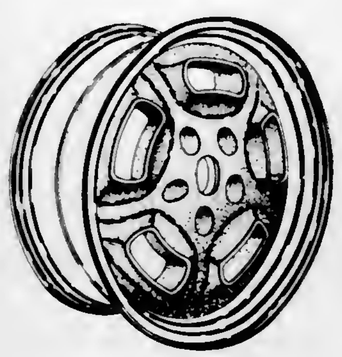
213,314
WHEEL

Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed May 14, 1968, Ser. No. 11,911
Term of patent 14 years
U.S. Cl. D14—30
Int. Cl. D12—*14*



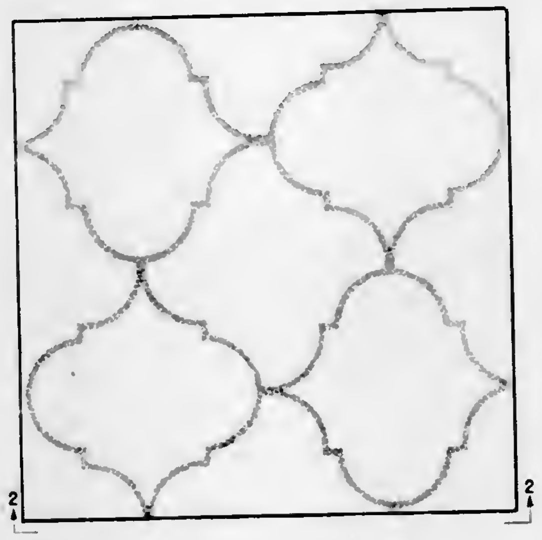
213,315
WHEEL

Donald J. Reid, Pleasant Ridge, Mich, assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed May 14, 1968, Ser. No. 11,912
Term of patent 14 years
U.S. Cl. D14—30
Int. Cl. D12—*14*



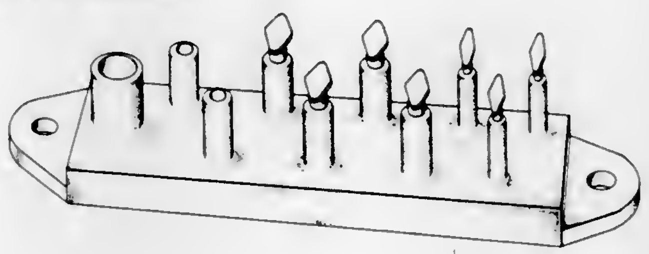
213,316
FLOOR TILE OR SIMILAR ARTICLE

John Stanley Madsen, River Road, Montgomery Township, Belle Mead, N.J. 08502
Filed Feb. 1, 1968, Ser. No. 10,410
Term of patent 14 years
U.S. Cl. D18—2
Int. Cl. D25—*01*



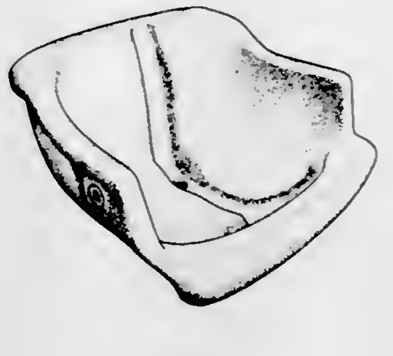
213,317
FLUID DISTRIBUTION UNIT

John F. Nelson, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 10,819
Term of patent 14 years
U.S. Cl. D23—40
Int. Cl. D23—*01*



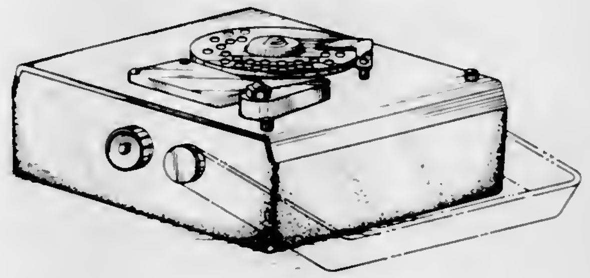
213,318
PERINEAL BATH

E. Peter Robare, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of design application Ser. No. 4,000, Sept. 23, 1966. This application Mar. 26, 1968, Ser. No. 11,147
Term of patent 14 years
U.S. Cl. D23—51
Int. Cl. D23—*02*



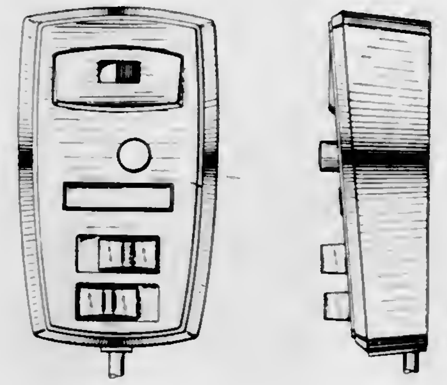
213,319
PORTABLE DATA RECORDER

Francesco Collura, New York, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed Nov. 13, 1967, Ser. No. 9,384
Term of patent 14 years
U.S. Cl. D26—5
Int. Cl. D14—*02*



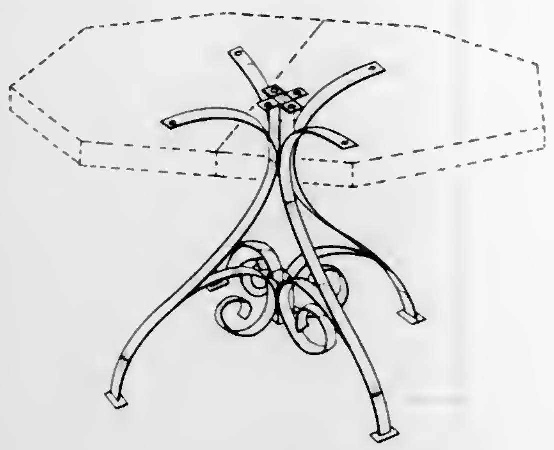
213,320
REMOTE CONTROL UNIT FOR A MOTION PICTURE PROJECTOR

Dianne B. Ainslie, 22 Bobrich Drive, Rochester, N.Y. 14610
Filed Feb. 5, 1968, Ser. No. 10,440
Term of patent 14 years
U.S. Cl. D26—13
Int. Cl. D14—*01*



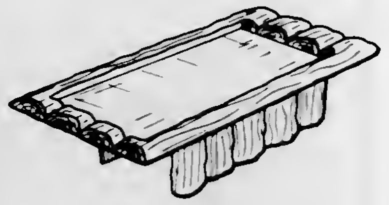
213,321
TABLE

Robert E. Kjer Jakobsen, Compton, Calif., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed Dec. 29, 1967, Ser. No. 9,975
Term of patent 14 years
U.S. Cl. D33—14
Int. Cl. D6—*01*



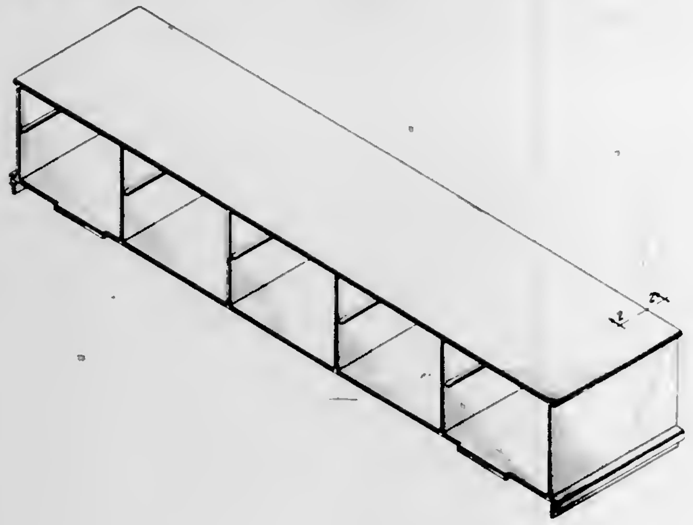
213,322
TABLE

John Gawrys, 13555 Lenmoore, Belleville, Mich. 48111
Filed Feb. 5, 1968, Ser. No. 10,435
Term of patent 14 years
U.S. Cl. D33—14
Int. Cl. D6—*01*



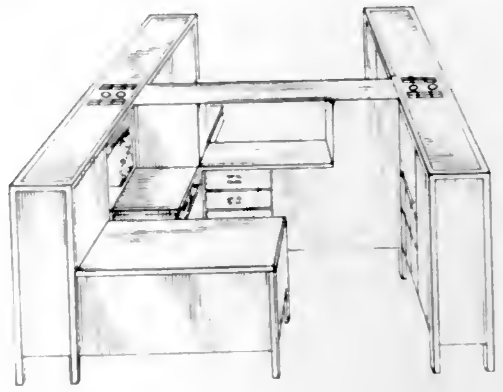
213,323
LOCKING STACKABLE SUTURE BOX CABINET

Gaetano Salvatore Buccino, Bethel, and Jack Marks Granowitz, Danbury, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Continuation of design applications Ser. No. 3,129, July 19, 1966, and Ser. No. 3,135, July 19, 1966. This application Oct. 13, 1967, Ser. No. 8,993
Term of patent 14 years
U.S. Cl. D33—19
Int. Cl. D6—*01*



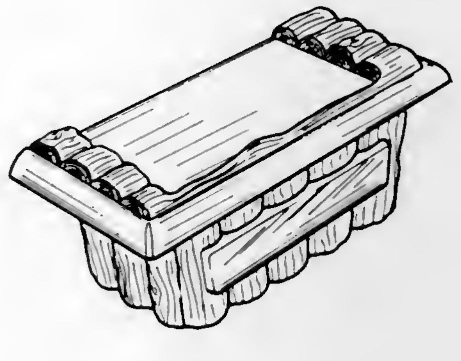
213,324
COMBINED DESK AND PLURAL CABINET UNIT

Norman R. Bender, Youngstown, Ohio, assignor to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio
Filed Jan. 9, 1968, Ser. No. 10,099
Term of patent 14 years
U.S. Cl. D33—19
Int. Cl. D6—*01*



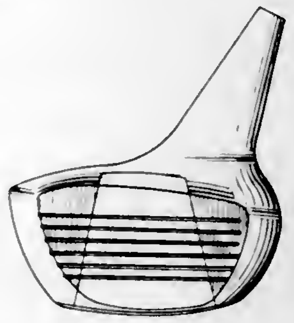
213,325
BAR

John Gawrys, 13555 Lenmore, Belleville, Mich. 48111
Filed Feb. 5, 1968, Ser. No. 10,434
Term of patent 14 years
U.S. Cl. D33—19
Int. Cl. D6—*01*



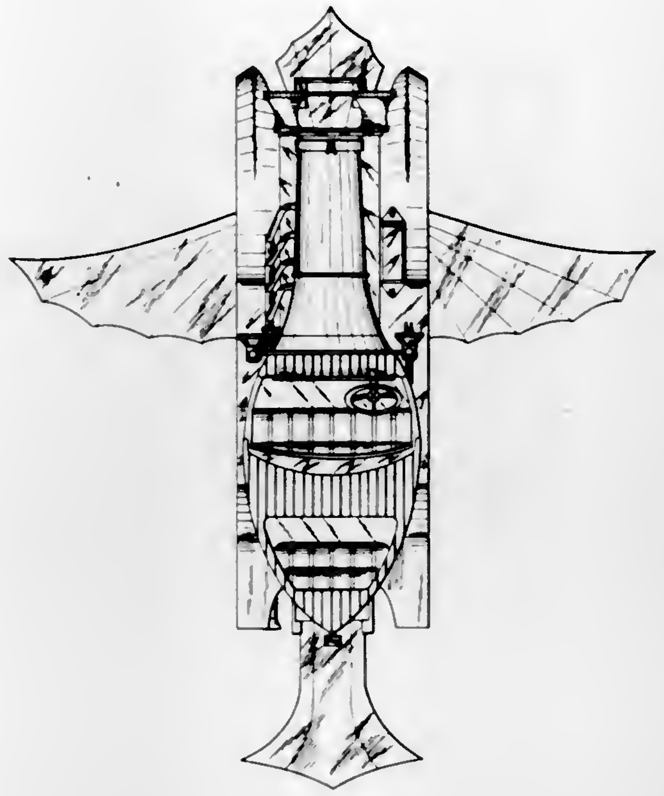
213,326
GOLF CLUB HEAD

Leo C. Driscoll, 109 Pleasant St., Dumont, N.J. 07628
Filed Mar. 12, 1968, Ser. No. 10,930
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



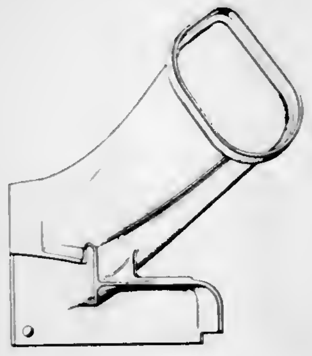
213,327
CONVERTIBLE VEHICULAR TOY

Gerard L. Lambert and Donald J. Maurer, Torrance, Daniel H. Meggs, Hollywood Riviera, Stewart W. Renner, Compton, and Herman C. Starner, Los Angeles, Calif., assignors to Mattel, Inc., a corporation of California
Filed Dec. 6, 1967, Ser. No. 9,652
Term of patent 14 years
U.S. Cl. D34—15
Int. Cl. D21—*02*



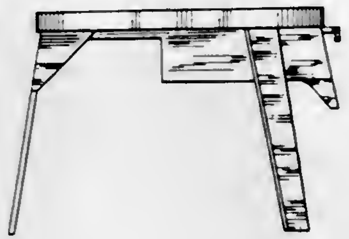
213,328
LAWNMOWER CHUTE

William R. Smith, McDonough, and Wallace A. Hanson, Jr., Riverdale, Ga., assignors to McDonough Power Equipment, Inc., McDonough, Ga.
Filed Mar. 29, 1968, Ser. No. 11,198
Term of patent 14 years
U.S. Cl. D40—1
Int. Cl. D15—*99*



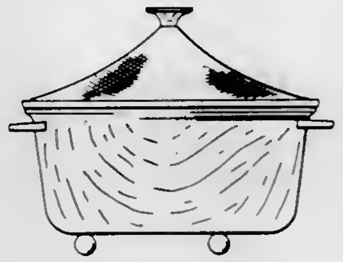
213,329
DISPENSING STAND FOR A COFFEE CAN

Samuel B. Boster, 7304 Reading Road, Cincinnati, Ohio 45237
Filed Jan. 25, 1968, Ser. No. 10,302
Term of patent 14 years
U.S. Cl. D44—10
Int. Cl. D7—*99*



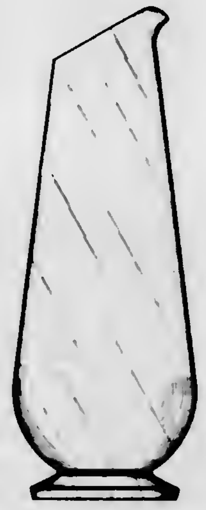
213,330
BUN WARMER

Lawrence Katzman, 101 Central Park West 10023, and Robert Dublirer, 10 Downing St. 10014, both of New York, N.Y.
Filed Dec. 28, 1967, Ser. No. 9,965
Term of patent 14 years
U.S. Cl. D44—15
Int. Cl. D7—*04*



213,331
PITCHER

Marvin G. Yutzey, Moundsville, W. Va., assignor to Morgantown Glassware Guild, Inc., Morgantown, W. Va.
Filed Dec. 20, 1967, Ser. No. 9,862
Term of patent 14 years
U.S. Cl. D44—21
Int. Cl. D7—*01*



213,332
LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE

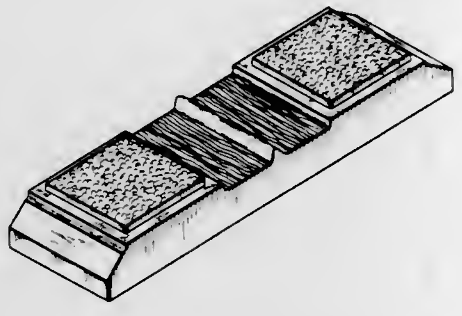
Yuen Sang Poon, Hong Kong, assignor to Baldwin Bracelet Corporation, New York, N.Y., a corporation of New York

Filed June 12, 1968, Ser. No. 12,318

Term of patent 14 years

U.S. Cl. D45—4

Int. Cl. D11—*01*



213,333
LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE

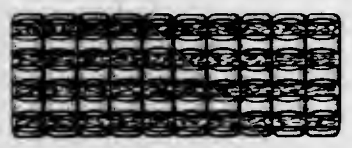
Yuen Sang Poon, Hong Kong, assignor to Baldwin Bracelet Corporation, New York, N.Y., a corporation of New York

Filed June 12, 1968, Ser. No. 12,320

Term of patent 14 years

U.S. Cl. D45—4

Int. Cl. D11—*01*



213,334
FLOOD LAMP

Joseph Thornley and Frank Stanley Allwork, Thetford, Norfolk, England, assignors to Mole-Richardson (English) Limited, London, England, a company of Great Britain

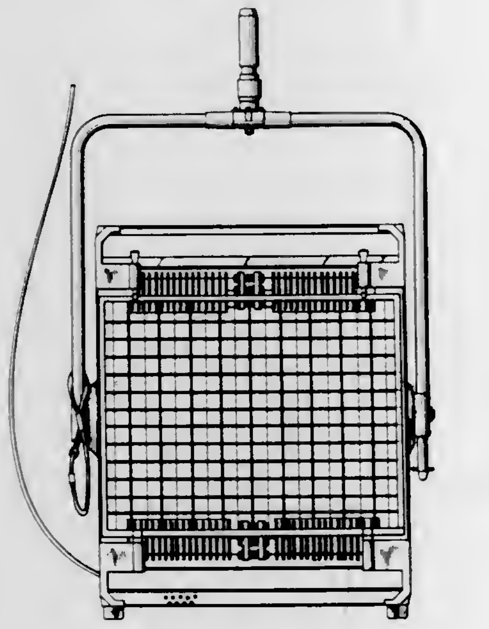
Filed May 11, 1967, Ser. No. 7,071

Claims priority, application Great Britain Mar. 20, 1967

Term of patent 14 years

U.S. Cl. D48—20

Int. Cl. D26—*03*



213,335
HAMPER

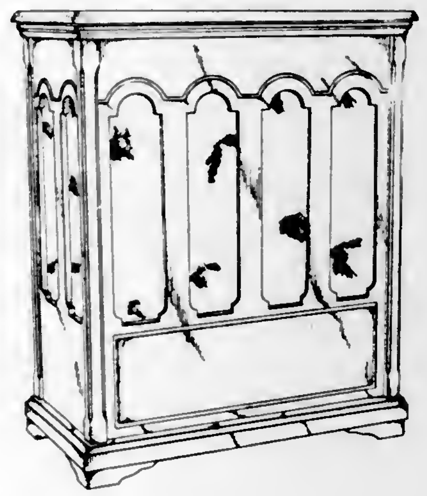
Aaron H. Wolff, 1707 Huntley Place, Hewlett, N.Y. 11557

Filed Aug. 18, 1967, Ser. No. 8,318

Term of patent 7 years

U.S. Cl. D49—8.2

Int. Cl. D7—*06*



213,336
CONDITION CONTROL DEVICE

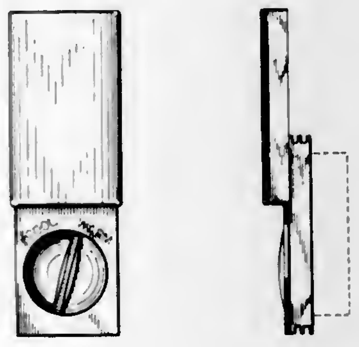
Wallace A. Monson, Golden Valley, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 13, 1968, Ser. No. 10,945

Term of patent 14 years

U.S. Cl. D52—7

Int. Cl. D10—*09*



213,337
FORK OR SIMILAR ARTICLE OF FLATWARE

Gunter Schmidt, Solingen, Germany, assignor to Paul Wirths Metallwarenfabrik, Solingen, Germany, a special partnership

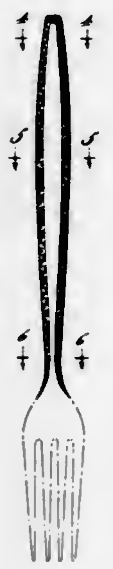
Filed Feb. 5, 1968, Ser. No. 10,432

Claims priority, application Germany Aug. 18, 1967

Term of patent 14 years

U.S. Cl. D54—12

Int. Cl. D7—*03*



213,338
PHONOGRAPH CABINET

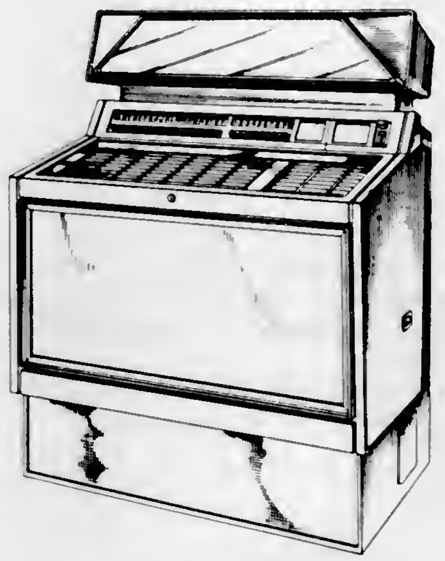
Melvin H. Boldt, Glenview, Ill., assignor to Rowe International, Inc., Whippany, N.J., a corporation of Delaware

Filed Jan. 17, 1968, Ser. No. 10,336

Term of patent 14 years

U.S. Cl. D56—4

Int. Cl. D14—*01*



213,339
TAPE EMBOSSING TOOL

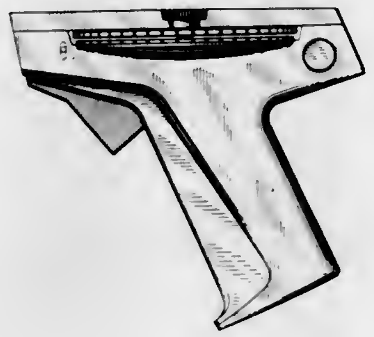
James H. Lee, Walnut Creek, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed Oct. 12, 1967, Ser. No. 8,975

Term of patent 14 years

U.S. Cl. D64—10

Int. Cl. D18—*03*



213,340
ENVELOPE FEEDER FOR A PRINTING PRESS

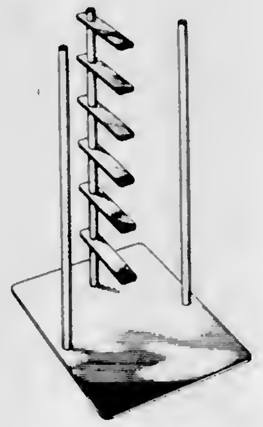
Robert B. Burns, 1001 Travis, Fort Worth, Tex. 76104

Filed June 20, 1967, Ser. No. 7,527

Term of patent 14 years

U.S. Cl. D64—11

Int. Cl. D18—*99*



213,341
WRITING IMPLEMENT

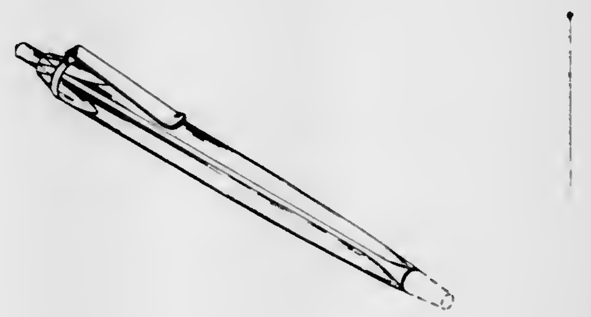
Murray Fields, New Rochelle, N.Y., assignor, by mesne assignments, to Consolidated Food Corporation, Chicago, Ill., a corporation of Maryland

Filed Nov. 4, 1966, Ser. No. 4,557

Term of patent 14 years

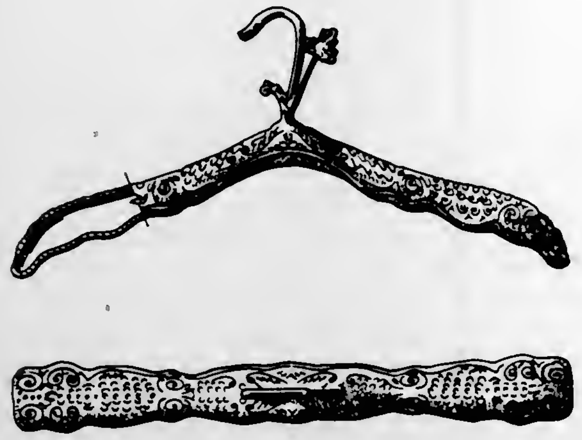
U.S. Cl. D74—17

Int. Cl. D19—*06*



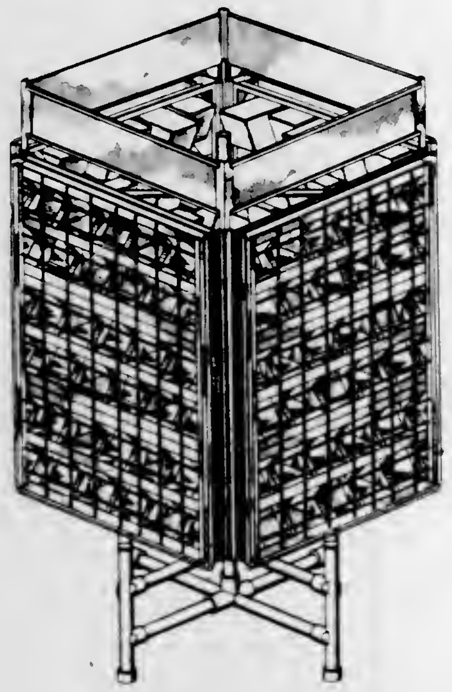
213,342
GARMENT HANGER

Ralph La Rue Du Bois, 4242 E. 111th St., Tulsa, Okla. 74135
Filed Mar. 15, 1968, Ser. No. 10,990
Term of patent 14 years
U.S. Cl. D80—8
Int. Cl. D6—*07*



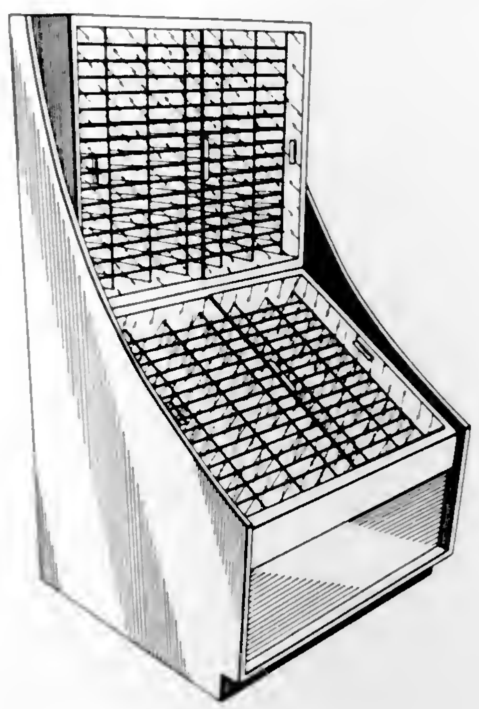
213,343
DISPLAY STAND FOR STEREO TAPE CARTRIDGES

Ivan R. Stulman, Van Nuys, Calif., assignor to Electronic Merchandise Corporation of California, Los Angeles, Calif., a corporation of California
Filed Nov. 1, 1967, Ser. No. 9,228
Term of patent 14 years
U.S. Cl. D80—9
Int. Cl. D6—*01*



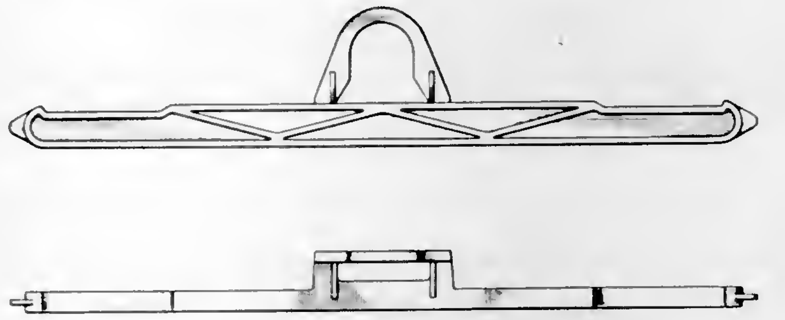
213,344
DISPLAY CABINET

Gordon L. Freedman, Charlevoix, Mich., assignor to Freedman Artcraft Engineering Corp., Charlevoix, Mich., a corporation of Michigan
Filed Nov. 16, 1967, Ser. No. 9,440
Term of patent 14 years
U.S. Cl. D80—11
Int. Cl. D6—*01*



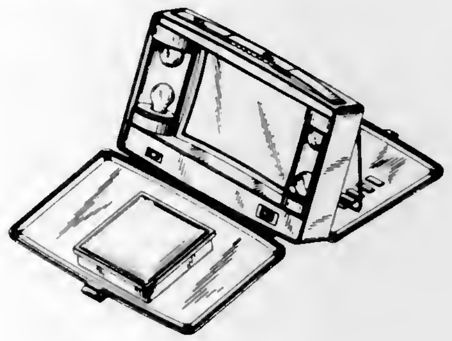
213,345
BEDSIDE BAG HANGER

Roger A. Lamb, Monrovia, Calif., assignor to Resiflex Laboratories, Los Angeles, Calif., a corporation of California
Filed Apr. 22, 1968, Ser. No. 11,571
Term of patent 14 years
U.S. Cl. D83—1
Int. Cl. D6—*01;* D24—*05*



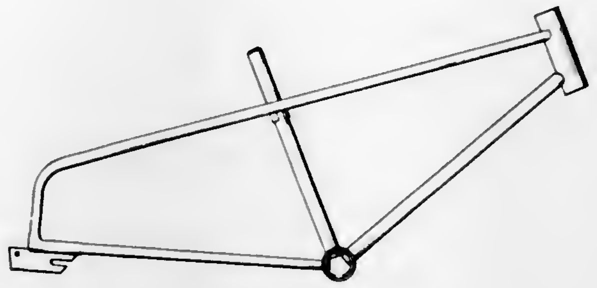
213,346
DRESSING MIRROR

Norman J. Mercer, New York, N.Y., assignor to The Englishtown Corporation, New York, N.Y., a corporation of New York
Filed Oct. 26, 1967, Ser. No. 9,175
Term of patent 14 years
U.S. Cl. D86—10



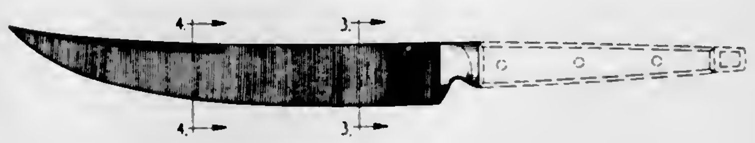
213,347
BICYCLE FRAME

Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Mar. 1, 1967, Ser. No. 6,000
Term of patent 14 years
U.S. Cl. D90—8



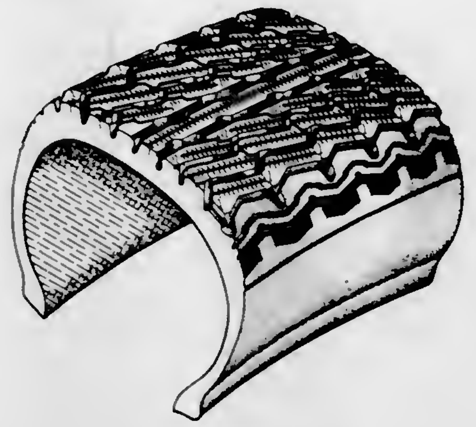
213,348
KNIFE

Roger L. Kelly, Arlington Heights, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 22, 1967, Ser. No. 9,503
Term of patent 14 years
U.S. Cl. D95—3
Int. Cl. D7—*03*



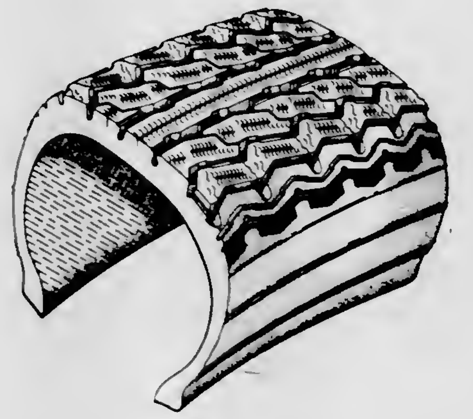
213,349
TIRE

Frank Bernard Jones, Sutton Coldfield, England, assignor to The Dunlop Company Limited, Erdington, Birmingham, England, a British corporation
Filed Jan. 30, 1968, Ser. No. 10,369
Claims priority, application Great Britain Sept. 8, 1967
Term of patent 14 years
U.S. Cl. D90—20
Int. Cl. D12—*14*



213,350
TIRE

Frank Bernard Jones, Sutton Coldfield, England, assignor to The Dunlop Company Limited, Erdington, Birmingham, England, a British corporation
Filed Jan. 30, 1968, Ser. No. 10,370
Claims priority, application Great Britain Sept. 8, 1967
Term of patent 14 years
U.S. Cl. D90—20
Int. Cl. D12—*14*



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PATENTS WERE ISSUED ON THE 18TH DAY OF FEBRUARY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Jensen, Peter A. R. Thuja occidentalis. 2,861, 2–18–69, Cl. 50.
Long, John A., to The O. M. Scott & Sons Co. St. Augustinegrass. 2,863, 2–18–69, Cl. 88
Long, John A., to The O. M. Scott & Sons Co. St. Augustinegrass. 2,864, 2–18–69, Cl. 88.
Meilland, Marie-Louise. Rose plant. 2,862, 2–18–69, Cl. 11.
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  Long, John A. 2,863.
  Long, John A. 2,864.

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Allwork, Frank S. : *See*—
  Thornley, Joseph, and Allwork. 213,334.
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  Buccino, Gaetano S., and Granowitz. 213,323.
American Home Products Corp. : *See*—
  Kelly, Roger L. 213,348.
American Standard, Inc. : *See*—
  Robare, E. Peter, 213,318.
Appeal, Mel, and M. Schnur, to Elpo Industries, Inc. Blister display card. 213,309. 2–18–69, Cl. D9—192.
Baldwin Bracelet Corp. : *See*—
  Poon, Yuen S. 213,332.
  Poon, Yuen S. 213,333.
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  Jones, Paul R. 213,303.
Becker, Max : *See*—
  Haskin, Donald F., and Becker. 213,313.
Bender, Norman R., to The General Fireproofing Co. Combined desk and plural cabinet unit. 213,324, 2–18–69, Cl. D33—19.
Boldt, Melvin H., to Rowe International, Inc. Phonograph cabinet. 213,338, 2–18–69, Cl. D56—4.
Boston, Samuel B. Dispensing stand for a coffee can. 213,329, 2–18–69, Cl. D44—10.
Buccino, Gaetano S., and J. M. Granowitz, to American Cyanamid Co. Locking stackable suture box cabinet. 213,323, 2–18–69, Cl. D33—19.
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  O'Brien, Kevin M., and Burns. 213,305.
Burns, Robert B. Envelope feeder for a printing press. 213,340, 2–18–69, Cl. D64—11.
Case, J. I., Co. : *See*—
  Renquist, Bruce L. 213,312.
Collie, Stafford D., to Phillips Petroleum Co. Packaging container or the like. 213,310, 2–18–69, Cl. D9—219.
Collura, Francesco, to Keuffel & Esser Co. Portable data recorder. 213,319, 2–18–69, Cl. D26—5.
Consolidated Food Corp. : *See*—
  Fields, Murray. 213,341.
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Dublirer, Robert : *See*—
  Katzman, Lawrence, and Dublirer. 213 330.
Du Bois, Ralph L. R. Garment hanger. 213,342, 2–18–69, Cl. D80—8.
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  Jones, Frank B. 213,350.
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  Stulman, Ivan R. 213,343.
Elpo Industries, Inc. : *See*—
  Appeal, Mel, and Schnur. 213,309.
Englishtown Corp., The : *See*—
  Mercer, Norman J. 213,346.
Fields, Murray, to Consolidated Food Corp. Writing implement. 213,341, 2–18–69, Cl. D74—17.
Freedman Artcraft Engineering Corp. : *See*—
  Freedman, Gordon L. 213,344.
Freedman, Gordon L., to Freedman Artcraft, Engineering Corp. Display cabinet. 213,344, 2–18–69, Cl. D80—11.
Gawrys, John. Table. 213,322, 2–18–69, Cl. D33—14.
Gawrys, John. Bar 213,325, 2–18–69, Cl. D33—19.
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  O'Brien, Kevin M., and Burns. 213,305.
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  Buccino, Gaetano S., and Granowitz. 213,323.
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  Smith, William R., and Hanson. 213,328.
Haskin, Donald F., and M. Becker. Vehicle. 213,313, 2–18–69, Cl. D14—3.
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  Monson, Wallace A. 213,336.
Illinois Tool Works, Inc. : *See*—
  Nelson, John F. 213,317.
Jakobsen, Robert E. K., to Schlumberger Ltd (Schlumberger N.A.) Table. 213,321, 2–18–69, Cl. D33—14.
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Jones, Frank B., to The Dunlop Co. Ltd. Tire. 213,350, 2–18–69, Cl. D90—20.
Jones, Paul R., to Bates Industries, Inc. Face shield. 213,303, 2–18–69, Cl. D2—233.
Katzman, Lawrence, and R. Dublirer. Bun warmer. 213,330. 2–18–69, Cl. D44—15.
Kelly, Roger L., to American Home Products Corp. Knife 213,348, 2–18–69, Cl. D95—3.
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  Reid, Donald J. 213,315.
  Reid, Donald J. 213,314.
Keuffel & Esser Co. : *See*—
  Collura, Francesco. 213,319.
Kneapler, Stephen J., to Richford Corp. Bottle. 213,307, 2–18–69, Cl. D9—115.
Kneapler, Stephen J., to Richford Corp. Bottle. 213,308, 2–18–69, Cl. D9—143.
Lamb, Roger A., Resiflex Laboratories. Bedside bag hanger. 213,345. 2–18–69. Cl. D83—1.
Lambert, Gerard L., D. J. Maurer, D. H. Meggs, S. W.
Lambert, Gerard L., D. J. Maurer, D. H. Meggs, S. W. Renner, and H. C. Starner, to Mattel, Inc. Convertible vehicular toy. 213,327, 2–18–69, Cl. D34—15.
Lee, James H., to Dymo Industries, Inc. Tape embossing tool. 213,339, 2–18–69, Cl. D64—10.
Madsen, John S. Floor tile or similar article. 213,316, 2–18–69, Cl. D18—2.
Mattel, Inc. : *See*—
  Lambert, Gerard L., Maurer, Meggs, Renner, and Starner. 213,327.
Maurer, Donald J. : *See*—
  Lambert, Gerard L., Maurer, Meggs, Renner, and Starner. 213,327.
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  Smith, William R., and Hanson. 213,328.
Mercer, Norman J., to The Englishtown Corp. Dressing mirror. 213,346, 2–18–69, Cl. D86—10.
Mole-Richardson (English) Ltd. : *See*—
  Thornley, Joseph, and Allwork. 213,334.
Monson, Wallace A., to Honeywell, Inc. Condition control device. 213,336, 2–18–69, Cl. D52—7.
Morgantown Glassware Guild, Inc. : *See*—
  Yutzey, Marvin G. 213,331.
Murray Ohio Mfg. Co., The : *See*—
  Schreckengost, Viktor. 213,347.
Nelson, John F., to Illinois Tool Works, Inc. Fluid distribution unit. 213,317, 2–18–69, Cl. D23—40.
O'Brien, Kevin M., and D. H. Burns, to General Foods Corp. Bottle. 213,305, 2–18–69, Cl. D9—60.
Peters, Charles M. D. Building panel. 213,311, 2–18–69, Cl. D13—1.
Phillips Petroleum Co. : *See*—
  Collie, Stafford D. 213,310.
  Smith, Wilburn Q. 213,304.
Poon, Yuen S., to Baldwin Bracelet Corp. Link chain for a bracelet or similar article. 213,332, 2–18–69, Cl. D45—4.
Poon, Yuen S., to Baldwin Bracelet Corp. Link chain for a bracelet or similar article. 213,333, 2–18–69, Cl. D45—4.
Reid, Donald J., to Kelsey-Hayes Co. Wheel. 213,314, 2–18–69, Cl. D14—30.
Reid, Donald J., to Kelsey-Hayes Co. Wheel. 213,315, 2–18–69, Cl. D14—30.
Renquist, Bruce L., to J. I. Case Co. Tractor. 213,312, 2–18–69, Cl. D14—3.
Resiflex Laboratories : *See*—
  Lamb, Roger A. 213,345.
Riccadonna, Ottavio, to Ottavio Riccadonna S.p.A. Bottle. 213,306, 2–18–69, Cl. D9—77.
Riccadonna, Ottavio, S.p.A. : *See*—
  Riccadonna, Ottavio. 213,306.
Richford Corp. : *See*—
  Kneapler, Stephen J. 213,307.
  Kneapler, Stephen J. 213,308.
Robare, E. Peter, to American Standard, Inc. Perineal bath. 213,318, 2–18–69, Cl. D23—51.
Rowe International, Inc. : *See*—
  Boldt, Melvin H. 213,338.
Schlumberger Ltd. (Schlumberger N.A.) : *See*—
  Jakobsen, Robert E. 213,321.
Schmidt, Gunter, to Paul Wirths Metallwarenfabrik. Fork or similar article of flatware. 213,337, 2–18–69, Cl. D54—12.

Schnur, Martin: *See*—
  Appeal, Mel, and Schnur. 213,309.
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Smith, William R., and W. A. Hanson, Jr., to McDonough Power Equipment, Inc. Lawn mower chute. 213,328, 2–18–69, Cl. D40—1.
Thornley, Joseph, and F. S. Allwork, to Mole-Richardson (English) Ltd. Flood lamp. 213,334, 2–18–69, Cl. D48—20.
Wirths, Paul, Metallwarenfabrik: *See*—
  Schmidt, Gunter. 213,337.
Wolff, Aaron H. Hamper. 213,335, 2–18–69, Cl. D49—8.2.
Yutzey, Marvin G., to Morgantown Glassware Guild, Inc. Pitcher. 213,331, 2–18–69, Cl. D44—21.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 18TH DAY OF FEBRUARY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A.B. Astra Sodertalje: *See*—
  Debay, Andre G., and Thery. 3,428,642.
AB Rosenblads Patenter: *See*—
  Backteman, Erik H. 3,428,107.
ACF Industries, Inc.: *See*—
  Keene, William C. 3,427,994.
AER Corp.: *See*—
  Villalobos, Joseph A. 3,427,727.
AMP, Inc.: *See*—
  Keller, Joseph R. 3,428,843.
  Loose, Winfield W. 3,428,935.
  Reider, George S., Jr., and Seitz. 3,428,934.
Abbott, Edward A., Jr., to Hughes Aircraft Co. Electronic switching circuit employing insulated gate field effect transistors. 3,428,832, 2–18–69, Cl. 307—251.
Accary, Andre, P. Magnier, and M. Marchal, to Commissariat a l'Energie Atomique. Method of extruding metallic carbides and in particular uranium monocarbide. 3,428,717, 2–18–69, Cl. 264—.5.
Accurate Finishing Tools Co., Inc.: *See*—
  Niedzielski, Albert, and Noll. 3,428,058.
Acker, Norbert K. Device for the automation of cash stations in sales establishments. 3,428,959, 2–18–69, Cl. 340—172.5.
Adam, Gunter: *See*—
  Scheib, Hermann, and Adam. 3,428,329.
Adams, Harry A., to The Standard Oil Co. Electrical energy storage device comprising aluminum-lithium electrode and mechanical screen surrounding the electrode. 3,428,493, 2–18–69, Cl. 136—100.
Adams, James R., to United-Carr Inc. Webbing fastener. 3,427,693, 2–18–69, Cl. 24—222.
Adams-Russell Co., Inc.: *See*—
  Oleksiak, Joseph. 3,428,920.
Addis, Gilbert I., to Union Carbide Corp. Recovery of metal from insulated electrical cable. 3,428,447, 2–18–69, Cl. 75—66.
Administrator of the Federal Aviation Agency: *See*—
  Updegraff, Billy P. 3,428,030.
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  Brown, George W. 3,428,158.
Aeberli, Paul, and W. J. Houlihan, to Sandoz Inc. Preparation of homo- and heteroaryl-2-aniline ketones. 3,428,644, 2–18–69, Cl. 260—296.
Aerojet-General Corp.: *See*—
  Hamel, Edward E., and Olsen. 3,428,667.
  Steele, Richard K., Cruise, and Jang. 3,427,876.
  Truax, Robert C., and Sprow. 3,427,806.
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  Grabhofer, Herbert, and Ulrich. 3,428,456.
Aichenegg, Paul C., C. D. Emerson, and L. E. Gillen, to Chemagro Corp. Polychloroethyl and polychlorovinyl acyl mono and bisdisulfides. 3,428,665, 2–18–69, Cl. 260—453.
Aichenegg, Paul C., and C. D. Emerson, to Chemagro Corp. Bis(chloro-bromovinyl sulfoxides). 3,428,687, 2–18–69, Cl. 260—607.
Ainsworth, Alan, to United Kingdom Atomic Energy Authority. Remote-control manipulator. 3,428,189, 2–18–69, Cl. 214—1.
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Air Reduction Co., Inc.: *See*—
  Blackman, Paul R., and Sullivan. 3,428,778.
  Blanchard, Edward R., and Marancik. 3,428,501.
  Herman, Charles O., and Funkhouser. 3,428,566.
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  Airheart, Franklin B. 3,427,827.
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  Dzung, Lang S. 3,428,835.
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Aldrich, Paul E., to E. I. du Pont de Nemours and Co. 5-aryloxatricyclo[3.2.2.0^{2},4]nonan-1-V YL urethanes. 3,428,643, 2–18–69, Cl. 260—295.
Alferieff, Nicholas. Man to machine communication keyboard device. 3,428,747, 2–18–69, Cl. 178—17.
Allen, Edward R. Apparatus and method for producing sugar solutions. 3,428,487, 2–18–69, Cl. 127—22.
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Bolt, Conway A., Jr.: *See*—
Webb, James E. 3,428,923.

Bolton-Emerson, Inc.: *See*—
Danforth, Donald W. 3,428,262.
Moulton, William R. 3,428,261.

Bonzagni, Francis A., to Monsanto Co. Paper treated with alkenyl fatty acid ester/alpha-beta-olefinically unsaturated polycarboxylic acid interpolymer. 3,428,485, 2–18–69, Cl. 117—155.

Borg Holding Aktiengesellschaft: *See*—
Peter Van Dillen, Paul J., Vollmer, Kallfass, and Zimmermann. 3,428,488.

Boschi, Antonio, to Societa Applicazioni Gomma Antivibranti "Saga" S.p.A. Expansion joint for roads and bridges. 3,427,935, 2–18–69, Cl. 94—18.

Bossard, Paul, and J. Monie, to Etablissements Carpano and Pons. Synchronous electric motor. 3,428,841, 2–18–69, Cl. 310—164.

Bostock, James H., and P. E. Pierce, to Otis Engineering Corp. Well tools. 3,427,989, 2–18–69, Cl. 103—232.

Botalam: *See*—
Glasson, Jean E. 3,427,958.

Boudreau, Frank, P. O. Huston, and D. R. Rasmusson, to Walter Kidde & Co., Inc. Yarn supply creel frame. 3,428,188, 2–18–69, Cl. 211—175.

Bowles Engineering Corp.: *See*—
Dexter, Edwin M., and Humphrey. 3,428,067.

Box, James A.: *See*—
Lake, Clarence L., Box, and Golla. 3,427,776.

Boyd, David M., Jr., and K. O. Rockey, to Universal Oil Products Co. In-line magnetic particle collector. 3,428,179, 2–18–69, Cl. 210—222.

Boyer, John L.: *See*—
Scott, Angu' A., Boyer, and Hartman. 3,428,871.

Boys, Thomas M. A., to L. W. G. and K. L. Grove-Jones. Safety cap for bottles. 3,428,201, 2–18–69, Cl. 215—9.

Bradbury, James G.: *See*—
Haulik, Leo J., Bradbury, Greer, and Decker. 3,428,339.

Braff, Joseph A., and R. L. Fox, to Allied Steel & Tractor Products, Inc. Vibratory compacter. 3,427,939, 2–18–69, Cl. 94—48.

Brandt, Nellie B. Stand for iron. 3,428,280, 2–18–69, Cl. 248—117.2.

Braskamp, Willem H., to Indobeem N.V. Hair clamp. 3,428,057, 2–18–69, Cl. 132—36.

Braun, Gunther: *See*—
Merten, Rudolf, Bayer, Braun, and Kaiser. 3,428,577.
Merten, Rudolf, Bayer, Braun, and Kaiser. 3,428,578.

Braun, Willy, and I. Paetzke, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Anthraquinone azo barbituric acid derivative dyes. 3,428,620, 2–18–69, Cl. 260—154.

Braun, Willy, and E. Anton, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Anthra [1,2-c] pyrazole derivative. 3,428,647, 2–18–69, Cl. 260—312.

Braunschweigische Maschinenbauanstalt: *See*—
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Bravo, Justo B., and G. R. Dimeler, to Sun Oil Co. Noble metal aluminum alloys as catalysts for fuel cell electrodes. 3,428,490, 2–18–69, Cl. 136—86.

Briand, Alain, to Commissariat a l'Energie Atomique. Induction furnace. 3,428,770, 2–18–69, Cl. 219—10.49.

Bridges, Thomas F.: *See*—
Basile, Norman K., and Bridges. 3,428,205.

Briles, Franklin S. Toilet paper dispenser. 3,428,267, 2–18–69, Cl. 242—55.53.

Bristol-Myers Co.: *See*—
Keil, John G., and Hooper. 3,428,623.

Bristow, Joseph J. Gutter guard. 3,428,183, 2–18–69, Cl. 210—474.

British Aircraft Corp. (Operating) Ltd.: *See*—
Knight, John R., and Leworthy. 3,428,270.

British Industrial Plastics Ltd.: *See*—
Hofton, James, Vickers, and Woodward. 3,428,608.

British Iron and Steel Research Association, The: *See*—
Thomas, Jack M. 3,427,853.

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Turnbull, John N., and Gilbert. 3,428,552.

British Titan Products Co., Ltd.: *See*—
Cleaver, Denis. 3,428,771.

Britt, Jack, and F. A. Swain, to Rolls-Royce Ltd. Compressors or turbines for gas turbine engines. 3,428,243, 2–18–69, Cl. 230—122.

Brockway, Wilhelm W. Solenoid operated impulse relay. 3,428,924, 2–18–69, Cl. 335—196.

Brooks, John G.: *See*—
Schoenbaum, Alexander W., Ashworth, and Brooks. 3,428,053.

Brooks, John M.: *See*—
Purcell, John R., and Brooks. 3,428,891.

Brooks, Peter J.: *See*—
Jackson, Roy J., and Brooks. 3,427,895.

Broschke, Heinrich, W. Holle, and W. Wiessner, to Ernst Leitz G.m.b.H. Single lens reflex cameras. 3,427,946, 2–18–69, Cl. 95—42.

Brossard, Bernard P., J. Boichard, M. L. M. J. Gay, R. M. C. Janin, and L. M. E. Pichon, to Rhone-Poulenc S.A. Process for the preparation of oxalic acid. 3,428,675, 2–18–69, Cl. 260—533.

Brotherton, Thomas K., and J. Smith, Jr., to Union Carbide Corp. Viscosity control of spandex solutions. 3,428,611, 2–18–69, Cl. 260—75.

Brown & Sharpe Mfg. Co.: *See*—
Levesque, George N., Taylor, and Barney. 3,427,755.

Brown, Donald E.: *See*—
McFarlin, Richard F., and Brown. 3,428,418.

Brown, George W., to Addressograph-Multigraph Corp. Print pressure control means in character embossing machines. 3,428,158, 2–18–69, Cl. 197—6.6.

Brown, Lewis E., to Fisher Governor Co. Flow control device. 3,428,080, 2–18–69, Cl. 137—501.

Brown, Maurice H., and G. F. Linning, to Amerline Corp. Coil receiving structure. 3,428,929, 2–18–69, Cl. 336—129.

Brown, Neil. Foldable frame construction for crab pots and the like. 3,427,742, 2–18–69, Cl. 43—100.

Brown, Neuberne H., Jr., D. P. Butler, J. M. Carter, M. Ferik, and P. E. Ogle; said Ferik assor. to said Ogle and said Brown. Inflatable bulkhead for railroad car. 3,427,997, 2–18–69, Cl. 105—369.

Brown, Omar L., to Ermal C. Fraze. Can end with off center rivet. 3,428,210, 2–18–69, Cl. 220—54.

Brownfield, Charles L.: *See*—
Meyer, Elwyn A., and Brownfield. 3,427,923.

Browning, Iben. Camera apparatus and film. 3,427,942, 2–18–69, Cl. 95—11.

Brownstein, Arthur M., to Princeton Chemical Research, Inc. Anaerobic adhesive. 3,428,614, 2–18–69, Cl. 260—78.5.

Brozo, Donald E., to Burroughs Corp. Sheet deflection gate. 3,428,309, 2–18–69, Cl. 271—64.

Brucker, Henry J., and B. M. Jenkins, to American Aluminum Co. Gasketed closure. 3,428,209, 2–18–69, Cl. 220—46.

Brundage, Robert W. Pressure balanced bearing loads in hydraulic devices. 3,427,983, 2–18–69, Cl. 103—126.

Brunner, Robert F., and C. H. C. Van Pelt. Insect bait dispenser. 3,427,743, 2–18–69, Cl. 43—131.

Bryan, John F., Jr., to Trakwork Equipment Co. Railroad ballast handling system. 3,427,990, 2–18–69, Cl. 104—2.

Buckley, Robert: *See*—
Wheelock, Dapid B., and Buckley. 3,428,249.

Bull, Rame W.: *See*—
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Bullard, E. D., Co.: *See*—
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Bullock, Barney. Fastening for a vehicle safety harness. 3,427,694, 2–18–69, Cl. 24—230.

Bundus, Robert H., to Beatrice Foods Co. Separation of frozen hog skins. 3 428,231, 2–18–69, Cl. 225—1.

Bunker-Ramo Corp., The: *See*—
Greenblum, Carl. 3,428,851.
Greenblum, Carl. 3,428,852.

Burch, Arthur R., to Declark, Inc. Control apparatus for material-unit stacker. 3,428,149, 2–18–69, Cl. 187—29.

Burdett, Harold D. Trash can container. 3,428 245, 2–18–69, Cl. 232—43.2.

Burke, Harry T., and R. L. Andrews, to E. W. Bliss Co. Transfer feed press. 3,428,166, 2–18–69, Cl. 198—218.

Burke, Joseph R., to United States of America, National Aeronautics and Space Administration. Optical spin compensator. 3,428,812, 2–18–69, Cl. 250—203.

Burroughs Corp.: *See*—
Brozo, Donald E. 3,428,309.
McEvoy, John C. 3,428,830.
Shimabukuro, George T. 3,428,944.

Burton, Charles G., to Chisholm-Ryder Co. Inc. Mobile cucumber harvester. 3,427,894, 2–18–69, Cl. 56—327.

Busby, Joseph B., to Celanese Corp. Method and apparatus for quenching polymeric films. 3,427,686, 2–18–69, Cl. 18—15.

Bush, William A.: *See*—
Carel, Alfred B., and Bush. 3,427,788.

Butcher, Walter W., to Hughes Aircraft Co. Liquid container pressurization by non-electrolytic dissociation of container contents. 3,427,808, 2–18–69, Cl. 60—204.

Butler, David P.: *See*—
Brown, Neuberne H., Jr., Butler, Carter, Ferik, and Ogle. 3,427,997.

Butler, De Forest D.: *See*—
King, Franklyn D., and Butler. 3,428,203.

Buzza, Edmund E., to Beckman Instruments, Inc. Flame photometer. 3,428,401, 2–18–69, Cl. 356—187.

C.A.V. Ltd.: *See*—
Kemp Kenneth A. W. 3,427,979.

Cacossa, Frank G., to The Flintkote Co. Roof deck system. 3,427,771, 2–18–69, Cl. 52—262.

Cadwallader, Edgar A., and J. F. Revilock, to United States of America, Interior. Method and apparatus for preventing scale formation in heat exchangers. 3,428,114, 2–18–69, Cl. 165—1.

Caldwell, Roland B., to Ranco Inc. Automotive temperature control. 3,428,115, 2–18–69, Cl. 165—23.

Calgon Corp.: *See*—
Rivers, Hubert M. 3,428,557.

Callahan, Francis J., Jr., B. J. Gallagher, J. Tasker, and E. D. Shufflebarger, to Nuclear Products Co. Bellows metering valve. 3,428,291, 2–18–69, Cl. 251—122.

Callahan, James L., and B. Gertisser, to The Standard Oil Co. Process of oxidation of olefins to unsaturated aldehydes and acids. 3,428,674, 2–18–69, Cl. 260—533.

Cambre, Cushman M.: *See*—
Walker, George B., and Cambre. 3,428,680.

Cambridge Thermionic Corp.: *See*—
Lyman, Joseph. 3,428,371.

Cameron, Daniel F.: *See*—
Turner, Malcolm M., and Cameron. 3,428,664.

Cameron, Steele P.: *See*—
Quick, Lloyd, Mortoly, and Cameron. 3,428,508.

Campbell, Rex C., and E. B. McDowell, to General Electric Co. Synchronizer for register control. 3,428,877, 2–18–69, Cl. 318—85.

Campbell, Robert L. Noncurling floor protector. 3,427,705, 2–18–69, Cl. 29—449.

Canadian General Electric Co., Ltd.: *See*—
Davidson, William T. 3,428,779.
MacKay, Ian N. 3,428,523.

Candioto, Donny W.: *See*—
Quinn, Richard M., and Candioto. 3,428,819.

Cane, Albert L. Ball game apparatus including a playing area and movable pieces selectively movable along said playing area. 3,428,316, 2–18–69, Cl. 273—85.

Cannon, William N., to Eli Lily and Co. Synergistic combination containing an oxiodinium compound and bis-(3,5,6-trichloro-2-hydroxyphenyl)methane. 3,428,736, 2–18–69, Cl. 424—340.

Cantarutti, Armindo: *See*—
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Cape, Richard A. G., to Dominion Bridge Co. Ltd. Open web steel joist production line. 3,427,699, 2–18–69, Cl. 29—155.

Cappotto, Samuel D., to SCM Corp. Belt tensioning device. 3,427,893, 2–18–69, Cl. 74—242.13.

Capriolo, Igino, and U. Sacerdote, to Fiat Societa per Azioni. High velocity air gun with frangible valve trigger means. 3,428,037, 2–18–69, Cl. 124—11.

Carborundum Co., The: *See*—
Davis, Howard F., Jr. 3,428,443.

Carel, Alfred B., and W. A. Bush, to Continental Oil Co. Valved trap manifold. 3,427,788, 2–18–69, Cl. 55—197.

Carlodge Corp.: *See*—
Lodjic, Carl L., and McGregor. 3,428,154.

Carls, William, to Numatics, Inc. Safety valve system. 3,428,084, 2–18–69, Cl. 137—596.14.

Carlson, Henry, I. Lundquist, S. H. Danieli, and R. Andersson, to Allmanna Svenska Elektriska Aktiebolaget Vasteras. Trackless marshalling trolley. 3,427,991, 2–18–69, Cl. 104—26.

Carnation Co.: *See*—
Long, Marshall. 3,427,954.

Carborundum Co., The: *See*—
McGarvey, Jarvis M. 3,427,765.

Cargill Inc.: *See*—
Swenson, Robrt A., and Smith. 3,428,683.

Carney, Leroy L., and G. G. Priest, to Dixie Chemical Products Co. Ammonia stripping process. 3,428,426, 2–18–69, Cl. 23—193.

Carp, Ralph W., W. B. Carruth, and M. Slavin, to The Bendix Corp. Automobile turn signal with lamp failure indicator. 3,428,943, 2–18–69, Cl. 340—80.

Carpenter, Alton D.: *See*—
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Carrier Corp.: *See*—
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Stankavich, Anthony J., and Geckle. 3,428,492.

Carruth, Winford B.: *See*—
Carp, Ralph W., Carruth, and Slavin. 3,428,943.

Carson, Chester C.: *See*—
Grobel, Lloyd P., and Carson. 3,427,880.

Carson, Chester C., E. E. Gibbs, and L. P. Grobel, to General Electric Co. Wear detector for fluid-cooled elastic machine. 3,428,838, 2–18–69, Cl. 310—56.

Carson, Don B., to Universal Oil Products Co. Method for purifying hydrogen. 3,428,429, 2–18–69, Cl. 23—212.

Carson, Don B., to Universal Oil Products Co. Conversion process in the presence of hydrogen. 3,428,549, 2–18–69, Cl. 208—79.

Carter, Charles I.: *See*—
Wannamaker, Thomas M., Carter, and Rogers. 3,428,239.

Carter, Jack M.: *See*—
Brown, Neuberne, H., Jr., Butler, Carter, Ferik, and Ogle. 3,427,997.

Carter-Wallace, Inc.: *See*—
Dille, James M., Stiefel, and Myer. 3,428,638.

Casas-Robert, Ramon, to Mefina S.A. Lock stitch sewing machine convertible to a chain stitch sewing machine. 3,428,008, 2–18–69, Cl. 112—168.

Casper, Ray K., and L. A. Lindelof, to E. J. Longyear Co. Offset core lifter apparatus. 3,428,138, 2–18–69, Cl. 175—255.

Castellano, Joseph A., and J. Green, to Thiokol Chemical Corp. 4-Substituted-2,3,5,6 - tetrafluoronitrosobenzene. 3,428,672, 2–18–69, Cl. 260—515.

Caster, Richard W.: *See*—
Oita, Katashi, Pierson, Ottaway, and Carter. 3,428,024.

Catozzo, Leo. Film splicing device. 3,428,511, 2–18–69, Cl. 156—505.

Cavoli, Joseph W., to Artistic Packaging, Inc. Bow frame. 3,428,227, 2–18–69, Cl. 223—46.

Cawley, Terence J., to Corning Glass Works. Feedback isolator. 3,428,065, 2–18–69, Cl. 137—81.5.

Carrock, Frederick E., B. Toekes, and K. W. Doak, to Rexall Drug and Chemical Co. Process for obtaining polybutadiene-modified styrene resins. 3,428,712, 2–18–69, Cl. 260—880.

Celanese Corp.: *See*—
Billheimer, John E. 3,428,724.
Blake Lawrence R. 3,428,468.
Busby, Joseph B. 3,427,686.
Smith, Eldred T., and Hinz. 3,428,605.

Centre Electronique Horloger S.A.: *See*—
Hetzel, Max, Haring, and Robert. 3,428,937.

Certain, George M., to Cooling Products, Inc. Welding apparatus. 3,428,777, 2–18–69, Cl. 219—125.

Certain-Teed Products Corp.: *See*—
Jackson, Joseph C., and Seipt. 3,428,721.

Chambers, George: *See*—
Hall, Kenneth F., and Chambers. 3,428,387.

Chambers, John E. Connection for sheet metal ducts. 3,428,342, 2–18–69, Cl. 285—399.

Champion, Ronald C.: *See*—
Moon, Anthony J. R., and Champion. 3,427,952.

Chance, A. B., Co.: *See*—
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Chandler Evans Inc.: *See*—
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Chandos, Robert E., to North American Rockwell, Corp. Non-injection self-adaptive controller. 3,428,791, 2–18–69, Cl. 235—151.1.

Chaney, John L. Elastomeric ring-like members for biasing spectacle temples. 3,428,392, 2–18–69, Cl. 351—113.

Chang, Ned, P. I. Robinson, and A. Wang, to Wang Laboratories, Inc. Programmable calculating apparatus. 3,428,950, 2–18–69, Cl. 340—172.5.

Charbonnier, Roger, and C. Picot, to Societe d'Instrumentation Schlumberger. Ultrasonic device for measuring the thickness of objects. 3,427,868, 2–18–69, Cl. 73—67.9.

Charyn, Fred P., and H. M. Garrett, to Kaiser Industries Corp. Expandable chute device. 3,428,156, 2–18–69, Cl. 193—22.

Check, Mathias M., to Eaton Yale & Towne, Inc. Hospital function latch. 3,428,352, 2–18–69, Cl. 292—359.

Chemagro Corp.: *See*—
Aichenegg, Paul C., Emerson, and Gillen. 3,428,665.
Aichenegg, Paul C., and Emerson. 3,428,687.
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Chemical Process Corp.: *See*—
Egbert, Robert B. 3,428,423.

Chemische Werke Huls A.G.: *See*—
Schleimer, Bernhard. 3,428,699.
Strauss, Gunther. 3,428,625.

Chemische Werke Witten G.m.b.H.: *See*—
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Chemway Filters, Inc.: *See*—
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Chermely, Leslie A., to Pullman, Inc. Lifting arrangement for a furnace fume elbow and the like. 3,428,301, 2–18–69, Cl. 263—46.

Chesnut, Merrill G., to United Aircraft Corp. Heart pump actuator. 3,428,042, 2–18–69, Cl. 128—1.

Chevron Research Co.: *See*—
Lowe, Warren. 3,428,563.
Stuart, Frank A., Stewart, Lowe, and Kavanagh. 3,428,615.
Toland, William G. 3,428,671.

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Chilvers, Kenneth W., and G. Trappe, to Imperial Chemical Industries Ltd. Polyurethane coating compositions and process of making same. 3,428,609, 2–18–69, Cl. 260—75.

Chiola, Vincent, and C. D. Vanderpool, to Sylvania Electric Products Inc. Preparation of heteropolytungstic and heteropolymolybdic acids. 3,428,415, 2–18–69, Cl. 23—23.

Chiou, Charles, and J. R. Garcia, to International Business Machines Corp. Solid state device including electrical packaging arrangement with improved electrical connections. 3,428,866, 2–18–69, Cl. 317—101.

Chisholm-Ryder Co. Inc.: *See*—
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Chittenden, Richard M., and O. F. Ecklund, to American Can Co. Method and apparatus for blow molding hollow thermoplastic articles. 3,428,722, 2–18–69, Cl. 264—98.

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Christian, Frank T., and E. E. Hood, to The Bendix Corp. Bicycle hub. 3,428,377, 2–18–69, Cl. 308—192.

Christopher, Peter J., to The English Electric Co. Ltd. Float valves. 3,428,078, 2–18–69, Cl. 137—416.

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Chrysler Corp.: *See*—
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Keller, Robert P., and Ash. 3,428,372.
MacAfee, James E., Davis, and Hentschel. 3,428,034.
Ryszewski, Vincent J. 3,428,345.

Chynoweth, Alan G., to Bell Telephone Laboratories, Inc. High speed magnetoresistive switching device. 3,428,833, 2–18–69, Cl. 307—309.

Ciancio, Pasqualina J. Liquid applicator. 3,428,404, 2–18–69, Cl. 401—109.

Ciba Corp.: *See*—
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Ciba Ltd.: *See*—
Renner, Alfred. 3,428,607.

Ciegler, Alex, and E. B. Lillehoj, to United States of America, Agriculture. Microbiological decontamination of aflatoxin-contaminated edibles. 3,428,458, 2–18–69, Cl. 99—2.

Ciszewski, Joseph F., M. Hayase, and N. F. Robinson, to McDonnell Douglas Corp. Induction heating tool. 3,428,769, 2–18–69, Cl. 219—9.5.

- Cities Service Oil Co.: *See*—
  - Fischer, Robert L. 3,428,565.
- Clapsaddle, Victor, to North American Winfield Door Corp. Panel mounting construction. 3,428,326, 2-18-69, Cl. 52—502.
- Clark, David A. Lift hitch assembly. 3,428,335, 2-18-69, Cl. 280—479.
- Clark, Homer E., Jr., to Alcan Co., Inc. Base wad. 3,427,920, 2-18-69, Cl. 86—12.
- Clarks Ltd.: *See*—
  - Freer, Arthur W. 3,427,673.
- Cleaver, Denis, to British Titan Products Co., Ltd. Plasma producing apparatus. 3,428,771, 2-18-69, Cl. 219—10.51.
- Clevite Corp.: *See*—
  - Eastman, David P. 3,427,974.
- Cloud, Samuel E. Spherical vehicle. 3,428,015, 2-18-69, Cl. 115—1.
- Coats, Carlton E., to Ashland Oil & Refining Co. Water dispersible coating composition and use of same in electrocoat painting. 3,428,586, 2-18-69, Cl. 260—22.
- Coats, Carlton E., to Ashland Oil & Refining Co. Electrocoating compositions comprising aromatic amine amidated drying oil copolymer-maleic anhydride adducts. 3,428,589, 2-18-69, Cl. 260—23.7.
- Coes, Loring, Jr., to Norton Co. Grinding apparatus. 3,427,754, 2-18-69, Cl. 51—98.
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  - Leake, Preston H., and Cogbill. 3,428,049.
- Coja, Felix V. Liquid dispenser. 3,428,218, 2-18-69, Cl. 222—23.
- Coleman, Charles H., Jr., and R. P. MacKenzie, to Ampex Corp. Head-to-tape velocity error compensator for rotary head video tape recorders. 3,428,745, 2-18-69, Cl. 178—6.6.
- Coless, Thomas L., to Union Carbide Corp. Method of making bonded welding flux. 3,428,497, 2-18-69, Cl. 148—26.
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- Colling, Philip M.: *See*—
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  - Goldman, Morris. 3,427,779.
- Colonial Sugar Refining Co. Ltd.: *See*—
  - Toy, Arthur D. F. 3,428,624.
- Columbia Broadcasting System, Inc.: *See*—
  - Fender, Clarence L. 3,427,916.
  - Thompson, Josephus B. 3,427,917.
- Columbian Slides, Inc.: *See*—
  - Kowack, Frank J. 3,428,369.
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  - Andresen, Lorenz J., and Halloran. 3,428,248.
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  - Hodge, Edward B. 3,428,525.
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  - Beauval, Jean-Jacques, Duhem, and Pacchioni. 3,427,927.
  - Accary, Andre, Magnier, and Marchal. 3,428,717.
  - Briand, Alain. 3,428,770.
  - Cottignies, Stanislas. 3,428,808.
  - Yerouchalmi, David. 3,428,834.
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  - Jean, Henri, and Thibault. 3,428,604.
  - Kunert, Heinz, and Biermann. 3,427,770.
- Compagnie des Ateliers et Forges de la Loire: *See*—
  - Gay, Pierre. 3,427,848.
- Compagnie Generale d'Electricite: *See*—
  - Klein, Georges. 3,428,836.
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Hofmeister, Konrad J., and R. A. Sylvester, to Jones & Laughlin Steel Corp. Length measurer with plurality of photocells which are sequentially gated. 3,428,817, 2–18–69, Cl. 250—219.
Hofton, James, W. H. Vickers, and A. Woodward, to British Industrial Plastics Ltd. Thermal stability treatment of oxymethylene polymers with ethylene imine group-containing compounds. 3,428,608, 2–18–69, Cl. 260—67.5.
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Jackson, Samuel H., to Kings Electronics Co., Inc. Sealed crimp type coaxial cable connection. 3,428,739, 2–18–69, Cl. 174—75.
Jacobs, Earl D., and W. H. Quick, to North American Rockwell Corp. Sign detector. 3,428,816, 2–18–69, Cl. 250—218.
Jacobs, George W., to The Reliance Electric and Engineering Co. Conventional elevator control with additional means to selectively lock out floors. 3,428,148, 2–18–69, Cl. 187—29.
Jacobs, Winston W., to New Rochelle Mfg. Co. Vehicle with bridging structure. 3,427,746, 2–18–69, Cl. 46—206.
Jacobsen, Bent B., and F. O. Roe, to International Standard Electric Corp. Pilot signal control system that precompensates outgoing signals for Doppler shift effects. 3,428,-898, 2–18–69, Cl. 325—15.
Jacoby, Charles H., and F. V. Whelply, to International Salt Co. Additive for inhibiting caking and freezing of sodium chloride and for inhibiting corrosion in the presence of sodium chloride brine. 3,428,571, 2–18–69, Cl. 252—383.
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Jacuzzi, Candido, F. M. Nash, and Baroody, to Jacuzzi Bros., Inc. Swimming pool construction. 3,427,662, 2–18–69., Cl. 4—172.
Jaffe, David L., to Polarad Electronics Corp. Automatic pancake baker. 3,427,956, 2–18–69, Cl. 99—423.
Jaffee, Robert I., to Douglas Aircraft Co., Inc. Sandwich structures and method. 3,427,706, 2–18–69, Cl. 29—471.1.
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Jean, Henri, and C. Thibault, to Compagnie de Saint-Gobain. Gas phase manufacture of polyformaldehyde. 3,428,604, 2–18–69, Cl. 260—67.
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Johannsen, Bruno B., and J. C. Thompson, to Deere & Co. Two-way plow. 3,428,136, 2–18–69, Cl. 172—285.
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Johnston, James R. Coupling device. 3,427,691, 2–18–69, Cl. 24—73.
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Johnstone, Paul L., to Hercules Inc. Method of producing a needled, nonwoven fibrous structure. 3,428,506, 2–18–69, Cl. 156—148.
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Jones, Vercoe C., and J. L. Olson, to Nutting Truck and Caster Co. Control apparatus. 3,427,992, 2–18–69, Cl. 104—172.
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K & L Steelfounders and Engineers Ltd. : *See—*
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Merten, Rudolf, Bayer, Braun, and Kaiser. 3,428,578.
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Kandall, Charles. Structure for increasing the load-carrying capacity of a beam. 3,427,773, 2–18–69, Cl. 52—225.
Kandel, Walter R. Filter cigarette of adjustable filter capacity. 3,428,050, 2–18–69, Cl. 131—10.3.
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Kassal, Robert J., to E. I. du Pont de Nemours, and Co. Process for the synthesis of olefin oxides. 3,428,658. 2–18–69, Cl. 260—348.5.
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Kawashima, Masao, and Katagiri. 3,428,886.
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Keene, William C., to ACF Industries, Inc. Covered hopper cars. 3,427,994, 2–18–69, Cl. 105—248.
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Keil, Walter M., to The Youngstown Foundry and Machine Co. Apparatus for bundling slender articles. 3,427,959, 2–18–69, Cl. 100—212.
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Keller, Robert P., and E. J. Ash, to Chrysler Corp. Tubular housing and support. 3,428,372, 2–18–69, Cl. 308—15.
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Kenaga, Duane L., to The Dow Chemical Co. Method of treating paper with ethylenimine derivatives using a boron trifluoride-amine complex catalyst. 3,428,484, 2–18–69, Cl. 117—155.
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Kirby, Charles A. Folding door guide, stop and retainer. 3,428,109, 2–18–69, Cl. 160—206.
Kistler, Samuel S., and C. V. Rue, to International Telephone and Telegraph Corp. Prestressed grinding wheel. 3,427,759, 2–18–69, Cl. 51—206.
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Klein, Georges, to Compagnie Generale d'Electricite. Electric current generators of the magnetohydrodynamic type. 3,428,836, 2–18–69, Cl. 310—11.
Klein, Ludwig. Adjustable load rack for trucks. 3,428,330, 2–18–69, Cl. 280—179.
Kleiner, Eduard K., to Geigy Chemical Corp. Polymers of N-perfluoroalkanoylamino- and N-perfluoroalkanoylamino-alkyl acrylamides and methacrylamides. 3,428,709, 2–18–69, Cl. 260—836.
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Knight, John R., and J. Leworthy, to British Aircraft Corp. (Operating) Ltd. Lightning conductors in aircraft. 3,428,-270, 2–18–69, Cl. 244-1.
Knight, Robert D., and D. A. Nepela, to International Business Machines Corp. Laminar flow film developing apparatus. 3,427,949, 2–18–69, Cl. 95—89.
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Asari, Akira. 3,427,857.
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Kobnick, Werner, to Berg Mfg. & Sales Co. Compressed air brake system for a trailer. 3,428,368, 2–18–69, Cl. 303—15.
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Kohler, Robert, to Hoerriger Ventilwerke Aktiengesellschaft. Annular nonreturn valve. 3,428,082, 2–18–69, Cl. 137—516.23.
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Kokusai Denshin Denwa Kabushiki Kaisha (also known as Kokusai Denshin Denwa Co., Ltd.) : *See—*
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Kraus, Ludwig, and F. H. Van Winsen, to Daimler-Benz Aktiengesellschaft. Wheel suspension system for motor vehicles. 3,428,142, 2–18–69, Cl. 180—73.

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Trachtenberg, Robert S., and Kreuzer. 3,428,284.

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Kroetch, Arthur A. Body conversion and tailgate assembly for a load supporting body. 3,428,359, 2–18–69, Cl. 296—10.

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Kulig, Constantine W., to Emhart Corp. Apparatus and method for handling glassware for inspection or the like. 3,428,174, 2–18–69, Cl. 209—73.

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Lake, Clarence L., J. A. Box, and W. J. Golla, to The Tremco Mfg. Co. Self-adherent, shock absorbing, sealing and spacing strip. 3,427,776, 2–18–69, Cl. 52—403.

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Landsman, Irving, and E. Insecticidal tapes and methods of using the same. 3,428,221, 2–18–69, Cl. 222—182.

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Langley, Robert C., and H. Myers, to Engelhard Minerals & Chemicals Corp. Method for producing hydrogen diffusion cells. 3,428,476, 2–18–69, Cl. 117—62.

Lanman, Robert K., to Armorlite Lens Co. Inc. Die finishing machine. 3,427,751, 2–18–69, Cl. 51—57.

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Larson, Donald H.: *See*—
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Leath, James. Toy apparatus with manually tiltable platform. 3,428,310, 2–18–69, Cl. 272—31.

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Leitz, Ernst, G.m.b.H.: *See*—
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Lemmon, Richard C., to Radio Corp. of America. Step recovery damper diode for retrace driven horizontal deflection circuits. 3,428,857, 2–18–69, Cl. 315—27.

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Leonard, Claude H.: *See*—
Young, Thomas J., and Leonard, C. F., and C. H. 3,428,-133.

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Lessig, William R. III, and J. E. Dickson, to The Black and Decker Mfg. Co. Wheel height adjustment for lawn mower. 3,428,328, 2–18–69, Cl. 280—43.17.

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Lesuer, William M., to The Lubrizol Corp. Mixed salts of phosphorus acids and hydrocarbon-substituted succinic acids. 3,428,561, 2–18–69, Cl. 252—32.5.

Letter, Eugene C.: *See*—
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Lewis, Walter E. F., to Atlantic Richfield Co. Wax compositions containing graft polymer of polyethylene and to paperboards coated therewith. 3,428,591, 2–18–69, Cl. 260—28.5.

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Lindenmann, Adolf J.: *See*—
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Linke, Arthur G.: *See*—
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  - Morgan, Melvin C. and C. K. 3,428,331.
- Morgan, Melvin C. and C. K. Binder construction for a loaded mobile bed. 3,428,331, 2–18–69, Cl. 280—179.
- Mori, Kenji: *See—*
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- Mori, Ryutaro: *See—*
  - Honda, Juichi, Matsumura, Yoshida, and Mori. 3,428,407.
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  - Kuhl, Bernhard R., and Morrall. 3,428,020.
- Morreale, Anthony P., and Z. R. Summers, IMC Magnetics Corp. Small angle stepping motor with offset permanent magnet rotor having axially located pole shoes. 3,428,837, 2–18–69, Cl. 310—49.
- Morren, John E., to Baker Perkins Inc. Process for recovering fatty acids and triglyceride oil from soapstock. 3,428,660, 2–18–69, Cl. 260—412.5.
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  - Donaldson, Malcolm M., and Morris. 3,428,478.
- Morris, Philip, Inc.: *See—*
  - Wagner, Edward E. 3,427,932.
- Morris, Robert R., to Eagle-Picher Industries, Inc. Package for sliced bread. 3,428,240, 2–18–69, Cl. 229—87.
- Morrison, Charles F., to Granville-Phillips Co. Method and apparatus for dynamically calibrating vacuum gauges. 3,427,858, 2–18–69, Cl. 73—4.
- Mortoly, John L: *See—*
  - Quick, Lloyd, Mortoly, and Cameron. 3,428,508.
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  - Crowell, Merton H., and Morton. 3,428,850.
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  - Lyon, Gary F. 3,428,820.
  - Mika, Abraham. 3,427,715.
- Mott, Lambert H. Nose cone tip. 3,427,977, 2–18–69, Cl. 102—105.
- Motter, George F., III. Dredge pipe pontoons. 3,428,011, 2–18–69, Cl. 114—43.5.
- Motz, Herbert. Ball game apparatus. 3,428,322, 2–18–69, Cl. 273—123.
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- Müller, Arno, to Gesellschaft fur Kernforschung m.b.H. Method and device for the refuelling of nuclear reactors. 3,428,522, 2–18–69, Cl. 176—31.
- Muller, Karl H., to Honeywell G.m.b.H. Motor reversing and speed control apparatus. 3,428,880, 2–18–69, Cl. 318—257.
- Munroe, William A., and F. B. Kruger, to Bacharach Industrial Instrument Co. Incline dynamometer. 3,427,874, 2–18–69, Cl. 73—116.
- Murphy, John P. Method of clarifying water and compositions used therefor. 3,428,558, 2–18–69, Cl. 210—59.
- Musillo, Robert G. Charm bracelet with locking ring. 3,427,823, 2–18–69, Cl. 63—3.
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- Mustee, Bernard E., to E. L. Mustee & Sons, Inc. Molded laundry tub. 3,427,664, 2–18–69, Cl. 4—183.

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  Webb, James E. 3,428,847.
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Navasky, Bernard. Waistband construction and curtain therefor. 3,427,661, 2–18–69, Cl. 2—236.
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Neale, Dory J., Sr. Tree trimmer. 3,427,717, 2–18–69, Cl. 30—180.
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  Sekimoto, Tadahiro. 3,428,899.
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  Fisher, Gerald E., Noble, and Williams. 3,428,788.
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  Niedzielski, Albert, and Noll. 3,428,058.
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Norsworthy, Keith H., to The Boeing Co. Time correlation computers. 3,428,794, 2–18–69, Cl. 235—181.
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  Hunter, Henry D., and Owen. 3,428,307.
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Northwestern Corp., The : *See*—
  Bolen, Richard K. 3,428,216.
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Noxon, Paul A., to The Bendix Corp. Fog simulator and method for accomplishing airborne simulation of a fog. 3,427,730, 2–18–69, Cl. 35—12.
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Nuclear Products Co. : *See*—
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  Carls, William. 3,428,084.
Nute, Philip R., S. Serabian, and F. Weighart, to Automation Industries, Inc. Ultrasonic attenuation meter. 3,427,867, 2–18–69 Cl. 73—67.9.
Nutten, Warren D., and B. C. Phillips, to The Tillotson Mfg. Co. Liquid fuel burner system and fuel control. 3,428,406, 2–18–69, Cl. 431—12.
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  Millendorf, Alfred J., and Oberender. 3,428,662.
Ocker, Herbert W. G., to Werner & Pfeiderer. Screw conveyor with venting stacks. 3,427,728, 2–18–69, Cl. 34—183.
O'Connell, John D., and R. Q. Stockholm. Coping for wall of lined swimming pool. 3,427,663, 2–18–69, Cl. 4—172.
Oesterheld, Karl A. Apparatus for dressing crude asbestos separated from the source rock. 3,428,265, 2–18–69, Cl. 241—259.
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Olsen, John S., to E. I. du Pont de Nemours, and Co. Yarn-lubricating composition. 3,428,560, 2–18–69, Cl. 252—8.7.
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  Klingner, Wolfgang, and Kittel. 3,428,159.
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O'Reilly, Campbell. Frying pan insert. 3,427,957, 2–18–69, Cl. 99—446.
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tainer with cap having suspension means for display purposes. 3,428,220, 2–18–69, Cl. 222—153.
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  Hughes, Joseph V., Jr., and Squier. 3,428,716.
  Jasinski, Amy L., and Walmsley. 3,428,706.
  Newing, Charles W., Jr. 3,428,599.
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Parker, Robert J. Ball gripping and throwing apparatus. 3,428,036, 2–18–69, Cl. 124—5.
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Patterson, Robert E., and J. F. Ptacek, to The Vendo Co. Proximity control for a vending machine. 3,428,157, 2–18–69, Cl. 194—2.
Pechoucek, Miroslav, to Vyzkumny Ustav Matematickych stroju. Transistor logic oscillator. 3,428,913, 2–18–69, Cl. 331—57.
Peck, Richard C., and E. W. Atkins, to United States of America, Commerce. System for determining the type of atmospheric precipitation by detecting meteorological parameters. 3,428,890, 2–18–69, Cl. 324—61.
Peek, Sanford C., to Sylvania Electric Products, Inc. A.C. control circuit for arc discharge lamps. 3,428,862, 2–18–69, Cl. 315—195.
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  Harker, Robert I., and Pellicane. 3,428,568.
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  Soulen, John R., and Schwartz. 3,428,695.
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Perkinson, William B. : *See*—
  Hoyler, Robert C., Koscinski, and Perkinson. 3,428,754.
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Petersen, John F. Method and apparatus for draining water. 3,427,810, 2–18–69, Cl. 61—10.
Peterson, Henry J., to Sun Oil Co. Production of 6,7-dimethyltetralin and 2,3-dimethylnaphthalene. 3,428,698, 2–18–69, Cl. 260—668.
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Pfarrwaller, Erwin, to Sulzer Brothers Ltd. Cloth motion in looms. 3,428,095, 2–18–69, Cl. 139—304.
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ISSUED FEBRUARY 18, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

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39 : 02,864

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 18, 1969 Volume 859 Number 3

TRADEMARKS

NOTICES

Errata

In the OFFICIAL GAZETTE of January 7, 1969, at page TM 30, insert the following: "863,018. DERMAPHEN. Endo Laboratories Inc. SN 280,221. Pub. 10–22–68. Filed 9–13–67."

In the OFFICIAL GAZETTE of January 14, 1969, at page TM 75, Registration Nos. 863,380 and 863,381 appeared under Class 12. They should be listed under Class 13. At page TM 86, under Trademark Registrations Amended, Disclaimed, Corrected, etc. "863,610" should read *853,610*.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic, syrup or beverage; **Reg. No. 47,189**, same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,755** (COKE), same, Nonalcoholic maltless beverages and the syrups for making such beverages, **filed** July 5, 1968, D.C., E.D. Va. (Norfolk), Doc. 6878–N, *The Coca-Cola Company* v. *Burroughs Enterprises, Inc., doing business as Ranch House and Winfield Scott Beaman*. Final judgment, injunction against the defendants, "Coca-Cola" and "Coke" are valid, registered trademarks belonging exclusively to plaintiff. Defendants perpetually enjoined, Oct. 30, 1968. **Same, filed** July 22, 1968, D.C., S.D.N.Y., Doc. 68–C–2989, *The Coca-Cola Company* v. *Improv, Inc.* Final judgment, defendant enjoined, Nov. 12, 1968. **Same, filed** Sept. 23, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50011, *The Coca-Cola Company* v. *Funland Inc.* Stipulated judgment, permanently enjoining defendants, Nov. 13, 1968.

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 82,124 (WALTHAM), Waltham Watch Company, Watches, watchcases, watch movements, and parts thereof, **filed** Sept. 4, 1964, D.C., S.D.N.Y., Doc. 64–C–2745, *Waltham Watch Co.* v. *Alvin Messler and Boriano Pearl Corp.* Final judgment against defendant, Oct. 23, 1968.

Reg. No. 227,904 (THE NEW YORK TIMES), The New York Times Company, Daily newspapers, **filed** July 3, 1968, D.C., S.D.N.Y., Doc. 68–C–2728, *The New York Times Company* v. *Heritage Society of America, Ltd.* Final judgment on consent, defendant enjoined, Aug. 12, 1968.

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 287,074. (See Reg. No. 545,127.)

Reg. No. 366,253. (See Reg. No. 545,127.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 524,505 (SCRABBLE), The Production and Marketing Corporation, Game including board and playing pieces;

CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	15,322
Date of oldest new application	September 20, 1967
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4–17–68	3–4 –65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4–1 –68	3–26–65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	4–4 –68	7–30–64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9–20–67	9–22–65
Renewals (All Classes)	11–25–68	....
Sec. 12(c) Publications (All Classes)	11–27–68	....

Applications filed during the month of December 1968— 2,314

Registrations Issued ________________________ 392—No. 864,751 to No. 865,142
Renewals Issued ________________________ 80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 589,217, same, Production and Marketing Company, Scoring devices and turn-tables used in the playing of games and board games; **Reg. No. 617,871**, same, Score pads, **filed** May 16, 1968, D.C., S.D.N.Y., Doc. 68–C–2006, *Production and Marketing Company* v. *E. S. Lowe Company, Inc.* Notice of dismissal, July 29, 1968.

Reg. No. 538,608 (NYLATRON), The Polymer Corporation, Nylon in rod, strip, and tube form, **filed** July 29, 1968, D.C. Del. (Wilmington), Doc. 3591, *The Polymer Corporation* v. *Rexall Drug and Chemical Company, doing business as Fiber-Fil.* Dismissed on stipulation, Oct. 31, 1968.

Reg. No. 545,127 (CUTLER-HAMMER), Cutler-Hammer, Inc., Electrical control apparatus, electrical machines, and electrical supplies, consisting of: controllers for dynamo-electric machines, to wit, starting, stopping, reversing, and speed regulating apparatus for motors, and voltage and current regulating apparatus for generators, and like control apparatus for rotary converters; current breakers; magnetic brakes for various types of machines; lifting and separating magnets and controls therefor; electrical panelboards and multibrakers; solenoids, safety switches, meter service and entrance switches; float and pressure switches; insulating bases and supports for switches and the like; controllers and driving units for valves requiring rotation of an element thereof; solenoid-operated valves; fuse panels; terminal lugs; wiring fixtures and conduit fittings comprising switches; switch boxes and covers, attachment plugs, taps, receptacles, lamp sockets, and cord connectors; elevator control apparatus, consisting of limit switches, door switches, transfer switches, and floor selector switches; speed regulating and other current control resistors; rheostats; relays; contactors; switch panels; control panels; push button switches for machine tool controllers; motor starters; speed controllers and regulators especially adapted for marine service; resistance units for electric space heaters; industrial type electric heaters; ovens and immersion type electric water heaters; surface units and oven units for electric ranges; theater and spotlight dimmers; battery chargers; starters and speed regulators for the electric motors of fire pumps, printing presses, paper making machines. oil well drillers and pumps; crane and hoist controls; electrical controls for diesel locomotives; circuit controllers of the electronic type; electric welding controllers; and circuit controllers for electric refrigerators; **Reg. No. 287,074** ("C-H" AND DESIGN), same, Electrical apparatus, machines, and supplies, consisting of: controllers for dynamo-electric machines, to wit, starting, stopping and speed regulating apparatus for motors and voltage and current regulating apparatus for generators, and like control apparatus for rotary converters; current breakers; magnetic brakes for various types of machines, lifting and separating magnets and controls therefor; solenoids, safety switches, meter service and entrance switches, float, pressure and other special switches; insulating bases and supports for switches, automatic valve control units, solenoid-operated valves, fuse panels, terminal lugs; wiring fixtures and conduit fittings, consisting of switches, switch boxes and covers, attachment plugs, taps, receptacles, caps, lamp sockets, shade holders, wall plates, and cord connectors; elevator control apparatus, consisting of limit switches, door switches, transfer switches, and floor selector switches; speed regulating and other current control resistors, rheostats, relays, contactors, switch panels, push button switches for machine tool controllers; motor starters, speed controllers and regulators especially adapted for marine service; resistance units for space heaters; industrial heaters, ovens, and immersion water heaters; theatre and spotlight dimmers, battery chargers; starters and speed regulators for fire pumps, printing presses, paper making machines, oil well drillers and pumps; and crane and hoist controls; **Reg. No. 366,253** (REPRESENTATION OF NAME PLATE), same, Electrical control apparatus, electrical machines, and electrical supplies, consisting of: controllers for dynamo-electric machines, to wit, starting, stopping, reversing, and speed regulating apparatus for motors, and voltage and current regulating apparatus for generators, and like control apparatus for rotary converters; current breakers; magnetic brakes for various types of machines; lifting magnets and controls therefor; solenoids, safety switches, meter service and entrance switches; float, pressure and other special switches; insulating bases and supports for switches and the like; automatic valve control units; solenoid-operated valves; fuse panels, terminal lugs; wiring fixtures and conduit fittings comprising switches, switch boxes and covers, attachment plugs, taps, receptacles, caps, lamp sockets and cord connectors; elevator control apparatus, consisting of limit switches, door switches, transfer switches, and floor selector switches; speed regulating and other control resistors; rheostats; relays; contactors; switch panels; control panels; push button switches for machine tool controllers; motor starters; speed controllers and regulators especially adapted for marine service; resistance units for space heaters; industrial heaters; ovens, and immersion water heaters; battery chargers; starters and speed regulators for fire pumps, printing presses, paper making machines and oil well pumps; crane and hoist controls; electronic control apparatus; electric welding controllers and electric refrigerator control devices, **filed** Mar. 18, 1968, D.C., S.D.N.Y., Doc. 68–C–1105, *Cutler-Hammer, Inc.* v. *Time Electronics Sales Co., Inc.* Consent judgment, defendant enjoined, Apr. 25, 1968.

Reg. No. 589,217. (See Reg. No. 524,505.)

Reg. No. 612,697 (AGILON), Deering Milliken Research Corporation, Stretch and/or bulked yarns made from elasticized thermoplastic filaments and their combinations with other textile yarns, **filed** June 6, 1968, D.C., S.D.N.Y., Doc. 68–C–2310, *Deering Milliken Research Corp.* v. *Patrick Industries, Inc. et ano.* Consent judgment, complaint dismissed as against individual defendant and corporate defendant enjoined, Oct. 17, 1968.

Reg. No. 617,871. (See Reg. No. 524,505.)

Reg. No. 679,591. (See 2,656,508.)

Reg. No. 723,572. (See 2,656,508.)

2,656,508, W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID; **2,869,078**, Coulter and Coulter, FLUID METERING APPARATUS; **Reg. No. 679,591** (COULTER COUNTER), Coulter Electronics, Inc., Particle counting and analyzing apparatus for use in biological and industrial fields; **Reg. No. 723,572** (CC AND DESIGN), same, Apparatus for the study of the physical characteristics of particles suspended in fluids, **filed** June 11, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c960, *Coulter Electronics, Inc.* v. *Nuclear-Chicago Corp., Radiation Instrument Dev. Lab. Inc.* On motion of court, ordered cause stricken from the calendar without prejudice and with leave to reinstate on motion of any party, Sept. 12, 1968.

2.869,078. (See 2,656,508.)

MARKS PUBLISHED FOR OPPOSITION

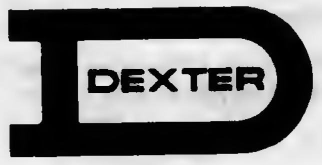
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 260,144. The Dexter Corporation, Windsor Locks, Conn. Filed Dec. 6, 1966.



Owner of Reg. No. 191,312.

Class 37—Paper and Stationery

For Pliable Fibrous Paper Materials for Use as Tea Bags, Filtering Media, Packaging Papers, Wiping Tissues and Papers, Pad Cover Stock, Absorbent Tissues and Papers, Manila-Type Papers, Insulation Papers, Base Tissues and Papers for Meat Casings, Industrial Tape and Mimeograph Stencils, and the Like (Int. Cl. 16).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fibrous Non-Woven and Web Materials Suitable for Use as Drapery Headers, Disposable Surgical Wraps and Drapes, Disposable Clothing and Diapers, and the Like (Int. Cl. 24).

First use on or before May 1, 1966.

SN 270,642. Canterbury Belts, Ltd., New York, N.Y. Filed May 4, 1967.

IMAGE

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Small Leather Goods—Namely, Wallets (Int. Cl. 18).

Class 28—Jewelry and Precious-Metal Ware

For Men's Jewelry (Int. Cl. 14).

Class 39—Clothing

For Men's Belts (Int. Cl. 25).

First use Apr. 9, 1967.

SN 270,693. Oatey Co., Cleveland, Ohio, by change of name from The L. R. Oatey Company, Cleveland, Ohio. Filed May 4, 1967.

TOP LINE

Class 12—Construction Materials

For Vehicle Body Repair Materials—Namely, Plastic Fillers and Filler Kits and Glazing Putties (Int. Cl. 17).
First use Nov. 1, 1966.

Class 16—Protective and Decorative Coatings

For Protective and Decorative Coatings—Paint-Like Coatings and Liquid Plastic Materials, Gray Primers and Undercoatings (Int. Cl. 2).
First use Nov. 1, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Solders, Fluxes, and Body Solders (Int. Cls. 1 and 6).
First use Mar. 15, 1965.

SN 276,272. Societe Francaise pour la Gestion des Brevets d'Application Nucleaire, Paris, France. Filed July 10, 1967.

BREVATOME

Priority claimed under Sec. 44(d) on French Reg. No. 736,370, dated Feb. 13, 1967.

Class 100—Miscellaneous

For Collecting, Correlating and Analyzing Intellectual Property of French Companies and Agencies in the Field of Nuclear Energy and Disseminating Information Concerning Such Property and Protecting Such Property Against Infringement (Int. Cl. 42).

Class 101—Advertising and Business

For International Marketing of Intellectual Property of French Companies and Agencies in the Field of Nuclear Energy (Int. Cl. 35).

SN 278,838. Western Blue Print Company, Kansas City, Mo. Filed Aug. 22, 1967.

OPTI-COPY

Owner of Reg. No. 851,486.

Class 100—Miscellaneous

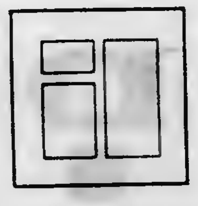
For Technical Photographic Services (Int. Cl. 42).

Class 106—Material Treatment

For Photographic Development and Printing Services (Int. Cl. 40).

First use on or about June 7, 1967.

SN 281,546. J. G. Braun Company, Skokie, Ill. Filed Oct. 2, 1967.



Class 12—Construction Materials

For Metallic Architectural Supplies—Namely, Panels, Moldings, Grills, Railings, and Ornaments (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

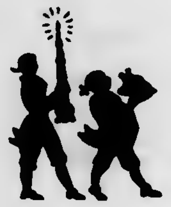
For Metallic Pipe, Brackets, Fittings, and Fasteners (Int. Cl. 6).

Class 14—Metals and Metal Castings and Forgings

For Ferrous and Non-Ferrous Metals Embodied in Bars, Angles, Tubes, and Miscellaneous Architectural Shapes (Int. Cl. 6).

First use Sept. 1, 1967.

SN 281,831. Russell's Foods, Inc., Cleveland, Ohio, by change of name from Tas-Tee Catering, Inc., Cleveland, Ohio. Filed Oct. 4, 1967.



Class 100—Miscellaneous

For Catering Services, Mobile Food Services, Food Vending Machine Services, and Restaurant Services (Int. Cl. 42).

Class 101—Advertising and Business

For Food and Beverage Management Services for Hotels, Motels, and Lounges (Int. Cl. 35).

First use March 1957.

SN 287,477. Thrush Products, Inc., d.b.a. H. A. Thrush & Company, Peru, Ind. Filed Dec. 26, 1967.

THRUSH

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fluid Control Valves and Parts Thereof (Int. Cl. 6).
First use Aug. 15, 1925.

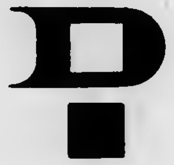
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Circulators and Pumps—Namely, Electrically Operated Centrifugal Type Pumps, Primarily for Use in Hot Water Heating Systems and Air Conditioning Systems, and Parts Thereof (Int. Cl. 7).
First use Jan. 1, 1928.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Tube Type Heat Echangers, Primarily for Use in Hot Water Heating Systems, and Parts Thereof (Int. Cl. 11).
First use Jan. 1, 1938.

SN 290,084. Domestic Marble & Stone Corporation, New York, N.Y. Filed Feb. 1, 1968.



Class 1—Raw or Partly Prepared Materials

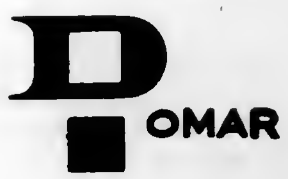
For Rough Quarried Marble, Stone, Slate, Granite, and Travertine (Int. Cl. 19).

Class 12—Construction Materials

For Sawn, Polished or Otherwise Finished Marble, Stone, Slate, Granite, and Travertine (Int. Cl. 19).

First use July 1960.

SN 290,085. Domestic Marble & Stone Corporation, New York, N.Y. Filed Feb. 1, 1968.



Class 1—Raw or Partly Prepared Materials

For Rough Quarried Marble, Stone, Slate, Granite, and Travertine (Int. Cl. 19).

Class 12—Construction Materials

For Sawn, Polished or Otherwise Finished Marble, Stone, Slate, Granite, and Travertine (Int. Cl. 19).

First use Dec. 18, 1967.

SN 295,788. American Racing Equipment, Brisbane, Calif. Filed Apr. 17, 1968.

American

The drawing is lined for the colors red and blue.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Lug Nuts for Motor Vehicles (Int. Cl. 6).

Class 19—Vehicles

For Wheels and Hub Caps for Motor Vehicles (Int. Cl. 12).

First use Nov. 8, 1962.

SN 296,913. Clairol Incorporated, New York, N.Y. Filed Apr. 30, 1968.

THE DISK

Class 51—Cosmetics and Toilet Preparations

For Hair Coloring, Hair Lightener, Hair Conditioner, Hair Groom, Nail Color, Lip Color, Rouge, Moisturizing Lotion, Compact Powder, Moisture Makeup, Skin Freshener Lotions, and Cleanser (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use Apr. 16, 1968.

SN 297,924. Kenco Chemical & Manufacturing Co., Inc., Jacksonville, Fla. Filed May 13, 1968.

KENCO

Class 6—Chemicals and Chemical Compositions

For Household Insecticides (Int. Cl. 5).
First use Dec. 15, 1964.

Class 52—Detergents and Soaps

For Solvents To Clean and Remove Obstructions in Drain Pipes (Int. Cl. 3).
First use Oct. 1, 1967.

SN 298,280. Henry A. Patnaude, Sacramento, Calif. Filed May 16, 1968.

HEPA-LINE-PRODUCT

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

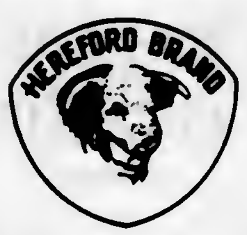
For Anchors, Tie-Downs, Lead Shields, Grommets, and Cleats (Int. Cl. 6).

Class 19—Vehicles

For Dollies (Int. Cl. 12).

First use Apr. 3, 1968.

SN 299,720. Tandy Corporation, d.b.a. Tex Tan Western Leather Co., Fort Worth, Tex. Filed June 5, 1968.



Owner of Reg. No. 503,153.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Leather Goods—Namely, Saddles and Billfolds (Int. Cl. 18.)
First use July 18, 1907.

Class 39—Clothing

For Belts, Ties, Gloves, Boots, Shoes, Slippers, Moccasins, and Chaps (Int. Cl. 25).
First use 1961.

SN 303,095. Ellen Kaye Laboratories, Inc., St. Paul, Minn. Filed July 19, 1968.

GOLD AWARD

Owner of Reg. No. 501,153.

Class 51—Cosmetics and Toilet Preparations

For Permanent Wave Lotion and Permanent Wave Neutralizer (Int. Cl. 3).
First use on or about Jan. 1, 1947.

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).
First use on or about Oct. 1, 1946.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 281,876. Esco, Incorporated, Houston, Tex. Filed Oct. 5, 1967.

MRS

For Metal-Reinforced Urethane Plastic Sheet Material (Int. Cl. 17).
First use at least as early as May 1, 1967.

SN 304,045. Anglo-American Clays Corporation, New York, N.Y. Filed Aug. 1, 1968.

ALPHAGLOSS

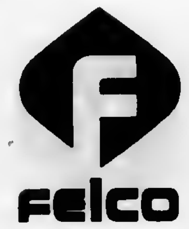
For Clay—Namely, Kaolin (Int. Cl. 19).
First use at least as early as May 15, 1968.

SN 304,046. Anglo-American Clays Corporation, New York, N.Y. Filed Aug. 1, 1968.

ALPHACOTE

For Clay—Namely, Kaolin (Int. Cl. 19).
First use at least as early as Jan. 5, 1967.

SN 305,271. Farmers Regional Cooperative, Fort Dodge, Iowa. Filed Aug. 16, 1968.



Owner of Reg. Nos. 600,806, 711,671, and others.
For Legume, Grain and Grass Seeds (Int. Cl. 31).
First use at least as early as Mar. 1, 1968; September 1955 as to "Felco."

Class 2—Receptacles

SN 245,997. Jonas Tempelhof, La Chaux-de-Fonds, Switzerland. Filed May 18, 1966.

EXPOVISTO

Priority claimed under Sec. 44(d) on Swiss Reg. No. 214,886, dated Nov. 22, 1965.
For Packing and Exhibition Cartons Made of Cardboard and Used as Wall or Counter Stands (Int. Cl. 16).

SN 283,282. Sepko Chemicals, Inc., Minneapolis, Minn. Filed Oct. 24, 1967.

DISPENS-O-PAK

For Cardboard Box Containers Having Openable and Closable Fluid Material Dispensing Facilities (Int. Cl. 16).
First use Aug. 1, 1967.

SN 296,852. Lochinvar Water Heater Corporation, Detroit, Mich. Filed Apr. 29, 1968.

LOCK-TEMP

For Storage Tanks (Int. Cl. 6).
First use Jan. 17, 1968.

SN 298,478. Si Lite, Incorporated, Chicago, Ill. Filed May 17, 1968.

FOAM WARE

Without waiving its common law rights, applicant disclaims the words "Foam Ware" apart from the mark as a whole. Owner of Reg. Nos. 419,177 and 719,085.
For Containers for Holding Food—Namely, Trays, Plates, and Bowls, All Made of Plastic (Int. Cl. 21).
First use Feb. 1, 1968.

SN 299,093. Geo. J. Ball, Inc., West Chicago, Ill. Filed May 27, 1968.

CELL-PAK

For Compartmented Plastic Trays for Commercial Growing and Sale of Plants (Int. Cl. 20).
First use on or before Nov. 1, 1966.

SN 302,472. Purex Corporation, Ltd., Lakewood, Calif. Filed July 11, 1968.

STRUCTO-CELL

For Milk Cases, Trays for Handling Materials and Storage Bins, All Made of Plastic Foam (Int. Cl. 20).
First use June 6, 1968.

SN 305,063. Pride Container Corporation, Chicago, Ill. Filed Aug. 13, 1968.

PRIDE

For Corrugated Shipping Containers (Int. Cl. 16).
First use Apr. 5, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 281,627. Samsonite Corporation, Denver, Colo. Filed Oct. 2, 1967.

Samsonite CLASSIC ATTACHÉ
DIPLOMAT

Applicant disclaims the term "Attaché" apart from the mark as shown. Owner of Reg. Nos. 590,973, 773,019, and 822,195.
For Luggage—Namely, Attaché Cases (Int. Cl. 18).
First use in or about October 1962.

SN 281,628. Samsonite Corporation, Denver, Colo. Filed Oct. 2, 1967.

Samsonite Signat Attaché
SUBURBAN

Applicant disclaims the term "Attaché" apart from the mark as shown. Owner of Reg. Nos. 590,973, 883,860, and others.
For Luggage—Namely, Attaché Cases (Int. Cl. 18).
First use Aug. 3, 1967.

SN 281,629. Samsonite Corporation, Denver, Colo. Filed Oct. 2, 1967.

Samsonite CLASSIC ATTACHÉ
STATESMAN

Applicant disclaims the term "Attaché" apart from the mark as shown. Owner of Reg. Nos. 590,973, 773,019, and 822,195.
For Luggage—Namely, Attaché Cases (Int. Cl. 18).
First use in or about March 1964.

SN 281,630. Samsonite Corporation, Denver, Colo. Filed Oct. 2, 1967.

Samsonite CLASSIC ATTACHÉ
COMMUTER

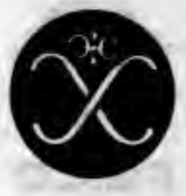
Applicant disclaims the term "Attaché" apart from the mark as shown. Owner of Reg. Nos. 590,973, 773,019, and 822,195.
For Luggage—Namely, Attaché Cases (Int. Cl. 18).
First use in or about October 1962.

SN 281,631. Samsonite Corporation, Denver, Colo. Filed Oct. 2, 1967.

Samsonite Signat Attaché
ENVOY

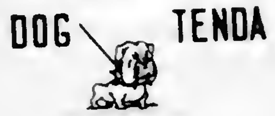
Applicant disclaims the term "Attaché" apart from the mark as shown. Owner of Reg. Nos. 590,973, 883,860, and others.
For Luggage—Namely, Attaché Cases (Int. Cl. 18).
First use Aug. 20, 1965.

SN 288,541. Sarne Company, Inc., New York, N.Y. Filed Jan. 10, 1968.



For Luggage, Tote Bags, Plastic, Leather, Straw and Beaded Pocketbooks and Handbags, and Evening Bags (Int. Cl. 18).
First use 1953.

SN 291,455. The Vacuum Cleaner Corporation of America, Philadelphia, Pa. Filed Feb. 19, 1968.



Applicant makes no claim to the word "Dog," or to the representation of a dog, apart from the mark as shown.
For Cord Reels for Tethering Pets (Int. Cl. 18).
First use December 1961.

SN 295,560. Sarne Company, Inc., New York, N.Y. Filed Apr. 12, 1968.

FASHION MATES

Applicant disclaims the word "Fashion" apart from the mark as a whole.
For Luggage, Tote Bags, Plastic, Leather, Straw and Beaded Pocketbooks and Handbags, and Evening Bags (Int. Cl. 18).
First use Mar. 11, 1968.

SN 304,871. Stat-Pak, Incorporated, New York, N.Y. Filed Aug. 12, 1968.

STAT KIT

The word "Kit" is disclaimed apart from the mark as shown.
For Physicians' Carrying Bags (Int. Cl. 18).
First use Jan. 16, 1967.

Class 4 — Abrasives and Polishing Materials

SN 290,469. Churchill Chemical Company, Galesburg, Ill. Filed Feb. 7, 1968.

MEL-O-TONE

For Self-Polishing Liquid Floor Wax (Int. Cl. 3).
First use on or about Feb. 1, 1967.

SN 297,425. William C. Coons, Jr., d.b.a. The Marwin Company, Ventura, Calif. Filed May 6, 1968.

"CER-CRE"

For Metallographic Polishing Abrasive (Int. Cl. 3).
First use Nov. 7, 1962.

SN 310,824. S. C. Johnson & Son, Inc., Racine, Wis. Filed Oct. 30, 1968.

TRANS-LITE

For Polishing Preparation for Use on Floors, Walls, and Other Hard and Flexible Surfaces, and Polishing Preparations With Cleaning Properties (Int. Cl. 3).
First use on or about Jan. 1, 1958.

Class 6 — Chemicals and Chemical Compositions

SN 280,300. British Titan Products Company Limited, Billingham, England. Filed Sept. 14, 1967.

TIL

Owner of British Reg. No. 824,016, dated Aug. 9, 1961.
For Organo-Metallic Compounds for Industrial Purposes (Int. Cl. 1).

SN 285,714. J. T. Baker Chemical Company, Phillipsburg, N.J. Filed Nov. 28, 1967.

ANHYDRONE

For Magnesium Perchlorate Used as a Drying Agent (Int. Cl. 1).
First use at least as early as 1930.

SN 287,382. Seravac Laboratories (Pty.) Limited, Cape Town, Cape Province, Republic of South Africa. Filed Dec. 21, 1967.

SAGAVAC

For Chemical Preparations, Compositions, or Solutions for Molecular Chromatography (Int. Cl. 1).
First use Sept. 18, 1967; in commerce Sept. 18, 1967.

SN 295,564. Sternco Industries, Inc., Harrison, N.J. Filed Apr. 12, 1968.

ALGI-GO

Owner of Reg. No. 771,679.
For Antibiotic Preparation To Control the Growth of Algae in Aquarium Tanks (Int. Cl. 5).
First use Jan. 15, 1962.
Subj. to Intf. with SN 301,194.

SN 296,572. The Perkin-Elmer Corporation, Norwalk, Conn. Filed Apr. 25, 1968.

VHR

For Multilayer Light Reflection Coating Applied to Optical Mirror Blanks and the Like (Int. Cl. 1).
First use Dec. 8, 1967.

SN 297,674. Hartz Mountain Products Corp., New York, N.Y. Filed May 8, 1968.

CHLOR-RID

For Preparation for Removing Chlorine From Tap Water Used in Aquarium Fish Tanks (Int. Cl. 1).
First use Apr. 1, 1968.

SN 297,707. Reichhold Chemicals, Inc., White Plains, N.Y. Filed May 8, 1968.

BLAVIN

For Polyvinyl Chloride Color Concentrate (Int. Cl. 2).
First use Apr. 5, 1968.

SN 297,906. Weston Chemical Corporation, New York, N.Y. Filed May 10, 1968.

WESLINK

For Organic Phosphorus Compounds Suitable as Resin Cross-Linking Agents (Int. Cl. 1).
First use Apr. 12, 1967.

SN 297,907. Weston Chemical Corporation, New York, N.Y. Filed May 10, 1968.

WESFLEX

For Organic Phosphorus Containing Plasticizers (Int. Cl. 1).
First use Jan. 30, 1965.

SN 298,020. Medi-Chem, Incorporated, Santa Monica, Calif. Filed May 13, 1968.

CYTO-SET

For Chemical Preparation, in Spray Form, for Mixing and Preserving Cytological Smears (Int. Cl. 1).
First use Aug. 3, 1967.

SN 298,223. Foseco International Limited, Birmingham, England. Filed May 15, 1968.

RENOX

For Chemical Compositions for Removing Oxides and Other Non-Metallic Compounds From the Channels of Induction Furnaces and From Other Areas of Metal Melting Furnaces (Int. Cl. 1).
First use Apr. 2, 1968; in commerce Apr. 2, 1968.

SN 298,270. Union Carbide Corporation, New York, N.Y. Filed May 15, 1968.

KARDEL

For Herbicide (Int. Cl. 5).
First use on or about Apr. 30, 1968.

SN 298,271. Union Carbide Corporation, New York, N.Y. Filed May 15, 1968.

SURFEL

For Herbicide (Int. Cl. 5).
First use on or about Apr. 30, 1968.

SN 298,413. Calgon Corporation, Pittsburgh, Pa. Filed May 17, 1968.

F-95

For Film-Type Corrosion Inhibitor Used in Condensate Systems (Int. Cl. 1).
First use Aug. 31, 1967.

SN 298,423. Chevron Chemical Company, San Francisco, Calif. Filed May 17, 1968.

BUXCIDE

Owner of Reg. Nos. 434,849 and 846,102.
For Insecticide (Int. Cl. 5).
First use Apr. 23, 1968.

SN 298,685. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed May 21, 1968.

LUCONYL

For Dyestuffs, Being Pigment Formulations (Int. Cl. 2).
First use Nov. 30, 1967; in commerce Apr. 15, 1968.

SN 298,755. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed May 21, 1968.

PENNAMINE

For Herbicidal Compositions (Int. Cl. 5).
First use February 1966.

SN 299,203. The Baker Castor Oil Company, Bayonne, N.J. Filed May 28, 1968.

STAYCIN

For Stabilizers for Polyvinyl Resins (Int. Cl. 1).
First use on or before May 9, 1968.

SN 299,225. FMC Corporation, New York, N.Y. Filed May 28, 1968.

TANDEX

For Herbicides (Int. Cl. 5).
First use May 3, 1968.

SN 299,298. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

TAI WINDS

For Room Freshener (Int. Cl. 5).
First use May 10, 1968.

SN 299,302. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

SEA WILLOW

For Room Freshener (Int. Cl. 5).
First use May 10, 1968.

SN 299,642. Blain Industries, Inc., Van Buren, Ark. Filed June 4, 1968.

NOIT CART

For Chemical Composition To Be Applied to Vehicle Tires as a Non-Skid Safety Traction (Int. Cl. 1).
First use Apr. 29, 1968.

SN 299,769. GAF Corporation, New York, N.Y. Filed June 5, 1968.

MICROWET

For Chemicals Used To Prevent Spotting on Sensitized Film (Int. Cl. 1).
First use Apr. 25, 1968.

SN 301,194. Chemical Insecticide Corporation, Edison, N.J. Filed June 24, 1968.

ALGAE-GO

For Algaecide (Int. Cl. 5).
First use Aug. 30, 1967.
Subj. to Intf. with SN 295,564.

SN 302,685. Morton International, Inc., Chicago, Ill. Filed July 15, 1968.

SELECT

For Salt for Recharging Water Softeners (Int. Cl. 1).
First use on or about Mar. 22, 1965.

Class 7 — Cordage

SN 295,469. Sun Chemical Corporation, New York, N.Y. Filed Apr. 11, 1968.

VELVET-FAB

For Flocked Gift Tieing Ribbon (Int. Cl. 26).
First use Feb. 2, 1968.

SN 295,470. Sun Chemical Corporation, New York, N.Y. Filed Apr. 11, 1968.

VELVET-RIB

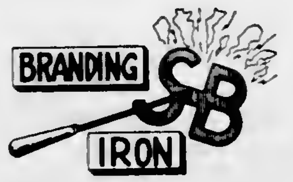
For Flocked Gift Tieing Ribbon (Int. Cl. 26).
First use Feb. 26, 1968.

SN 303,418. John C. Hopkins, d.b.a. Power-Rate Sales Co., Pittsburgh, Pa. Filed July 23, 1968.

BUDDY

For Tow Ropes and Tie-Down Ropes for Vehicles (Int. Cl. 22).
First use Sept. 23, 1967.

SN 304,018. Schermerhorn Bros., Co., Chicago, Ill. Filed July 31, 1968.



The drawing is lined for the color red.
For Binder and Baler Twines (Int. Cl. 22).
First use on or about July 10, 1967.

Class 10 — Fertilizers

SN 279,550. W. R. Grace & Co., New York, N.Y. Filed Sept. 1, 1967.

GRACE

Owner of Reg. No. 777,996.
For Fertilizers Containing Essential Plant Nutrients (Int. Cl. 1).
First use December 1960.

SN 298,428. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed May 17, 1968.

Brea

Owner of Reg. No. 784,246.
For Urea and Urea Solutions, Sold for Use as a Fertilizer (Int. Cl. 1).
First use Apr. 21, 1967.

SN 301,827. Federal Chemical Company, Louisville, Ky. Filed July 2, 1968.

FEDERAL LAWN MASTER

For Lawn Fertilizers (Int. Cl. 1).
First use Apr. 16, 1968.

SN 303,500. Lloyd Harley Bowen, d.b.a. The Garden Mart, Bellaire, Tex. Filed July 24, 1968.

AMAZE

For Liquid Fertilizer for Growing Plants of All Types (Int. Cl. 1).
First use May 1967.

SN 305,167. Union Carbide Inter-America, Inc., New York, N.Y. Filed Aug. 14, 1968.

UNIFOL

For Chemical Fertilizer (Int. Cl. 1).
First use on or about Aug. 3, 1967.

SN 305,204. Continental Oil Company, Ponca City, Okla. Filed Aug. 15, 1968.

AGRI-FLO

For Liquid Fertilizer (Int. Cl. 1).
First use Mar. 25, 1968.

SN 305,964. Norsk Hydro-Elektrisk Kvaelstofaktieselskab, Oslo, Norway. Filed Aug. 26, 1968.

VIKING SHIP

For Natural and Synthetic Fertilizers (Int. Cl. 1).
First use June 1956; in commerce June 1956.

SN 306,503. Occidental Petroleum Corporation, Los Angeles, Calif. Filed Sept. 3, 1968.

SCOTCH GARDENER

For Fertilizers (Int. Cl. 1).
First use on or about June 15, 1968.

Class 11 — Inks and Inking Materials

SN 270,632. Robert Koreska, d.b.a. W. Koreska, Vienna, Austria. Filed May 3, 1967.

CARBOFILM

Owner of Austrian Reg. No. 56,271, dated Dec. 16, 1965.
For Carbon Paper (Int. Cl. 16).

SN 296,802. Burroughs Corporation, Detroit, Mich. Filed Apr. 29, 1968.

PROTECTOGRAPH

Owner of Reg. No. 583,442.
For Inking Ribbons Used With Business Machines, Especially Check Protecting, Check Printing, Check Writing and Signing, and Check Certifying Machines, and the Like (Int. Cl. 16).
First use May 1932.

SN 298,875. Sun Chemical Corporation, New York, N.Y. Filed May 22, 1968.

SUNCURE

For Printing Ink (Int. Cl. 2).
First use Feb. 19, 1968.

Class 12 — Construction Materials

SN 264,121. W. R. Grace & Co., New York, N.Y., assignee of Electrovert Inc., Mount Vernon, N.Y. Filed Jan. 16, 1967.

RODOPLY

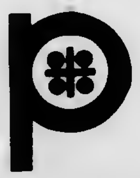
For Plastic Vapor Barrier for Use in the Construction Industry (Int. Cl. 19).
First use July 1966.

SN 275,271. Kane Manufacturing Corporation, Kane, Pa. Filed July 3, 1967.

VAN-GUARD

For Security Screens Used To Confine Inmates of Mental Institutions and Prisons (Int. Cl. 6).
First use Apr. 20, 1967.

SN 275,465. Perstorp Aktiebolag, Perstorp, Sweden. Filed July 6, 1967.



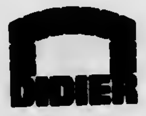
Owner of Swedish Reg. No. 112,230, dated Feb. 19, 1965.
For Decorative Plastic Laminates, and Plastic Laminates and Moulded Plastics for Construction Purposes (Int. Cl. 19).

SN 280,705. Harvestall Industries, Inc., New Hampton, Iowa. Filed Sept. 19, 1967.

AIR-FRAME

For Floor Supports for Grain Drying Bins (Int. Cl. 6).
First use Oct. 15, 1965.

SN 285,121. Didier-Werke A.G., Wiesbaden, Germany. Filed Nov. 17, 1967.



Owner of German Reg. No. 471,344, dated Aug. 29, 1934.
For Refractory and/or Acid Resistant Materials—Namely, Bricks; Chemically, Ceramically or Hydraulically Bonded Mortars and Mixes, Especially Those Useful as Ramming, Gunning, Patching, Casting, and/or Coating Mixes (Int. Cl. 19).

SN 285,239. M & D Enterprises, Inc., Springfield, Mo. Filed Nov. 20, 1967.

BONCOAT

For Cementitious Mixture for Application as a Surface Coating and Use as a Matrix for an Exposed Aggregate Finish (Int. Cl. 19).
First use on or about Oct. 26, 1965.

SN 297,213. Pomona Tile Manufacturing Company, Pomona, Calif. Filed May 2, 1968.

SPACE-RITE

Owner of Reg. No. 384,910.
For Ceramic Tile (Int. Cl. 19).
First use Mar. 7, 1968.

SN 298,389. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed May 17, 1968.

CLOISTER

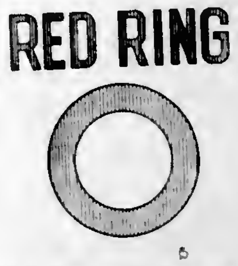
Owner of Reg. Nos. 721,769 and 803,710.
For Plywood, Lumber, Wood and Wood Fiber Products, Used in the Construction, Building, Industrial, and Furniture Fields, i.e., Panels for Walls, Doors, and Partitions (Int. Cl. 19).
First use on or about May 2, 1968.

SN 303,297. Fibreboard Corporation, San Francisco, Calif. Filed July 22, 1968.

PABCO

Owner of Reg. Nos. 75,095, 252,677, and 651,070.
For Insulating Material for Pipes, Boilers, Tanks, and Fittings, Sold in the Form of Blocks and Arcuate Segments; and Insulating Cement (Int. Cl. 17).
First use April 1949.

SN 303,427. Missouri Portland Cement Company, Clayton, Mo. Filed July 23, 1968.



The drawing is lined for red. Owner of Reg. No. 440,899.
For Portland Cement (Int. Cl. 19).
First use January 1963; Aug. 22, 1901, in a different form.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 278,545. Water Service Laboratories, Inc., New York, N.Y. Filed Aug. 17, 1967.

CHEMISTAT

Owner of Reg. Nos. 420,805 and 517,799.
For Chemical Feeding Devices Comprising a Container for Chemicals and Means for Feeding Chemicals From Said Container in the Form of a Solution or Suspension to Water or Other Aqueous Liquid (Int. Cl. 11).
First use Dec. 30, 1940.

SN 279,812. Commercial Mechanisms, Inc., Kansas City, Mo. Filed Sept. 7, 1967.

WIG-WAG

For Oscillatory Nozzle Apparatus for Vehicle Washing Equipment (Int. Cl. 11).
First use Aug. 14, 1967.

SN 292,665. American Standard Inc., New York, N.Y. Filed Mar. 7, 1968.

DIRECTION 2000

For Sanitary Ware, Bathroom Fixtures, and Accessories Relating Thereto—Namely, Shower Enclosures, Bathtubs, Toilet Enclosures, Lavatories, Shower Heads, Bathtub Shower Surrounds, Shower Stalls, and Lavatory Table Tops (Int. Cl. 11).
First use on or about July 28, 1967.

SN 293,792. Beneke Corporation, Columbus, Miss. Filed Mar. 21, 1968.

PURR SUEDE

For Finish on Water Closet Seats and Bath Stools (Int. Cls. 11 and 20).
First use June 15, 1967.

SN 303,458. Virginia Chemicals Inc., West Norfolk, Va. Filed July 23, 1968.

DRIP-TROL

For Capillary Tube Liquid Flow Controller of the Drip Feed Type, Embodying a Built-In Suction Device (Int. Cl. 11).
First use Jan. 22, 1968.

SN 307,751. Republic Steel Corporation, Cleveland, Ohio. Filed Sept. 19, 1968.

RS 95

For Seamless Steel Casing (Int. Cl. 6).
First use Oct. 16, 1967.

SN 308,163. Leonard Troy, d.b.a. The Industrial Design Co., Scranton, Pa. Filed Sept. 24, 1968.

AUTOMAG

For Control Valves (Int. Cl. 6).
First use Aug. 15, 1967.

SN 309,805. W. John Woolley, d.b.a. W. J. Woolley Company, River Forest, Ill. Filed Oct. 16, 1968.

SYNCHRO-CHEK

For Check Valves (Int. Cl. 6).
First use Dec. 1, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 293,330. Union Carbide Corporation, New York, N.Y. Filed Mar. 14, 1968.

CALSIBAR

For Deoxidizer Alloy for Addition to Molten Metal (Int. Cl. 6).
First use on or about Feb. 6, 1968.

SN 299,688. Masten Corporation, Arlington Heights, Ill. Filed June 4, 1968.

MASTALLOY

For Bronze Castings in the Shape of Bars and Tubes (Int. Cl. 6).
First use May 1967.

SN 299,770. Geoscience Instruments Corporation, Mount Vernon, N.Y. Filed June 5, 1968.

GELIDE

For Germanium (Int. Cl. 6).
First use at least as early as May 10, 1967.

SN 304,186. Louis Dejonge and Company, Staten Island, N.Y. Filed Aug. 2, 1968.

PIPIN' HOT

For Foil Sandwich Wrap (Int. Cl. 6).
First use July 15, 1968.

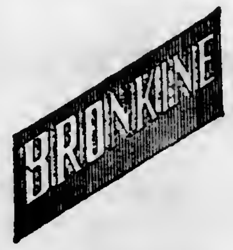
Class 18 — Medicines and Pharmaceutical Preparations

SN 284,744. G. D. Searle & Co., Skokie, Ill. Filed Nov. 13, 1967.

DEPEPTHINE

Owner of Reg. No. 795,489.
For Preparation for Treatment of the Gastro-Intestinal System (Int. Cl. 5).
First use Nov. 3, 1967.

SN 303,394. Etnah Rochon Boutté, New York, N.Y. Filed July 23, 1968.



The drawing is lined for the color red.
For Medicine for Coughs, Colds, and Bronchial Irritation (Int. Cl. 5).
First use Dec. 10, 1921.

Class 19 — Vehicles

SN 286,638. Brunswick Corporation, Chicago, Ill. Filed Dec. 11, 1967.

CONCORDE

For Motor Yachts (Int. Cl. 12).
First use Aug. 1, 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 272,351. Cal-West Electric, Inc., South San Francisco, Calif. Filed May 25, 1967.

SKYLYTE

For Portable Tower Bearing Electric Light Fixtures (Int. Cl. 11).
First use Feb. 21, 1967.

SN 297,178. Dynair Electronics, Inc., San Diego, Calif. Filed May 2, 1968.

MINI-SYNC

For Television Synchronizing Generators (Int. Cl. 9).
First use Jan. 22, 1968.

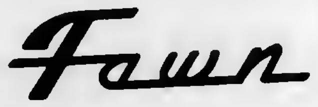
SN 299,663. Fisher Radio Corporation, Long Island City, N.Y. Filed June 4, 1968.

160-T

For Radio Receivers (Int. Cl. 9).
First use Apr. 19, 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 296,134. Fawn Engineering Company, Des Moines, Iowa. Filed Apr. 22, 1968.



For Pool Tables (Int. Cl. 28).
First use July 19, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 267,917. Chicago Welding Sales Company, d.b.a. York Engineering Company, Chicago, Ill. Filed Mar. 30, 1967.

YORK'S SPAT-R-WAY

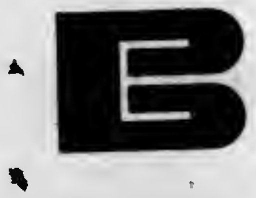
For Hand Actuated Sprayers for Chemical Coatings (Int. Cl. 7).
First use Mar. 1, 1967.

SN 274,117. Big Bear, Inc., St. Cloud, Minn. Filed June 16, 1967.

HARVEST SUPREME

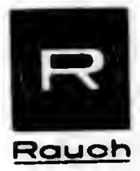
Owner of Reg. Nos. 645,976, 826,328, and others.
For Parts for Internal Combustion Engines—Namely, Connecting Rods, Liner Sleeves, Pistons, Exchange Blocks, and Overhaul Kits Comprising Connecting Rods, Liner Sleeves, and Pistons (Int. Cl. 7).
First use June 5, 1967.

SN 276,087. Bata Shoe Company of Canada Limited, Batawa, Ontario, Canada. Filed July 17, 1967.



Owner of Canadian Reg. No. 137,062, dated Aug. 21, 1964.
For Leather and Related Material Treating, Curing, Forming, and Fabricating Machinery Used in Manufacturing Footwear—Namely, Mechanical and Hydraulic Clicking Machines; Vacuum and Pressure Forming Machines; Conveyors for Footwear Manufacture; Rubber Extruding Machines; Cyclic Upper Muller, and Moist Heat-Setter for Footwear Manufacture; High Frequency Bonding and Cutting Machines; Injection Moulding Machines; Bottom Roughing Machines; Marking Machines; and Laminating Machines for Laminating Footwear Materials (Int. Cl. 7).

SN 279,414. The Rauch Corporation, Cleveland, Ohio. Filed Aug. 30, 1967.



For Material Handling Equipment—Namely, Cranes, Conveyors, and Grabs (Int. Cl. 7).
First use Apr. 18, 1966.

SN 279,880. United States Machinery, Inc., North Billerica, Mass. Filed Sept. 7, 1967.

STRIPE-OMATIC

For Machine for the Spiral Striping and Printing Insulating Material to Wire and Cable (Int. Cl. 7).
First use Feb. 20, 1967.

SN 281,220. Rees Blow Pipe Mfg. Co., Berkeley, Calif. Filed Sept. 26, 1967.

HYDRO-WASH

For Smoke and Gas Scrubber for Use With Refuse Burners (Int. Cl. 11).
First use May 27, 1967.

SN 285,244. Melroe Company, Gwinner, N. Dak. Filed Nov. 20, 1967.

MELROE

Owner of Reg. Nos. 659,026 and 822,806.
For Self-Propelled Vehicles Having Front End Mounting Means for Various Attachments Actuated by the Power Means of the Vehicles, Attachments Therefor, Plows, and Parts and Accessories Therefor (Int. Cl. 12).
First use Dec. 26, 1961.

SN 288,411. Triulzi S.p.A., Novate, Milan, Italy. Filed Oct. 30, 1967.

For Priority claimed under Sec. 44(d) on Italian application filed May 31, 1967; Reg. No. 213,625, dated Aug. 4, 1967.
For Machines for Extruding or Moulding Natural and Synthetic Rubbers and Elastomers in General and Particularly Preplastifying Screw-Shaft Machines for the Direct Injection of Natural and Synthetic Rubbers and of Elastomers in General (Int. Cl. 7).

SN 294,661. Rival Manufacturing Company, Kansas City, Mo. Filed Apr. 1, 1968.

CLICK 'N CLEAN

For Electric Can Openers (Int. Cl. 7).
First use on or about Jan. 15, 1968.

SN 295,527. Illinois Tool Works Inc., Chicago, Ill. Filed Apr. 12, 1968.

ILLINOIS

Owner of Reg. No. 118,664.
For Cutting Tools and Tool Bits in Connection With Machine Tools, Milling Cutters, Shaper Cutters, Metal Slitting Saws, Drills, Hobs, End Mills, Carbide Cutting Tools, Tool Bits, Drill Speeders and Broaches (Int. Cl. 7).
First use as early as 1935.

SN 304,040. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Aug. 1, 1968.

KING

Owner of Reg. No. 537,995.
For Hand-Operated Sprayers for Dispensing or Distributing Insecticides, Fungicides, Pesticides, Paint, Weed Killers, Fertilizers, and Other Liquids (Int. Cl. 8).
First use during 1912.

SN 304,873. The Stanley Works, New Britain, Conn. Filed Aug. 12, 1968.

HANDYMAN

Owner of Reg. Nos. 366,892, 611,783, and others.
For Electric Power Tools—Namely, Sabre Saws, Circular Saws, Drills, and Routers (Int. Cl. 7).
First use at least as early as 1950.

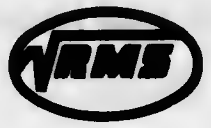
SN 308,440. Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Sept. 30, 1968.

SUMITOMO

For Parts for Machines—Namely, Gears, Pinions, Shafts; Parts and Accessories for Railway Locomotives—Namely, Railway Trucks, Wheels, Axles, and Wheel-Axle Units (Int. Cl. 7).
First use June 30, 1901; in commerce Sept. 27, 1965.

Class 26 — Measuring and Scientific Appliances

SN 240,539. RMS Engineering, Inc., Atlanta, Ga. Filed Mar. 9, 1966.



Applicant claims exclusive right to use of "RMS" as a part of the mark shown, but not otherwise. Owner of Reg. No. 738,969.
For Electronic Instruments Related to the Generation, Distribution, and Processing of Signals Used as a Precise Reference for Either Time or Frequency—Namely, VLF Phase Tracking Receivers for Calibrating Secondary Frequency Standards; Frequency Combiners; Frequency Synthesizers; Frequency and Time Reference Signal Distributors; and Receivers for Extracting Time-of-Day Information From Radio Signals (Int. Cl. 9).
First use Aug. 17, 1965.

SN 264,378. A.V.P.S. Corporation, New York, N.Y. Filed Feb. 10, 1967.

SELECT-A-SHOW

For Devices for Sequentially Controlling a Plurality of Electrical Circuits for Timed Intervals in Accordance With Preset Actuators (Int. Cl. 9).
First use Dec. 15, 1966.

SN 281,561. Divcon International (U.K.) Limited, London, England. Filed Oct. 2, 1967.

SEATASK

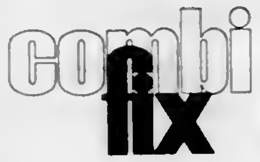
For Underwater Equipment, Particularly Diving Chambers (Int. Cl. 9).
First use Oct. 1, 1966; in commerce Aug. 1, 1967.

SN 282,084. Henry's Camera Corporation, Los Angeles, Calif. Filed Oct. 9, 1967.

COLORDELTARON

For Photographic Equipment—Namely, Cameras, Lenses, Projectors, Tripods, Viewers, Exposure Meters, Developing Tanks, Editors, Carrying Cases for Binoculars, and Parts Therefor (Int. Cl. 9).
First use Apr. 15, 1967.

SN 282,148. Tesa S.A., Renens, Vaud, Switzerland. Filed Oct. 9, 1967.



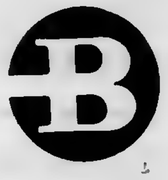
Owner of Swiss Reg. No. 209,481, dated Mar. 16, 1965.
For Standard Elements for Measuring Set-Up Assemblies for Making Multiple Measurements (Int. Cl. 9).

SN 288,216. Intertech Corporation, Princeton, N.J. Filed Jan. 5, 1968.

INFRA 2

For Infrared Gas Analyzers (Int. Cl. 9).
First use October 1967.

SN 289,168. Burroughs Corporation, Detroit, Mich. Filed Jan. 19, 1968.



Owner of Reg. Nos. 513,593 and 522,893.
For Data Processing Equipment—Namely, Electronic Computers and Computer System Components, Namely, Central Processors, Card Readers, Punched Paper Tape Readers, Magnetic Tape Recorders and Readers, Card Punches, Paper Tape Punches, Line Printers, Magnetic Disk File Storage Units, Computer Input/Output Display Units, Magnetic Core and Thin-Film Memory Modules, Data Transmission and Conversion Terminal Units; and Adding Machines, Calculating Machines, Accounting Machines, Cash Registering Machines, Bookkeeping Machines, Typewriter-Accounting Machines, Check Writers and Disbursing Machines, and Components and Parts for All of Said Equipment (Int. Cl. 9).
First use Apr. 16, 1947.

SN 292,755. The Aro Corporation, Bryan, Ohio. Filed Mar. 8, 1968.

LOGI-TROL

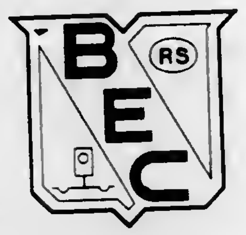
For Pressure Sensing and Timing Unit for Controlling Torque or Work Output of Pneumatic Tools and Other Pneumatically Operated Devices (Int. Cl. 9).
First use Jan. 4, 1968.

SN 292,827. T. G. & Y. Stores Company, Oklahoma City, Okla. Filed Mar. 8, 1968.

GOLDEN T

For Cameras (Int. Cl. 9).
First use Aug. 11, 1967.

SN 293,218. BEC Pressure Controls Corp., Davenport, Iowa. Filed Mar. 14, 1968.



For Differential Pressure Controls Sensitive to and Reacting on Differentials in Fluid Pressures (Int. Cl. 9).
First use on or about July 15, 1961.

SN 295,568. Torr X-Ray Corporation, Los Angeles, Calif. Filed Apr. 12, 1968.

Radifluor 360

Applicant disclaims the numeral "360" apart from the mark as shown.
For Radiographic and Fluoroscopic Units for the X-ray Examination and Inspection of Electronic Components and the Like (Int. Cl. 10).
First use Dec. 8, 1967.

SN 296,537. Honeywell Inc., Minneapolis, Minn. Filed Apr. 25, 1968.

VISIPRINTER

Owner of Reg. Nos. 548,931 and 687,925.
For Digital Data Recording Input Units Which Supply Electrical Print Signals to Galvanometers (Int. Cl. 9).
First use at least as early as April 1967.

SN 298,617. The National Cash Register Company, Dayton, Ohio. Filed May 20, 1968.

PETITE

For Adding Machines (Int. Cl. 9).
First use May 17, 1967.

SN 300,766. Welling International Corp., Orange, Conn. Filed June 18, 1968.

WELLING

For Eye Glass Frames, Eye Glass Cases, and Sun Glasses (Int. Cl. 9).
First use May 1, 1967, on eye glass frames.

SN 301,234. Leeds & Northrup Company, Philadelphia, Pa. Filed June 24, 1968.

HYDROSCAN

For Streaming Current Detectors (Int. Cl. 9).
First use May 16, 1968.

SN 301,439. Main-Wall Enterprises, Houston, Tex. Filed June 26, 1968.

KLIMB-SAVER

For Sextant Type Instrument, as for Measuring Roof Areas (Int. Cl. 9).
First use Apr. 2, 1968.

SN 301,787. Tracor, Inc., Austin, Tex. Filed July 1, 1968.

CHROMAFIX

For Synchronizing Equipment for Television Cameras (Int. Cl. 9).
First use at least as early as Apr. 5, 1968.

SN 303,167. Houston Fearless Corporation, Los Angeles, Calif. Filed July 19, 1968.

MINI-COLOR

For Photographic Film Processor (Int. Cl. 9).
First use Mar. 15, 1968.

SN 306,134. GAF Corporation, New York, N.Y. Filed Aug. 28, 1968.

FINEX

Owner of Reg. Nos. 395,983 and 761,922.
For Light-Sensitive Photographic Film for X-Ray Purposes (Int. Cl. 1).
First use Aug. 9, 1968.

SN 306,259. Mettler Instrument Corporation, Hightstown, N.J. Filed Aug. 29, 1968.

MICO

For High-Precision Balances and Scales for the Accurate Determination of Mass, Weight or Quantity by Weighing (Int. Cl. 9).
First use Aug. 12, 1968.

Class 27 — Horological Instruments

SN 282,943. A.B.C. Television Limited, London, England. Filed Sept. 26, 1967.

THE AVENGERS

For Wrist Watches and Leg Watches (Int. Cl. 14).
First use Oct. 1, 1965; in commerce Feb. 1, 1967.

SN 304,584. Bulova Watch Company, Inc., Flushing, N.Y. Filed Aug. 7, 1968.

ACCURATRONIC

Owner of Reg. Nos. 709,055, 825,731, and others.
For Watches and Parts Thereof (Int. Cl. 14).
First use July 26, 1968.

SN 304,585. Bulova Watch Company, Inc., Flushing, N.Y. Filed Aug. 7, 1968.

ATOMACHRON

For Watches and Parts Thereof (Int. Cl. 14).
First use July 26, 1968.

SN 304,586. Bulova Watch Company, Inc., Flushing, N.Y. Filed Aug. 7, 1968.

ATOMATRON

For Watches and Parts Thereof (Int. Cl. 14).
First use July 26, 1968.

Class 28 — Jewelry and Precious-Metal Ware

SN 303,794. H, Inc., Worcester, Mass. Filed July 29, 1968.

STATE HERITAGE

For Jewelry (Int. Cl. 14).
First use on or about July 5, 1968.

SN 308,256. International Silver Company, Meriden, Conn. Filed Sept. 26, 1968.

SILVER LACE

The word "Silver" is disclaimed apart from the mark as shown but applicant waives none of its common law rights thereto.
For Flatware and Holloware Made in Whole or in Part of Silver (Int. Cls. 8 and 14.)
First use at least as early as June 7, 1968.

Class 29 — Brooms, Brushes, and Dusters

SN 297,284. The Fuller Brush Company, East Hartford, Conn. Filed May 3, 1968.

HOUSE OF FULLER

Owner of Reg. Nos. 143,340, 815,964, and others.
For Brushes—Namely, Clothes Brushes and Eyebrow Brushes (Int. Cl. 21).
First use October 1965.

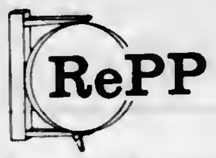
Class 31 — Filters and Refrigerators

SN 268,887. Millipore Corporation, Bedford, Mass. Filed Apr. 11, 1967.

STERIFIL

For Sterilizing Filter Holders Used Primarily for Microanalysis and Filtration Procedures in Clinical Diagnosis and Experimentation (Int. Cl. 11).
First use Mar. 8, 1967.

SN 284,852. The Virtis Company, Inc., Gardiner, N.Y. Filed Nov. 14, 1967.



For Freeze Dryers, Solvent Evaporators, Freezers and Parts Therefor (Int. Cl. 11).
First use May 22, 1962.

SN 293,940. Robert Marsh Enterprises, Inc., Santa Ana, Calif. Filed Mar. 22, 1968.

LAUREL

For Water Conditioner Units, Such as Water Softener Units for Domestic and Commercial Use (Int. Cl. 11).
First use on or before July 1, 1967.

SN 297,371. Bio-Rad Laboratories, Richmond, Calif. Filed May 6, 1968.

AMINEX

For Ion Exchange Resins (Int. Cl. 1).
First use Nov. 4, 1957.

SN 300,805. Dean Products, Inc., Brooklyn, N.Y. Filed June 19, 1968.

JACADEAN

Owner of Reg. No. 553,674.
For Cooling Plates, Emersion Coolers, Cooling Cabinets, Cooling Shrouds, Cooling Drums, Refrigerated Filter Presses, Refrigerated Dip Pans, Utensils for Cooling and Refrigerating Food, Chemicals, Gases and Liquids, Cooling Platens, Refrigerated Counter Tops, Coolers for Sterilizing Laboratory Equipment (Int. Cl. 11).
First use December 1967.

Class 32 — Furniture and Upholstery

SN 291,622. Merillate Woodworking Company, Adrian, Mich. Filed Feb. 21, 1968.

Romance

For Cabinets—Namely, Kitchen Cabinets and Vanity Cabinets (Int. Cl. 20).
First use Apr. 28, 1967.

SN 295,256. Schnadig Corporation, Chicago, Ill. Filed Apr. 9, 1968.

CORONA COLLECTION

The word "Collection" is disclaimed apart from the mark as shown.
For Sofas, Tables and Chairs (Int. Cl. 20).
First use on or before Apr. 2, 1968.

SN 305,041. Fortune Plastics, Inc., Old Saybrook, Conn. Filed Aug. 13, 1968.

ROYALETAINER

For Wheeled Cabinet for Holding Plastic Refuse Sacks (Int. Cl. 20).
First use May 31, 1968.

SN 305,485. Perfection Bedding Company, Birmingham, Ala. Filed Aug. 19, 1968.

CROWN-O-PEDIC

For Mattresses and Box Springs (Int. Cl. 20).
First use June 28, 1962.

SN 306,063. L. & B. Products Corp., Bronx, N.Y. Filed Aug. 27, 1968.

HERALD HOUSE

For Furniture—Namely, Tables, Chairs, Benches, Cabinets and Stools (Int. Cl. 20).
First use July 1, 1968.

SN 311,091. Douglas Furniture Corporation, Chicago, Ill. Filed Nov. 1, 1968.

DOUGLAS

For Kitchen, Dinette and Dining Room Sets, Folding Tables, Restaurant Tables and Chairs, Desk Chairs, Chair Stools, and Upholstered Chairs (Int. Cl. 20).
First use prior to Dec. 1, 1950.

Class 33 — Glassware

SN 282,056. Century Industries, Inc., Chicago, Ill. Filed Oct. 9, 1967.

DURA SEAL

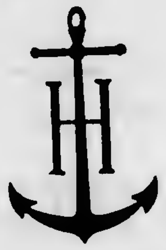
No claim of exclusive right is made to "Seal" for the goods recited.
For Glass Having Insulating Properties (Int. Cl. 19).
First use on or about Sept. 19, 1967.

SN 282,253. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Oct. 11, 1967.

ANCHOR HOCKING

Owner of Reg. Nos. 756,056, 780,225, and others.
For Coasters, Salt and Pepper Shakers, Fish Bowls, Caster Cups, Cruets, Butter Dish, Juice Extractor, Cups, and Flower Pots, All Made of Glass (Int. Cl. 21).
First use about January 1956.

SN 282,256. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Oct. 11, 1967.



Owner of Reg. Nos. 369,485, 817,381, and others.
For Coasters, Salt and Pepper Shakers, Fish Bowls, Caster Cups, Cruets, Butter Dish, Juice Extractor, Cups, and Flower Pots, All Made of Glass (Int. Cl. 21).
First use about January 1956.

SN 310,524. PPG Industries, Inc., Pittsburgh, Pa. Filed Oct. 25, 1968.

NESATRON

Owner of Reg. No. 441,046.
For Glass Having an Electrically Conductive Film (Int. Cl. 21).
First use at least as early as Aug. 28, 1968.

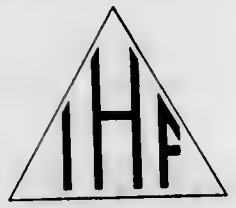
Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 267,969. National Beryllia Corp., Haskell, N.J. Filed Mar. 30, 1967.

ZIRCOLOX

For Zirconium Oxide Crucibles (Int. Cl. 9).
First use Mar. 7, 1967.

SN 280,871. Industrial Heating and Finishing Co., Inc., Birmingham, Ala. Filed Sept. 21, 1967.



For Industrial Heat Process Equipment—Namely, Industrial Ovens, Furnaces, Air Heaters and Make-Up Air Units for Drying and Curing Ovens (Int. Cl. 11).
First use Nov. 22, 1966.

SN 300,003. Raypak Company, Inc., South El Monte, Calif. Filed June 7, 1968.

SEQUENCE-PAK

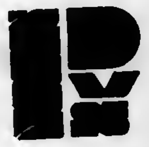
For Sequence Controlled Multiple Boiler Installations (Int. Cl. 11).
First use February 1965.

SN 300,071. Cragmet Corporation, Rancocas, N.J. Filed June 10, 1968.

CRAGMET

For Vacuum Furnaces and Parts Therefor (Int. Cl. 11).
First use May 10, 1968.

SN 300,147. Wheeling Service & Supply, Inc., Arlington Heights, Ill. Filed June 10, 1968.



Owner of Reg. No. 840,476.
For Plastic-Coated Metal Air Ducts and Fittings Therefor (Int. Cl. 6).
First use Apr. 25, 1968.

SN 300,806. Dean Products, Inc., Brooklyn, N.Y. Filed June 19, 1968.

JACADEAN

Owner of Reg. No. 553,674.
For Heating Platens and Plates, Emersion Heaters, Heating Ovens, Heat Exchangers, Melting Tanks, Drum Warmers, Heat Treating Furnaces, Heating Tanks, Heated Filter Presses, Heated Dip Pans, Utensils for Heating Food, Chemicals, Gases and Liquids, Heated Counter Tops and Heaters for Sterilizing Laboratory Equipment (Int. Cl. 11).
First use December 1967.

SN 301,393. Aero-Flow Dynamics, Inc., Linden, N.J. Filed June 26, 1968.

IFB

Owner of Reg. Nos. 747,628 and 760,729.
For Heaters—Namely, Heater Sections for Inclusion in Air Heating Systems (Int. Cl. 11).
First use Sept. 18, 1961.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 273,765. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed June 13, 1967.

HOSEMASTER

For Hose Assemblies (Int. Cl. 17).
First use Nov. 2, 1964.

SN 282,188. Haveg Industries, Inc., Wilmington, Del. Filed Oct. 10, 1967.

FABAIR

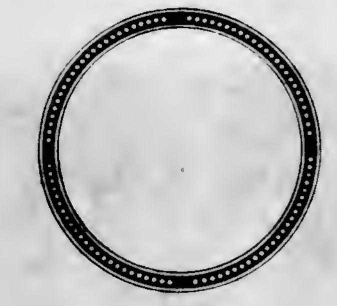
For Fabric Reinforced Inflatable Seals for Use on Aircraft as Canopy Seals, Engine Access Door Seals and Variable Sweep Wing Seals (Int. Cl. 17).
First use Feb. 1, 1966.

SN 305,388. American Lace Leather Co. Inc., Richmond, Va. Filed Aug. 19, 1968.

HOLD FAST

Owner of Reg. No. 535,119.
For Lacing for Leather Belts (Int. Cl. 7).
First use on or about Jan. 1, 1925.

SN 307,999. The General Tire & Rubber Company, Akron, Ohio. Filed Sept. 23, 1968.



For Tires (Int. Cl. 12).
First use December 1967.

SN 308,288. The General Tire & Rubber Company, Akron, Ohio. Filed Sept. 26, 1968.

Sidewinder

For Tires (Int. Cl. 12).
First use December 1967.

SN 308,292. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Sept. 26, 1968.

TORQUE-FLEX

For Belts and Belting Composed Wholly or Principally of Rubber and/or Synthetic Rubber (Int. Cl. 7).
First use Aug. 19, 1968.

SN 308,326. Thor Power Tool Company, Aurora, Ill. Filed Sept. 26, 1968.

PACELON

Owner of Reg. No. 114,710.
For Rubber-Fabric Conveyor Belting (Int. Cl. 7).
First use April 1967.

SN 308,448. Albany Felt Company, Albany, N.Y. Filed Sept. 30, 1968.

TUFF-CORE

For Conveyor Belt Woven of Fibers and Yarns of Cotton, Synthetics and Asbestos (Int. Cl. 7).
First use on or about Sept. 10, 1968.

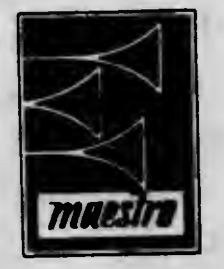
SN 308,642. Tire Distributors, Incorporated, Minneapolis, Minn. Filed Oct. 1, 1968.

FORMULA

For Motor Vehicle Tires (Int. Cl. 12).
First use in or about August 1968.

Class 36 — Musical Instruments and Supplies

SN 285,525. Chicago Musical Instrument Co., Chicago, Ill. Filed Nov. 24, 1967.



The drawing is lined for the colors pink, yellow and blue. Applicant disclaims a representation of horns per se apart from the mark as shown. Owner of Reg. Nos. 328,690 and 336,824.
For Devices for Modifying the Electrical Tone Signals of Electrical Musical Instruments, Electrified String and Band Instruments Having Such Devices, Electronic Amplifiers for Musical Instruments Wherein the Amplifiers Have Such Devices, and Devices for Creating Electrical Signals for Use in Electronic Musical Instruments (Int. Cl. 9).
First use at least as early as June 25, 1967.

Class 37 — Paper and Stationery

SN 299,115. Dur-O-Lite Pencil Company, Melrose Park, Ill. Filed May 27, 1968.

SCANNER

For Writing Instruments—Namely, Mechanical Pencils, and Components Thereof, Namely, Mechanical Pencil Lead (Int. Cl. 16).
First use May 14, 1968.

Class 38 — Prints and Publications

SN 273,531. Scholastic Magazines, Inc., New York, N.Y. Filed June 9, 1967.

STORY

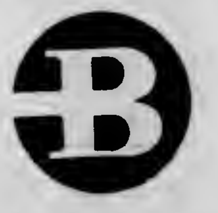
For Collections of Literary Works Published in Magazine, Booklet or Book Form From Time to Time (Int. Cl. 16).
First use October 1932.

SN 290,071. Burroughs Corporation, Detroit, Mich. Filed Feb. 1, 1968.

Burroughs

Owner of Reg. No. 247,563.
For Books, Pamphlets, Magazines, Instructional and Technical Reference Manuals for Data Processing, and Printed Reference Tables, Charts, Templates, Cards and Folders (Int. Cl. 16).
First use January 1907 on technical manuals.

SN 290,072. Burroughs Corporation, Detroit, Mich. Filed Feb. 1, 1968.



For Books, Pamphlets, Magazines, Instructional and Technical Reference Manuals for Data Processing, and Printed Reference Tables, Charts, Templates, Cards and Folders (Int. Cl. 16).
First use Apr. 16, 1947.

SN 292,639. United Business Service Company, Boston, Mass. Filed Mar. 6, 1968.

UNITED
Business & Investment
REPORT

The words "Business & Investment Report" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 149,271, 830,186, and others.

For Economic Service Publication—Namely, Business and Investment Report Issued Each Week (Int. Cl. 16).

First use May 2, 1966; Apr. 22, 1921, as to the mark "United."

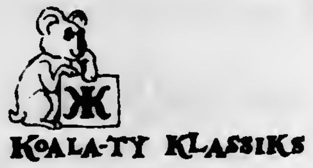
SN 293,191. The World Press Company, New York, N.Y. Filed Mar. 13, 1968.

atlas

For Monthly Magazine (Int. Cl. 16).

First use Mar. 6, 1961.

SN 297,979. Richard Czerniowski, d.b.a. Koala-Ty Klassiks, Yonkers, N.Y. Filed May 13, 1968.



For Greeting Cards (Int. Cl. 16).

First use Apr. 28, 1968.

SN 298,483. Sutton Publishing Company, Inc., White Plains, N. Y. Filed May 17, 1968.

THE AMERICAN HOSPITAL PROFESSIONAL

Owner of Reg. No. 825,118.

For Periodical Magazine (Int. Cl. 16).

First use May 7, 1968.

SN 299,556. Jack Gasnick, New York, N.Y. Filed June 3, 1968.

THINK MINK

For Printed Labels, Posters, Bulletins Containing Advice Relating to Safe Conduct (Int. Cl. 16).

First use Mar. 1, 1960.

SN 301,410. Clarity Publishing, Inc., Albany, N.Y. Filed June 26, 1968.

CROSSWINDS

For Monthly Magazine in Newspaper Format (Int. Cl. 16).

First use Apr. 19, 1968.

SN 305,069. Alfred B. Rode, New York, N.Y. Filed Aug. 13, 1968.

CLOUD 9

For Travel Newsletter (Int. Cl. 16).

First use Aug. 5, 1968.

SN 306,012. Board of Publication of the Methodist Church, Inc., d.b.a. The Graded Press, Nashville, Tenn. Filed Aug. 22, 1968.

HI TIMES

For Magazine Published Quarterly (Int. Cl. 16).

First use May 7, 1968.

Class 39 — Clothing

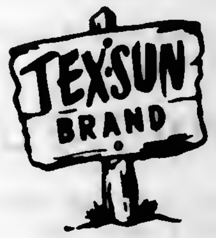
SN 246,509. Dorothy M. Young, d.b.a. Beverly Creations, Silver Spring, Md. Filed May 24, 1966.

The drawing is lined for gold, or deep yellow, and color is claimed as a feature of the mark. The word "Creations" is disclaimed apart from the mark as shown.

For Hunt Caps, Riding Boots, Jodphurs, Slacks, Skirts, Blouses, Sweaters, Shirts, Shorts, Dresses, Jackets, Neckties, Ascots, Scarves, and Chokers (Int. Cl. 25).

First use Apr. 22, 1966.

SN 274,005. Tex-Sun Glove Company, Corsicana, Tex. Filed June 15, 1967.



The word "Brand" is disclaimed apart from the mark as shown.

For Work Gloves (Int. Cl. 25).

First use Jan. 28, 1952.

SN 278,534. Stone Manufacturing Company, Greenville, S.C. Filed Aug. 17, 1967.

MERRY
CAPERS

For Blouses, Shirts, Shorts, Slacks, Overalls, Playsuits, Jumpers, Dresses and Lingerie (Int. Cl. 25).

First use July 25, 1967.

SN 279,487. The Joseph & Feiss Company, Cleveland, Ohio. Filed Aug. 31, 1967.

DURA-SET

For Tailored Men's Wear—Namely, Slacks, Jackets, and Suits (Int. Cl. 25).

First use June 28, 1967.

SN 281,432. Angelica Corporation, St. Louis, Mo., by change of name from Angelica Uniform Company, St. Louis, Mo. Filed Sept. 29, 1967.

ANGELICA-PREST

For Uniforms, Including Dresses, Aprons, Bandettes, Blouses, Pinafores, Smocks, Women's Blazers, Tunics, Women's Jackets, Skirts, Slacks, Laboratory Coats, Hospital Coats, Hospital Smocks, Men's Jackets, Cummerbunds, Bow-Ties, Men's Service Coats, Men's Blazers, Men's Shirts, Men's Work Suits, Having Fabric Specially Designed and Processed To Retain Its Shape, Whether That Shape Be Flat, Curved or Creased, Through Numerous Laundry or Dry Cleaning Cycles, Without Requiring Pressing (Int. Cl. 25).

First use Aug. 1, 1967.

SN 281,613. Oxford Industries, Inc., Atlanta, Ga. Filed Oct. 2, 1967.

CLIPPERSHIP CANVAS

The word "Canvas" is disclaimed apart from the mark as shown.

For Fabric Made Up Into Men's and Boys' Slacks, Jeans, and Walk Shorts (Int. Cl. 25).

First use Sept. 19, 1967.

SN 283,183. Oxxford Clothes Inc., Chicago, Ill., by change of name from Weinberg Corporation, Chicago, Ill. Filed Oct. 23, 1967.

HEATHERMIST

For Men's and Boys' Suits, Jackets, Outercoats and Slacks (Int. Cl. 25).

First use Aug. 15, 1967.

SN 288,948. Four Star Sportswear, Inc., New York, N.Y. Filed Jan. 16, 1968.

SCUBA-DUBA

For Men's and Boys' Outerwear—Namely, Jackets, Trousers, Sport Coats, Rain Coats, Rain Hats, Sweaters, Vests, Shirts and Suits (Int. Cl. 25).

First use Oct. 5, 1967.

SN 292,840. Blue Bell Boots, Inc., Nashville, Tenn. Filed Mar. 11, 1968.

J. W. CARTER

J. W. Carter, deceased, was the name of the founder of applicant's predecessor. Owner of Reg. No. 824,478.

For Socks (Int. Cl. 25).

First use Feb. 8, 1968.

SN 293,189. Wolverine World Wide, Inc., Rockford, Mich. Filed Mar. 13, 1968.

Owner of Reg. No. 727,047 and others.

For Clothing for Men, Women and Children—Namely, Coats, Jackets, Dresses, Blouses, Skirts, Slacks, Trousers, Shirts, Sweaters, Belts and Gloves, and Hosiery (Int. Cl. 25).

First use on or about Nov. 1, 1966.

SN 293,347. M. Berman & Sons Inc., New York, N.Y. Filed Mar. 15, 1968.

Talk-Abouts

For Sportswear for Girls and Women—Namely, Skirts, Slacks, Sweaters, Jackets, Jumpers, Shirts, Shifts, Jamaica Shorts, Bermuda Shorts, Shorts, Pedal Pushers, Culottes, Hats, Tights, Dresses for Girls, and Dresses for Women (Int. Cl. 25).

First use Oct. 13, 1964.

SN 293,541. Melbo Clothing Incorporated, Higashiku, Osaka, Japan. Filed Mar. 18, 1968.

Melbo

Owner of Japanese Reg. No. 439,595, dated Feb. 6, 1954.

For Men's and Women's Suits (Int. Cl. 25).

SN 294,268. Etablissements Gaston Verdier, Societe Anonyme, Meaux, Seine-et- Marne, France. Filed Mar. 27, 1968.

GUI

The English translation of the term "Gui" is "mistletoe." Owner of French Reg. No. 1,251, dated Mar. 5, 1964 (Meaux); Natl. Inst. No. 223,300; and U.S. Reg. No. 196,284.

For Women's Hosiery, Tights, Corsets, Garters, Brassieres, Slips, Overalls, Petticoats, Shirts, Night Gowns, Negligees, Sweaters, Cardigans, Pullovers, Dresses and Skirts; Men's Sweaters, Pullovers, Underwear and Hosiery (Int. Cl. 25).

SN 297,727. Van Raalte Company, Inc., New York, N.Y. Filed May 8, 1968.

VANAIRE

For Fabric Made Up Into Women's Underwear and Lingerie (Int. Cl. 25).

First use Apr. 30, 1968.

SN 300,982. Spartans Industries, Inc., New York, N.Y. Filed June 20, 1968.

THE
HOPPY SHOP

Applicant disclaims the word "Shop" apart from the mark as shown. Owner of Reg. No. 848,860.

For Women's Shoes (Int. Cl. 25).

First use Jan. 1, 1968.

SN 301,225. Hart Schaffner & Marx, Chicago, Ill. Filed June 24, 1968.

NOVA-SET

For Suits, Coats, Overcoats, Topcoats, Vests, Trousers, Knickerbockers, Breeches for Men and Boys; and Suits, Coats, and Dresses for Women and Girls (Int. Cl. 25).

First use June 6, 1968.

SN 302,335. International Playtex Corporation, Dover. Del. Filed July 9, 1968.

FIRM 'N FLATTER

For Girdles (Int. Cl. 25).

First use July 22, 1966.

SN 302,613. French, Shriner & Urner Mfg. Co., South Boston, Mass. Filed July 12, 1968.

SOFT-LIFE

For Men's Shoes (Int. Cl. 25).
First use June 10, 1968.

SN 302,636. Par-Form Foundations, Inc., New York, N.Y. Filed July 12, 1968.

EBB TIDE

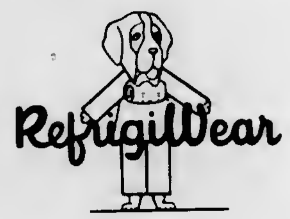
For Swimsuits (Int. Cl. 25).
First use May 25, 1968.

SN 303,193. Padmore & Barnes Limited, Kilkenny, Ireland. Filed July 19, 1968.

WALLABEES

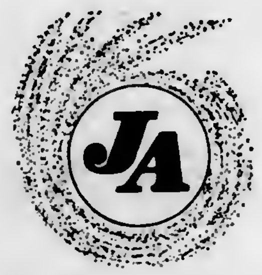
For Footwear (Int. Cl. 25).
First use April 1968; in commerce Apr. 19, 1968.

SN 303,444. Refrigiwear Inc., Inwood, N.Y. Filed July 23, 1968.



Owner of Reg. No. 633,681.
For Insulated Clothing for Men and Women for Use at Low Temperatures (Int. Cl. 25).
First use May 1966.

SN 303,760. Jacob Ash Company, Inc., Pittsburgh, Pa. Filed July 29, 1968.



For Gloves (Int. Cl. 25).
First use December 1965.

SN 303,842. Teplick Clothes, Inc., Philadelphia, Pa. Filed July 29, 1968.

CHESTER-HARRIS

Owner of Reg. No. 438,881.
For Men's Clothing—Namely, Suits, Overcoats, Topcoats, Sport Coats and Trousers (Int. Cl. 25).
First use 1937.

SN 303,908. Thomas W. Garland, Inc., St. Louis, Mo. Filed July 30, 1968.

VERONESE

For Fur Coats, Jackets, Capes, Stoles and Wraps (Int. Cl. 25).
First use July 13, 1958.

SN 307,321. The Empress Corporation, Los Angeles, Calif. Filed Sept. 13, 1968.

FLOAT COAT

The word "Coat" is disclaimed apart from the mark as shown.
For Ladies' and Men's Sport Clothing—Namely, Foul Weather Jackets (Int. Cl. 25).
First use Mar. 5, 1968.

SN 309,815. Melville Shoe Corporation, New York, N.Y. Filed Oct. 17, 1968.

GIRLFOOTING

For Shoes and Hosiery (Int. Cl. 25).
First use May 31, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 290,838. Forest City Products, Inc., Cleveland, Ohio. Filed Feb. 12, 1968.

SNEAKER SAVERS

For Iron-On Patches (Int. Cl. 26).
First use Jan. 5, 1968.

SN 301,125. Darling Curler, Incorporated, Lubbock, Tex. Filed June 24, 1968.

DARLING

For Non-Electrical Hair Curlers (Int. Cl. 26).
First use at least as early as Jan. 22, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 295,094. B. Ashworth & Company (Overseas) Limited, London, England. Filed Apr. 8, 1968.

DISCOVERY

Owner of British Reg. No. 692,353, dated Sept. 18, 1950.
For Textile Piece Goods—Namely, Men's Suitings (Int. Cl. 24).

SN 296,286. Abaco Fabrics Corp. (New York corporation), New York, N.Y., assignee of Abaco Fabrics Corp. (Delaware corporation), New York, N.Y. Filed Apr. 23, 1968.

ARROYO

"Arroyo" is a Spanish word, and when translated into English, means "ravine."
For Knitted and Textile Fabrics for Manufacture Into Women's, Teens' and Children's Sportswear—Namely, Shorts, Slacks, Pants, Tops, Dresses, Skirts, Suits, Vests, Blouses (Int. Cl. 24).
First use Dec. 7, 1967.

SN 301,460. J. P. Stevens & Co., Inc., New York, N.Y. Filed June 26, 1968.

ASTROMOD

Owner of Reg. No. 805,646.
For Graphite Fabrics Sold in the Bolt or by the Piece (Int. Cl. 24).
First use May 22, 1968.

Class 44—Dental, Medical, and Surgical Appliances

SN 220,589. United States Catheter & Instrument Corporation (Delaware corporation), Glens Falls, N.Y., assignee of United States Catheter & Instrument Corporation (New York corporation), Glens Falls, N.Y. Filed June 7, 1965.

RODRIGUEZ-ALVAREZ

For Cardiovascular Catheters (Int. Cl. 10).
First use about 1956.

SN 280,559. Clairol Incorporation, New York, N.Y. Filed Sept. 18, 1967.

RUSHING BEAUTY

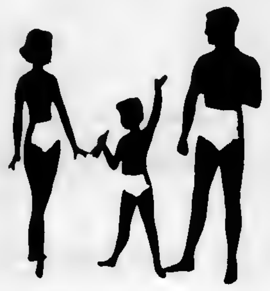
For Electrical Apparatus for Heating Hair Curlers Used for Curling, Drying and Setting Hair and Hair Curlers for Use With Such Apparatus (Int. Cl. 9).
First use Aug. 25, 1967.

SN 284,176. Drägerwerk, Heinr. & Bernh. Dräger, Lubeck, Germany. Filed Nov. 6, 1967.

DRAEGEROLITH

Owner of German Reg. No. 249,913, dated Aug. 4, 1920.
For Resuscitators, Anesthesia Apparatus, Inhalators, Medicament Atomizers, Atomizers, Respirators, and Protective Masks (Int. Cl. 10).

SN 284,321. Sani-Pac Corporation, New York, N.Y. Filed Nov. 7, 1967.



Applicant disclaims exclusive rights in the representation of the goods apart from the mark as shown, without waiving and without prejudice to any rights at common law. Owner of Reg. No. 859,371.
For Incontinent Pants for Men, Women and Children (Int. Cl. 5).
First use Apr. 13, 1960.

SN 291,295. Unitek Corporation, Monrovia, Calif. Filed Feb. 16, 1968.

HYDROFLAME

For Precision Soldering Units (Particularly Soldering Torches and Associated Gas Generators) Operating on Electrolytic Principles Without a Hydrocarbon Prime Fuel Source, Particularly for Use in Medical and Dental Offices and Laboratories on Medical and Dental Appliances (Int. Cl. 10).
First use at least as early as Jan. 25, 1968.

SN 296,151. Guardian Products Company, Inc., North Hollywood, Calif. Filed Apr. 22, 1968.

TORSION-X-BRACED

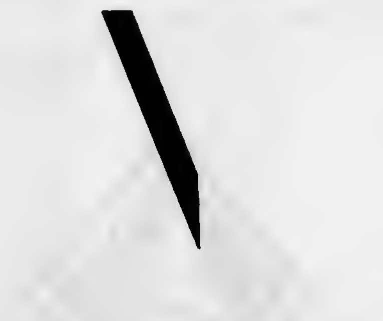
For Invalid Walkers (Int. Cl. 10).
First use Mar. 8, 1968.

SN 296,153. Guardian Products Company, Inc., North Hollywood, Calif. Filed Apr. 22, 1968.

TORSION-V-BRACED

For Invalid Walkers (Int. Cl. 10).
First use Mar. 8, 1968.

SN 297,139. Johnson & Johnson, New Brunswick, N.J. Filed May 2, 1968.



For Surgical Dressings; Bandages; Adhesive Tapes; Cellulose; Cotton Buds; Splints; Plasters; X-ray Detectable Dressings; Sponges; Underpads; Hospital Shave Kits; Hospital Packs Containing Drape Sheets, Table and Stand Covers; Disposable Hospital Gowns; Face Masks; Towels and Sanitary Napkins (Int. Cl. 5).
First use June 1965.

SN 297,498. Bio/Systems, Inc., New York, N.Y. Filed May 7, 1968.

BIO/SYSTEMS

For Artificial Kidney Systems and Components Thereof (Int. Cl. 10).
First use June 1965.

SN 297,908. The Max Wocher & Son Company, d.b.a. Duxe Products, Cincinnati, Ohio. Filed May 10, 1968.

CHAIR-MODE

For Chair Commodes (Int. Cl. 10).
First use on or about November 1959.

SN 301,489. Gullfiber Aktiebolag, Billesholm, Sweden. Filed June 27, 1968.

BILSOM

Owner of Swedish Reg. No. 122,874, dated Mar. 8, 1968.
For Ear Protectors Against Sound and Ear Plugs (Int. Cl. 10).

SN 303,199. The Songrand Corporation, Kansas City, Mo. Filed July 19, 1968.

QUICKI-DO

For Electrical Hair Curling Kit, Consisting of Curler Rollers, Clips and an Electric Heating Unit Insertible in the Curler Rollers (Int. Cl. 11).
First use on or about July 12, 1968.

SN 305,433. The Foregger Company, Inc., Smithtown, N.Y. Filed Aug. 19, 1968.

ETHERMATIC

For Vaporizers for Surgical Use (Int. Cl. 10).
First use July 10, 1968.

SN 306,227. The Dentists' Supply Company of New York, York, Pa. Filed Aug. 29, 1968.

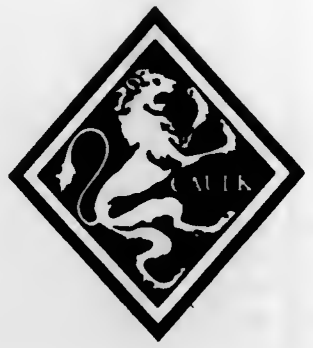
MULTI-VEST

Owner of Reg. No. 300,906.

For High Heat-Resistant Dental Investment Material To Form Molds for Casting Metals Having High Melting Temperatures To Form Dental Restorative Devices (Int. Cl. 5).

First use Feb. 20, 1960.

SN 306,651. The Dentists' Supply Company of New York, York, Pa. Filed Sept. 5, 1968.



Owner of Reg. Nos. 166,521, 674,672, and others.

For Dental and Surgical Supplies and Appliances—Namely, Amalgams, Amalgam Squeeze Cloths, Absorbent Points for Root Canals, Dental Cements, Dental Floss, Resinous Filling Material for Cranial Openings, and Matrixes for Dental Filling Materials (Int. Cl. 5).

First use January 1905 on dental cements.

SN 306,791. George A. Maison, d.b.a. Maison Plastics, San Francisco, Calif. Filed Sept. 6, 1968.

TELEFUSOR

For Eye Corrective Devices, Such as Transparent Colored Screens and Eye Glasses, Used Primarily in Connection With a Television Set (Int. Cl. 10).

First use Jan. 6, 1967.

SN 307,339. Merck & Co., Inc., Rahway, N.J. Filed Sept. 13, 1968.

RESPIHALER

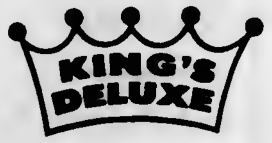
Owner of Reg. No. 740,228.

For Medical Device for the Oral Inhalation of Medicines (Int. Cl. 10).

First use Jan. 26, 1962.

Class 46 — Foods and Ingredients of Foods

SN 217,348. King Foods, Inc., Newport, Minn., by change of name from King Packing, Inc., Newport, Minn. Filed Apr. 26, 1965.



Applicant claims no registration rights in the word "Deluxe" apart from the mark as a whole. Owner of Reg. No. 623,632.

For Frozen Meats (Int. Cl. 29).

First use Sept. 1, 1959.

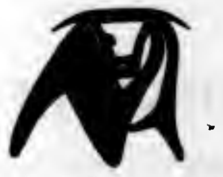
SN 271,943. Howard Food Products Company, Methuen, Mass. Filed May 19, 1967.

Howard's

For Bottled Foods—Namely, Mayonnaise, Piccalilli, Mustard Pickle, Pepper Relish, Sweet Relish, Hot Dog Relish, Melon Rind, Strawberry Preserve, Raspberry Preserve and Marmalade (Int. Cls. 29 and 30).

First use Jan. 1, 1894.

SN 275,069. Needham Packing Company, Inc., Sioux City, Iowa. Filed June 29, 1967.

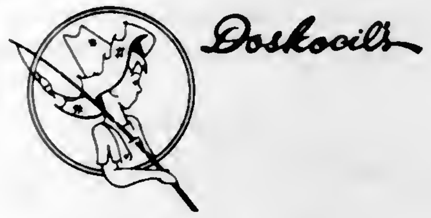


The mark is composed of a fanciful designation of the letter "N" superposed upon the representation of a steer.

For Beef Heart Caps, Beef Spleens and Beef Cheek Trimmings for Dog and Cat Foods (Int. Cl. 31).

First use Apr. 28, 1967.

SN 277,638. Doskocil Sausage, Inc., Hutchinson, Kans. Filed Aug. 7, 1967.



For Pork Sausage and Chili (Int. Cl. 29).

First use on or about Oct. 1, 1961, on sausage.

SN 282,406. Stilwell Frozen Foods, Inc., Stilwell, Okla. Filed Oct. 12, 1967.

YAM YUMMIES

No claim of exclusive right is made to the word "Yam" apart from the mark as shown.

For Frozen Candied Sweet Potatoes (Int. Cl. 29).

First use Sept. 1, 1967.

SN 285,621. P. Ferrero & C. S.p.A., Alba, Cuneo, Italy. Filed Nov. 27, 1967.

POCKET COFFEE

"Coffee" is disclaimed apart from the mark as a whole.

For Chocolate Filled With Liquid Coffee (Int. Cl. 30).

First use Nov. 15, 1967; in commerce Nov. 15, 1967.

Subj. to Intf. with SN 286,903.

SN 286,072. Silver Skillet Food Products Company, Skokie, Ill. Filed Dec. 4, 1967.

SILVER SKILLET

Owner of Reg. Nos. 333,973 and 677,401.

For Poultry—Namely, Fresh Frozen Cooked Turkey and Cooked Chicken; Boned Chicken Packed in Cans and/or Glasses; Canned Chop Suey With Chicken and Gravy With Chicken Added (Int. Cl. 29).

First use at least as early as 1944.

SN 286,903. Carnation Company, Los Angeles, Calif. Filed Dec. 14, 1967.

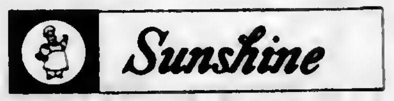
POCKET LUNCH

For Nutritious Food Bars, the Principal Ingredient of Which Are Milk Chocolate or Peanut Butter and Jelly (Int. Cl. 30).

First use Nov. 22, 1967.

Subj. to Intf. with SN 285,621.

SN 295,471. Sunshine Biscuits, Inc., New York, N.Y. Filed Apr. 11, 1968.

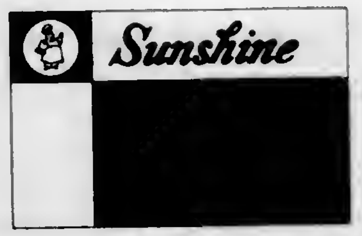


Owner of Reg. Nos. 619,541, 832,624, and others.

For Crackers, Cookies, and Wafers (Int. Cl. 30).

First use Oct. 4, 1967, on crackers.

SN 295,472. Sunshine Biscuits, Inc., New York, N.Y. Filed Apr. 11, 1968.



Owner of Reg. Nos. 619,541, 832,624, and others.

For Cookies (Int. Cl. 30).

First use Oct. 6, 1967.

SN 298,825. Holiday Farms Limited, Chippawa, Ontario, Canada. Filed May 22, 1968.

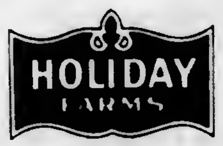
HOLIDAY FARMS

For Processed Frozen Meats and Cooked Frozen Meat and Poultry Products, With or Without Sauces or Gravies (Int. Cl. 29).

First use in 1961; in commerce in 1961.

Subj. to Intf. with SN 278,299.

SN 298,826. Holiday Farms Limited, Chippawa, Ontario, Canada. Filed May 22, 1968.



For Processed Frozen Meats and Cooked Frozen Meat and Poultry Products, With or Without Sauces or Gravies (Int. Cl. 29).

First use in 1961; in commerce in 1961.

Subj. to Intf. with SN 278,299.

SN 303,417. H. P. Hood & Sons, Inc., Boston, Mass. Filed July 23, 1968.

GOLDEN TRIANGLE

For Orange Juice Concentrate (Int. Cl. 32).

First use December 1961.

SN 303,607. Foster Frosty Foods, Inc., Denver, Colo. Filed July 25, 1968.

PORTION-RITE

For Frozen Precooked and Uncooked Meat Entrees (Int. Cl. 29).

First use Nov. 1, 1955.

SN 304,741. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. Filed Aug. 9, 1968.

Nugget

Owner of Reg. Nos. 758,505 and 681,583.

For Canned Fruits; Canned Vegetables; Frozen Vegetables; Frozen Fruits; Frozen Strawberries; Frozen Breaded Shrimp; Frozen Peeled and Deveined Shrimp; Frozen Precooked Breaded Fish Portions; Frozen Precooked Breaded Fish Sticks; Frozen Concentrated Orange Juice; and Frozen Dessert Pies (Int. Cls. 29, 30, and 32).

First use June 1, 1916, on canned fruits and canned vegetables.

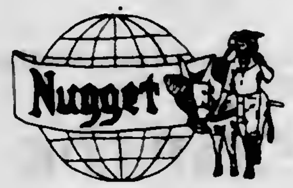
SN 306,618. O'Connell Packing Co., Sherwood, Oreg. Filed Sept. 5, 1968.

BEG-MORE

For Food for Dogs and Cats (Int. Cl. 31).

First use Dec. 7, 1945.

SN 307,617. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. Filed Sept. 18, 1968.



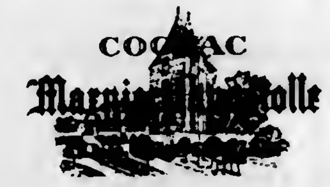
Owner of Reg. Nos. 758,505, 841,746, and others.

For Canned Food Items as Follows: Fruits; Berries; Vegetables; Fruit, Berry, and Mincemeat Pie Fillings; Soups; Preserves; Jams; Jellies; Mayonnaise; French Dressing; Salad Dressing; Vinegar; Sugar; Evaporated Milk; Sandwich Spread; Prepared Mixes—Namely, Cake, Muffin, Waffle, Pancake, Pie Crust, Doughnut, Roll, and Cookie Mixes; Apple Juice; Food Seasonings—Namely, Salt, Pepper, Chili Powder, Oregano, Onion Powder, Paprika, Poultry Seasoning, Sage, Thyme, Vegetable Flakes; Gelatin Desserts; Olives; Gherkins; Cocktail Onions; and Cherry Peppers (Int. Cls. 29, 30, and 32).

First use Mar. 4, 1968; June 1, 1916, as to the mark "Nugget."

Class 49 — Distilled Alcoholic Liquors

SN 293,747. Societe des Produits Marnier-Lapostolle, Paris, France. Filed Mar. 20, 1968.



Priority claimed under Sec. 44(d) on French Reg. No. 730,103, dated Dec. 19, 1967. No claim is made to the words "Cognac" and "Fine Champagne." Owner of U.S. Reg. Nos. 312,050, 735,496, and others.

For Cognac (Int. Cl. 33).

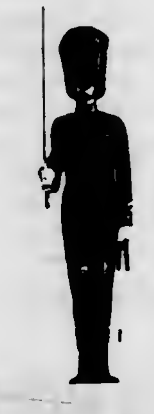
SN 304,643. Alpha Industries, Inc., Helena, Mont. Filed Aug. 8, 1968.

LEWIS & CLARK

For Alcoholic Beverages—Namely, Gin, Whiskies, and Vodka (Int. Cl. 33).

First use November 1966.

SN 307,067. National Distillers and Chemical Corporation, d.b.a. The Windsor Distillery Company, New York, N.Y. Filed Sept. 11, 1968.



The portrait shown on the drawing is not that of any particular living individual.

For Whisky (Int. Cl. 33).

First use June 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 271,217. Arlington Aluminum Company, Detroit, Mich. Filed May 11, 1967.

SNAP-LOK

For Signboards of Open Frame Construction for the Inserting of Advertising Posters, Printed Advertising Displays and the Like (Int. Cl. 6).

First use Aug. 21, 1957.

SN 281,065. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. Filed Sept. 25, 1967.

831

For Reflective Glass Beads for Use With Reflectorized Traffic and Sign Markings (Int. Cl. 21).

First use Mar. 11, 1957.

Class 51 — Cosmetics and Toilet Preparations

SN 270,909. Rene Duval, nee Germaine Nicolle, d.b.a. Parfums Volnay, Suresnes, Hauts-de-Seine, France. Filed May 8, 1967.

PERLINETTE

Priority claimed under Sec. 44(d) on French Reg. No. 728,512, dated Feb. 24, 1967.

For Perfumes, Perfume Extracts, Cologne Waters, Bath Salts, Rouge, Hair Setting and Waving Lotions, Hair Rinse, Hair Bleach, Hair Dyes, Hair Tonic, Lipsticks, Nail Polish and Non-Medicated Creams and Lotions for the Beauty and Care of the Hands, of the Body and of the Face (Int. Cl. 3).

SN 280,059. Richard Hudnut, Morris Plains, N.J. Filed Sept. 11, 1967.

DAINTY MIST

Applicant disclaims the word "Mist" apart from the mark as shown.

For Feminine Hygiene Deodorant (Int. Cl. 5).

First use Aug. 24, 1967.

SN 280,060. Richard Hudnut, Morris Plains, N.J. Filed Sept. 11, 1967.

COLOR FLINGERS

Applicant disclaims the word "Color" apart from the mark as shown.

For Nail Enamel (Int. Cl. 3).

First use Aug. 22, 1967.

SN 280,062. Richard Hudnut, Morris Plains, N.J. Filed Sept. 11, 1967.

NECESSAIRE

The English translation of the mark "Necessaire" is "necessary, requisite, needful."

For Feminine Hygiene Deodorant (Int. Cl. 5).

First use Aug. 25, 1967.

SN 281,105. Owen Laboratories, Inc., Dallas, Tex. Filed Sept. 25, 1967.

NutraSpa

For Bath Oil (Int. Cl. 3).

First use Sept. 12, 1967.

SN 286,656. The Emko Company, St. Louis, Mo. Filed Dec. 11, 1967.

MINE

For Deodorant Product—Namely, a Personal Deodorant Spray Product (Int. Cl. 5).

First use Nov. 15, 1967.

SN 286,657. The Emko Company, St. Louis, Mo. Filed Dec. 11, 1967.

BECAUSE

For Deodorant Product—Namely, a Personal Deodorant Spray (Int. Cl. 5).

First use Nov. 15, 1967.

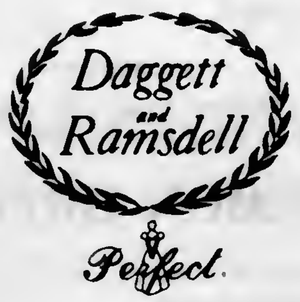
SN 289,508. Invincible Products Corporation, Chicago, Ill Filed Jan. 24, 1968.

BODYLAC

For Hair Spray (Int. Cl. 3).

First use Jan. 10, 1968.

SN 289,882. Daggett & Ramsdell International Corp., New York, N.Y. Filed Jan. 30, 1968.



Owner of Reg. Nos. 239,772, 347,897, and others.

For Cold Cream, Hand Cream and Cleansing Cream (Int. Cl. 3).

First use September 1962; 1895 in a different form.

SN 291,139. Cosmetics Manufacturing Company, d.b.a. Imperial Del Oro, Long Beach, Calif. Filed Feb. 15, 1968.

Imperial Collection

For After Shave Lotion and Cologne for Men (Int. Cl. 3).

First use Sept. 1, 1966.

SN 292,075. John H. Breck, Inc., Wayne, N.J. Filed Feb. 28, 1968.

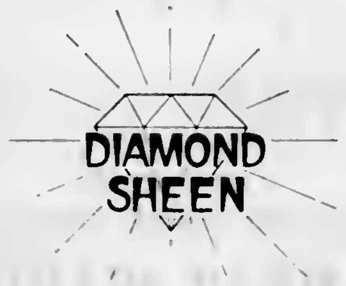
HAIR MAGIC

Owner of Reg. No. 717,300.

For Permanent Wave Preparation and Hair Setting Lotion (Int. Cl. 3).

First use June 17, 1966, on permanent wave preparation.

SN 292,126. Pride Stores, Inc., d.b.a. Diamond Sheen Products, Los Angeles, Calif. Filed Feb. 28, 1968.



For Hair Conditioner (Int. Cl. 3).

First use Nov. 25, 1967.

SN 296,055. Tiffany Perfumes, Ltd., New York, N.Y. Filed Apr. 19, 1968.

KISMET

For Perfume (Int. Cl. 3).

First use Apr. 17, 1968.

SN 296,635. Bristol-Myers Company, New York, N.Y. Filed Apr. 26, 1968.

DURAMENTA

For Toothpaste (Int. Cl. 3).

First use Apr. 1, 1968.

SN 296,640. Bristol-Myers Company, New York, N.Y. Filed Apr. 26, 1968.

SUMMER GLO

For After Shave and a Sun Tan Lotion (Int. Cl. 3).

First use Dec. 14, 1967.

SN 296,983. Revlon, Inc., New York, N.Y. Filed Apr. 30, 1968.

FabuLightener

For Hair Bleach (Int. Cl. 3).

First use Sept. 14, 1966.

SN 297,944. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

SEE THE LIGHT

For Hair Coloring Preparation (Int. Cl. 3).

First use Apr. 23, 1968.

SN 298,068. USV Pharmaceutical Corporation, New York, N.Y. Filed May 13, 1968.

SUSURRO

For Aerosol Breath Freshener (Int. Cl. 3).

First use Apr. 25, 1968.

SN 298,544. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

YEARNING

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet and Powder Sachet (Int. Cl. 3).

First use May 8, 1968.

SN 298,547. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

INTERCHANGE

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet and Powder Sachet (Int. Cl. 3).

First use May 8, 1968.

SN 298,549. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

MODERNIQUE

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet and Powder Sachet (Int. Cl. 3).

First use May 8, 1968.

SN 298,627. Rayette-Faberge, Inc., New York, N.Y. Filed May 20, 1968.

EUGENE

For Hair Creme (Int. Cl. 3).
First use 1935.

SN 298,799. Bristol-Myers Company, New York, N.Y. Filed May 22, 1968.

SUMMER GLO

For Cosmetic-Bath Oil (Int. Cl. 3).
First use Dec. 14, 1967.

SN 299,293. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

UNEXPECTED

For Dusting Powder, Perfume, and Cologne (Int. Cl. 3).
First use May 10, 1968.

SN 299,297. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

EXPRESSION

For Perfume, Dusting Powder, Cologne, and Bath Oil (Int. Cl. 3).
First use May 10, 1968.

SN 299,301. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

SEA WILLOW

For Bath Oil (Int. Cl. 3).
First use May 10, 1968.

SN 299,303. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

TEMPLE BELLS

For Cologne, Perfume, Dusting Powder, and Bath Oil (Int. Cl. 3).
First use May 10, 1968.

SN 299,307. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

BIRD IN FLIGHT

For Dusting Powder, Perfume, and Cologne (Int. Cl. 3).
First use May 10, 1968.

SN 299,308. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

ABSTRACT

For After Shave Lotion and Talcum Powder (Int. Cl. 3).
First use May 10, 1968.

SN 302,257. Alberto-Culver Company, Melrose Park, Ill. Filed July 9, 1968.

PLURAL

For Toothpaste (Int. Cl. 3).
First use Apr. 18, 1968.

SN 302,276. Alberto-Culver Company, Melrose Park, Ill. Filed July 9, 1968.

THE YEARLINGS

For Hair Color Preparation (Int. Cl. 3).
First use Apr. 18, 1968.

SN 302,680. La Maur, Inc., Minneapolis, Minn. Filed July 15, 1968.

ICS

For Hair Conditioner (Int. Cl. 3).
First use May 16, 1967.

SN 302,890. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed July 17, 1968.

LEMON BRITE

No claim is made to exclusive use of the word "Lemon" apart from the mark as shown.
For Creme Rinse (Int. Cl. 3).
First use June 24, 1968.

SN 304,961. Ray Drug Company, Inc., Oakland, Calif. Filed Aug. 12, 1968.

BEAUTIFAIR

For Bleach for Unwanted Hair (Int. Cl. 3).
First use July 22, 1968.

SN 305,099. Organon Inc., West Orange, N.J. Filed Aug. 14, 1968.

FEMINIQUE

For Personal Hygiene Deodorant Spray for Women (Int. Cl. 5).
First use July 11, 1968.

SN 305,267. Charmaceuticals, Inc., Los Angeles, Calif. Filed Aug. 16, 1968.

Silk

For Face Cream (Int. Cl. 3).
First use Nov. 1, 1967.

SN 305,268. Charmaceuticals, Inc., Los Angeles, Calif. Filed Aug. 16, 1968.

Chrysalis

For Face Cream (Int. Cl. 3).
First use Nov. 1, 1967.

SN 306,730. Carol Edwards, Inc., Skokie, Ill. Filed Sept. 6, 1968.

HEAT WAVE

Applicant disclaims exclusive rights to the word "Wave" apart from the mark as shown.
For Hair Spray (Int. Cl. 3).
First use on or before July 24, 1968.

SN 307,392. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 16, 1968.

DEE DEE

For Toilet Water (Int. Cl. 3).
First use Aug. 30, 1968.

SN 307,393. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 16, 1968.

IMPROMPTU

For Toilet Water (Int. Cl. 3).
First use Aug. 30, 1968.

SN 310,520. The Gillette Company, Boston, Mass. Filed Oct. 25, 1968.

FEEL FREE

For Deodorant for Personal Use (Int. Cl. 5).
First use Oct. 7, 1968.

SN 310,739. Yardley of London, Inc., New York, N.Y. Filed Oct. 29, 1968.

GENTLE STRENGTH

For Nail Conditioner (Int. Cl. 3).
First use Sept. 4, 1968.

SN 310,741. Yardley of London, Inc., New York, N.Y. Filed Oct. 29, 1968.

SLICKER FLASH

For Lip Polish (Int. Cl. 3).
First use Sept. 5, 1968.

SN 310,877. Faberge, Inc., New York, N.Y. Filed Oct. 30, 1968.

AFRO

For Cologne (Int. Cl. 3).
First use Oct. 12, 1968.

Class 52 — Detergents and Soaps

SN 279,312. Madison Chemical Corporation, Maywood, Ill. Filed Aug. 29, 1967.

CHEM$_2$O

For Water Soluble Cleaning Solvent for Industrial, Commercial, and Institutional Use (Int. Cl. 1).
First use Jan. 1, 1963.

SN 281,388. Pequa Industries, Inc., Massapequa Park, N.Y. Filed Sept. 28, 1967.

CESS-FLO

For Solvent for Opening Up Clogged Cesspools and Septic Tanks and Also Used as a Concrete Degreaser (Int. Cl. 3).
First use on or about Sept. 1, 1967.

SN 283,128. Keystone Chemical Company, Inc., North Kansas City, Mo. Filed Oct. 23, 1967.

Key Brite

For Liquid Detergent for Washing Dishes and Hands and Spray Cleaners for Household Use (Int. Cl. 3).
First use Jan. 18, 1967.

SN 298,527. American Heritage Products, Inc., Portage, Ind. Filed May 20, 1968.

DM-9

For Hair Shampoo (Int. Cl. 3).
First use Feb. 15, 1968.

SN 298,546. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

YEARNING

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,548. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

INTERCHANGE

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,550. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

MODERNIQUE

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 299,294. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

UNEXPECTED

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,299. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

TAI WINDS

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,306. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

BIRD IN FLIGHT

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,309. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

ABSTRACT

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,310. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

NIGHT SOUNDS

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,312. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

EXPRESSION

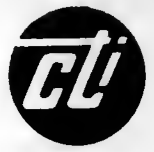
For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,315. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

SKY LANTERNS

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 302,917. Chemical Technical Industries, Inc., Hialeah, Fla. Filed July 17, 1968.



For Household and Industrial Cleaners and Detergents for Removing Rust, Water Stain and Mildew From Tile and Metals, for Brick and Masonry Cleaning, for Removing Algae, Slime and Calcium From Air Conditioners and Refrigeration Equipment, and for Preparing Concrete or Metal Surfaces Prior to Painting (Int. Cls. 1 and 3).
First use July 1, 1968.

SN 305,880. Dorex, Inc., Madison, Wis. Filed Aug. 26, 1968.

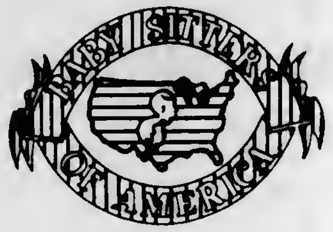
LIMEX

For Preparation for Removing Lime and Mineral Deposits From Porcelain and Metal Surfaces (Int. Cl. 3).
First use June 1967.

SERVICE MARKS

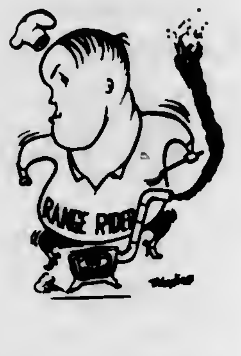
Class 100 – Miscellaneous

SN 261,566. Baby Sitters of America, Inc., Raleigh, N.C. Filed Dec. 28, 1966.



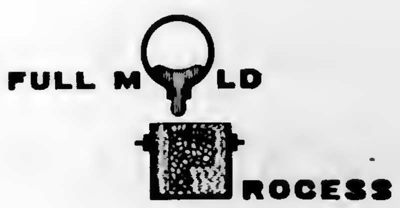
Applicant disclaims any exclusive rights, apart from the mark as shown, to the verbal portion of the mark and to the representation of a map of the United States. The drawing is lined for the colors red and blue, but no claim is made to color.
For Baby Sitting Services (Int. Cl. 42).
First use Mar. 1, 1966.

SN 264,988. Herbert H. Terrell, d.b.a. B and H Grill, Memphis, Tenn. Filed Feb. 17, 1967.



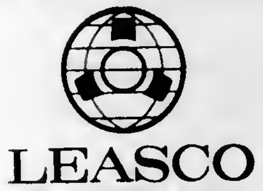
"Bob Wiggs" identifies Robert J. Wiggs whose consent is of record.
For Restaurant Services (Int. Cl. 42).
First use Apr. 15, 1959.

SN 265,300. Full Mold Process, Inc., Lathrup Village, Mich. Filed Feb. 23, 1967.



The drawing is lined for the colors red and gray. Applicant disclaims the wording "Full Mold Process."
For Providing Foundaries With Technical Information Relating to Cavityless Casting Methods (Int. Cl. 42).
First use June 7, 1963.

SN 277,560. Leasco Data Processing Equipment Corporation, Great Neck, N.Y. Filed Aug. 4, 1967.



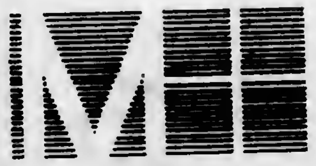
Owner of Reg. No. 790,843.
For Leasing of Electronic and Electro-Mechanical Data Processing Equipment, Office and Related Equipment (Int. Cl. 42).
First use May 22, 1967.

SN 279,228. Sunshine Parti-Pal, Inc., Augusta, Ga. Filed Aug. 28, 1967.

RHUBUN

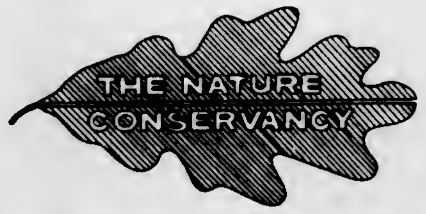
For Restaurant Services (Int. Cl. 42).
First use on or about Feb. 1, 1966.

SN 280,079. Neal Mitchell Associates Incorporated, Cambridge, Mass. Filed Sept. 11, 1967.



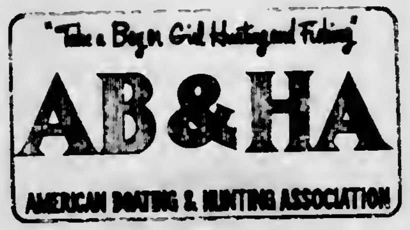
The drawing is lined to indicate the mark as used and such lines are not an indication of color.
For Architectural and Engineering Services Relating to Housing, and Housing Development (Int. Cl. 42).
First use March 1967.

SN 280,449. The Nature Conservancy, Washington, D.C. Filed Sept. 15, 1967.



The lining on the drawing of the mark is for the color green, no claim is made as to color.
For Association Services—Namely, the Preservation or Aid in the Preservation of All Types of Wild Nature, Including Natural Areas, Features, Objects, Flora and Fauna, and Biotic Communities; the Establishment of Nature Reserves or Other Protected Areas To Be Used for Scientific, Educational, and Other Esthetic Purposes; the Promotion of the Conservation and Proper Use of Our Natural Resources; the Study or Promotion of the Study of Plant and Animal Communities and of Other Phases of Ecology, Natural History, and Conservation; the Promotion of Education in the Fields of Nature Preservation and Conservation; and Cooperation With Other Organizations Having Similar or Related Objectives (Int. Cl. 42).
First use January 1960.

SN 283,210. American Boating & Hunting Association, Dallas, Tex. Filed Oct. 24, 1967.



The drawing is lined for the colors red and blue.
For Association Services for the Promotion of Outdoor Sports Activities—Namely, Hunting, Boating and Fishing (Int. Cl. 42).
First use Sept. 11, 1967.

SN 285,197. Canteen Corporation, Chicago, Ill. Filed Nov. 20, 1967.

MOBILE HOST

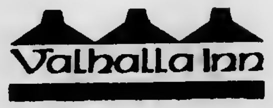
Applicant disclaims the word "Mobile" apart from the mark as shown.
For Industrial Catering Services, Utilizing Trucks for Transporting and Displaying Food and Drink Articles for Sale (Int. Cl. 42).
First use Dec. 21, 1966.

SN 286,177. Rerebaz, Inc., McKee City, N.J. Filed Dec. 4, 1967.

ZABERVILLE

For Restaurant and Catering Services (Int. Cl. 42)).
First use June 12, 1960.

SN 286,737. Valhalla Inn Limited, Islington, Toronto, Ontario, Canada. Filed Dec. 11, 1967.



Applicant disclaims the exclusive use of the word "Inn" apart from the mark as shown. Owner of Canadian Reg. No. 153,320, dated Sept. 22, 1967.
For Hotel, Restaurant, Banquet and Catering Services; and Providing Convention Facilities (Int. Cl. 42).

SN 286,738. Valhalla Inn Limited, Islington, Toronto, Ontario, Canada. Filed Dec. 11, 1967.

VALHALLA INN

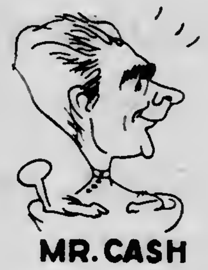
Applicant disclaims the exclusive use of the word "Inn" apart from the mark as shown. Owner of Canadian Reg. No. 153,976, dated Nov. 3, 1967.
For Hotel, Restaurant, and Bar Services (Int. Cl. 42).

SN 287,667. Stows of Manchester, Inc., Chelsea, Mass., by change of name from New England Snacks, Inc., Chelsea, Mass. Filed Dec. 27, 1967.

STOWS

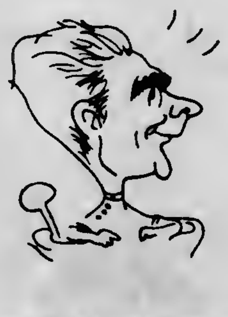
For Restaurant Services (Int. Cl. 42).
First use in or about November 1967.

SN 291,219. Gilman Street Pharmacy, Berkeley, Calif. Filed Feb. 6, 1968.



For Preparation and Dispensation of Prescription Drugs (Int. Cl. 42).
First use July 17, 1966.

SN 291,223. Gilman Street Pharmacy, Berkeley, Calif. Filed Feb. 6, 1968.



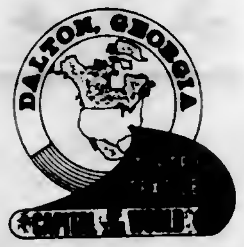
For Preparation and Dispensation of Prescription Drugs (Int. Cl. 42).
First use July 17, 1966.

SN 291,224. John H. Kritikson, d.b.a. The Family Kitchen, Evanston, Ill. Filed Oct. 25, 1967.

THE FAMILY KITCHEN

For Take Out Food Services (Int. Cl. 42).
First use May 1, 1963.

SN 295,515. Dalton-Whitfield Chamber of Commerce, Inc., Dalton, Ga. Filed Apr. 12, 1968.



The geographical location "Dalton, Georgia," and the map depicting its location, are disclaimed apart from the mark as shown in the drawing. The drawing is lined for purposes of striping only.

For Association Services—Namely, Publicizing and Developing the Busines and Industrial Interests of the City of Dalton and County of Whitfield, Georgia, and Promoting the Establishment of New Industries and Businesses in Said City and County (Int. Cl. 42).

First use Mar. 25, 1968; 1965 in a different form.

SN 296,088. Ray L. Allen, Dunedin, Fla. Filed Apr. 22, 1968.

RUNAWAY BAY CLUB

Applicant disclaims the words "Bay Club" apart from the mark.

For Operating a Private Club Featuring Sports, Entertainment, Dining, and Sleeping Accommodations (Int. Cl. 42).

First use Mar. 12, 1968.

SN 296,693. Industrial Bio-Test Laboratories, Inc., Northbrook, Ill. Filed Apr. 26, 1968.

BIO-TEST

For Biological Evaluations and Consulting Services (Int. Cl. 42).

First use July 1953.

Subj. to Intf. with SN 287,998.

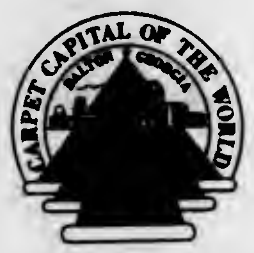
SN 296,707. National Work Clothes Rental, Elizabeth, N.J. Filed Apr. 26, 1968.

NATIONAL KEY-MAN

For Uniform Rental Service (Int. Cl. 42).

First use on or about Mar. 15, 1968.

SN 300,262. Dalton-Whitfield Chamber of Commerce, Inc., Dalton, Ga. Filed June 12, 1968.

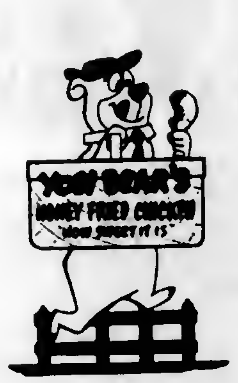

CARPET CAPITAL OF THE WORLD
DALTON GEORGIA

The geographical location "Dalton, Georgia" is disclaimed apart from the mark as shown.

For Association Services—Namely, Publicizing and Developing the Business and Industrial Interests of the City of Dalton and County of Whitfield, Georgia, and Promoting the Establishment of New Industries and Businesses in Said City and County (Int. Cl. 42).

First use May 29, 1968; Mar. 15, 1967, in a different form.

SN 306,739. Screen Gems, Inc., New York, N.Y. Filed Sept. 6, 1968.

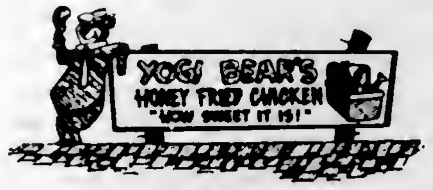


The lining on the drawing is for shading only and is not intended to represent color. Applicant disclaims the wording "Honey Fried Chicken." Owner of Reg. No. 802,412.

For Restaurant Services (Int. Cl. 42).

First use at least as early as May 25, 1968.

SN 306,740. Screen Gems, Inc., New York, N.Y. Filed Sept. 6, 1968.

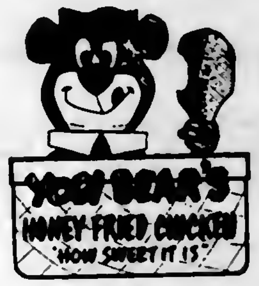


The lining on the drawing is for shading only and is not intended to represent color. Applicant disclaims the wording "Honey Fried Chicken." Owner of Reg. No. 802,412.

For Restaurant Services (Int. Cl. 42).

First use at least as early as Jan. 3, 1968.

SN 306,741. Screen Gems, Inc., New York, N.Y. Filed Sept. 6, 1968.



The lining on the drawing is for shading only and is not intended to represent color. Applicant disclaims the wording "Honey Fried Chicken." Owner of Reg. No. 802,412.

For Restaurant Services (Int. Cl. 42).

First use at least as early as Jan. 3, 1968.

SN 310,221. Fam Rec Corporation, Seymour, Ind. Filed Oct. 22, 1968.

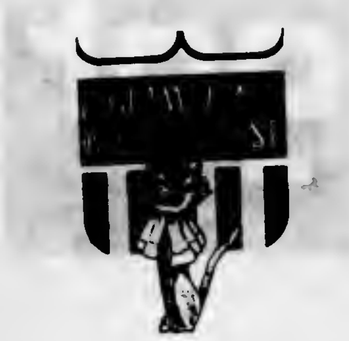
TOTE-A-POKE

For Carry-Out Restaurant Service, Purveying Especially Fried Chicken (Int. Cl. 42).

First use Apr. 1, 1968.

Class 101—Advertising and Business

SN 239,775. Johnson-March Corp., d.b.a. Triple E Company, Philadelphia, Pa. Filed Feb. 28, 1966.



Applicant disclaims the exclusive right in and to the words "Kitty Contest" apart from its service mark as shown. The drawing is lined for the colors red and blue. Owner of Reg. No. 849,971.

For Promoting the Sale of Goods and Services of Others Through the Medium of Periodic Contests Relating to the Appearance and Behavior of Cats (Int. Cl. 35).

First use Dec. 4, 1965.

SN 265,692. The Chicago Section of the American Chemical Society, Chicago, Ill. Filed Mar. 1, 1967.

TRAIL BLAZERS OF CHEMISTRY

The words "of Chemistry" are disclaimed apart from the mark as a whole.

For Conducting Exhibitions in the Fields of Chemistry and Chemical Engineering (Int. Cl. 35).

First use prior to 1945.

SN 275,869. Novo Services, Inc., New York, N.Y. Filed July 12, 1967.

B

For Film and Video Tape Storage, Inspection, Repair, Print Procurement and Related Services for Others in the Motion Picture and Television Industries and in Advertising Agencies (Int. Cl. 35).

First use February 1967.

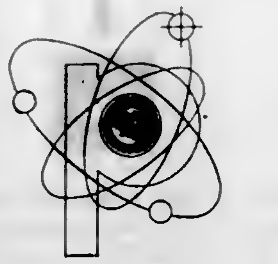
SN 275,890. World Food and Agricultural Foundation, Inc., Madison, Wis. Filed July 12, 1967.

CINDERELLA OF THE WORLD

For Promoting the Goods and Services of Others by Selecting a Girl To Represent the Food and Agricultural Industries (Int. Cl. 35).

First use Mar. 27, 1967.

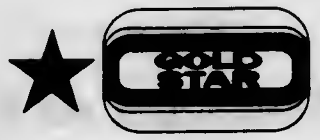
SN 282,624. Harold M. Pitman Company, Chicago, Ill. Filed Oct. 16, 1967.



For Distribution and Sale of Goods Manufactured by Others—Namely, Photographic Materials, Metals, Chemicals and Supplies for the Graphic Arts (Int. Cl. 35).

First use September 1960.

SN 289,330. Parts Distributors Warehouse, Inc., Memphis, Tenn. Filed Jan. 22, 1968.



For Business Management Services to Automotive Parts and Accessories Jobbers (Int. Cl. 35).

First use Dec. 18, 1967.

SN 292,694, J & H International Corporation, Chicago, Ill. Filed Mar. 7, 1968.

READY MONEY

For Sales Promotion for Retail Establishments, Such as Supermarkets, Service Stations and the Like, Through the Organization, Offering and Distribution of Promotional Games Utilizing Promotional Literature, Prize Slips, Game Cards, and Game Discs and the Like, to the Public at the Participating Establishments (Int. Cl. 35).

First use Dec. 15, 1967.

SN 293,403. San Martin Vineyards Company, d.b.a. San Martin Vineyards Co., San Martin, Calif. Filed Mar. 15, 1968.

WINELAND - U.S.A.

For Mail Order Winery Services (Int. Cl. 35).

First use June 1, 1963.

Class 102—Insurance and Financial

SN 281,362. Crown Life Insurance Company, Toronto, Ontario, Canada. Filed Sept. 28, 1967.

GOLI

For Underwriting of Insurance (Int. Cl. 36).

First use Dec. 12, 1966; in commerce Dec. 12, 1966.

SN 300,154. The Investamerica Group, Inc., San Antonio, Tex. Filed June 11, 1968.

No claim is made to the representation of the map of the United States apart from the mark as shown.

For Marketing of Mutual Funds and Other Investment Securities (Int. Cl. 36).

First use on or about Sept. 1, 1966.

SN 311,105. Suncard Services, Inc., Phoenix, Ariz. Filed Nov. 1, 1968.

For Credit Financing Services (Int. Cl. 36).

First use June 27, 1968.

Class 103 — Construction and Repair

SN 284,112. The Siggins Corporation, Kansas City, Mo. Filed S.R. Nov. 3, 1967; Am. P.R. Nov. 12, 1968.

SYMPHONY OF SUDS

For Automobile Washing Services (Int. Cl. 37).

First use Oct. 2, 1967.

SN 309,426. GAF Corporation, New York, N.Y. Filed Oct. 11, 1968.

Owner of Reg. Nos. 509,124, 837,005, and others.

For Repair of Photographic and Reproduction Apparatus and Equipment (Int. Cl. 37).

First use January 1965.

SN 310,821. Brennan Bros. Co. Inc., New York, N.Y. Filed Oct. 30, 1968.

WE ARE PROUD OF OUR CONNECTIONS

Owner of Reg. No. 741,427.

For Installation and Repair of Plumbing and Heating Equipment (Int. Cl. 37).

First use Apr. 12, 1956.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

864,751. ROYAL DARK. Fränkische Pelzindustrie, Märkle & Co. MULTIPLE CLASS (Classes 1 and 39). SN 240,289. Pub. 12-5-67. Filed 3-7-66.

864,752. RICHFIELD. Atlantic Richfield Company. MULTIPLE CLASS (Classes 1, 6, 12, and 15). SN 264,878. Pub. 12-3-68. Filed 2-17-67.

864,753. K-PRENE. Kaufmann Tool & Engineering Corp. MULTIPLE CLASS (Classes 1 and 23). SN 275,379. Pub. 12-3-68. Filed 7-5-67.

864,754. MAGNAFLOW AND DESIGN. Magnolia Plastics, Inc. SN 283,261. Pub. 12-3-68. Filed 10-24-67.

864,755. K AND DESIGN. Kawaguchi Rubber Industrial Co., Ltd. SN 283,902. Pub. 12-3-68. Filed 11-1-67.

864,756. GLEATHER. Wood & Hyde Glove Leather Corporation. SN 284,060. Pub. 12-3-68. Filed 11-2-67.

864,757. ASTROTURF. Monsanto Company. SN 286,166. Pub. 12-3-68. Filed 12-4-67.

864,758. NASCO-GUARD. Nasco Industries, Inc. SN 297,927. Pub. 12-3-68. Filed 5-13-68.

864,759. ZEFLITE. Dow Badische Company. SN 299,627. Pub. 12-3-68. Filed 6-4-68.

864,760. ZEFTEX. Dow Badische Company. SN 299,628. Pub. 12-3-68. Filed 6-4-68.

864,761. ZEFGUARD. Dow Badische Company. SN 303,104. Pub. 12-3-68. Filed 7-19-68.

Class 2 — Receptacles

864,762. "IF IT'S PAPER." Dillard Paper Company. MULTIPLE CLASS (Classes 2, 5, and 37). SN 262,928. Pub. 12-3-68. Filed 1-20-67.

864,763. AGPRO. Agpro, Inc. MULTIPLE CLASS (Classes 2, 13, and 23). SN 269,489. Pub. 12-3-68. Filed 4-19-67.

864,764. SHG AND DESIGN. Schmidt'sche Heissdampf-Gesellschaft m.b.H. SN 274,667. Pub. 10-8-68. Filed 6-23-67.

864,765. TRANS-FLEX. L. Marino, Inc. SN 285,242. Pub. 6-4-68. Filed 11-20-67.

864,766. LITER LURE LINES. Eleanor V. Kingsley, d.b.a. Jackson Company. SN 268,742. Pub. 12-10-68. Filed 4-10-67.

864,767. RIDGI-COR AND DESIGN. Hoerner Waldorf Corporation. SN 293,926. Pub. 12-3-68. Filed 3-22-68.

864,768. VALAIR. Sarah Coventry Inc. MULTIPLE CLASS (Classes 2 and 23). SN 297,152. Pub. 12-3-68. Filed 5-2-68.

864,769. AMERACE. Amerace Corporation. SN 301,295. Pub. 12-3-68. Filed 6-25-68.

864,770. FREEZETTES. Republic Molding Corporation. SN 303,070. Pub. 12-3-68. Filed 7-18-68.

864,771. CONDI-MATE. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 303,542. Pub. 12-3-68. Filed 7-24-68.

864,772. PORTA UTILITY CAN. The Huffman Manufacturing Company. SN 303,994. Pub. 12-3-68. Filed 7-31-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

864,773. PAMPER AND DESIGN. Pamper Products Co. SN 281,161. Pub. 2-6-68. Filed 9-26-67.

864,774. HIPPIE. Jack Gasnick, d.b.a. Cross at the Green Enterprises. MULTIPLE CLASS (Classes 3, 22, and 39). SN 281,881. Pub. 12-3-68. Filed 10-5-67.

864,775. SAFESPEED. Safespeed Shoe Corp. SN 292,966. Pub. 12-3-68. Filed 3-11-68.

Class 4 — Abrasives and Polishing Materials

864,776. CRESCENT. B. Wise Mfg. Corp. MULTIPLE CLASS (Classes 4, 6, 51, and 52). SN 259,875. Pub. 12-3-68. Filed 12-2-66.

864,777. FISK. Uniroyal, Inc. MULTIPLE CLASS (Classes 4, 6, 21, and 52). SN 282,028. Pub. 12-3-68. Filed 10-9-67.

864,778. THERMABLATE. The Clover Manufacturing Company. SN 295,420. Pub. 12-3-68. Filed 4-11-68.

864,779. MET-LOK. William A. Boettcher, d.b.a. W. A. Boettcher & Co. SN 296,394. Pub. 12-3-68. Filed 4-24-68.

864,780. MINER AND BURRO (DESIGN). Nugget Distributors' Cooperative of America, Inc., d.b.a. Nuggett Distributors, Inc. SN 300,038. Pub. 12-3-68. Filed 6-10-68.

864,781. CUBICUT. Minnesota Mining and Manufacturing Company. SN 305,374. Pub. 12-3-68. Filed 8-19-68.

Class 5 — Adhesives

864,762. (See Class 2 for this trademark.)

864,782. DYNYL. Societe Rhodiaceta. SN 275,475. Pub. 12-3-68. Filed 7-6-67.

864,783. TAMANORI. Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha (Arakawa Forest Chemical Industries, Ltd.). SN 286,492. Pub. 12-3-68. Filed 12-7-67.

864,784. PETRO-WELD. Seatex Corporation. SN 291,642. Pub. 12-3-68. Filed 2-21-68.

Class 6 — Chemicals and Chemical Compositions

864,752. (See Class 1 for this trademark.)

864,776. (See Class 4 for this trademark.)

864,777. (See Class 4 for this trademark.)

864,785. GAR-BUDS. Madison Chemical Corporation. SN 280,437. Pub. 12-3-68. Filed 9-15-67.

864,786. CLA-PERM. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 282,998. Pub. 12-3-68. Filed 10-20-67.

864,787. TAMANORI. Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha (Arakawa Forest Chemical Industries, Ltd.). SN 286,493. Pub. 12-3-68. Filed 12-7-67.

864,788. ONE FOR THE LAUNDRY. Calgon Corporation (Delaware corporation), assignee of Calgon Corporation (Pennsylvania corporation). SN 287,519. Pub. 12-3-68. Filed 12-26-67.

864,789. CLIN-LINK. Standard Brands Incorporated. SN 287,593. Pub. 12-3-68. Filed 12-26-67.

864,790. SUPERMATIC. Eastman Kodak Company. SN 288,199. Pub. 12-3-68. Filed 1-5-68.

864,791. STIMUSOY. Adkins-Phelps Company. SN 289,249. Pub. 12-3-68. Filed 1-22-68.

864,792. FRESH START. Germain's, Inc. SN 296,423. Pub. 12-3-68. Filed 4-24-68.

864,793. SKINO. Mooney Chemicals, Inc. SN 296,706. Pub. 12-3-68. Filed 4-26-68.

864,794. PITCH PACK. Ciba Corporation, d.b.a. The Gland-O-Lac Company. SN 297,270. Pub. 12-3-68. Filed 5-3-68.

864,795. BARRIER. Alberto-Culver Company. SN 302,185. Pub. 12-3-68. Filed 7-8-68.

864,796. FYRGUARD. Stauffer Chemical Company. SN 302,693. Pub. 12-3-68. Filed 7-15-68.

864,797. NU-TAB. Sucrest Corporation. SN 303,111. Pub. 12-3-68. Filed 7-19-68.

Class 7 — Cordage

864,798. AVIBELT. FMC Corporation. MULTIPLE CLASS (Classes 7, 42, and 43). SN 298,668. Pub. 12-3-68. Filed 5-21-68.

864,799. DYNABELT. FMC Corporation. MULTIPLE CLASS (Classes 7, 42, and 43). SN 298,669. Pub. 12-3-68. Filed 5-21-68.

Class 8 — Smokers' Articles, Not Including Tobacco Products

864,800. JJJ AND DESIGN. JJJ Merchandise Corp. SN 300,197. Pub. 12-3-68. Filed 6-11-68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

864,801. DELTA VISIER AND DESIGN. Delta-Visier G.m.b.H. SN 281,272. Pub. 12-3-68. Filed 9-27-67.

864,802. DESIGN BLAST. American Cyanamid Company. SN 288,166. Pub. 12-3-68. Filed 1-5-68.

864,803. SUPERSEIS. Hercules Incorporated. SN 294,838. Pub. 12-3-68. Filed 4-3-68.

864,804. GG31 AND DESIGN. G-G31, Inc. SN 302,067. Pub. 12-3-68. Filed 7-5-68.

864,805. TRIPLE-CHASER. Federal Laboratories, Inc. SN 302,397. Pub. 12-3-68. Filed 7-10-68.

864,806. SPEDEHEAT. Federal Laboratories, Inc. SN 302,398. Pub. 12-3-68. Filed 7-10-68.

864,807. ARMINIUS. Firearms Import & Export Corp. SN 305,650. Pub. 12-3-68. Filed 8-21-68.

864,808. FIGURE OF WARRIOR'S HEAD. Firearms Import & Export Corp. SN 305,651. Pub. 12-3-68. Filed 8-21-68.

Class 10 — Fertilizers

864,809. GARDENGLO AND DESIGN. Advance Fertilizer and Chemical Ltd. SN 288,165. Pub. 12-3-68. Filed 1-5-68.

864,810. MISTY ISLES. Bering Industries Ltd. SN 299,094. Pub. 12-3-68. Filed 5-27-68.

864,811. HAPPI GROW LUCKY. Hancock Agriculture Products & Processors, Inc. SN 300,081. Pub. 12-3-68. Filed 6-10-68.

864,812. MISCELLANEOUS DESIGN. Woodville Lime & Chemical Company. SN 300,150. Pub. 12-3-68. Filed 6-10-68.

Class 11 — Inks and Inking Materials

864,813. BC AND DESIGN. Braznell Company. SN 275,619. Pub. 12-3-68. Filed 7-10-67.

864,814. SECRET-SET. Van Son Holland Ink Corporation of America. SN 293,422. Pub. 12-3-68. Filed 3-15-68.

Class 12 — Construction Materials

864,752. (See Class 1 for this trademark.)

864,815. MARMO-RETINATO. Fabbrica Piastrelle Ubaldo Franceschinis. SN 262,858. Pub. 12-3-68. Filed 1-19-67.

864,816. COLONIAL. Majestic Tile Company. SN 263,929. Pub. 12-3-68. Filed 2-3-67.

864,817. H HURON. National Gypsum Company. SN 265,549. Pub. 12-3-68. Filed 2-27-67.

864,818. MARATHON. United Paint Mfg. Co. SN 266,606. Pub. 5-14-68. Filed 3-13-67.

864,819. FIRESTOP. Georgia-Pacific Corporation. SN 270,671. Pub. 12-3-68. Filed 5-4-67.

864,820. EPOXALL. Allied Compositions Co., Inc. SN 271,324. Pub. 12-3-68. Filed 5-12-67.

864,821. SCHALK. Schalk Chemicals, Inc. MULTIPLE CLASS (Classes 12 and 52). SN 271,886. Pub. 12-3-68. Filed 5-19-67.

864,822. MINICEL. Haveg Industries, Inc. SN 277,283. Pub. 12-3-68. Filed 8-1-67.

864,823. TERRASTAN. Silmica Corporation of America. MULTIPLE CLASS (Classes 12 and 16). SN 279,132. Pub. 12-3-68. Filed 8-28-67.

864,824. TELE-POOL. Hendon Construction Company. SN 283,661. Pub. 12-3-68. Filed 10-30-67.

864,825. TELE-SWIM. Hendon Construction Company. SN 283,662. Pub. 12-3-68. Filed 10-30-67.

864,826. CA AND DESIGN. Capitol Aggregates, Inc. SN 285,992. Pub. 12-3-68. Filed 12-1-67.

864,827. BIDIM. Societe Rhodiaceta. SN 281,230. Pub. 12-10-68. Filed 9-26-67.

864,828. PPG INDUSTRIES AND DESIGN. PPG Industries, Inc., by change of name from Pittsburgh Plate Glass Company. SN 290,055. Pub. 12-3-68. Filed 2-1-68.

864,829. AMAX. American Metal Climax, Inc. MULTIPLE CLASS (Classes 12, 14, and 38). SN 300,153. Pub. 12-3-68. Filed 6-11-68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

864,763. (See Class 2 for this trademark.)

864,830. HYER MEDITERRANEAN. Hyer Hardware Mfg. Co. SN 251,305. Pub. 12-3-68. Filed 7-29-66.

864,831. MISCELLANEOUS DESIGN. Sphinxworks Muller & Co., Ltd. SN 267,270. Pub. 12-3-68. Filed 3-21-67.

864,832. FLOWER-LIKE (DESIGN). Cori International Corporation. MULTIPLE CLASS (Classes 13 and 19). SN 279,720. Pub. 12-3-68. Filed 9-6-67.

864,833. SUPER VAC-U-FLEX. Automation Industries, Inc. SN 282,344. Pub. 12-3-68. Filed 10-12-67.

864,834. PERMA-TONE. Waldes Kohinoor, Inc. SN 283,047. Pub. 12-3-68. Filed 10-20-67.

864,835. TFA. Tube Forgings of America, Inc. SN 295,389. Pub. 12-3-68. Filed 4-10-68.

864,836. SUPER RANGE. Smith-Blair, Inc. SN 300,660. Pub. 12-3-68. Filed 6-18-68.

864,837. SUMITOMO. Sumitomo Metal Industries, Ltd. SN 305,287. Pub. 12-3-68. Filed 8-16-68.

Class 14 — Metals and Metal Castings and Forgings

864,829. (See Class 12 for this trademark.)

864,838. BERTHOLD STANDARD. H. Berthold Messinglinienfabrik und Schriftgiesserei A.G. SN 275,373. Pub. 12-3-68. Filed 7-5-67.

864,839. BESPLATE. Chemetron Corporation. SN 278,785. Pub. 12-3-68. Filed 8-22-67.

864,840. ASTRALLOY. Vulcan Steel Corporation. SN 280,189. Pub. 12-3-68. Filed 9-12-67.

864,841. 21-6-9. Armco Steel Corporation. SN 280,924. Pub. 12-3-68. Filed 9-22-67.

864,842. UBG. Secon Metals Corporation. SN 292,502. Pub. 12-3-68. Filed 3-5-68.

864,843. SUMITOMO. Sumitomo Metal Industries, Ltd. SN 305,286. Pub. 12-3-68. Filed 8-16-68.

Class 15 — Oils and Greases

864,752. (See Class 1 for this trademark.)

864,844. SUN. Sun Oil Company. SN 294,216. Pub. 12-3-68. Filed 3-26-68.

864,845. SUNOCO. Sun Oil Company. SN 294,217. Pub. 12-3-68. Filed 3-26-68.

Class 16 — Protective and Decorative Coatings

864,823. (See Class 12 for this trademark.)

864,846. T GLO. Tenneco Chemicals, Inc. SN 228,212. Pub. 12-3-68. Filed 9-20-65.

864,847. POLYCELL CEMENT PAINT. Polycell Products Limited. SN 287,578. Pub. 12-3-68. Filed 12-26-67.

864,848. DITZLER. PPG Industries, Inc., by change of name from Pittsburgh Plate Glass Company. SN 290,698. Pub. 12-3-68. Filed 2-9-68.

864,849. CAVALON. E. I. du Pont de Nemours and Company. SN 302,678. Pub. 12-3-68. Filed 7-15-68.

Class 17 — Tobacco Products

864,850. SOMERSET. Turmac Tobacco Company N.V. SN 276,271. Pub. 12-3-68. Filed 7-7-67.

864,851. MEDIA. Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V. SN 276,357. Pub. 12-3-68. Filed 7-19-67.

864,852. FRONTENAC. Turmac Tobacco Company N.V. SN 280,824. Pub. 12-3-68. Filed 9-20-67.

864,853. REMBRANDT R1. Rembrandt Tobacco Corporation (Overseas) Limited. SN 280,969. Pub. 12-3-68. Filed 9-22-67.

864,854. ROYAL MOUNTED. Lane Limited. SN 289,904. Pub. 12-3-68. Filed 1-30-68.

864,855. GOLDEN HOURS. Lane Limited. SN 297,422. Pub. 12-3-68. Filed 5-6-68.

864,856. RED LABEL. Corral, Wodiska y Ca. SN 297,977. Pub. 12-3-68. Filed 5-13-68.

864,857. ORIENT EXPRESS. A. Garfinkel, Inc. SN 298,328. Pub. 12-3-68. Filed 5-16-68.

864,858. SMART SET. Gabino Roche, d.b.a. Roche From Habana, Cuba. SN 304,624. Pub. 12-3-68. Filed 8-7-68.

864,859. LUV. The American Tobacco Company. SN 304,645. Pub. 12-3-68. Filed 8-8-68.

864,860. LOVE. The American Tobacco Company. SN 304,646. Pub. 12-3-68. Filed 8-8-68.

864,861. GIGI. Bayuk Cigars Incorporated. SN 305,109. Pub. 12-3-68. Filed 8-14-68.

Class 18 — Medicines and Pharmaceutical Preparations

864,862. MALTOLATUM. International Chemical and Nuclear Corporation, assignee of United Laboratories, Inc. SN 268,633. Pub. 12-3-68. Filed 4-7-67.

864,863. ORGANIC SEA PRODUCTS ETC. AND DESIGN. Organic Sea Products Corporation. SN 273,670. Pub. 12-3-68. Filed 6-12-67.

864,864. KALGARD. Ciba Corporation. SN 273,744. Pub. 12-3-68. Filed 6-13-67.

864,865. VELVA-TEARS. Optometics, Inc. SN 274,086. Pub. 12-3-68. Filed 6-16-67.

864,866. PREVAIL. Bristol-Myers Company. SN 275,911. Pub. 12-3-68. Filed 7-13-67.

864,867. LIQUILUBE. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,514. Pub. 12-3-68. Filed 8-4-67.

864,868. SOLUMYCIN. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,519. Pub. 12-3-68. Filed 8-4-67.

864,869. DEBRISOL. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,520. Pub. 12-3-68. Filed 8-4-67.

864,870. PANIDOTE. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,523. Pub. 12-3-68. Filed 8-4-67.

864,871. THEROPHYLLIN. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,524. Pub. 12-3-68. Filed 8-4-67.

864,872. DEMSARDEX. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,527. Pub. 12-3-68. Filed 8-4-67.

864,873. WITHDRAWN.

864,874. COAGSOL. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,530. Pub. 12-3-68. Filed 8-4-67.

864,875. SINUDYNE. Bristol-Myers Company. SN 284,590. Pub. 12-3-68. Filed 11-13-67.

864,876. EQUIPOISE. Ciba Corporation. SN 285,526. Pub. 12-3-68. Filed 11-24-67.

864,877. VORANIL. Ciba Corporation. SN 285,527. Pub. 12-3-68. Filed 11-24-67.

864,878. PANREXIN. Pan American Laboratories, Inc. SN 285,752. Pub. 12-3-68. Filed 11-28-67.

864,879. PANTEMIC. Pan American Laboratories, Inc. SN 285,753. Pub. 12-3-68. Filed 11-28-67.

864,880. CITCON. Chas. Pfizer & Co., Inc. SN 288,338. Pub. 12-3-68. Filed 1-8-68.

864,881. NORLAC. Rowell Laboratories Inc. SN 288,862. Pub. 12-3-68. Filed 1-15-68.

864,882. VITAPYRENA. Richardson-Merrell Inc. SN 292,961. Pub. 12-3-68. Filed 3-11-68.

864,883. ALKA-SELTZER PLUS. Miles Laboratories, Inc. SN 300,878. Pub. 12-3-68. Filed 6-20-68.

864,884. ASPINASE. E. R. Squibb & Sons, Inc. SN 303,876. Pub. 12-3-68. Filed 7-30-68.

864,885. QUANTRIL. Chas. Pfizer & Co., Inc. SN 304,559. Pub. 12-3-68. Filed 8-7-68.

Class 19 — Vehicles

864,832. (See Class 13 for this trademark.)

864,886. GOLDEN EAGLE. Golden Eagle Coach Manufacturer's, Incorporated. SN 275,521. Pub. 12-10-68. Filed 7-7-67.

864,887. A TOUGH BIRD. North American Rockwell Corporation. SN 290,516. Pub. 12-10-68. Filed 2-7-68.

864,888. PIAGGIO AND DESIGN. Piaggio & C. Societa per Azioni. SN 282,924. Pub. 12-3-68. Filed 10-19-67.

864,889. MIDAS MUFFLER SHOPS AND DESIGN. Midas, Inc. SN 287,931. Pub. 12-3-68. Filed 1-2-68.

864,890. LADY MARIAN. Premium Corporation of America, Inc. SN 295,169. Pub. 12-3-68. Filed 4-8-68.

864,891. VILLA WEST AND DESIGN. Golden West Trailers, Inc. SN 295,823. Pub. 12-3-68. Filed 4-17-68.

864,892. SKI-JET. Corrugated Metal Container Corporation. SN 296,310. Pub. 12-3-68. Filed 4-23-68.

Class 21 — Electrical Apparatus, Machines, and Supplies

864,777. (See Class 4 for this trademark.)

864,893. SEA HORSE (DESIGN). Oceanographic Engineering Corporation. SN 229,863. Pub. 12-13-66. Filed 10-11-65.

864,894. MERMAID LINE AND DESIGN. Culver-Stearns Manufacturing Company. SN 254,035. Pub. 12-3-68. Filed 9-8-66.

864,895. ELECTRONIC MATCH. Ranco Incorporated, by merger from The Wilcolator Company. SN 260,485. Pub. 12-3-68. Filed 12-9-66.

864,896. CECILWARE FE-25 AND DESIGN. Cecilware Corporation. SN 266,504. Pub. 12-3-68. Filed 3-13-67.

864,897. MONA LISA. Mona Shops Inc. SN 269,201. Pub. 12-3-68. Filed 4-14-67.

864,898. ZENITH. Zenith Radio Corporation. SN 271,005. Pub. 12-3-68. Filed 5-8-67.

864,899. SEMICON. The Okonite Company. SN 276,164. Pub. 12-3-68. Filed 7-17-67.

864,900. PICOTRIM. Voltronics Corporation. SN 277,396. Pub. 12-3-68. Filed 8-2-67.

864,901. BULLET. The Thomas & Betts Co. SN 280,353. Pub. 12-3-68. Filed 9-14-67.

864,902. NABOND. National Wire and Cable Corporation. SN 282,121. Pub. 12-3-68. Filed 10-9-67.

864,903. NAFOAM. National Wire and Cable Corporation. SN 282,122. Pub. 12-3-68. Filed 10-9-67.

864,904. P (DESIGN). Papst-Motoren K.G. MULTIPLE CLASS (Classes 21 and 34). SN 283,922. Pub. 12-3-68. Filed 11-1-67.

864,905. MISCELLANEOUS DESIGN. Equipto Electronics Corporation. SN 283,998. Pub. 12-3-68. Filed 11-2-67.

864,906. 1050. Avnet, Inc., assignee of Carol Wire & Cable Corp. SN 285,198. Pub. 12-3-68. Filed 11-20-67.

864,907. UE (DESIGN). Tungsten Contact Manufacturing Company, Inc., d.b.a. Union Electrical Parts Co. SN 287,190. Pub. 12-3-68. Filed 12-18-67.

864,908. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,374. Pub. 12-3-68. Filed 1-8-68.

864,909. MISCELLANEOUS DESIGN. Philco-Ford Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 288,753. Pub. 12-3-68. Filed 1-15-68.

864,910. PEXCO. Plastic Extrusion and Engineering Company, Inc. SN 289,606. Pub. 12-3-68. Filed 1-25-68.

864,911. UNIPHOR. LKB-Produkter Aktiebolag. SN 289,700. Pub. 12-3-68. Filed 1-26-68.

864,912. TORWICO. Torwico Electronics, Inc. SN 290,200. Pub. 12-3-68. Filed 2-2-68.

864,913. AERO SYSTEMS. Aero Systems, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 290,682. Pub. 12-3-68. Filed 2-9-68.

864,914. CHECKMATE. Jefferson Electric Company. SN 293,831. Pub. 12-3-68. Filed 3-21-68.

864,915. TYMSHARE AND DESIGN. Tymshare, Inc. SN 293,872. Pub. 12-3-68. Filed 3-21-68.

864,916. POLAR PROBE. Communication Mfg. Co. SN 302,672. Pub. 12-3-68. Filed 7-15-68.

Class 22 — Games, Toys, and Sporting Goods

864,774. (See Class 3 for this trademark.)

864,917. CASADIO AND DESIGN. Pietro Casadio. SN 271,441. Pub. 12-3-68. Filed 5-15-67.

864,918. FLEX-AIRE SKY-VU. The Coleman Company, Inc. SN 279,369. Pub. 12-3-68. Filed 8-30-67.

864,919. "SANS-SOUCI." Stearns Manufacturing Company. SN 280,895. Pub. 12-3-68. Filed 9-21-67.

864,920. GREENSKEEPER. Genesco, Inc. SN 284,366. Pub. 10-29-68. Filed 11-8-67.

864,921. AQUAGARD AND DESIGN. Martin Industries. SN 286,834. Pub. 12-3-68. Filed 12-13-67.

864,922. HIGH LINE. High Line Corporation. SN 290,170. Pub. 12-3-68. Filed 2-2-68.

864,923. CHRISTEE. Republic Tool & Manufacturing Corp. SN 290,330. Pub. 12-3-68. Filed 2-5-68.

864,924. MAXIMA. Professional Golf Company. SN 290,751. Pub. 12-3-68. Filed 2-9-68.

864,925. AR-15. Colt's Inc. SN 291,024. Pub. 12-3-68. Filed 2-14-68.

864,926. COLT AR-15. Colt's Inc. SN 291,025. Pub. 12-3-68. Filed 2-14-68.

864,927. COBRA. Colt's Inc. SN 291,029. Pub. 12-3-68. Filed 2-14-68.

Class 23 — Cutlery, Machinery, and Tools and Parts Thereof

864,753. (See Class 1 for this trademark.)

864,763. (See Class 2 for this trademark.)

864,768. (See Class 2 for this trademark.)

864,928. AUDION. Audion Elektro N.V. SN 244,388. Pub. 12-3-68. Filed 4-27-66.

864,929. MEGA CHIP. Pratt & Whitney Inc. SN 245,963. Pub. 12-19-67. Filed 5-18-66.

864,930. SEWER JET AND DESIGN. Sanitary Hydraulics, Inc. SN 256,376. Pub. 9-26-67. Filed 10-13-66.

864,931. MISCELLANEOUS DESIGN. Patal Engraving & Engineering Co. MULTIPLE CLASS (Classes 23 and 50). SN 258,398. Pub. 12-3-68. Filed 11-10-66.

864,932. P POWERMATIC AND DESIGN. Houdaille Industries, Inc. (Delaware corporation), by merger and change of name from Houdaille Industries, Inc. (Michigan corporation). SN 268,312. Pub. 12-3-68. Filed 4-4-67.

864,933. IL METCO. Becton, Dickinson and Company, assignee of Ivers-Lee Company. SN 270,681. Pub. 12-3-68. Filed 5-4-67.

864,934. IRVEND. Irvin Industries Inc., by change of name from Irving Air Chute Co., Inc. SN 270,685. Pub. 12-3-68. Filed 5-4-67.

864,935. APCOR AND DESIGN. Geartronics Corporation. SN 273,226. Pub. 12-3-68. Filed 6-7-67.

864,936. PROFESSIONAL. John Oster Manufacturing Co. SN 273,504. Pub. 12-3-68. Filed 6-9-67.

864,937. ALLPAC. Allpac, Inc. SN 273,583. Pub. 12-3-68. Filed 6-12-67.

864,938. JET SPEED. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co. SN 273,768. Pub. 12-3-68. Filed 6-13-67.

864,939. CROWN LINE. UMC Industries, Inc. SN 274,550. Pub. 12-3-68. Filed 6-22-67.

864,940. HEAD DIRECTOR. The Pandjiris Weldment Co. SN 274,766. Pub. 12-3-68. Filed 6-26-67.

864,941. MILLSTONE. Williams Cutlery, Inc. SN 276,595. Pub. 12-3-68. Filed 7-21-67.

864,942. CROWN SEVENTY TWO AND DESIGN. UMC Industries, Inc. SN 276,883. Pub. 12-3-68. Filed 7-26-67.

864,943. BW (DESIGN). Barry-Wehmiller Company. SN 277,607. Pub. 12-3-68. Filed 8-7-67.

864,944. IKO. Nippon Thompson Co., Ltd. SN 279,845. Pub. 12-3-68. Filed 9-7-67.

864,945. KELLY. True Temper Corporation. SN 280,899. Pub. 12-3-68. Filed 9-21-67.

864,946. DUOMAT. Benno Kaltenegger, d.b.a. Benno Kaltenegger Ingenieurburo und Machinenbau (IMAS). SN 282,805. Pub. 12-3-68. Filed 10-18-67.

864,947. BOLTON EMERSON AND DESIGN. Bolton-Emerson, Inc. SN 284,158. Pub. 12-3-68. Filed 11-6-67.

864,948. HOLE-HOG. Petroleum Supply Company. SN 285,056. Pub. 12-3-68. Filed 11-16-67.

864,949. AIRGARD. American Allsafe Company, Inc. SN 286,406. Pub. 12-3-68. Filed 12-7-67.

864,950. PSI PSI. Precision Specialties, Inc. SN 287,582. Pub. 12-3-68. Filed 12-26-67.

864,951. FOLDAMATIC. Geo. D. Roper Corporation. SN 287,956. Pub. 12-3-68. Filed 1-2-68.

864,952. QUADRATORQUE. Geo. D. Roper Corporation. SN 287,957. Pub. 12-3-68. Filed 1-2-68.

864,953. HOOF AND DESIGN. Hoof Products Company. SN 288,215. Pub. 12-3-68. Filed 1-5-68.

864,954. D IN DESIGN. R. & J. Dick Co., Inc. SN 288,684. Pub. 12-3-68. Filed 1-12-68.

864,955. MONO MUTRATOR. Mono Pumps Limited. SN 289,320. Pub. 12-3-68. Filed 1-22-68.

864,956. AVCO NEW IDEA MOW/DITIONER AND DESIGN. Avco Corporation. SN 293,618. Pub. 12-3-68. Filed 3-19-68.

864,957. STRIPVAR. Kinetics Corporation of California. SN 294,398. Pub. 12-3-68. Filed 3-28-68.

864,958. "NYNAMIC." Coats & Clark Inc. SN 295,719. Pub. 12-3-68. Filed 4-16-68.

864,959. MMR AND DESIGN. Mac M. Rothkopf & Co., Inc. SN 303,751. Pub. 12-3-68. Filed 7-29-68.

864,960. NOVITA. Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co. SN 304,555. Pub. 12-3-68. Filed 8-7-68.

Class 24 — Laundry Appliances and Machines

864,961. WASH 'N GO. Colgate-Palmolive Company. SN 293,233. Pub. 12-3-68. Filed 3-14-68.

Class 26 — Measuring and Scientific Appliances

864,913. (See Class 21 for this trademark.)

864,962. SEA HORSE (DESIGN). Oceanographic Engineering Corporation. SN 229,864. Pub. 12-27-66. Filed 10-11-65.

864,963. BALATRON. Labconco Corporation. SN 256,746. Pub. 12-3-68. Filed 10-19-66.

864,964. SLIDE COMMANDER. Spindler & Sauppe. SN 264,982. Pub. 12-3-68. Filed 2-17-67.

864,965. CONVEY-O-WEIGH. Howe Richardson Scale Company. SN 273,280. Pub. 12-3-68. Filed 6-7-67.

864,966. SIMPLEX. National Rejectors, Inc. SN 274,538. Pub. 12-3-68. Filed 6-22-67.

864,967. FILTER GUARD. Jacuzzi Bros., Incorporated. SN 280,709. Pub. 12-3-68. Filed 9-19-67.

864,968. WEPCO AND DESIGN. Wayne Electronic Products Company. SN 281,506. Pub. 12-3-68. Filed 9-29-67.

864,969. SOPHISTIPATS AND DESIGN. Hans C. Bjornker, d.b.a. "Sophistipats." SN 284,443. Pub. 12-3-68. Filed 11-9-67.

864,970. MENTOR. James G. Biddle Co. SN 287,695. Pub. 12-3-68. Filed 12-28-67.

864,971. DURAMIL 7 AND DESIGN. Wabash Magnetics, Inc. SN 288,482. Pub. 12-3-68. Filed 1-10-68.

864,972. MISCELLANEOUS DESIGN. Ringler-Dorin, Inc. SN 289,423. Pub. 12-3-68. Filed 1-23-68.

864,973. MICRO-FOIL. RdF Corporation. SN 292,128. Pub. 12-3-68. Filed 2-28-68.

Class 27 — Horological Instruments

864,974. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,379. Pub. 12-3-68. Filed 1-8-68.

864,975. BARR'S. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers. SN 292,166. Pub. 12-3-68. Filed 2-29-68.

Class 28 — Jewelry and Precious-Metal Ware

864,976. FASHION MAGIC. Emmons Jewelers, Inc. SN 305,885. Pub. 12-3-68. Filed 8-26-68.

Class 29 — Brooms, Brushes, and Dusters

864,977. SUNSTAR. Sunstar Dentifrice Company Limited. SN 275,702. Pub. 12-3-68. Filed 7-10-67.

Class 30 — Crockery, Earthenware, and Porcelain

864,978. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,370. Pub. 12-3-68. Filed 1-8-68.

Class 31 — Filters and Refrigerators

864,979. AQUA-GUARD AND DESIGN. Aqua Guard, Inc. SN 257,245. Pub. 12-3-68. Filed 10-26-66.

864,980. JET-O-FLO. Sternco Industries, Inc. SN 276,711. Pub. 12-3-68. Filed 7-24-67.

864,981. R (DESIGN). Ranco Incorporated. SN 280,251. Pub. 12-3-68. Filed 9-13-67.

864,982. BLICKMAN AND DESIGN. S. Blickman, Inc. SN 291,487. Pub. 12-3-68. Filed 2-20-68.

Class 32 — Furniture and Upholstery

864,983. TOOTSIE ROLL. Tootsie Roll Industries, Inc. SN 281,835. Pub. 12-3-68. Filed 10-4-67.

864,984. MISCELLANEOUS DESIGN. Vladimir Kagan Designs Inc. SN 290,669. Pub. 12-3-68. Filed 2-8-68.

864,985. MISCELLANEOUS DESIGN. Business Efficiency Aids, Inc. SN 294,720. Pub. 12-3-68. Filed 4-2-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

864,904. (See Class 21 for this trademark.)

864,986. QUICK-O-MATIC AND DESIGN. Food Facilities Development Corp. SN 266,528. Pub. 12-3-68. Filed 3-13-67.

864,987. CAMP-KING. B. R. Acker, d.b.a. Southern Research. SN 284,338. Pub. 12-3-68. Filed 11-8-67.

864,988. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,368. Pub. 12-3-68. Filed 1-8-68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

864,989. VREDESTEIN. N.V. Rubberfabriek Vredestein. SN 282,119. Pub. 12-3-68. Filed 10-9-67.

864,990. UNILON. United Products Co., Inc. SN 282,305. Pub. 12-3-68. Filed 10-11-67.

864,991. MISCELLANEOUS DESIGN. Yokohama Gomu Kabushiki Kaisha (The Yokohama Rubber Company Ltd.) SN 295,696. Pub. 12-3-68. Filed 4-15-68.

864,992. JACK. Dayco Corporation. SN 297,983. Pub. 12-3-68. Filed 5-13-68.

864,993. W-RIB. Bridgestone Tire Company Limited. SN 302,017. Pub. 12-3-68. Filed 7-5-68.

864,994. W-LUG. Bridgestone Tire Company Limited. SN 302,018. Pub. 12-3-68. Filed 7-5-68.

Class 36 — Musical Instruments and Supplies

864,909. (See Class 21 for this trademark.)

864,995. PRESIDENT AND DESIGN. Pearl Musical Instrument Manufacturing Company Limited. SN 270,409. Pub. 12-3-68. Filed 5-1-67.

864,996. LIDOVOX. Matthew de Florio. SN 277,450. Pub. 12-3-68. Filed 8-3-67.

864,997. UA LATINO AND DESIGN. United Artists Records, Inc. SN 291,211. Pub. 12-3-68. Filed 2-15-68.

864,998. FABULOUS ROCK RECORDS. Topps Chewing Gum, Incorporated. SN 292,434. Pub. 12-3-68. Filed 3-4-68.

864,999. VENTURE. Venture Records, Inc. SN 296,475. Pub. 12-3-68. Filed 4-24-68.

Class 37 — Paper and Stationery

864,762. (See Class 2 for this trademark.)

865,000. SG. Polyfoam, Inc. SN 272,853. Pub. 4-30-68. Filed 6-1-67.

865,001. PERSONAL STATIONERY STYLED BY DU BARRY. E. Errett Smith, Inc. SN 276,179. Pub. 12-3-68. Filed 7-17-67.

865,002. LAUREATE. Nekoosa-Edwards Paper Company. SN 279,088. Pub. 12-3-68. Filed 8-25-67.

865,003. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,367. Pub. 12-3-68. Filed 1-8-68.

865,004. MISCELLANEOUS DESIGN. Consolidated Packaging Corporation. SN 293,479. Pub. 12-3-68. Filed 3-18-68.

865,005. SST. Scripto, Inc. SN 294,670. Pub. 12-3-68. Filed 4-1-68.

865,006. CONSO-CHEM. Consolidated Packaging Corporation. SN 294,815. Pub. 12-3-68. Filed 4-3-68.

865,007. LOGO. Sanford Ink Company. SN 295,180. Pub. 12-3-68. Filed 4-8-68.

865,008. QUIP. Sanford Ink Company. SN 295,181. Pub. 12-3-68. Filed 4-8-68.

865,009. EXPO. Sanford Ink Company. SN 295,182. Pub. 12-3-68. Filed 4-8-68.

865,010. SHOP-RITE. Wakefern Food Corporation. SN 297,470. Pub. 12-3-68. Filed 5-6-68.

Class 38 — Prints and Publications

864,829. (See Class 12 for this trademark.)

865,011. MISCELLANEOUS DESIGN. Canadian Imperial Bank of Commerce. SN 256,643. Pub. 12-3-68. Filed 10-18-66.

865,012. CRAZY. Heetrans, Inc., d.b.a. Decalomaniac Co. SN 268,491. Pub. 12-3-68. Filed 4-6-67.

865,013. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 280,411. Pub. 12-3-68. Filed 9-15-67.

865,014. CONSTELLATION INTERNATIONAL. Grosset & Dunlap, Inc. SN 286,426. Pub. 12-3-68. Filed 12-7-67.

865,015. 7 DIAS. Shea Rustin, Inc. SN 287,323. Pub. 12-3-68. Filed 12-20-67.

865,016. PRINCE GEORGES SENTINEL. Morkap Publishing Company. SN 287,935. Pub. 12-3-68. Filed 1-2-68.

865,017. BRIGHT EYES. Norcross, Inc. SN 297,312. Pub. 12-3-68. Filed 5-3-68.

865,018. POP-INS. Norcross, Inc. SN 297,313. Pub. 12-3-68. Filed 5-3-68.

865,019. NORCROSS NYMPHS. Norcross, Inc. SN 297,314. Pub. 12-3-68. Filed 5-3-68.

Class 39 — Clothing

864,751. (See Class 1 for this trademark.)

864,774. (See Class 3 for this trademark.)

865,020. CAST'AWAYS. Tyrrell Industries, Inc. SN 258,735. Pub. 12-3-68. Filed 11-15-66.

865,021. LORD JIM. Lord Jim, Inc. SN 261,856. Pub. 2-20-68. Filed 1-3-67.

865,022. VAN CORT. John Plain & Company. SN 266,784. Pub. 12-3-68. Filed 3-15-67.

865,023. CONTRACID. Gottschalk & Co. G.m.b.H. SN 275,654. Pub. 12-3-68. Filed 7-10-67.

865,024. NAUTI-TOGS. Waynesboro Knitting Company. SN 275,802. Pub. 12-3-68. Filed 7-11-67.

865,025. PANKLETS BY MARY GREY. Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills. SN 275,849. Pub. 12-3-68. Filed 7-12-67.

865,026. AMERICAN TENNIS. Court 'n' Sport, Ltd. SN 276,227. Pub. 12-3-68. Filed 7-18-67.

865,027. CUNARD AND DESIGN. Cunard-Werk GmbH. SN 276,823. Pub. 12-3-68. Filed 7-26-67.

865,028. DOMINO AND DESIGN. Raleigh Manufacturers, Inc. SN 283,034. Pub. 12-3-68. Filed 10-20-67.

865,029. REENTRY AND DESIGN. Mid-Atlantic Footwear Corp. SN 288,106. Pub. 12-3-68. Filed 1-4-68.

865,030. PELLON. Pellon Corporation. SN 290,406. Pub. 12-3-68. Filed 2-6-68.

865,031. "KING FOOTS." Johnson Hosiery Mills, Inc. SN 291,075. Pub. 12-3-68. Filed 2-14-68.

865,032. P AND DESIGN. Parklane Hosiery Company, Inc. SN 291,093. Pub. 12-3-68. Filed 2-14-68.

865,033. DINO PISANI. Allied Stores Corporation. SN 291,572. Pub. 12-3-68. Filed 2-21-68.

865,034. YOUNG VICTORIAN BY ARPEJA AND DESIGN. Arpeja Petite Juniors, Inc. SN 291,823. Pub. 12-3-68. Filed 2-26-68.

865,035. PRO'S PRIDE. Gepner Knitwear Co., Inc. SN 292,372. Pub. 12-3-68. Filed 3-4-68.

865,036. ACME AND DESIGN. Acme Boot Company, Inc. SN 293,007. Pub. 12-3-68. Filed 3-12-68.

865,037. AGILE. Florence Walsh, Inc. SN 293,064. Pub. 12-3-68. Filed 3-12-68.

865,038. KNOW CLOTHES. Glen Mfg. Inc. SN 296,150. Pub. 12-3-68. Filed 4-22-68.

865,039. CLANSMAN. Russell Hosiery Mills, Inc. SN 296,455. Pub. 12-3-68. Filed 4-24-68.

865,040. THE THREE BEARS. Sig Smith & Co., Inc. SN 296,723. Pub. 12-3-68. Filed 4-26-68.

865,041. MAJESTY OF THE EAST. Majesty of the East, Inc. SN 297,301. Pub. 12-3-68. Filed 5-3-68.

865,042. THE BIRDS AND DESIGN. Wrenn Manufacturing Co., Inc. SN 297,623. Pub. 12-3-68. Filed 5-7-68.

865,043. SHURTLE-NECK. Piedmont Shirt Company. SN 297,800. Pub. 12-3-68. Filed 5-9-68.

865,044. BOCKERS. Philtex Manufacturing Company. SN 298,148. Pub. 12-3-68. Filed 5-14-68.

865,045. BH WRAGGE. Sydney Wragge. SN 301,498. Pub. 12-3-68. Filed 6-27-68.

865,046. SPORTSWEAR PROMOTIONS. Sportswear Promotions, Inc. SN 302,574. Pub. 12-3-68. Filed 7-12-68.

865,047. BUNNY SUE. Terry Sue Casuals, Inc. SN 302,576. Pub. 12-3-68. Filed 7-12-68.

865,048. MONCLARE. Ragan Knitting Company Inc. SN 304,285. Pub. 12-3-68. Filed 8-5-68.

865,049. DARN PROOF. Ragan Knitting Company Inc. SN 304,286. Pub. 12-3-68. Filed 8-5-68.

865,050. MISCELLANEOUS DESIGN. L. Wohl & Company, Inc. SN 305,189. Pub. 12-3-68. Filed 8-15-68.

Class 40 — Fancy Goods, Furnishings, and Notions

865,051. HI-AIR. American Velcro, Inc. SN 290,815. Pub. 12-3-68. Filed 2-12-68.

865,052. GRIPETTE. Solo Products Corporation. SN 293,860. Pub. 12-3-68. Filed 3-21-68.

865,053. KNITLOK. Hisashi Hamano. SN 301,529. Pub. 12-3-68. Filed 6-27-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

864,798. (See Class 7 for this trademark.)

864,799. (See Class 7 for this trademark.)

865,054. LF AND DESIGN. Liberty Fabrics of New York, Inc. SN 273,653. Pub. 12-3-68. Filed 6-12-67.

865,055. PERMA FASHION. The Woodlin Shirt Corp. SN 293,873. Pub. 12-3-68. Filed 3-21-68.

865,056. COIF CARE. John F. Amico & Co. SN 295,711. Pub. 12-3-68. Filed 4-16-68.

865,057. MACROSTRAND. Fiber Glass Industries, Inc. SN 295,819. Pub. 12-3-68. Filed 4-17-68.

865,058. TUNED-IN. Westwood Textile Manufacturing, Inc. SN 295,985. Pub. 12-3-68. Filed 4-18-68.

865,059. PURREY POLYESTER. Chatham Manufacturing Company. SN 296,116. Pub. 12-3-68. Filed 4-22-68.

865,060. WEARATHON. Armstrong Cork Company. SN 296,785. Pub. 12-3-68. Filed 4-29-68.

865,061. MIYUKITEX. Miyuki Keori Kabushiki Kaisha (Miyuki Woollen Textile Co., Ltd.). SN 297,582. Pub. 12-3-68. Filed 5-7-68.

865,062. USCHAK. Lanneau Tapijt- en Fluweelweverij N.V. SN 298,133. Pub. 12-3-68. Filed 5-14-68.

Class 43 — Thread and Yarn

864,798. (See Class 7 for this trademark.)

864,799. (See Class 7 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

865,063. CLIP-STIK. Baxter Laboratories, Inc. SN 281,539. Pub. 12-3-68. Filed 10-2-67.

865,064. SAUNA/MASTER. Ben Steinman. SN 292,975. Pub. 12-3-68. Filed 3-11-68.

Class 45 — Soft Drinks and Carbonated Waters

865,065. ADANAC. Canada Dry Corporation, assignee of Canada Dry Corporation. SN 297,003. Pub. 12-3-68. Filed 5-1-68.

Class 46 — Foods and Ingredients of Foods

865,066. SANTA. Kanto Canned Food Products Co., Ltd. SN 236,096. Pub. 12-3-68. Filed 1-10-66.

865,067. X-NOG. Borden, Inc., by change of name from The Borden Company. SN 292,259. Pub. 12-3-68. Filed 3-1-68.

865,068. CONSUL. Vega Trading Co., Inc. SN 292,643. Pub. 12-3-68. Filed 3-6-68.

865,069. BREA. Collier Carbon and Chemical Corporation. SN 298,429. Pub. 12-3-68. Filed 5-17-68.

865,070. CHIPOS AND DESIGN. General Mills, Inc. SN 300,870. Pub. 10-22-68. Filed 6-20-68.

865,071. JOBB. Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Company. SN 299,624. Pub. 12-3-68. Filed 6-4-68.

865,072. SUB. Home Town Foods, Inc. SN 296,323. Pub. 12-10-68. Filed 4-23-68.

865,073. LONDON FRYS. London Dry Ltd. SN 302,947. Pub. 12-3-68. Filed 7-17-68.

865,074. MR. DO BEE. Romper Room, Inc. SN 303,234. Pub. 12-3-68. Filed 7-22-68.

Class 47 — Wines

865,075. AUJOUX. Aujoux & Cie Societe Vinicole Beaujolaise, d.b.a. Aujoux & Cie S.A. SN 275,609. Pub. 12-3-68. Filed 7-10-67.

865,076. BROQUEL. Benegas Hermanos y Cia. Ltda. S.A.I.C. SN 291,018. Pub. 12-3-68. Filed 2-14-68.

865,077. LAUREL HIGHLANDS. L and H Associates, d.b.a. Laurel Highlands Vineyards. SN 295,745. Pub. 12-3-68. Filed 4-16-68.

Class 48 — Malt Beverages and Liquors

865,078. HARP (DESIGN). Arthur Guinness Son & Company Limited. SN 290,239. Pub. 12-3-68. Filed 2-5-68.

Class 49 — Distilled Alcoholic Liquors

865,079. RED HACKLE. Hepburn & Ross Limited. SN 280,779. Pub. 12-3-68. Filed 9-20-67.

865,080. ESSAY'S. South African Wine Farmers Association (London) Limited. SN 286,041. Pub. 12-3-68. Filed 12-1-67.

865,081. CONFEDERATE FLAG. Marita Spirits Limited, assignee of William P. Cashman, d.b.a. Marita and Marita Spirits & Wine Company. SN 294,011. Pub. 10-15-68. Filed 3-25-68.

Class 50 — Merchandise Not Otherwise Classified

864,931. (See Class 23 for this trademark.)

865,082. SQUIRE. John Thomas Batts, Inc. SN 298,312. Pub. 12-3-68. Filed 5-16-68.

Class 51 — Cosmetics and Toilet Preparations

864,776. (See Class 4 for this trademark.)

865,083. FLICKER STICK. Clairol Incorporated. SN 224,511. Pub. 10-11-66. Filed 7-29-65.

865,084. ARTIST BROW. Rexall Drug and Chemical Company, assignee of Beauty Counselors, Inc. SN 224,704. Pub. 12-3-68. Filed 8-2-65.

865,085. ZASMIN. FGM Žasmin S.r.l. SN 268,392. Pub. 12-3-68. Filed 4-5-67.

865,086. VIKING. Valhalla Inc. SN 270,171. Pub. 12-3-68. Filed 4-27-67.

865,087. M LEOPOLD NITE LITE. M. Leopold, Inc., assignee of Richard A. Spike, d.b.a. M. Leopold. SN 278,740. Pub. 12-3-68. Filed 8-21-67.

865,088. M LEOPOLD MORNING LITE. M. Leopold, Inc., assignee of Richard A. Spike, d.b.a. M. Leopold. SN 278,741. Pub. 12-3-68. Filed 8-21-67.

865,089. UPPERCUT. Emile Kettin. SN 281,583. Pub. 12-3-68. Filed 10-2-67.

865,090. MANICOTE. The Borden Company. SN 286,998. Pub. 12-3-68. Filed 12-15-67.

865,091. WHEN BEING CLOSE COUNTS. Colgate-Palmolive Company. SN 287,345. Pub. 12-3-68. Filed 12-21-67.

865,092. BOUQUET. Calgon Corporation (Delaware corporation), assignee of Calgon Corporation (Pennsylvania corporation). SN 287,518. Pub. 12-3-68. Filed 12-26-67.

865,093. IT HAPPENS RIGHT NOW. Summit Laboratories, Inc. SN 287,841. Pub. 12-3-68. Filed 12-29-67.

865,094. REPAIR KIT. Richard Hudnut. SN 289,612. Pub. 12-3-68. Filed 1-25-68.

865,095. A & P AND DESIGN. The Great Atlantic and Pacific Tea Company, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 290,488. Pub. 12-3-68. Filed 2-7-68.

865,096. WINNER'S CIRCLE. Winners Circle, Inc. SN 293,423. Pub. 12-3-68. Filed 3-15-68.

865,097. SHIMMY SHINS. Alberto-Culver Company. SN 294,119. Pub. 12-3-68. Filed 3-26-68.

865,098. SBS- AND DESIGN. Sugar Beet Products Company. MULTIPLE CLASS (Classes 51 and 52). SN 297,000 Pub. 12-3-68. Filed 5-1-68.

865,099. DESIGN OF MAN AND WOMAN CARRYING A SIGN. Sugar Beet Products Company. MULTIPLE CLASS (Classes 51 and 52). SN 297,001. Pub. 12-3-68. Filed 5-1-68.

Class 52 — Detergents and Soaps

864,776. (See Class 4 for this trademark.)

864,777. (See Class 4 for this trademark.)

864,821. (See Class 12 for this trademark.)

865,095. (See Class 51 for this trademark.)

865,098. (See Class 51 for this trademark.)

865,099. (See Class 51 for this trademark.)

865,100. KWIK DRI. Lowe's, Inc. SN 273,656. Pub. 12-3-68. Filed 6-12-67.

865,101. DETERGENT "1·2·4." Foresight Corporation, d.b.a. Water Soluble Products. SN 275,886. Pub. 12-3-68. Filed 7-12-67.

865,102. DETERGENT "1·2·2." Foresight Corporation, d.b.a. Water Soluble Products. SN 275,888. Pub. 12-3-68. Filed 7-12-67.

865,103. MISCELLANEOUS DESIGN. Bulova Watch Company, Inc. SN 283,975. Pub. 12-3-68. Filed 11-2-67.

865,104. POT LUCK. Standard International Corporation. SN 291,532. Pub. 12-3-68. Filed 2-20-68.

Service Marks

Class 100 — Miscellaneous

865,105. UNIT CALL AND DESIGN. J. C. Barnard and Associates. SN 257,030. Pub. 12-3-68. Filed 10-24-66.

865,106. HORN & HARDART. The Horn & Hardart Company. SN 270,573. Pub. 12-3-68. Filed 5-3-67.

865,107. NATIONAL PERSONNEL CONSULTANTS. National Personnel Consultants. SN 271,955. Pub. 12-3-68. Filed 5-19-67.

865,108. MEND. Pacific Employers Insurance Company. SN 273,302. Pub. 12-3-68. Filed 6-7-67.

865,109. C CONSOLIDATED ENGINEERING. Consolidated Engineering Company Incorporated. MULTIPLE CLASS (Classes 100 and 103). SN 281,868. Pub. 12-3-68. Filed 10-5-67.

865,110. CHEMCLEAN. Chemclean Corporation. SN 284,449. Pub. 12-3-68. Filed 11-9-67.

865,111. QUALITY AND DESIGN. Quality Tool & Die Co., Inc. SN 286,032. Pub. 12-3-68. Filed 12-1-67.

865,112. SALVATION. Salvation Discotheque Ltd. SN 286,961. Pub. 12-3-68. Filed 12-14-67.

865,113. JOHN MANDIS MARKET INN. John Mandis, Inc. SN 290,306. Pub. 12-3-68. Filed 2-5-68.

865,114. ME AND DESIGN. Meridian Engineering, Inc. SN 291,884. Pub. 12-3-68. Filed 2-26-68.

865,115. COMPLAN. Computation Planning, Inc. SN 301,008. Pub. 12-3-68. Filed 6-21-68.

865,116. GRENADIER. Grenadier Restaurant Ltd. SN 305,886. Pub. 12-3-68. Filed 8-26-68.

Class 101 — Advertising and Business

865,117. RX RETAIL PHARMACY LEAGUE RPL AND DESIGN. Wholesale Druggists Merchandising Association, Inc. SN 263,634. COLLECTIVE MARK. Pub. 12-3-68. Filed 1-30-67.

865,118. Q PLAN (DESIGN). International Minerals & Chemical Corporation. SN 278,267. Pub. 12-3-68. Filed 8-15-67.

865,119. MINK MONEY. Mademoiselle Furs, Inc. SN 289,640. Pub. 12-3-68. Filed 1-26-68.

Class 102 — Insurance and Financial

865,120. A WORLD OF PROTECTION AND DESIGN. Meridian Mutual Insurance Company. SN 273,834. Pub. 12-3-68. Filed 6-14-67.

865,121. GROUP PORTRAIT. Central National Bank in Chicago. SN 277,328. Pub. 12-3-68. Filed 8-2-67.

865,122. MISCELLANEOUS DESIGN. Central Bank and Trust Company. SN 278,463. Pub. 12-3-68. Filed 8-17-67.

865,123. S (DESIGN). Stuyvesant Life Insurance Company. SN 283,365. Pub. 12-3-68. Filed 10-25-67.

865,124. CHECK COMMAND. The Equitable Trust Company. SN 297,249. Pub. 12-3-68. Filed 5-3-68.

Class 103 — Construction and Repair

865,109. (See Class 100 for this trademark.)

865,125. SHIELD (DESIGN). Ervin Industries Inc., by change of name from Ervin Construction Company, Incorporated. SN 267,740. Pub. 12-3-68. Filed 3-28-67.

865,126. ERVIN AND DESIGN. Ervin Industries Inc., by change of name from Ervin Construction Company, Incorporated. SN 267,741. Pub. 12-3-68. Filed 3-28-67.

Class 105 — Transportation and Storage

865,127. PRICE AND DESIGN. The Price Company Limited. SN 284,033. Pub. 12-3-68. Filed 11-2-67.

865,128. SKYWAY-TO-HIGHWAY. Donley F. Hunt, Jack A. Stockfish, Nash M. Love, and Daniel B. Rathbun (joint owners), d.b.a. Skyway-To-Highway. SN 288,318. Pub. 12-3-68. Filed 1-8-68.

Class 106 — Material Treatment

865,129. LUBRINIZED. Quantum, Incorporated. SN 248,845. Pub. 1-30-68. Filed 6-23-66.

Class 107 — Education and Entertainment

865,130. SWEET SOUND OF SUCCESS. S. H. Lynch & Company, Inc. SN 261,859. Pub. 12-3-68. Filed 1-3-67.

865,131. SAINTS GO MARCHING IN AND DESIGN. New Orleans Saints, assignee of New Orleans Saints. SN 270,941. Pub. 12-3-68. Filed 5-8-67.

865,132. "THE CRYAN SHAMES." The Cryan Shames. SN 273,609. Pub. 12-3-68. Filed 6-12-67.

865,133. SAGA OF AMERICA. John Alexander and Sanford I. Hansell (joint owners). SN 277,120. Pub. 12-3-68. Filed 7-31-67.

865,134. CBOA AND DESIGN. Collegiate Basketball Officials Association, Inc. SN 278,468. Pub. 12-3-68. Filed 8-17-67.

865,135. ST. LOUIS STARS. Missouri National Soccer Club, Inc. SN 296,077. Pub. 12-3-68. Filed 4-22-68.

Collective Membership Mark

Class 200

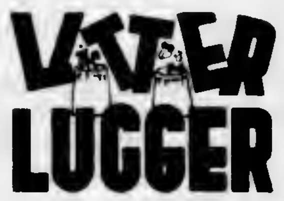
865,136. SOCIETY OF BLACK BELTS OF AMERICA AND DESIGN. Society of Black Belts International Corp. SN 279,421. Pub. 12-3-68. Filed 8-30-67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

865,137. Leo Paul Garvey, Brainerd, Minn. SN 250,472. Filed P.R. 7-18-66; Am. S.R. 11-1-68.



For Plastic Waste Bag To Be Adhesively Mounted Onto the Dashboard of an Automobile (Int. Cl. 22).
First use June 3, 1965.

Class 4 — Abrasives and Polishing Materials

865,138. Stanley Home Products, Inc., Westfield, Mass. SN 293,598. Filed P.R. 3-18-68; Am. S.R. 11-29-68.

DE-MARK-IT

For Cleaning and Polishing Compound for Cleaning Floors and the Like (Int. Cl. 3).
First use Aug. 24, 1967.

Class 30 — Crockery, Earthenware, and Porcelain

865,139. Castleton China, Inc., New Castle, Pa. SN 261,715. Filed P.R. 12-30-66; Am. S.R. 10-28-68.

FILIGREE

For China Dinnerware (Int. Cl. 21).
First use Nov. 28, 1966.

Class 38 — Prints and Publications

865,140. The Webb Publishing Company, St. Paul, Minn. SN 285,365. Filed P.R. 11-21-67; Am. S.R. 11-25-68.

the magazine of new farming ideas

For Trade Magazine (Int. Cl. 16).
First use Nov. 9, 1967.

Class 39 — Clothing

865,141. Melville Shoe Corporation, New York, N.Y. SN 274,225. Filed P.R. 6-19-67; Am. S.R. 12-6-68.

OOH-PAKES

For Women's and Girls' Hosiery and Panti-Hose (Int. Cl. 25).
First use June 9, 1967.

Class 51 — Cosmetics and Toilet Preparations

865,142. Clairol Incorporated, New York, N.Y. SN 272,354. Filed P.R. 5-25-67; Am. S.R. 11-21-68.

LEMONITE

For Hair Lightener (Int. Cl. 3).
First use Apr. 20, 1967.

TRADEMARK REGISTRATIONS RENEWED

73,721. LUNKENHEIMER. Cls. 13 and 26 (Int. Cls. 7 and 9). 5–11–09.
248,225. ANDRE PERUGIA. Cl. 39 (Int. Cl. 25). 10–16–28.
249,932. TICKL-TASTE. Cl. 46 (Int. Cl. 30). 11–27–28.
250,438. NAPHTHOSOL. Cl. 6 (Int. Cl. 2). 12–11–28.
250,508. PANCHROMATIC. Cl. 51 (Int. Cl. 3). 12–11–28.
250,810. UNISET. Cl. 37 (Int. Cl. 16). 12–18–28.
251,045. REPRESENTATION OF TRIANGLE WITH TRANSVERSE BAND. Cl. 46 (Int. Cl. 29). 12–25–28.
252,967. PERMA SHYNE. Cl. 16 (Int. Cl. 3). 2–19–29.
253,266. CARPULE. Cl. 44 (Int. Cl. 5). 2–26–29.
255,083. "ROYAL CROWN" AND DESIGN. Cl. 23 (Int. Cl. 8). 4–16–29.
255,148. FULFLO. Cl. 23 (Int. Cl. 7). 4–16–29.
441,436. PAL HOLLOW GROUND AND DESIGN. Cl. 23 (Int. Cl. 8). 11–30–48.
441,587. ALPA. Cl. 26 (Int. Cl. 9). 12–14–48.
442,034. WILSON JONES RECORD KEEPING ESSENTIALS WJ AND DESIGN. Cl. 32 (Int. Cl. 16). 2–8–49.
442,700. TRIANGLE (DESIGN). Cl. 28 (Int. Cls. 8 and 14). 5–17–49.
442,567. SERGINES. Cl. 27 (Int. Cl. 14). 4–26–49.
503,524. ADAMANT. Cl. 11 (Int. Cl. 2). 10–26–48.
503,526. ANNIVERSARY. Cl. 11 (Int. Cl. 2). 10–26–48.
502,582. CABRILLO. Cl. 17 (Int. Cl. 34). 9–28–48.
503,590. P & W. Cl. 23 (Int. Cls. 7 and 8). 11–2–48.
502,688. HUSHKOTE. Cl. 12 (Int. Cl. 19). 10–5–48.
503,813. YESTER-LAID. Cl. 46 (Int. Cl. 29). 11–9–48.
504,265. LEWIS-SHEPARD. Cl. 23 (Int. Cls. 7 and 12). 11–30–48.
504,532. WEED-NO-MORE. Cl. 6 (Int. Cl. 5). 12–7–48.
504,608. TWEED AND DOG DESIGN. Cl. 17 (Int. Cl. 34). 12–7–48.
504,609. SKOAL. Cl. 17 (Int. Cl. 34). 12–7–48.
504,632. INLAND AND DESIGN. Cl. 14 (Int. Cl. 6). 12–7–48.
504,663. BRIGHT SAIL. Cl. 16 (Int. Cl. 3). 12–7–48.
504,743. FROZEN DRUMSTICK. Cl. 46 (Int. Cl. 30). 12–14–48.
504,755. COCONOG. Cl. 46 (Int. Cl. 32). 12–14–48.
504,756. CRESTVIEW. Cl. 46 (Int. Cl. 29). 12–14–48.
504,848. FROSTINT. Cl. 42 (Int. Cl. 24). 12–14–48.
505,165. SONORA CLEAR AS A BELL AND DESIGN. Cl. 21 (Int. Cl. 9). 12–28–48.
505,172. TELEHEIGHT. Cl. 26 (Int. Cl. 9). 12–28–48.
505,173. WINDBREAKER. Cl. 39 (Int. Cl. 25). 12–28–48.
505,235. EVANS STANDARD. Cl. 39 (Int. Cl. 25). 12–28–48.
505,694. SUNRAE. Cl. 6 (Int. Cls. 3 and 5). 1–18–49.
505,778. KROBAT AND DESIGN. Cl. 22 (Int. Cl. 28). 1–18–49.
506,201. LAND O'. Cl. 39 (Int. Cl. 25). 2–1–49.
506,372. TINTABIT. Cl. 6 (Int. Cl. 3). 2–1–49.
506,479. CLOVER LEAF. Cl. 16 (Int. Cl. 2). 2–8–49.
506,671. LUBRIDERM. Cl. 18 (Int. Cl. 5). 2–15–49.
506,685. VITALITE. Cl. 22 (Int. Cl. 28). 2–15–49.
506,723. BALTAR. Cl. 26 (Int. Cl. 9). 2–15–49.
506,886. FLETCHER MANIFOLD. Cl. 37 (Int. Cl. 16). 2–22–49.
506,975. NUPASTEL. Cl. 37 (Int. Cl. 16). 2–22–49.
507,110. PIN KLIP. Cl. 28 (Int. Cl. 14). 2–22–49.
507,133. TOWNSTER. Cl. 39 (Int. Cl. 25). 3–1–49.
507,188. SMITHFIELD. Cl. 46 (Int. Cl. 29). 3–1–49.
507,272. CRESARROW. Cl. 27 (Int. Cl. 14). 3–1–49.
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742,791. SILOO ICE-GRIP. Cl. 1.
742,803. OLETHENE. Cl. 1.
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742,833. TRIARAM. Cl. 6.
742,834. TRISANIDE. Cl. 6.
742,839. L. Cl. 6.
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742,844. FAM. Cl. 10.
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742,849. HOMESHIELD ETC. AND DESIGN. Cl. 12.
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742,929. BUG BRIG AND DESIGN. Cl. 21.
742,937. FEATURE-LITE. Cl. 21.
742,946. HAWAIIAN DART. Cl. 22.
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743,176. AL-BEF. Cl. 46.
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750,798. TE AND DESIGN. Cl. 21. 6–11–63.

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745,002. CARGILL AND DESIGN. Cl. 1. 2–12–63. Cargill, Incorporated, Minneapolis, Minn. Amended to appear:

CARGILL

818,089. FRIGID PAK. Cls. 2 and 37. 11–8–66. Milprint, Inc., Milwaukee, Wis. Corrected: In the statement, column 2, line 6 should be deleted.

847,816. NODEMA. Cl. 18. 4–23–68. Irving P. Filderman, Memphis, Tenn. Amended to appear:

NODEMA

855,012. PANCOXIN. Cl. 18. 8–20–68. Merck & Co., Inc., Rahway, N.J. Corrected: In the statement, column 2, line 3, "il" should be deleted and *ly* should be inserted.

859,233. NORTHERN. Cls. 21, 29, 34, 39, 42, and 44. 10–29–68. Northern Electric Company, Chicago, Ill. Corrected: In the statement, column 1, line 6, after "cables" *, cord sets* should be inserted.

860,139. MOONDREAM. Cl. 39. 11–12–68. Grampian Textiles Limited, Glasgow, Scotland. Corrected: In the statement, column 2, line 3, "1966" should be deleted and *1965* should be inserted.

861,425. GOLD ALLIGATOR. Cl. 39. 12–3–68. The Alligator Company, Inc., St. Louis, Mo. Corrected: In the statement, column 2, line 5, "706,044" should be deleted and *706,041* should be inserted.

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(**Registered** ; **Renewed** ; **Canceled** ; **Amended, Disclaimed**, Corrected, etc. ; **New Certificates** ; **12c Publications.**)

Abington Textile Machinery Works, North Abington, Mass. 742,965, canc. Cl. 23.

Acker, B. R., d.b.a. Southern Research, Largo, Fla. 864,987, pub. 12–3–68. Cl. 34.

Acme Boot Co., Inc., Clarksville, Tenn. 865,036, pub. 12–3–68. Cl. 39.

Acme White Lead & Color Works, Detroit, Mich., to The Sherwin-Williams Co., Cleveland, Ohio. 507,867, ren. 2–18–69. Cl. 6.

Adco, Inc.: *See—*
American Disinfecting Co.

Adkins-Phelps Co., North Little Rock, Ark. 864,791, pub. 12–3–68. Cl. 6.

Advance Fertilizer & Chemical Ltd., Trail, British Columbia, Canada. 864,809, pub. 12–3–68. Cl. 10.

Aero Systems, Inc., Miami Springs, Fla. 864,913, pub. 12–3–68. Multiple Class (Classes 21 and 26).

Agpro, Inc., Santa Rosa, Calif. 864,763, pub. 12–3–68. Multiple Class (Classes 2, 13, and 23).

Air-Con Filter Corp., Memphis, Tenn. 742,999–43,001, canc. Cl. 31.

Albany Billiard Ball Co., Albany, N.Y. 506,685, ren. 2–18–69. Cl. 22.

Albany Billiard Ball Co., Albany, N.Y. 509,016, ren. 2–18–69. Cl. 22.

Alberto-Culver Co., Melrose Park, Ill. 864,795, pub. 12–3–68. Cl. 6.

Alberto-Culver Co., Melrose Park, Ill. 865,097, pub. 12–3–68. Cl. 51.

Alexander, John, and Sanford I. Hansell, Detroit, Mich. 865,133, pub. 12–3–68. Cl. 107.

Alliance Mfg. Co., The, to The Alliance Mfg. Co., Inc., Alliance, Ohio. 509,394, ren. 2–18–69. Cl. 21.

Alliance Mfg. Co., Inc., The: *See—*
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Allied Compositions Co., Inc., Maspeth, N.Y. 864,820, pub. 12–3–68. Cl. 12.

Allied Stores Corp., New York, N.Y. 865,033, pub. 12–3–68. Cl. 39.

Alligator Co., Inc., St. Louis, Mo. 861,425, cor. Cl. 39.

Allpac, Inc., Dallas, Tex. 864,937, pub. 12–3–68. Cl. 23.

Amerace Corp., New York, N.Y. 864,769, pub. 12–3–68. Cl. 2.

American Allsafe Co., Inc., Buffalo, N.Y. 864,949, pub. 12–3–68. Cl. 23.

American Chocolate & Cocoa Co., Inc., d.b.a. American Chocolate Co., Inc., St. Louis, Mo. 743,076, canc. Cl. 46.

American Chocolate Co., Inc.: *See—*
American Chocolate & Cocoa Co., Inc.

American Cyanamid Co.: *See—*
Wetterwald & Pfister Co., Inc.

American Cyanamid Co., Wayne, N.J. 864,802, pub. 12–3–68. Cl. 9.

American Disinfecting Co., to Adco, Inc., Sedalia, Mo. 252,967, ren. 2–18–69. Cl. 16.

American Metal Climax, Inc., New York, N.Y. 864,829, pub. 12–3–68. Multiple Class (Classes 12, 14, and 38).

American Screen Products Co., Chicago, Ill. 742,849, canc. Cl. 12.

American Screen Products Co., Chicago, Ill. 742,869, canc. Cl. 13.

American Tobacco Co., The, New York, N.Y. 864,859–60, pub. 12–3–68. Cl. 17.

American Velcro, Inc., Manchester, N.H. 865,051, pub. 12–3–68. Cl. 40.

Amico, John F., & Co., Chicago, Ill. 865,056, pub. 12–3–68. Cl. 42.

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Aqua Guard, Inc., Geneva, Ill. 864,979, pub. 12–3–68. Cl. 31.

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Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha (Arakawa Forest Chemical Industries, Ltd.), Higashi-ku, Osaka, Japan. 864,787, pub. 12–3–68. Cl. 6.

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Armstrong Cork Co., Lancaster, Pa. 865,060, pub. 12–3–68. Cl. 42.

Arnstein Bros. & Co., Inc., New York, N.Y. 742,987, canc. Cl. 28.

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Arrow Liqueurs Corp., Detroit, Mich. 743,100, canc. Cl. 49.

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Atlantic Richfield Co., Los Angeles, Calif. 864,752, pub. 12–3–68. Multiple Class (Classes 1, 6, 12, and 15).

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Aujoux & Cie Societe Vinicole Beaujolaise, d.b.a. Aujoux & Cie S.A., Saint-Georges-en-Beaujolais (Rhone), France. 865,075, pub. 12–3–68. Cl. 47.

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Avisun Corp., Philadelphia, Pa. 742,805, canc. Cl. 1.

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Axel Bros., Inc., Jamaica, N.Y. 742,988, canc. Cl. 28.

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Bausch & Lomb Optical Co., to Bausch & Lomb Inc., Rochester, N.Y. 506,723, ren. 2–18–69. Cl. 26.

Baxter Laboratories, Inc., Morton Grove, Ill. 865,063, pub. 12–3–68. Cl. 44.

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Bjornker, Hans C., d.b.a. "Sophistipats," Walnut Creek, Calif. 864,969, pub. 12–3–68. Cl. 26.

Blickman, S., Inc., Weehawken, N.J. 864,982, pub. 12–3–68. Cl. 31.

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Boettcher, William A., d.b.a. W. A. Boettcher & Co., Chicago, Ill. 864,779, pub. 12–3–68. Cl. 4.

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Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. 864,874, pub. 12–3–68. Cl. 18.

Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. 864,867–72, pub. 12–3–68. Cl. 18.

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Calgon Corp., from Calgon Corp., Pittsburgh, Pa. 864,788, pub. 12-3-68. Cl. 6.
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Canada Dry Corp., from Canada Dry Corp., New York, N.Y. 865,065, pub. 12-3-68. Cl. 45.
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Chicago Snack Foods Co. : *See*—
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Ciba Corp., d.b.a. The Gland-O-Lac Co., Summit, N.J. 864,794, pub. 12-3-68. Cl. 6.
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Ciba Corp., Summit, N.J. 864,876-7, pub. 12-3-68. Cl. 18.
Clairol Inc., New York, N.Y. 506,372, ren. 2-18-69. Cl. 6.
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Roth, Otto, Inc.
Communication Mfg. Co., Long Beach, Calif. 864,916, pub. 12-3-68. Cl. 21.
Compagnie des Montres Longines, Francillon S.A. (Longines Watch Co. Francillon Ltd.), St. Imier, Switzerland. 442,567, ren. 2-18-69. Cl. 27.
Computation Planning, Inc., Washington, D.C. 865,115, pub. 12-3-68. Cl. 100.
Consolidated Engineering Co., Inc., Baltimore, Md. 865,109, pub. 12-3-68. Multiple Class (Classes 100 and 103).
Consolidated Packaging Corp., Chicago, Ill. 865,004, pub. 12-3-68. Cl. 37.
Consolidated Packaging Corp., Chicago, Ill. 865,006, pub. 12-3-68. Cl. 37.
Cook Laboratories, Inc., Chicago, Ill., to Cook-Waite Laboratories, Inc., New York, N.Y. 253,266, ren. 2-18-69. Cl. 44.
Cook-Waite Laboratories, Inc. : *See*—
Cook Laboratories, Inc.
Cooper's, Inc., Kenosha, Wis. 509,364, ren. 2-18-69. Cl. 39.
Corl International Corp., Bremen, Ind. 864,832, pub. 12-3-68. Multiple Class (Classes 13 and 19).
Corral, Wodiska y Ca., Tampa, Fla. 864,856, pub. 12-3-68. Cl. 17.
Corrugated Metal Container Corp., Archbald, Pa. 864,892, pub. 12-3-68. Cl. 19.
Court 'n' Sport, Ltd., New York, N.Y. 865,062, pub. 12-3-68. Cl. 39.
Coventry, Sarah, Inc., Newark, N.Y. 864,768, pub. 12-3-68. Multiple Class (Classes 2 and 23).
Cresarrow Watch Co., Newark, N.J. 507,272, ren. 2-18-69. Cl. 27.
Cross at the Green Enterprises : *See*—
Gasnick, Jack.
Cryan Shames, The, Chicago, Ill. 865,132, pub. 12-3-68. Cl. 107.
Culver-Stearns Mfg. Co., Worcester, Mass. 864,894, pub. 12-3-68. Cl. 21.
Cunard-Werk G.m.b.H., Goslar/Harz, Germany. 865,027, pub. 12-3-68. Cl. 39.
Dale Alley Co., St. Joseph, Mo. 743,176, canc. Cl. 46.
Danbury Rubber Co., Inc., The, Danbury, Conn. 742,923, canc. Cl. 20.
Davidson Rubber Co., Dover, N.H. 743,169, canc. Cl. 32.
Dayco Corp., Dayton, Ohio. 864,992, pub. 12-3-68. Cl. 35.
Daystrom, Inc., Murray Hill, N.J., from Wiancko Engineering Co., Pasadena, Calif. 742,975, canc. Cl. 26.
Decalomaniac Co. : *See*—
Heetrans, Inc.
De Florio, Matthew, Toronto, Ontario, Canada. 864,996, pub. 12-3-68. Cl. 36.
Delta-Visier G.m.b.H., Ottobrunn, near Munich, Germany. 864,801, pub. 12-3-68. Cl. 9.
Derby Foods, Inc., Chicago, Ill. 743,075, canc. Cl. 46.
Desertopics Publishing Co., Palm Springs, Calif. 743,031, canc. Cl. 38.
Dick, R. & J., Co., Inc., King of Prussia, Pa. 864,954, pub. 12-3-68. Cl. 23.
Dillard Paper Co., Greensboro, N.C. 864,762, pub. 12-3-68. Multiple Class (Classes 2, 5, and 37).
Dow Badische Co., Williamsburg, Va. 864,759-61, pub. 12-3-68. Cl. 1.
Dual Security Co. : *See*—
Williams, Victor W.
Dunn, R. G., Cigar Corp. : *See*—
Sensenbrenner, A., Sons.
Duplex Mfg., Inc., Beaverton, Oreg. 743,105, canc. Cl. 50.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 507,939, ren. 2-18-69. Cl. 26.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 864,849, pub. 12-3-68. Cl. 16.
Durrazzo Products, Inc., St. Paul, Minn. 742,866, canc. Cl. 12.
East Smithfield Farms, Inc., Bala-Cynwyd, Pa. 507,188, ren. 2-18-69. Cl. 46.
Eastman Kodak Co., Rochester, N.Y. 864,790, pub. 12-3-68. Cl. 6.
Easy Green Division, Yeadon, Pa. 742,846, canc. Cl. 10.
Eberhard Faber Inc. : *See*—
Eberhard Faber Pencil Co.
Eberhard Faber Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes-Barre, Pa. 506,975, ren. 2-18-69. Cl. 37.
Eberhard Faber Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes Barre, Pa. 509,702, ren. 2-18-69. Cl. 37.
Eichberg & Co., Inc., New York, N.Y. 742,989, canc. Cl. 28.
Electronic Research & Development Corp., from Ant-O-Matic Mfg., Inc., Tulsa, Okla. 743,154, canc. Cl. 107.
Elton Electric Co. : *See*—
Johnson, Elton.
Emmons Jewelers, Inc., Newark, N.Y. 864,976, pub. 12-3-68. Cl. 28.
Engelhard Hanovia, Inc., Newark, N.J. 742,809, canc. Cl. 1.
Equipto Electronics Corp., Aurora, Ill. 864,905, pub. 12-3-68. Cl. 21.
Equitable Trust Co., The, Baltimore, Md. 865,124, pub. 12-3-68. Cl. 102.
Ervin Construction Co., Inc. : *See*—
Ervin Industries Inc.
Ervin Industries Inc., from Ervin Construction Co., Inc., Charlotte, N.C. 865,125-6, pub. 12-3-68. Cl. 103.
Evans', L. B., Son Co., Wakefield, Mass. 505,235, ren. 2-18-69. Cl. 39.
FGM Zasmin S.r.l., Milan, Italy. 865,085, pub. 12-3-68. Cl. 51.
FMC Corp., Philadelphia, Pa. 864,798-9, pub. 12-3-68. Multiple Class (Classes 7, 42, and 43).
Fabbrica Piastrelle Ubaldo Franceschinis, Udine, Italy. 864,815, pub. 12-3-68. Cl. 12.
Fabriek Van Chemische Producten Vondelingenplaat N.V., Vondelingenplaat, Netherlands. 742,832-4, canc. Cl. 6.
Factor, Max, d.b.a. Max Factor & Co., Los Angeles, to Max Factor & Co., Hollywood, Calif. 250,508, ren. 2-18-69. Cl. 51.
Factor, Max, & Co. : *See*—
Factor, Max.
Farber Bros., Inc., Memphis, Tenn. 742,918, canc. Cl. 19.
Federal Laboratories, Inc., Saltsburg, Pa. 864,805-6, pub. 12-3-68. Cl. 9.
Fiber Glass Industries, Inc., Amsterdam, N.Y. 865,057, pub. 12-3-68. Cl. 42.
Filderman, Irving P., Memphis, Tenn. 847,816. Am. 7(d). Cl. 18.
Firearms Import & Export Corp., Miami, Fla. 864,807-8, pub. 12-3-68. Cl. 9.
Flavor-Fresh Foods, Inc. : *See*—
Nodaway Valley Foods, Inc.
Flavor-Fresh Foods, Inc., Corning, Iowa. 743,064, canc. Cl. 46.
Fletcher Paper Co., Alpena, Mich. 506,886, ren. 2-18-69. Cl. 37.
Folklore Center, The : *See*—
Young, Israel G.
Food Facilities Development Corp., Deer Park, N.Y. 864,986, pub. 12-3-68. Cl. 34.
Foresight Corp., d.b.a. Water Soluble Products, Chicago, Ill. 865,101-2, pub. 12-3-68. Cl. 52.
Frankische Pelzindustrie, Markle & Co., Furth, Bavaria, Germany. 864,751, pub. 12-5-67. Multiple Class (Classes 1 and 39).
Freudenberg, Carl, Hoehnerweg, Germany. 742,806, canc. Cl. 1.
Fulflo Specialties Co., to The Fulflo Specialties Co., Inc., Blanchester, Ohio. 255,148, ren. 2-18-69. Cl. 23.
Fulflo Specialties Co., Inc., The : *See*—
Fulflo Specialties Co.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 864,786, pub. 12-3-68. Cl. 6.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 865,013, pub. 12-3-68. Cl. 38.
G-G31, Inc., North Hollywood, Calif. 864,804, pub. 12-3-68. Cl. 9.

Gardner Tooth-Brush Co., Inc., The, New York, N.Y. 288,891, canc. Cl. 29.
Garfinkel, A., Inc., Washington, D.C. 864,857, pub. 12-3-68. Cl. 17.
Garrett Corp., The, Los Angeles, Calif. 509,534, ren. 2-18-69. Cl. 23.
Garvey, Leo P., Brainerd, Minn. 865,137. Cl. 2.
Gasnick, Jack, d.b.a. Cross at the Green Enterprises, New York, N.Y. 864,774, pub. 12-3-68. Multiple Class (Classes 3, 22, and 39).
Geartronics Corp., North Billerica, Mass. 864,935, pub. 12-3-68. Cl. 23.
General Aniline & Film Corp. : *See*—
GAF Corp.
General Mills, Inc., Minneapolis, Minn. 865,070, pub. 10-22-68. Cl. 46.
Genesco Inc. : *See*—
Perugia, Andre.
Genesco, Inc., Nashville, Tenn. 864,920, pub. 10-29-68. Cl. 22.
Georgia-Pacific Corp., Portland, Oreg. 864,819, pub. 12-3-68. Cl. 12.
Gepner Knitwear Co., Inc., Atlanta, Ga. 865,035, pub. 12-3-68. Cl. 39.
Gerber Cheese Co., Inc. : *See*—
Gerber & Co. Inc.
Gerber & Co., Inc., to Gerber Cheese Co., Inc., New York, N.Y. 251,045, ren. 2-18-69. Cl. 46.
Gerig, Lester E., Lawrence, Kans. 743,185, canc. Cl. 100.
Germain's, Inc., Los Angeles, Calif. 864,792, pub. 12-3-68. Cl. 6.
Gilmour Mfg. Co. : *See*—
Gilmour, Robert A.
Gilmour, Robert A., d.b.a. Gilmour Mfg. Co., Somerset, Pa. 864,938, pub. 12-3-68. Cl. 23.
Gingrich, John D., Daly City, Calif. 742,949, canc. Cl. 22.
Gland-O-Lac Co., The : *See*—
Ciba Corp.
Glen Mfg. Inc., Milwaukee, Wis. 865,038, pub. 12-3-68. Cl. 39.
Golden Eagle Coach Manufacturer's, Inc., Raytown, Mo. 864,886, pub. 12-10-68. Cl. 19.
Golden West Trailers, Inc., Fullerton, Calif. 864,891, pub. 12-3-68. Cl. 19.
Goldsmith, Louis, Inc., Philadelphia, Pa. 506,201, ren. 2-18-69. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 507,984, ren. 2-18-69. Cl. 35.
Gottschalk & Co., G.m.b.H., Kassel, Germany. 865,023, pub. 12-3-68. Cl. 39.
Grampian Textiles Ltd., Glasgow, Scotland. 860,139, cor. Cl. 39.
Graybar Electric Co., Inc., New York, N.Y. 742,937, canc. Cl. 21.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 504,663, ren. 2-18-69. Cl. 16.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 504,755-6, ren. 2-18-69. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The : *See*—
Great Atlantic & Pacific Tea Co., The.
Great Atlantic & Pacific Tea Co., Inc., The, New York, N.Y. 865,095, pub. 12-3-68. Multiple Class (Classes 51 and 52).
Greco Pharmacal, Inc., Bayside, N.Y. 742,905, canc. Cl. 18.
Grenadier Restaurant Ltd., New York, N.Y. 865,116, pub. 12-3-68. Cl. 100.
Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills, Bristol, Va. 865,025, pub. 12-3-68. Cl. 39.
Grey, Mary, Hosiery Mills : *See*—
Grey Hosiery Mills.
Grosset & Dunlap, Inc., New York, N.Y. 865,014, pub. 12-3-68. Cl. 38.
Guhring, Gottlieb, Firma, Ebingen, Wurttemberg, Germany. 742,966, canc. Cl. 23.
Guinness, Arthur, Son & Co. Ltd., London, England. 865,078, pub. 12-3-68. Cl. 48.
Hamano, Hisashi, Soka-shi, Saitama-ken, Japan. 865,053, pub. 12-3-68. Cl. 40.
Hancock Agriculture Products & Processors, Inc., Garner, Iowa. 864,811, pub. 12-3-68. Cl. 10.
Happy Ware Mfg. Co., Inc., Kansas City, Mo. 742,871, canc. Cl. 13.
Hartmann Co., Racine, Wis., to Hartmann Luggage Co., Lebanon, Tenn. 508,774, ren. 2-18-69. Cl. 3.
Hartmann Luggage Co. : *See*—
Hartmann Co.
Haveg Industries, Inc., Wilmington, Del. 864,822, pub. 12-3-68. Cl. 12.
Hayes Track Appliance Co., Richmond, Ind. 507,346, ren. 2-18-69. Cl. 14.
Health History, Inc., Chicago, Ill. 743,135, canc. Cl. 100.
Heetrans, Inc., d.b.a. Decalomaniac Co., Pasadena, Calif. 865,012, pub. 12-3-68. Cl. 38.
Help, Inc. : *See*—
North Woods Coffee Co.
Hendon Construction Co., Little Ferry, N.J. 864,824-5, pub. 12-3-68. Cl. 12.
Hepburn & Ross Ltd., Keloinbridge, Glasgow, Scotland. 865,079, pub. 12-3-68. Cl. 49.
Hercules Inc., Wilmington, Del. 864,803, pub. 12-3-68. Cl. 9.
High Line Corp., Cohasset, Mass. 864,922, pub. 12-3-68. Cl. 22.
Hoerner Waldorf Corp., Saint Paul, Minn. 864,767, pub. 12-3-68. Cl. 2.
Home Town Foods, Inc., Jacksonville, Fla. 865,072, pub. 12-10-68. Cl. 46.
Hoof Products Co., Chicago, Ill. 864,953, pub. 12-3-68. Cl. 23.
Horn & Hardart Co., The, New York, N.Y. 865,106, pub. 12-3-68. Cl. 100.
Houdaille Industries, Inc., from Houdaille Industries, Inc., Buffalo, N.Y. 864,932, pub. 12-3-68. Cl. 23.
Hudnut, Richard, Morris Plains, N.J. 865,094, pub. 12-3-68. Cl. 51.
Huffman Mfg. Co., The, Dayton, Ohio. 864,772, pub. 12-3-68. Cl. 2.
Hunt, Donley F., Jack A. Stockfish, Nash M. Love, and Daniel B. Rathbun, d.b.a. Skyway-To-Highway, Washington, D.C. 865,128, pub. 12-3-68. Cl. 105.
Hydrocarbon Chemicals, Inc. : *See*—
Hyspec Container Corp.
Hyer Hardware Mfg. Co., Anaheim, Calif. 864,830, pub. 12-3-68. Cl. 13.
Hyspec Container Corp., Keyport, from Hydrocarbon Chemicals, Inc., Newark, N.J. 742,813, canc. Cl. 2.
Ideal Rubber Sales, Inc., Brooklyn, N.Y. 742,912, canc. Cl. 19.
Ideax Corp., New York, N.Y. 742,976, canc. Cl. 26.
Ident-I-Ski Co., Bergenfield, N.J. 742,950, canc. Cl. 22.
Industrial Fabrics Co. : *See*—
Burlington Industries, Inc.
Inland Steel Co., Chicago, Ill. 504,632, ren. 2-18-69. Cl. 14.
Inner-Med Co. : *See*—
Inner-Medical Co. Inc.
Inner-Medical Co. : *See*—
Inner-Medical Co. Inc.
Inner-Medical Co. Inc., d.b.a. Inner-Med Co., and/or Inner-Medical Co., Covington, Ky. 742,903, canc. Cl. 18.
International Chemical & Nuclear Corp., Burbank, from United Laboratories, Inc., Pasadena, Calif. 864,862, pub. 12-3-68. Cl. 18.
International Minerals & Chemical Corp., Skokie, Ill. 865,118, pub. 12-3-68. Cl. 101.
Interstate Bakeries Corp. : *See*—
Savory Baking Co.
Irvin Industries Inc., from Irving Air Chute Co., Inc., Lexington, Ky. 864,934, pub. 12-3-68. Cl. 23.
Irving Air Chute Co., Inc. : *See*—
Irvin Industries Inc.
Ivers-Lee Co. : *See*—
Becton, Dickinson & Co.
JJJ Merchandise Corp., New York, N.Y. 864,800, pub. 12-3-68. Cl. 8.
Jackson Co. : *See*—
Kingsley, Eleanor V.
Jacuzzi Bros., Inc., Little Rock, Ark. 864,967, pub. 12-3-68. Cl. 26.
Jefferson Electric Co., Bellwood, Ill. 864,914, pub. 12-3-68. Cl. 21.
Jobb Packing Co. : *See*—
Brawley-Mendota Packers Inc.
Jobet Industries, Inc., Oshkosh, Wis. 743,102, canc. Cl. 50.
Jo-Gal Shoe Co., Inc., Lawrence, Mass. 743,037, canc. Cl. 39.
Johnson, Elton, d.b.a. Elton Electric Co., Sioux Falls, S. Dak. 742,929, canc. Cl. 21.
Johnson Hosiery Mills, Inc., Hickory, N.C. 865,031, pub. 12-3-68. Cl. 39.
Joos, Dr. Chem. B., d.b.a. Beris Laboratories, Zurich, Switzerland. 742,894, canc. Cl. 18.
Joseph & Feiss Co., The, to The Joseph & Feiss Co., Cleveland, Ohio. 507,133, ren. 2-18-69. Cl. 39.
Kagan, Vladimir, Designs Inc., New York, N.Y. 864,984, pub. 12-3-68. Cl. 32.
Kaltenegger, Benno, d.b.a. Benno Kaltenegger Ingenieurburo und Maschinenbau (Imas), Siegburg, Germany. 864,946, pub. 12-3-68. Cl. 23.
Kaltenegger, Benno, Ingenieurburo und Maschinenbau (Imas) : *See*—
Kaltenegger, Benno.
Kanto Canned Food Products Co., Ltd., Shinjuku-ku, Tokyo, Japan. 865,066, pub. 12-3-68. Cl. 46.
Kaufmann Tool & Engineering Corp., Chicago, Ill. 864,753, pub. 12-3-68. Multiple Class (Classes 1 and 23).
Kawaguchi Rubber Industrial Co., Ltd., Katsushika-ku, Tokyo, Japan. 864,755, pub. 12-3-68. Cl. 1.
Kaye, S. L., & Co., Inc., New York, N.Y. 743,061, canc. Cl. 46.
Kennatrack Corp., Elkhart, Ind. 742,877, canc. Cl. 13.
Kettin, Emile, Neuilly-sur-Seine, Hauts-de-Seine, France. 865,089, pub. 12-3-68. Cl. 51.
Kimball Piano & Organ Co. : *See*—
Kimball, W. W., Co.
Kimball, W. W., Co., Chicago, Ill., to Kimball Piano & Organ Co., Jasper, Ind. 507,590, ren. 2-18-69. Cl. 36.
Kinetics Corp. of California, Solana Beach, Calif. 864,957, pub. 12-3-68. Cl. 23.
Kingsley, Eleanor V., d.b.a. Jackson Co., Pomona, Calif. 864,766, pub. 12-10-68. Cl. 2.
Kisco Boiler & Engineering Co., St. Louis, Mo. 507,803, ren. 2-18-69. Cl. 34.
L & H Associates, d.b.a. Laurel Highlands Vineyards, Greensburg, Pa. 865,077, pub. 12-3-68. Cl. 47.
LKB-Produkter Aktiebolag, Stockholm-Bromma, Sweden. 864,911, pub. 12-3-68. Cl. 21.
La Telemecanique Electrique, Societe Anonyme, Nanterre, France. 750,798, canc. Cl. 21.
Labconco Corp., Kansas City, Mo. 864,963, pub. 12-3-68. Cl. 26.
Lane Ltd., New York, N.Y. 864,854-5, pub. 12-3-68. Cl. 17.
Lanman & Kemp-Barclay & Co., Inc., New York, N.Y., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 508,637, ren. 2-18-69. Cl. 18.

Lanneau Tapijt- en Fluweelweverij N.V., Harelbeke, Belgium. 865,062, pub. 12–3–68. Cl. 42.
Laurel Highlands Vineyards: *See—*
L & H Associates.
Leather's Best, Inc., New York, N.Y. 742,788, canc. Cl. 1.
Le-Lite, Inc., to Emarco Corp., Chicago, Ill., to Emarco Corp., Dayton, Ohio. 508,161, ren. 2–18–69. Cl. 21.
Leopold, M.: *See—*
Leopold, M., Inc.
Leopold, M., Inc., Washington, D.C., from R. A. Spike, d.b.a. M. Leopold, Chevy Chase, Md. 865,087–8, pub. 12–3–68. Cl. 51.
Lestoil Products, Inc., Holyoke, Mass. 742,839, canc. Cl. 6.
Lestoil Products, Inc., Holyoke, Mass. 743,130, canc. Cl. 52.
Lewis-Shepard Co.: *See—*
Lewis-Shepard Products, Inc.
Lewis-Shepard Products, Inc., to Lewis-Shepard Co., Watertown, Mass. 504,265, ren. 2–18–69. Cl. 23.
Liberty Fabrics of New York, Inc., New York, N.Y. 865,054, pub. 12–3–68. Cl. 42.
London Dry Ltd., Spartanburg, S.C. 865,073, pub. 12–3–68. Cl. 46.
Lord Jim, Inc., Madison, Wis. 865,021, pub. 2–20–68. Cl. 39.
Lowe's, Inc., Cassopolis, Mich. 865,100, pub. 12–3–68. Cl. 52.
Lunkenheimer Co., The, to The Lunkenheimer Co., Cincinnati, Ohio. 73,721, ren. 2–18–69. Multiple Class (Classes 13 and 26).
Lynch, S. H., & Co., Inc., Dallas, Tex. 865,130, pub. 12–3–68. Cl. 107.
Mademoiselle Furs, Inc., New York, N.Y. 865,119, pub. 12–3–68. Cl. 101.
Madison Chemical Corp., Maywood, Ill. 864,785, pub. 12–3–68. Cl. 6.
Magnolia Plastics, Inc., Chamblee, Ga. 864,754, pub. 12–3–68. Cl. 1.
Majestic Tile Co., Chicago, Ill. 864,816, pub. 12–3–68. Cl. 12.
Majesty of the East, Inc., New York, N.Y. 865,041, pub. 12–3–68. Cl. 39.
Mandis, John, Inc., Washington, D.C. 865,113, pub. 12–3–68. Cl. 100.
Manning, Sue N., d.b.a. Rex Laboratory, Nashville, Tenn. 743,167, canc. Cl. 18.
Marcella Products, Inc., Miami, Fla. 743,048, canc. Cl. 40.
Marino, L., Inc., Brooklyn, N.Y. 864,765, pub. 6–4–68. Cl. 2.
Marita: *See—*
Marita Spirits Ltd.
Marita Spirits Ltd., from W. P. Cashman, d.b.a. Marita and Marita Spirits & Wine Co., Cleveland, Ohio. 865,081, pub. 10–15–68. Cl. 49.
Marita Spirits & Wine Co.: *See—*
Marita Spirits Ltd.
Martin Industries, Clayton, Ala. 864,921, pub. 12–3–68. Cl. 22.
Matthews, W. N., Corp., St. Louis, to A. B. Chance Co., Centralia, Mo. 505,172, ren. 2–18–69. Cl. 26.
Mayfab Inc., Brooklyn, N.Y. 742,817, canc. Cl. 3.
Meeter, Hugh J., d.b.a. Hugh J. Meeter Co., Grand Rapids, Mich. 742,841, canc. Cl. 7.
Meeter, Hugh J., Co.: *See—*
Meeter, Hugh J.
Melville Shoe Corp., New York, N.Y. 865,141. Cl. 39.
Mentor Furniture Co.: *See—*
Mentor Furniture Corp.
Mentor Furniture Corp., from Mentor Furniture Co., Mentor, Ohio. 743,003, canc. Cl. 32.
Merck & Co., Inc., Rahway, N.J. 855,012, cor. Cl. 18.
Meridian Engineering, Inc., Philadelphia, Pa. 865,114, pub. 12–3–68. Cl. 100.
Meridian Mutual Insurance Co., Indianapolis, Ind. 865,120, pub. 12–3–68. Cl. 102.
Meyerhoff, Jack, d.b.a. Yester-Laid Egg Farms, East Vineland, N.J. 503,813, ren. 2–18–69. Cl. 46.
Midas, Inc., Chicago, Ill. 864,889, pub. 12–3–68. Cl. 19.
Mid-Atlantic Footwear Corp., New York, N.Y. 865,029, pub. 12–3–68. Cl. 39.
Miles Laboratories, Inc., Elkhart, Ind. 864,883, pub. 12–3–68. Cl. 18.
Milprint, Inc., Milwaukee, Wis. 818,089, cor. Multiple Class (Classes 2 and 37).
Minnesota Mining & Mfg. Co., St. Paul, Minn. 864,781, pub. 12–3–68. Cl. 4.
Missouri National Soccer Club, Inc., St. Louis, Mo. 865,135, pub. 12–3–68. Cl. 107.
Miyuki Keori Kabushiki Kaisha (Miyuki Woollen Textile Co., Ltd.), Nagoya, Aichi Prefecture, Japan. 865,061, pub. 12–3–68. Cl. 42.
Mona Shops Inc., New York, N.Y. 864,897, pub. 12–3–68. Cl. 21.
Mono Pumps Ltd., London, England. 864,955, pub. 12–3–68. Cl. 23.
Monsanto Co., St. Louis, Mo. 864,757, pub. 12–3–68. Cl. 1.
Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. 864,960, pub. 12–3–68. Cl. 23.
Montrose Supply & Equipment Co.: *See—*
Montrose Oil & Belting Co. Inc.
Mooney Chemicals, Inc., Cleveland, Ohio. 864,793, pub. 12–3–68. Cl. 6.
Morkap Publishing Co., Rockville, Md. 865,016, pub. 12–3–68. Cl. 38.
Morris, Philip, Inc.: *See—*
Pal Blade Co.
Mueller, C. F., Co., Jersey City, N.J. 743,084, canc. Cl. 46.
N.V. Rubberfabriek Vredestein, The Hague, Netherlands. 864,989, pub. 12–3–68. Cl. 35.
Nasco Industries, Inc., Fort Atkinson, Wis. 864,758, pub. 12–3–68. Cl. 1.
National Conservative League, Inc., Chicago, Ill. 743,159, canc. Cl. 200.
National Gypsum Co., Buffalo, N.Y. 864,817, pub. 12–3–68. Cl. 12.
National Hotel Exposition: *See—*
New York State Hotel Association, Inc., and Hotel Association of New York City, Inc.
National Personnel Consultants, Detroit, Mich. 865,107, pub. 12–3–68. Cl. 100.
National Rejectors, Inc., St. Louis, Mo. 864,966, pub. 12–3–68. Cl. 26.
National Wire & Cable Corp., Los Angeles, Calif. 864,902–3, pub. 12–3–68. Cl. 21.
Navion Aircraft Co., Houston, Tex. 742,914, canc. Cl. 19.
Nekoosa-Edwards Paper Co., Port Edwards, Wis. 865,002, pub. 12–3–68. Cl. 37.
New Orleans Saints, from New Orleans Saints, New Orleans, La. 865,131, pub. 12–3–68. Cl. 107.
New York Herald Tribune Inc., New York, N.Y. 743,170, canc. Cl. 38.
New York State Hotel Association, Inc., and Hotel Association of New York City, Inc., d.b.a. National Hotel Exposition, New York, N.Y. 743,186, canc. Cl. 101.
Newneff, Inc., Pittsburgh, Pa. 743,082, canc. Cl. 46.
Niles-Bement-Pond Co., to Pratt & Whitney Inc., West Hartford, Conn. 503,590, ren. 2–18–69. Cl. 23.
Nippon Thompson Co., Ltd., Tokyo, Japan. 864,944, pub. 12–3–68. Cl. 23.
Nodaway Valley Foods, Inc., from Flavor-Fresh Foods, Inc., Corning, Iowa. 743,065, canc. Cl. 46.
Norcross, Inc., New York, N.Y. 865,017–19, pub. 12–3–68. Cl. 38.
Norfolk Paint Corp., d.b.a. Nuclear Research Associates, Quincy, Mass. 742,820, canc. Cl. 4.
Norris Inc., Atlanta, Ga. 743,092, canc. Cl. 46.
North American Rockwell Corp., Pittsburgh, Pa. 864,887, pub. 12–10–68. Cl. 19.
North Woods Coffee Co., from Help, Inc., d.b.a. Help, Inc., Chicago, Ill. 743,114, canc. Cl. 51.
Northern Electric Co., Chicago, Ill. 859,233, cor. Multiple Class (Classes 21, 29, 34, 39, 42, and 44).
Nuclear Research Associates: *See—*
Norfolk Paint Corp.
Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. 864,780, pub. 12–3–68. Cl. 4.
Nugget Distributors, Inc.: *See—*
Nugget Distributors' Cooperative of America, Inc.
Oceanographic Engineering Corp., La Jolla, Calif. 864,893, pub. 12–13–66. Cl. 21.
Oceanographic Engineering Corp., La Jolla, Calif. 864,962, pub. 12–27–66. Cl. 26.
Okonite Co., The, Passaic, N.J. 864,899, pub. 12–3–68. Cl. 21.
One Hour Valet, Inc., Jacksonville, to Uniservices, Inc., Miami, Fla. 508,876, ren. 2–18–69. Cl. 103.
Optometics, Inc., Los Angeles, Calif. 864,865, pub. 12–3–68. Cl. 18.
Organic Sea Products Corp., San Francisco, Calif. 864,863, pub. 12–3–68. Cl. 18.
Oster, John, Mfg. Co., Milwaukee, Wis. 864,936, pub. 12–3–68. Cl. 23.
Ozark Air Lines, Inc., Lambert Field, St. Louis, Mo. 743,189, canc. Cl. 105.
PPG Industries, Inc., from Pittsburgh Plate Glass Co., Pittsburgh, Pa. 864,828, pub. 12–3–68. Cl. 12.
PPG Industries, Inc., from Pittsburgh Plate Glass Co., Pittsburgh, Pa. 864,848, pub. 12–3–68. Cl. 16.
Pacific Employers Insurance Co., Los Angeles, Calif. 865,108, pub. 12–3–68. Cl. 100.
Pacific National Life Assurance Co., San Francisco, Calif. 743,143, canc. Cl. 102.
Pacific Vegetable Oil Corp., San Francisco, Calif. 743,087, canc. Cl. 46.
Pal Blade Co., to Pal Blade Co., Inc., to Philip Morris Inc., New York, N.Y. 441,436, ren. 2–18–69. Cl. 23.
Palmer, Mona, d.b.a. Palmer Publications, New York, N.Y. 509,848, ren. 2–18–69. Cl. 38.
Palmer Publications: *See—*
Palmer, Mona.
Pamper Products Co., Brooklyn, N.Y. 864,773, pub. 2–6–68. Cl. 3.
Pan American Laboratories, Inc., New Orleans, La. 864,878–9, pub. 12–3–68. Cl. 18.
Pan Pacific Homes, Bend, Oreg. 742,920, canc. Cl. 19.
Pandjiris Weldment Co., The, St. Louis, Mo. 864,940, pub. 12–3–68. Cl. 23.
Papst-Motoren K.G., St. Georgen, Black Forest, Germany. 864,904, pub. 12–3–68. Multiple Class (Classes 21 and 34).
Parfums Schiaparelli, Inc., New York, N.Y. 509,112, ren. 2–18–69. Cl. 51.
Park Avenue Foods, Inc., New York, N.Y. 743,062, canc. Cl. 46.
Parker, I. C., Fort Worth, Tex. 504,743, ren. 2–18–69. Cl. 46.
Parklane Hosiery Co., Inc., Great Neck, N.Y. 865,032, pub. 12–3–68. Cl. 39.
Parrott & Co., San Francisco, Calif. 509,542–3, ren. 2–18–69. Cl. 46.
Patal Engraving & Engineering Co., Newark, N.J. 864,931, pub. 12–3–68. Multiple Class (Classes 23 and 50).
Pearl Musical Instrument Mfg. Co. Ltd., Tokyo, Japan. 864,995, pub. 12–3–68. Cl. 36.
Pellon Corp., New York, N.Y. 865,030, pub. 12–3–68. Cl. 39.
Perry Co., The, Perry, Ga. 743,050–1, canc. Cl. 42.
Perry & Co. Ltd., Birmingham, England. 159,733, canc. Cl. 13.
Perugia, Andre, Paris, France, to Genesco Inc., Nashville, Tenn. 248,225, ren. 2–18–69. Cl. 39.

Petroleum Supply Co., Houston, Tex. 864,948, pub. 12–3–68. Cl. 23.
Pfizer, Chas., & Co., Inc., New York, N.Y. 864,880, pub. 12–3–68. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 864,885, pub. 12–3–68. Cl. 18.
Philco-Ford Corp., Philadelphia, Pa. 864,909, pub. 12–3–68. Multiple Class (Classes 21 and 36).
Philtex Mfg. Co., Philadelphia, Pa. 865,044, pub. 12–3–68. Cl. 39.
Piaggio & C. Societa per Azioni, Genoa, Italy. 864,888, pub. 12–3–68. Cl. 19.
Piedmont Shirt Co., Greenville, S.C. 865,043, pub. 12–3–68. Cl. 39.
Pignons S.A., Ballaigues, Switzerland. 441,587, ren. 2–18–69. Cl. 26.
Pittsburgh Plate Glass Co.: *See—*
PPG Industries, Inc.
Placon, Inc., Hackensack, N.J. 742,816, canc. Cl. 2.
Plain, John, & Co., Chicago, Ill. 865,022, pub. 12–3–68. Cl. 39.
Plastic Extrusion & Engineering Co., Inc., Westboro, Mass. 864,910, pub. 12–3–68. Cl. 21.
Polycell Products Ltd., Welwyn Garden City, England. 864,847, pub. 12–3–68. Cl. 16.
Polyfoam, Inc., Lester Prairie, Minn. 865,000, pub. 4–30–68. Cl. 37.
Power Sportswear Co., Inc., New York, N.Y. 743,038, canc. Cl. 39.
Pratt & Whitney Inc.: *See—*
Niles-Bement-Pond Co.
Pratt & Whitney Inc., West Hartford, Conn. 864,929, pub. 12–19–67. Cl. 23.
Precision Specialties, Inc., Pitman, N.J. 864,950, pub. 12–3–68. Cl. 23.
Premium Corp. of America, Inc., Minneapolis, Minn. 864,890, pub. 12–3–68. Cl. 19.
Price Co. Ltd., The, Quebec, Quebec, Canada. 865,127, pub. 12–3–68. Cl. 105.
Procter & Gamble Co., The, Cincinnati, Ohio. 743,125, canc. Cl. 52.
Pro-Dough Co., Denver, Colo. 743,014, canc. Cl. 37.
Professional Golf Co., Chattanooga, Tenn. 864,924, pub. 12–3–68. Cl. 22.
Quality Tool & Die Co., Inc., Hoboken, N.J. 865,111, pub. 12–3–68. Cl. 100.
Quantum, Inc., Wallingford, Conn. 865,129, pub. 1–30–68. Cl. 106.
RDF Corp., Hudson, N.H. 864,973, pub. 12–3–68. Cl. 26.
Ragan Knitting Co. Inc., Thomasville, N.C. 865,048–9, pub. 12–3–68. Cl. 39.
Raleigh Manufacturers, Inc., New York, N.Y. 865,028, pub. 12–3–68. Cl. 39.
Ranco Inc., Columbus, Ohio, from The Wilcolator Co., Elizabeth, N.J. 864,895, pub. 12–3–68. Cl. 21.
Ranco Inc., Columbus, Ohio. 864,981, pub. 12–3–68. Cl. 31.
Rembrandt Tobacco Corp. (Overseas) Ltd., Zurich, Switzerland. 864,853, pub. 12–3–68. Cl. 17.
Republic Molding Corp., Chicago, Ill. 864,770, pub. 12–3–68. Cl. 2.
Republic Tool & Mfg. Corp., Century City, Calif. 864,923, pub. 12–3–68. Cl. 22.
Revlon, Inc., New York, N.Y. 743,182, canc. Cl. 51.
Rex Laboratory: *See—*
Manning, Sue N.
Rexall Drug & Chemical Co., Los Angeles, Calif., from Beauty Counselors, Inc., Grosse Pointe, Mich. 865,084, pub. 12–3–68. Cl. 51.
Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 864,771, pub. 12–3–68. Cl. 2.
Reynolds & Reynolds Co., The, Dayton, Ohio. 250,810, ren. 2–18–69. Cl. 37.
Richardson, Howe, Scale Co., Clifton, N.J. 864,965, pub. 12–3–68. Cl. 26.
Richardson-Merrell Inc., New York, N.Y. 864,882, pub. 12–3–68. Cl. 18.
Rikkers, William, Handelsonderneming N.V., Amsterdam, Netherlands. 742,979, canc. Cl. 27.
Ringler-Dorin, Inc., New York, N.Y. 864,972, pub. 12–3–68. Cl. 26.
Rissman, John, & Son, Chicago, to Windbreaker, Inc., Danville, Ill. 505,173, ren. 2–18–69. Cl. 39.
Robins, A. H., Co., Inc., Richmond, Va. 742,906–8, canc. Cl. 18.
Roche, Gabino, d.b.a. Roche from Habana, Cuba, New York, N.Y. 864,858, pub. 12–3–68. Cl. 17.
Roche from Habana, Cuba: *See—*
Roche, Gabino.
Romper Room, Inc., Baltimore, Md. 865,074, pub. 12–3–68. Cl. 46.
Roper, Geo D., Corp., Newark, Ohio. 864,851–2, pub. 12–3–68. Cl. 23.
Rose, Ben, Chicago, Ill. 743,052, canc. Cl. 42.
Rose, Frances B., d.b.a. Rose Industries, Evanston, Ill. 743,161, canc. Cl. 2.
Rose Industries: *See—*
Rose, Frances B.
Roth, Otto, Inc., Newark, N.J., to Colton Razor Blade Co., Boston, Mass. 255,083, ren. 2–18–69. Cl. 23.
Rothkopf, Mac M., & Co., Inc., Garden City, N.Y. 864,959, pub. 12–3–68. Cl. 23.
Rowell Laboratories Inc., Baudette, Minn. 864,881, pub. 12–3–68. Cl. 18.
Royal Filtered Air Products, Inc., New York, N.Y. 742,862, canc. Cl. 12.
Russell Hosiery Mills, Inc., Star, N.C. 865,039, pub. 12–3–68. Cl. 39.
Russell Reinforced Plastics Corp., Lindenhurst, N.Y. 742,856, canc. Cl. 12.
Rustin, Shea, Inc., Atlanta, Ga. 865,015, pub. 12–3–68. Cl. 38.
Safespeed Shoe Corp., Westbury, N.Y. 864,775, pub. 12–3–68. Cl. 3.
Salvation Discotheque Ltd., New York, N.Y. 865,112, pub. 12–3–68. Cl. 100.
Sanford Ink Co., Bellwood, Ill. 865,007–9, pub. 12–3–68. Cl. 37.
Sanitary Hydraulics, Inc., Cleveland, Ohio. 864,930, pub. 9–26–67. Cl. 23.
Savory Baking Co., Newark, N.J., to Interstate Bakeries Corp., Kansas City, Mo. 249,932, ren. 2–18–69. Cl. 46.
Schalk Chemicals, Inc., Union, N.J. 864,821, pub. 12–3–68. Multiple Class (Classes 12 and 52).
Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V., Wageningen, Netherlands. 864,851, pub. 12–3–68. Cl. 17.
Schmidt'sche Heissdampf-Gesellschaft m.b.H., Wilhelmshoehe, Germany. 864,764, pub. 10–8–68. Cl. 2.
Schuler Chocolates, Inc., Winona, Minn. 743,174, canc. Cl. 46.
Schulz, Kathryn M., d.b.a. Peggie Schulz, Minneapolis, Minn. 742,790, canc. Cl. 1.
Schulz, Peggie: *See—*
Schulz, Kathryn M.
Scripto, Inc., Atlanta, Ga. 865,005, pub. 12–3–68. Cl. 37.
Seamless Rubber Co., The, New Haven, Conn. 742,946, canc. Cl. 22.
Searle, G. D., & Co., Skokie, Ill. 742,892, canc. Cl. 18.
Seatex Corp., Houston, Tex. 864,784, pub. 12–3–68. Cl. 5.
Secon Metals Corp., White Plains, N.Y. 864,842, pub. 12–3–68. Cl. 14.
Seminar Inc., New York, N.Y. 743,028, canc. Cl. 38.
Sensenbrenner, A., Sons, Los Angeles, Calif., to R. G. Dunn Cigar Corp., Lima, Ohio. 502,582, ren. 2–18–69. Cl. 17.
Sherwin-Williams Co., The, Cleveland, Ohio. 504,532, ren. 2–18–69. Cl. 6.
Silmica Corp. of America, Chicago, Ill. 864,823, pub. 12–3–68. Multiple Class (Classes 12 and 16).
Siloo Corp., New York, N.Y. 742,791, canc. Cl. 1.
Sinclair, H. M., Jr., Trustee for The Sinclair Mfg. Co., to The Sinclair Mfg. Co., Toledo, Ohio. 505,694, ren. 2–18–69. Cl. 6.
Sinclair Mfg. Co., The: *See—*
Sinclair, H. M., Jr.
Sky-To-Highway: *See—*
Hunt, Donley F., Jack A. Stockfish, Nash M. Love, and Daniel B. Rathbun.
Smith-Blair, Inc., South San Francisco, Calif. 864,836, pub. 12–3–68. Cl. 13.
Smith, E. Errett, Inc., New York, N.Y. 865,001, pub. 12–3–68. Cl. 37.
Smith, Sig, & Co., Inc., New York, N.Y. 865,040, pub. 12–3–68. Cl. 39.
Snack Products, Inc., d.b.a. Chicago Snack Foods Co., Downers Grove, Ill. 743,079, canc. Cl. 46.
Societe Rhodiaceta, Paris, France. 864,782, pub. 12–3–68. Cl. 5.
Societe Rhodiaceta, Paris, France. 864,827, pub. 12–10–68. Cl. 12.
Society of Black Belts International Corp., Summit, N.J. 865,136, pub. 12–3–68. Cl. 200.
Solo Products Corp., Englewood, N.J. 865,052, pub. 12–3–68. Cl. 40.
Sonora Corp. of America: *See—*
Sonora Radio & Television Corp.
Sonora Radio & Television Corp., Chicago, Ill., to Sonora Corp. of America, New York, N.Y. 505,165, ren. 2–18–69. Cl. 21.
"Sophistipats": *See—*
Bjornker, Hans C.
South African Wine Farmers Association, (London) Ltd., London, England. 865,080, pub. 12–3–68. Cl. 49.
Southern Research: *See—*
Acker, B. R.
Space Age Materials Corp., Woodside, N.Y. 742,878, canc. Cl. 14.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 505,778, ren. 2–18–69. Cl. 22.
Spaulding & Co., Chicago, Ill. 442,700, ren. 2–18–69. Cl. 28.
Sphinxworks Muller & Co., Ltd., Soleure, Switzerland. 864,831, pub. 12–3–68. Cl. 13.
Spike, Richard A.: *See—*
Leopold, M., Inc.
Spincraft, Inc., Milwaukee, Wis. 743,026, canc. Cl. 38.
Spindler & Sauppe, Glendale, Calif. 864,964, pub. 12–3–68. Cl. 26.
Sportswear Promotions, Inc., Miami, Fla. 865,046, pub. 12–3–68. Cl. 39.
Spotnails, Inc., Evanston, Ill., to Spotnails, Inc., Long Island City, N.Y. 508,350, ren. 2–18–69. Cl. 13.
Squibb, E. R., & Sons, Inc., New York, N.Y. 864,884, pub. 12–3–68. Cl. 18.
Standard Brands Inc., New York, N.Y. 864,789, pub. 12–3–68. Cl. 6.
Standard International Corp., Andover, Mass. 865,104, pub. 12–3–68. Cl. 52.
Standard Packaging Corp., Stamford, Conn. 864,908, pub. 12–3–68. Cl. 21.
Standard Packaging Corp., Stamford, Conn. 864,974, pub. 12–3–68. Cl. 27.
Standard Packaging Corp., Stamford, Conn. 864,978, pub. 12–3–68. Cl. 30.
Standard Packaging Corp., Stamford, Conn. 864,988, pub. 12–3–68. Cl. 34.
Standard Packaging Corp., Stamford, Conn. 865,003, pub. 12–3–68. Cl. 37.

Stanford Paper Sales Corp., Washington, D.C. 743,019, canc. Cl. 37.
Stanley Home Products, Inc., Westfield, Mass. 865,138. Cl. 4.
Stauffer Chemical Co., New York, N.Y. 864,796, pub. 12–3–68. Cl. 6.
Stearns Mfg. Co., St. Cloud, Minn. 864,919, pub. 12–3–68. Cl. 22.
Steinman, Ben, Huntington Station, N.Y. 865,064, pub. 12–3–68. Cl. 44.
Stelber Cycle Corp., Brooklyn, N.Y. 742,911, canc. Cl. 19.
Sternco Industries, Inc., Harrison, N.J. 864,980, pub. 12–3–68. Cl. 31.
Stockton Mfg. Co., Inc., Dallas, Tex. 743,039, canc. Cl. 39.
Stoffel & Co., Inc., New York, N.Y., to Burlington Industries, Inc., Greensboro, N.C. 504,848, ren. 2–18–69. Cl. 42.
Stradivari Sportswear, Inc., New York, N.Y. 743,043, canc. Cl. 39.
Stuart, C. H., & Co., Inc., Newark, N.Y. 742,981, canc. Cl. 28.
Stuyvesant Life Insurance Co., Allentown, Pa. 865,123, pub. 12–3–68. Cl. 102.
Sucrest Corp., New York, N.Y. 864,797, pub. 12–3–68. Cl. 6.
Sugar Beet Products Co., Saginaw, Mich. 865,098–9, pub. 12–3–68. Multiple Class (Classes 51 and 52).
Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. 864,837, pub. 12–3–68. Cl. 13.
Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. 864,843, pub. 12–3–68. Cl. 14.
Summit Laboratories, Inc., Indianapolis, Ind. 865,093, pub. 12–3–68. Cl. 51.
Sun Chemical Corp., New York, N.Y. 503,524, ren. 2–18–69. Cl. 11.
Sun Chemical Corp., New York, N.Y. 503,526, ren. 2–18–69. Cl. 11.
Sun Chemical Corp., New York, N.Y. 509,722–5, ren. 2–18–69. Cl. 11.
Sun Oil Co., Philadelphia, Pa. 864,844–5, pub. 12–3–68. Cl. 15.
Sunstar Dentifrice Co. Ltd., Takatsuki, Osaka Prefecture, Japan. 864,977, pub. 12–3–68. Cl. 29.
Superior Sales Co., Fort Worth, Tex. 742,865, canc. Cl. 12.
Swank, Inc., Attleboro, Mass. 507,110, ren. 2–18–69. Cl. 28.
Tenneco Chemicals, Inc., New York, N.Y. 864,846, pub. 12–3–68. Cl. 16.
Terry Sue Casuals, Inc., Miami, Fla. 865,047, pub. 12–3–68. Cl. 39.
Texas Pharmacal Co., Morris Plains, N.J. 506,671, ren. 2–18–69. Cl. 18.
Thomas & Betts Co., The, Elizabeth, N.J. 864,901, pub. 12–3–68. Cl. 21.
Tootsie Roll Industries, Inc., Hoboken, N.J. 864,983, pub. 12–3–68. Cl. 32.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 864,998, pub. 12–3–68. Cl. 36.
Torwico Electronics, Inc., Lakewood, N.J. 864,912, pub. 12–3–68. Cl. 21.
Traveler Publishing Co., Inc., The, San Francisco, Calif. 743,034, canc. Cl. 38.
Treetex Products Co.: *See*—
  Booth, Irving W.
True Temper Corp., Cleveland, Ohio. 864,945, pub. 12–3–68. Cl. 23.
Tube Forgings of America, Inc., Portland, Oreg. 864,835, pub. 12–3–68. Cl. 13.
Tungsten Contact Mfg. Co., Inc., d.b.a. Union Electrical Parts Co., North Bergen, N.J. 864,907, pub. 12–3–68. Cl. 21.
Tupperware: *See*—
  Rexall Drug & Chemical Co.
Turmac Tobacco Co. N.V., Amsterdam, Netherlands. 864,850, pub. 12–3–68. Cl. 17.
Turmac Tobacco Co. N.V., Amsterdam, Netherlands. 864,852, pub. 12–3–68. Cl. 17.
Tymshare, Inc., Los Altos, Calif. 864,915, pub. 12–3–68. Cl. 21.
Tyrrell Industries, Inc., Venice, Fla. 865,020, pub. 12–3–68. Cl. 39.
UMC Industries, Inc., St. Louis, Mo. 864,939, pub. 12–3–68. Cl. 23.
UMC Industries, Inc., St. Louis, Mo. 864,942, pub. 12–3–68. Cl. 23.
Union Electrical Parts Co.: *See*—
  Tungsten Contact Mfg. Co., Inc.
Uniroyal, Inc., New York, N.Y. 864,777, pub. 12–3–68. Multiple Class (Classes 4, 6, 21, and 52).
Uniservices, Inc.: *See*—
  One Hour Valet, Inc.
United Artists Records, Inc., New York, N.Y. 864,997, pub. 12–3–68. Cl. 36.
United Laboratories, Inc.: *See*—
  International Chemical & Nuclear Corp.
United Lace & Braid Co., Cranston, to United Lace & Braid, Inc., Providence, R.I. 507,339, ren. 2–18–69. Cl. 40.
United Lace & Braid, Inc.: *See*—
  United Lace & Braid Co.
United Paint Mfg. Co., Spokane, Wash. 864,818, pub. 5–14–68. Cl. 12.
United Products Co., Inc., Fort Wayne, Ind. 864,990, pub. 12–3–68. Cl. 35.
United States Ceramic Tile Co., Canton, Ohio. 742,855, canc. Cl. 12.
United States Tobacco Co., New York, N.Y. 504,608–9, ren. 2–18–69. Cl. 17.
Valhalla Inc., Tuscaloosa, Ala. 865,086, pub. 12–3–68. Cl. 51.
Van Son Holland Ink Corp. of America, Mineola, N.Y. 864,814, pub. 12–3–68. Cl. 11.
Vega Trading Co., Inc., New York, N.Y. 865,068, pub. 12–3–68. Cl. 46.
Venture Records, Inc., Beverly Hills, Calif. 864,999, pub. 12–3–68. Cl. 36.
Victori, Joseph, & Co., Inc., New York, N.Y. 743,070, canc. Cl. 46.
Virginia Maid Hosiery Mills, Inc., Pulaski, Va. 508,055, ren. 2–18–69. Cl. 39.
Voltronics Corp., Hanover, N.J. 864,900, pub. 12–3–68. Cl. 21.
Vulcan Steel Corp., Birmingham, Ala. 864,840, pub. 12–3–68. Cl. 14.
Wabash Magnetics, Inc., Wabash, Ind. 864,971, pub. 12–3–68. Cl. 26.
Wabash Screen Door Co., The, Memphis, Tenn. 742,851, canc. Cl. 12.
Wakefern Food Corp., Elizabeth, N.J. 865,010, pub. 12–3–68. Cl. 37.
Waldes Kohinoor, Inc., Long Island City, N.Y. 864,834, pub. 12–3–68. Cl. 13.
Walsh, Florence, Inc., New York, N.Y. 865,037, pub. 12–3–68. Cl. 39.
Wandel Machine Co., Inc., Pomeroy, Pa. 742,844, canc. Cl. 10.
Water Soluble Products: *See*—
  Foresight Corp.
Wayne Electronic Products Co., Oklahoma City, Okla. 864,968, pub. 12–3–68. Cl. 26.
Wayne-Gossard Corp.: *See*—
  Wayne Knitting Mills.
Wayne Knitting Mills, Fort Wayne, Ind., to Wayne-Gossard Corp., Humboldt, Tenn. 509,278, ren. 2–18–69. Cl. 39.
Wayne Mfg. Co., Pomona, Calif. 742,915, canc. Cl. 19.
Waynesboro Knitting Co., Waynesboro, Pa. 865,024, pub. 12–3–68. Cl. 39.
Webb Publishing Co., The, St. Paul, Minn. 865,140. Cl. 38.
Weco Products Co., Chicago, Ill. 742,996, canc. Cl. 29.
West Virginia Pulp & Paper Co., New York, N.Y. 742,815, canc. Cl. 2.
Westwood Textile Mfg., Inc., Southbridge, Mass. 865,058, pub. 12–3–68. Cl. 42.
Wetterwald & Pfister Co., Inc., New York, N.Y., to American Cyanamid Co., Wayne, N.J. 250,438, ren. 2–18–69. Cl. 6.
Weyerhaeuser Co., Tacoma, Wash. 742,971, canc. Cl. 23.
Wholesale Druggists Merchandising Association, Inc., New York, N.Y. 865,117, pub. 12–3–68. Cl. 101.
Wiancko Engineering Co.: *See*—
  Daystrom, Inc.
Wilcolator Co., The: *See*—
  Ranco Inc.
Williams Cutlery, Inc., Seaman, Ohio. 864,941, pub. 12–3–68. Cl. 23.
Williams, Victor W., d.b.a. Dual Security Co., Jenkintown, Pa. 743,187, canc. Cl. 102.
Wilson Jones Co.: *See*—
  Wilson-Jones Co.
Wilson-Jones Co., Chicago, Ill., to Wilson Jones Co., Niles, Ill. 442,034, ren. 2–18–69. Cl. 32.
Windbreaker, Inc.: *See*—
  Rissman, John, & Son.
Winners Circle, Inc., Martinsville, N.J. 865,096, pub. 12–3–68. Cl. 51.
Wise, B., Mfg. Corp., Los Angeles, Calif. 864,776, pub. 12–3–68. Multiple Class (Classes 4, 6, and 52).
Wohl, L., & Co., Inc., New York, N.Y. 865,050, pub. 12–3–68. Cl. 39.
Wood & Hyde Glove Leather Corp., Gloversville, N.Y. 864,756, pub. 12–3–68. Cl. 1.
Woodlin Shirt Corp., The, New York, N.Y. 865,055, pub. 12–3–68. Cl. 42.
Woodville Lime & Chemical Co., Woodville, Ohio. 864,812, pub. 12–3–68. Cl. 10.
Wragge, Sydney, New York, N.Y. 865,045, pub. 12–3–68. Cl. 39.
Wrenn Mfg. Co., Inc., Thomasville, N.C. 865,042, pub. 12–3–68. Cl. 39.
Yester-Laid Egg Farms: *See*—
  Meyerhoff, Jack.
Yokohama Gomu Kabushiki Kaisha (The Yokohama Rubber Co. Ltd.), Tokyo, Japan. 864,991, pub. 12–3–68. Cl. 35.
Young, Israel G., d.b.a. The Folklore Center, New York, N.Y. 743,025, canc. Cl. 38.
Youngstown Steel Door Co., The, Cleveland, Ohio. 742,916, canc. Cl. 19.
Zenith Radio Corp., Chicago, Ill. 864,898, pub. 12–3–68. Cl. 21.
Zimmerman, William, New York, N.Y. 743,107, canc. Cl. 50.

U.S. GOVERNMENT PRINTING OFFICE: O—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 25, 1969 Volume 859 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of December 1968

Examiner affirmed	82
Examiner affirmed in part	14
Examiner reversed	36
Total	132

Disclaimer

2,976,655.—*Robert L. Dreyfus*, Arlington, and *John W. Harrison*, Winchester, Mass. PACKAGING METHOD AND APPARATUS. Patent dated Mar. 28, 1961. Disclaimer filed Oct. 23, 1968, by the assignee, *W. R. Grace & Company.*

Hereby enters this disclaimer to claims 1 and 2 of said patent.

Erratum

All references to Patent Number 3,425,654 to Edward S. Cisco, Vehicle Having Convertible Floor Structure and Latch, appearing in the OFFICIAL GAZETTE of Feb. 4, 1969 should be deleted as the application was withdrawn from issue and the patent was not issued.

Certificates of Correction for the Week of Feb. 25, 1969

Re. 26,397
3,001,775
3,167,479
3,256,124
3,266,757
3,323,806
3,326,160
3,330,580
3,337,916
3,339,660
3,348,828
3,349,140
3,350,402
3,350,446
3,350,483
3,351,044
3,351,741
3,352,668
3,352,791
3,353,177
3,353,276
3,354,384
3,354,985
3,355,207
3,355,422
3,355,668
3,356,723
3,356,971
3,357,114
3,357,428
3,357,795
3,357,870
3,357,983
3,358,069
3,358,444
3,359,136
3,359,930
3,360,401
3,360,515
3,360,530
3,360,569
3,360,591
3,361,672
3,361,879
3,362,030
3,362,170
3,362,386
3,362,471
3,362,561
3,362,829
3,362,846
3,362,900
3,362,945
3,362,965
3,362,985
3,363,443
3,363,513
3,363,520
3,363,596
3,363,793
3,363,874
3,364,282

New Applications Received During December 1968

Patents	8001
Designs	441
Plant Patents	5
Reissues	40
Total	8487

Issue—February 25, 1969

Patents	1300—	No. 3,428,960	to No. 3,430,259,	incl.
Designs	63—	No. 213,351	to No. 213,413,	incl.
Plant Patents	5—	No. 2,865	to No. 2,869,	incl.
Total	1368			

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1969

PATENT EXAMINING GROUPS *Denotes oldest new application.	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-31-66
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*5-02-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-20-66
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4-03-67
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	7-18-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	4-03-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	*7-01-66
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-06-67
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	4-25-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-22-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*4-03-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-02-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-18-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	5-31-67

Total number of pending applications (excluding Designs)	3, 215
Total number of Design applications pending	187, 132

Expiration of patents: The patents within the range of numbers indicated below expire during March 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,587,576 to 2,590,832, inclusive
Plant Patents	Numbers 1,077 to 1,080, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re George B. Boettner

No. 7996. Decided June 20, 1968

[55 CCPA —; 396 F.2d 1006; 158 USPQ 106]

1. Patentability—Particular Subject Matter—"Flow Control of Molten Material."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Flow Control of Molten Material" on the ground of unpatentability over the prior art, is affirmed.

AFFIRMED.

Burton R. Turner (*Clarence R. Patty, Jr., Sughrue, Rothwell, Mion, Zinn & MacPeak,* of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling,* of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge,* Rich, Smith and Almond, *Associate Judges*

Almond, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 10, 16, 19 and 22 of appellant's application entitled "Flow Control of Molten Material." [1]

The invention relates to an improvement in the glass melting art and particularly in the construction and operation of a continuous glass melting tank. Glass melting tanks customarily have a partition or bridge wall between a melting end and a work or refining end thereof, which bridge wall is usually provided with a single throat or submerged passage. Although some attempts had been made in the past to utilize multiple throat bridge walls, the expected result of increased capacity and production never materialized, since most of the glass flow tended to pass through a throat on one side of the tank, leaving the throat on the opposite side virtually idle.

As pointed out in appellant's specification, it has recently been suggested that heat might be selectively applied to various throats of a multiple throat bridge wall to control the flow therethrough. However, it has been found that the application of heat to the various throats is not entirely satisfactory, since not only is the degree of control limited and a poor response time occasioned, but also the necessary insulation and operation are relatively expensive.

The present invention allegedly obviates the difficulties encountered with the known control method of applying heat to the throats of a bridge wall, and provides a method and apparatus for controlling the proportionment of flow of molten glass through a plurality of throats or submerged passages formed in a multiple throat bridge wall which separates the melting zone and working zone of a glass tank. More specifically, the proportionment of flow of molten glass through a plurality of throats in a multiple throat bridge wall is accomplished according to this invention by applying a gaseous stream above the glass flow emanating from certain of the throats, so as to cool such throats and thereby proportion the flow among the various throats.

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[1] Serial No. 180,677, filed March 19, 1962.

The apparatus is shown in FIGS. 1 and 2 of appellant's application.

Fig. 1

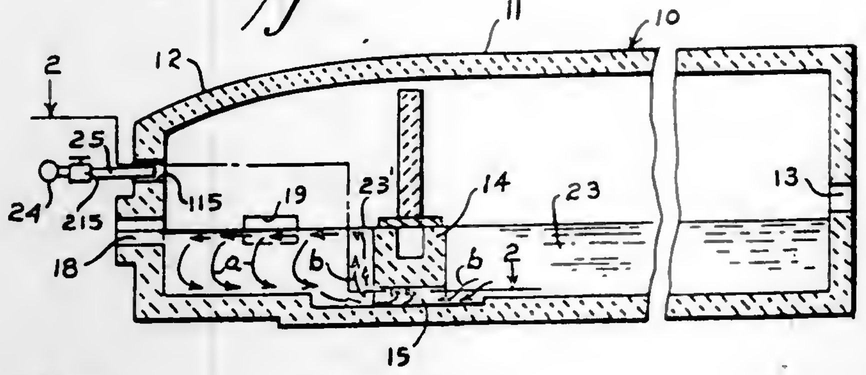
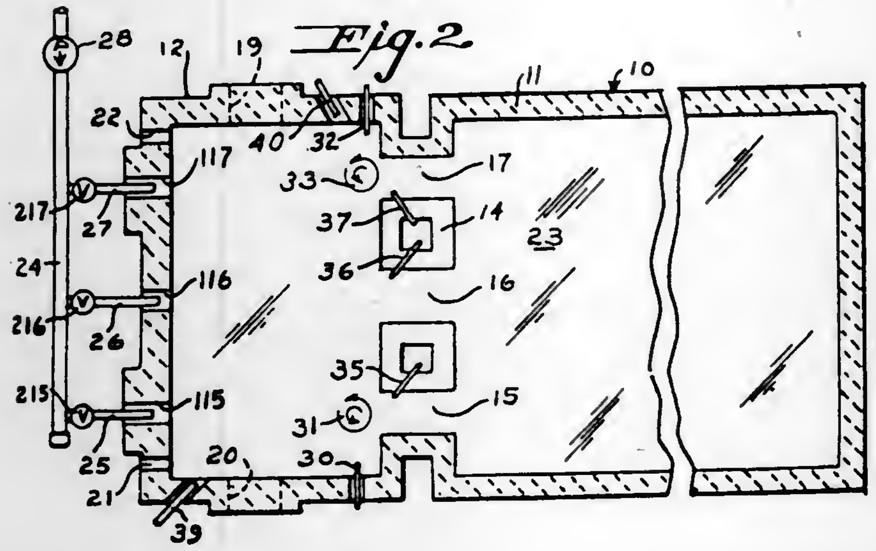


Fig. 2



Molten glass 23 from melting zone 11 flows simultaneously through a plurality of submerged passages or throats 15, 16, and 17 into the working or refining zone 12 in a plurality of separate forwardly-flowing streams. The temperature of the molten material flowing through the throats is measured either by radiation pyrometers 30, 32, or thermocouples 35, 36, and 37, which are utilized to indicate an unbalanced flow condition through the submerged throats. That is, an overly active throat carrying a large volume of glass will produce a hot reading, whereas an idle throat having very little flow will produce a cool reading. Therefore, in order to bring the proportionment of flow through the various throats into balance, a fluid is selectively introduced into the refining zone 12 through a nozzle 25, 26, or 27. The nozzles 25, 26, and 27 are respectively connected through valves 215, 216, and 217 to a header or fluid carrying conduit 24 having a suitable blower or pump means 28 connected thereto for supplying fluid under pressure to the header.

When the thermocouple or radiation pyrometer for a certain throat indicates a hot condition, the valve associated with the nozzle which is directed toward such throat is activated to supply cooling air above the glass flow emanating from such hot throat. The application of the cooling air above the selected flow positively cools the flow emerging from the hot throat and retards the flow therethrough so as to proportion the flow throughout the various throats.

Claim 16 is illustrative:

> 16. A method of producing glass-like material which comprises, forming a bath of molten glass-like material, passing a plurality of flows of such molten glass-like material through a plurality of submerged throats, positively cooling certain of the flows by applying a gaseous stream above the surface of the molten material which is emanating from certain of the throats and thereby controlling the relative rates of movement of such flows through the various throats.

Claim 10 is a method claim, and is broader than claim 16 in that it is not restricted to introduction of *cooling* gas above the molten glass flow. Claims 19 and 22 are apparatus claims drawn to a multiple throat melting furnace having means to introduce cooling fluid above the glass streams emanating from the throats. A single apparatus claim has been allowed.

The appealed claims were rejected as being unpatentable under 35 U.S.C. 103. The references relied upon are:

Forman et al., 2,121,958, June 28, 1938.
Paxton, 2,866,838, Dec. 30, 1958.

Paxton discloses both the method of and the apparatus for sensing unequal heating in the individual throats of a multiple throat glass melting furnace and applying supplemental heat to the lower temperature throat to effect equalization of temperatures and equalization of flow of molten material through all of the throats.

Forman discloses a glass melting furnace having an extension connected to the furnace through a restricted neck portion. The extension serves to allow the glass to cool somewhat before it enters canals leading to drawing chambers where it is drawn into sheet glass. In order to cool the glass to proper drawing temperature, Forman blows air across the molten glass "at any one of a plurality of locations between the furnace and the drawing chamber. The air may be blown into the system at the neck portion of the furnace extension, at the furnace extension proper, at the main canals leading to the various drawing pits or at the individual canals immediately behind the bridge walls separating the drawing chambers from the canals."

The Examiner rejected the claims as unpatentable over Paxton in view of Forman under 35 U.S.C. 103. The basis of the rejection was stated as follows:

> Paxton discloses both the method of and the apparatus for sensing unequal heating in the individual throats of a multiple throat furnace and applying supplemental heat to the throat at a lower temperature to effect equalization of the temperatures and the equalization of fluid flow of the molten material through all of the throats. Column 9, lines 23 to 29 of Paxton further suggest that heat decreasing, which is equivalent to cooling, of the throats may be practiced as well as heat increasing to attain temperature regulation of the throats of the furnace. Forman et al. teaches that the use of air blowers such as 30 and 31 to discharge air across and over the surface of the molten glass at the throat areas of furnaces to cool the molten glass within the throat are commonly used with glass furnaces. Therefore since the use of air blowing means set to blow air across the throat of a glass furnace are old and well known as shown by Forman et al., it would be obvious to a person of ordinary skill in the art to use the air blowing means of Forman et al. within the throats of the furnace of Paxton in substitution for the heating means 37 to 42 that permit the flow through the throats to be controlled by cooling rather than by heating. Although Paxton does not teach the use of cooling means, lines 23 to 29 of column 9 of Paxton suggest that heat decreasing, which is equivalent to cooling, as well as heat increasing may be used to control the flow of the molten glass through the throats of the furnace. Therefore it would be obvious to substitute a cooling means for the heating means within the throats of the glass furnace of Paxton.

The Board affirmed this rejection, stating:

> It is obvious that Paxton clearly teaches adjusting temperatures to affect viscosity of molten glass to maintain equal passage of molten glass through plural throats, column 5, lines 30 to 37. Even if Paxton did not specifically recite "increase or decrease heating effect," column 9, line 25, which we consider to be a fair teaching of "cooling" to the worker in the art, it would not constitute patentable invention over Paxton, in our opinion, to adjust flow by cooling less viscous molten glass, where the prior art clearly discloses adjusting

flow by heating more viscous molten glass. This is particularly so when Forman et al. specifically disclose an air cooling step applied to molten glass issuing from a comparable throat. * * *

Appellant attacks the decision of the Board on the ground that the rejection involves a piecemeal reconstruction of the references which would be illogical in the absence of appellant's own specification. He argues that Paxton contemplates only a *heating effect* being applied to the throats, and that an increase or decrease of the heating effect does not suggest in any way the application of cooling for flow control.

We cannot accept this argument. Paxton teaches equalizing the flow of glass through a plurality of throats by adjusting the temperature of these throats relative to each other. While Paxton uses heating means to make this adjustment, Forman makes it obvious to control the temperature of molten glass by cooling means identical to those employed by appellant. It would therefore seem obvious to use either heating means, cooling means, or even a combination of heating and cooling means to bring about relative temperature adjustments in a plurality of throats.[2]

Appellant has argued the patentability of the apparatus claims apart from the method claims. However, we find these claims also obvious for the reasons stated above.

[1] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, took no part in the decision of this case.

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[2] It is interesting to note that appellant's specification contemplates the use of either heating or cooling means for flow control. Appealed claim 10 therefore, not being limited to cooling means, contemplates either heating or cooling. Appellant's attempt to distinguish Paxton on the basis that Paxton discloses only heating means is therefore meaningless as to this claim.

U.S. Court of Customs and Patent Appeals

IN RE HARRY DUDLEY WRIGHT

No. 7853. Decided May 16, 1968

[55 CCPA —; 393 F.2d 1001; 157 USPQ 519]

1. PATENTABILITY—DOUBLE PATENTING—OPTIONAL DIVISIONAL APPLICATION—35 U.S.C. 121.

"The record does not show the whole prosecution history but the Examiner stated, without refutation, that appellant initiated the filing of the divisional application which was not in response to a requirement for restriction or election of species, so that 35 U.S.C. 121 has no applicability."

2. SAME—SAME—TERMINAL DISCLAIMER.

"In short, if the patent and application claims differ in substance as to the subject matter claimed, the terminal disclaimer obviates the ['double patenting'] rejection."

3. SAME—SAME—SAME—COMBINATION CLAIMS.

"In such a situation, where the combination claims being compared clearly do not contain the same elements, they cannot be said to be directed to the same invention. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579 *In re Borah*, 53 CCPA 800, 354 F.2d 1009, 148 USPQ 213. Before the terminal disclaimer was filed, the Examiner appears to have been properly concerned with the *obviousness* of the differences between the subject matter claimed but with the filing and acceptance of the disclaimer that becomes unimportant. The disclaimer obviates the double patenting rejection of claim 1."

4. SAME—SAME—SAME—SAME.

"While, of course, all these claims read on the identical switch and housing structure described in both the patent and the application and necessarily *relate* thereto, we do not find what is *defined* in claims 4 and 5 to be at all the same as what is defined in patent claim 1. It must be concluded, therefore, that these claims do not define identical inventions. Since they do not, the terminal disclaimer, obviating any possible timewise extension of patent protection, obviates the double patenting rejection."

APPEAL from the Patent Office. Serial No. 265,315.

AFFIRMED.

Moore & Hall, *Elliott I. Pollock*, *Reed C. Lawlor* for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK[1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection by the Examiner of claims 1–8, all claims of application Serial No. 265,315, filed March 12, 1963, entitled "Sectional Digital Selector Switch Construction."

This application is an optional "division"[2] of appellant's application Serial No. 820,543, which issued as Patent No. 3,089,923 on May 14, 1963, 2 months after the filing of the application at bar. A terminal disclaimer[3] was filed after final rejection disclaiming the portion of the term of any patent issued on the application on appeal beyond the expiration date of said issued patent.

Patent 3,089,923 and the appealed application contain identical disclosures.[4]

The sole ground of rejection is "double patenting," all eleven claims of the patent being relied on.

The Board stated that the only issue is double patenting and the effect of the terminal disclaimer.[5] As we read its opinion, it held the double patenting rejection to be supportable, notwithstanding the terminal disclaimer and our decisions in *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485, and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829, both cited and presumably considered by it, under 35 U.S.C. 101 on the ground that the same invention is being claimed in the application at bar and in the issued patent. It said that the claims "are substantially the same," that the "claimed subject matter is identical in each instance and the difference in the claims is one of changed verbiage or of the breadth of definition of corresponding elements," and that "any difference between the *claimed subject matter* * * * is not apparent." It referred to the "identical disclosures" and "the equal portions of those disclosures that are the subject matter of the patent and application claims."

Appellant submits that exactly the opposite is true, that it is entirely possible to have two or more inventions described in a single disclosure, that two distinct inventions were described, and that the claims of the application are directed to subject matter which is distinct from that claimed in the patent. Clearly, therefore, our only task is to construe the claims and determine who is right. Preliminary to further discussion, it is necessary to explain what the nature of the subject matter is.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[1] [2] The record does not show the whole prosecution history but the Examiner stated, without refutation, that appellant initiated the filing of the divisional application which was not in response to a requirement for restriction or election of species, so that 35 U.S.C. 121 has no applicability.

[3] The usual simple form of disclaimer to "all of the term after May 14, 1980 of any patent that may be hereafter granted on the basis of said application, so that any such patent granted hereafter will expire at the same time as U.S. Letters Patent No. 3,089,923 which issued on May 14, 1963." Cf. *In re Griswold*, 53 CCPA 1565, 365 F.2d 834, 150 USPQ 804, footnote 5, for another form of disclaimer.

[4] That is to say, the drawings and specifications are identical not including any claims as part of the disclosure and excluding the cross reference in the "divisional" application which says: "This is a divisional application of my co-pending patent application Serial No. 820,543, now Patent No. 3,089,923." There appears to be no cross reference in the issued but co-pending patent to the "divisional" application. See Rule 79.

[5] The Examiner "relied upon" only the Wright patent but he also cited as "Corroborative references" three other patents which he referred to in the course of the argument in his answer. The Board said it was not clear to it "of what they are alleged to be corroborative." While making certain presumptions as to why the Examiner referred to these patents, the Board did not rely on any of them to support its affirmance. We therefore find it unnecessary to consider them.

FIGS. 1 and 6 of the patent drawings, which are the same as the application drawings, are here reproduced:

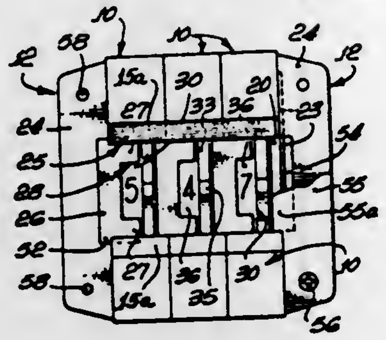

FIG. 1.

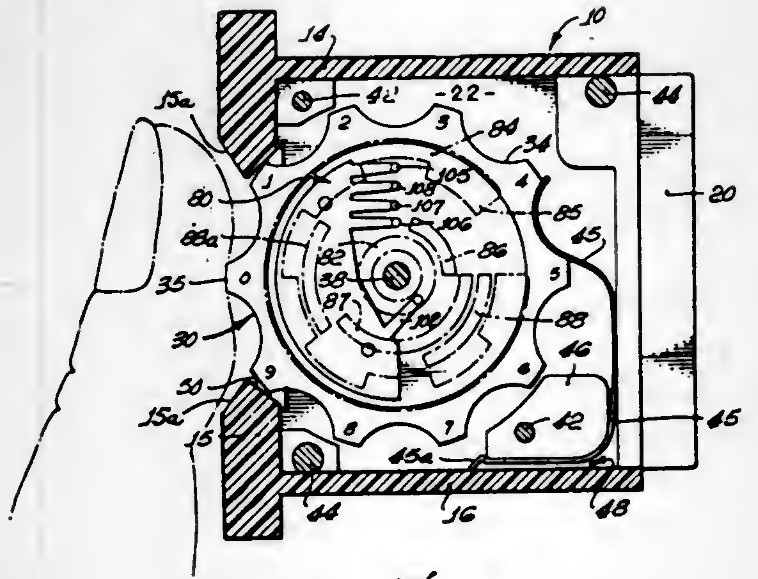

FIG. 6.

The invention is, or inventions are, embodied in a manually operated digital switch the construction of which is such that any desired number of similar units can be fastened together to display any desired number of digits and control as many circuits. In FIG. 1 a switch assembly of three units 10 is shown. Part of one unit is shown in side elevation in FIG. 6. It has a casing 14, 15, 16, 22 ("22" added as it does not appear in FIG. 6 but in other figures), like a shallow box, in which a thumbwheel or switching wheel 30 is rotatably mounted. The wheel has ten finger lugs 35 with intervening arcuate notches 34. The wheel has a rim or flange 36 on which indicia or "digits" from 0 to 9 are carried so that they appear in the windows 28 in each unit on the front of the switch, as the numbers "5 4 7" appear in FIG. 1, showing where the individual switching units are set. The curved spring detent 45 holds the wheel in its set position and also causes it to snap into position when manually rotated. Each wheel 30 carries the movable contacts, 80 for example, of the switch unit and the fixed contacts are carried by a circuit board of the so-called "printed" circuit type. The open side of the casing is closed by securing thereon, and over the switching wheel, the circuit board. As shown in FIG. 6, the circuit board 20, the one shown being that of the next adjacent unit, protrudes to the rear of the casing where the fixed contact terminals, not shown in this figure, are accessible for soldering connections. As many units 10 as are used are held together in a rigid assembly by through-bolts 44. Each unit has a lip at the front end, extending to one side as shown at 26 in FIG. 1, which interlocks with the adjacent unit. When the desired number of units is assembled, the assembly may be finished off by metal end plates 12, FIG. 1, by which the assembly can be panel mounted, the end plates having flanges 24 with screw holes 58.

The specification appears to fall into two parts. The first part describes what are primarily mechanical features of construction and configuration; the second part describes primarily electrical features such as the contact arrangements and their adaptation to both the decimal and binary or other non-decimal numerical systems. Such adaptation is accomplished by the proper arrangement of the switching contacts, both fixed and movable.

Appellant argues in his brief that the two inventions disclosed and claimed are "The 'Wall Structure' Invention" and "The 'Switching' Invention," contending that the former is claimed in the patent and the latter in the claims on appeal. In brief, patent claims 1–6 are said to relate to the geometry of the front of the switch casing whereby, as may be seen in FIG. 6, "the extent to which the switching wheel may be rotated during any given operation is governed by the physical relationship which exists between the several finger lugs 35 and adjacent portions of the switch casing 10." This includes the diverging surfaces 15a and the curvature of the notches 34. Patent claims 7–11 are said to be directed to the interlocking relationship and features of the individual units 10. On the other hand, says appellant, the application claims on appeal are directed to the "electrical aspects of applicant's invention." He appears to rely heavily on claim recitations of "correlation" of information signals derived from the switch contacts with the "indicia on the switching wheel," which he says is nowhere mentioned in the patent claims.

We fail to see the clear line of distinction between the patent and application claims which appellant's brief asserts. We also fail to find the claiming of identical inventions as asserted by the Examiner and the Board. We do find significant differences in the substance of the claimed subject matter.

The Examiner's rejection as recapitulated in his answer was as follows: Claims 1–3 are rejected on patent claim 7 for double patenting, the same invention being claimed as the differences are "in scope only." Claims 4–6 and 8 are rejected on patent claim 1 for double patenting, though they "differ from the patent claim in that the window is broadly claimed." Nevertheless, the Examiner's position was that there is "only one invention set forth in claim 1 [of the patent] and claims 4–6 and 8." Claim 7 was rejected for double patenting on patent claim 4, the Examiner's position being "that this claim [7] defines an invention like that of claim 4 of the patent."

In affirming, the Board adopted the Examiner's answer as a portion of its opinion and expressed its own view that "the claimed subject matter is identical in each instance and the difference in the claims is one of changed verbiage or of the breadth of definition of corresponding elements." While the Board appears to have found differences in the *claims* it said it was "not apparent" that there was any difference in "the *claimed subject matter.*"

Because it found the claimed subject matter of the patent and the appealed claims *identical*, the Board thereby distinguished the cases relied on by appellant, *In re Robeson* and *In re Kaye*, supra, and refused to give any effect to the terminal disclaimer.

It is necessary to consider each of the Examiner's rejections separately, having in mind the law which applies to the obviating of "double patenting" by the timely filing of a terminal disclaimer as set forth in the following recent cases decided by this court: *In re Robeson* and *In re Kaye*, *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570, the two *In re Braithwaite* cases, 54 CCPA 1589 and 1604, 379 F.2d 594 and 606, 154 USPQ 29 and 38 (1967) and *In re Jentoft*, P.A. 7905 (April 18, 1968). **[2]** In short, if the patent and application claims differ in substance as to the subject matter claimed, the terminal disclaimer obviates the rejection.

Rejection of Claims 1–3 on Patent Claim 7

Appealed claim 1 and patent claim 7 are both combination claims including a number of coacting elements; both are directed to a composite switch consisting of an assembly of several switching units, details of the units being specified. In his answer, the Examiner refers to specific elements present in patent claim 7 which are not in appealed claim 1, namely, the "means extending through said units binding them together" (the through-bolt 44), the lip 26 at the front of each unit casing which overlies and locks with the next adjacent unit, and the overhanging flanges 27 which define the window through which the indicia are seen. These were differences relied on by the applicant. Additionally, the Examiner pointed to a further limitation in patent claim 7, that the circuit board forming the side of each unit underlies the lip 26 of the adjacent unit. The Examiner also showed, by an analysis made in his final rejection, before the filing of the disclaimer, that application claim 1 contains a limitation to means for mounting the switch in a panel not present in patent claims 7–11, a difference he then characterized as not amounting to *patentable* novelty, and a further limitation to the movement of each switch wheel between a number of discrete positions corresponding to information signals to be generated, also not present in said patent claims.

[3] In such a situation, where the combination claims being compared clearly do not contain the same elements, they cannot be said to be directed to the same invention. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579, *In re Borah*, 53 CCPA 800, 354 F.2d 1009, 148 USPQ 213. Before the terminal disclaimer was filed, the Examiner appears to have been properly concerned with the *obviousness* of the differences between the subject matter claimed but with the filing and acceptance of the disclaimer that becomes unimportant. The disclaimer obviates the double patenting rejection of claim 1.

Claim 2 is dependent on claim 1 and merely adds the limitation that the switch wheel is rotatable in either direction. Its rejection falls for the same reason as that of claim 1.

Claim 3 is another independent claim similar to claim 1, differently organized, and with some further limitations to details not recited in claim 1. How it differs from claim 1 is unimportant, the significant fact being that it differs from patent claim 7 in the same respects as claim 1. Its rejection is therefore obviated by the terminal disclaimer for the same reasons.

Rejection of Claims 4–6 and 8 on Patent Claim 1

Beside patent claim 7, patent claim 1 is the only other independent claim, patent claim 4, also relied on in the rejection of claim 7, discussed later, being dependent on it. Claim 1 is, in accord with appellant's contentions, truly directed to "wall structure" aspects of the switch and contains many limitations to the related configurations of the switch housing and wheel, illustrated at the left of FIG. 6, above, adjacent the finger of the operator. Many, if not most, of these limitations we find lacking in appealed claims 4 and 5, which on the other hand, contain limitations with respect to the electrical contacts and their relationship to the indicia on the wheel which are not to be found in patent claim 1. **[4]** While, of course, all these claims read on the identical switch and housing structure described in both the patent and the application and necessarily *relate* thereto, we do not find what is *defined* in claims 4 and 5 to be at all the same as what is defined in patent claim 1. It must be concluded, therefore, that these claims do not define identical inventions. Since they do not, the terminal disclaimer, obviating any possible timewise extension of patent protection, obviates the double patenting rejection.

Claims 6 and 8 are dependent on claim 5. Claim 8 depends indirectly from claim 5 by being dependent on claim 7 which depends from claim 5. Claim 6 merely recites that the "digital system" of claim 5 is a decimal system and that the switch wheel moves to 10 positions spaced 36° apart, approximately. (Dividing a circle into ten equal parts necessarily results in 36° segments.) Claims 7 and 8, in conjunction, add limitations to claim 5 reciting the two kinds of switch contacts carried by the wheel for generating signals corresponding to the indicia appearing in the window, the digital system being a binary system and the signals produced being in accordance therewith. None of these added limitations are to be found in patent claim 1 and, of course, these dependent claims enjoy all the differences from claim 1 to be found in parent claim 5. They are, therefore, not to the same invention as claim 1. The disclaimer obviates their double patenting rejection.

Rejection of Claim 7 on Patent Claim 4

As just noted, appealed claim 7 depends from claim 5. Patent claim 4 depends from patent claim 1. Claim 1 describes the switching means broadly while claim 4 specifies that it includes a printed circuit and a wiper engaging it, the two being relatively movable to effect switching upon rotation of the rotor (wheel). Claim 7 of the application likewise deals with electrical contacts but neither it nor claim 5 refers to a printed circuit. Claim 7 recites two separate contacts on the wheel, one in the nature of a slip ring, called the "brush contact," which remains connected to a common terminal, the other being called a "switch arm means" which connects with the fixed terminals in the different positions of the wheel. The Examiner said, "this claim contains the limitation to a brush contact which * * * is found in patent claim 4 which is dependent from claim 1. Thus, it is the Examiner's position that this claim defines an invention like that of claim 4 of the patent."

We believe the Examiner misreads the claims as we find no element in claim 4 of the patent corresponding to the "brush contact" of claim 7; rather the "wiper means" of claim 4 corresponds to the switch arm of claim 7. Furthermore, and more importantly, comparing appealed claim 7 and its parent claim 5 with patent claim 4 and its parent claim

1, as we must, we do not find them to be directed to the same subject matter for the reasons stated in comparing patent claim 1 and appealed claim 5. When the limitations of the dependent claims are considered, we find still further differences. The rejection of claim 7 is obviated by the terminal disclaimer.

Conclusion

The decision of the Board affirming the several rejections of the Examiner on the ground of double patenting is reversed.

REVERSED.

SMITH, *J.*, concurring.

The dissenting opinion herein prompts me to add a few additional observations which support the conclusion reached by the majority.

The issue here arises in a "same invention" type of "double patenting" situation. In *In re Robeson*, 51 CCPA 1271, 331 F.2d 61, 141 USPQ 485 (1964), we observed that the bar to a *second* patent on the *same* invention arises from 35 U.S.C. 101. There, the court stated:

> Where the claims of a second application are substantially the same as those of the first patent, they are barred under 35 U.S.C. 101. *In re Ockert*, 44 CCPA 1024, 245 F.2d 467, 114 USPQ 330. *Miller* v. *Eagle Mfg. Co.*, 151 U.S. 186 (1894).

Thus, the analysis required was whether "one invention" had been twice claimed. That required a factual inquiry into whether the claims of the application were "substantially the same" as the claims of the patent.

Later decisions of this court have refined the "same invention" analysis so that now the legal issue which we face when a terminal disclaimer is filed is whether the appellant claims the *same subject matter*, i.e., *the same invention*, that he previously claimed in his earlier-issued patent. *In re Walles*, 54 CCPA 710, 366 F.2d 786, 151 USPQ 185 (1966). See *In re Faust*, 54 CCPA 1459, 378 F.2d 966, 153 USPQ 813 (1967). Thus, before appellant's application may be said to claim the "same invention" as his patent, the claims must *in fact* claim again the *same subject matter*. *In re Walles*, supra. As noted in *Walles*, this inquiry is a *factual* inquiry and requires that *all* of the subject matter defined by the entire claim must be considered. 54 CCPA at —, 366 F.2d at 790, 151 USPQ at 189.

Here, it seems to me, the majority opinion has carefully developed the factual analysis necessary to support its conclusion that the "same invention" has *not* been twice claimed. I do not find any *comparable factual analysis* in the dissenting opinion. I am, therefore, not persuaded by the dissent that the majority is in error. I cannot agree, in the absence of a convincing factual analysis to the contrary, that the same combination of elements has been claimed in both the application and the patent. I think it improper on the present record to attempt a value judgment as the dissent does as to what the claims "in essential part" are directed; that those differences between the claims are "minor changes in scope and verbiage," that they contain a "minor mechanical feature," that there are other "minor differences in the claim scope and verbiage," or that certain limitations are "de minimis." Thus, it seems to me the dissent is bottomed on an intuitive or subjective rationale which has no factual support in the present record to which we are limited under 35 U.S.C. 144. Thus, I believe that this case should be decided solely on the only basis which the record supports, i.e., the factual comparisons as fully set forth in the majority opinion.

I note that in *In re Eckel*, 55 CCPA —, — F.2d —, — USPQ — (1968) (PA 7820, decided May 2, 1968), the court fully and carefully developed a strong factual basis for that decision. It seems to me that this decision should rest on a comparable basis. When the *Eckel* type analysis is applied here, it requires the conclusion stated in the majority opinion.

Furthermore, in *Eckel*, the majority of this court carefully analyzed the line of reasoning that suggested "four categories" of "invention" into which "double patenting *situations*" may fall. It noted that "mere colorable variation" was not intended in *Robeson* to create a fourth category of invention for double patenting purposes. "The keystone of the colorable variation concept," the court said, "was that *the same invention* was being claimed although not in precisely the same language." It stated that an "analysis couched in terms of a 'colorable variation' is unnecessary and undesirable."

As previously pointed out, the Board here, as did the Board in *Eckel*, called the differences in the inventions "colorable variations." Thus, to affirm the Board here as the dissent would do, seems to undo the constructive step taken in *Eckel* as well as to erode the rationale of *Robeson*. This is necessarily the case as the dissent here seems to require an initial value judgment, for which there is no record support, to determine whether the differences between the claims are, in fact, more than a "minor" change "in scope and verbiage." Such a test seems fraught with the same difficulties as was the "mere colorable variation" test and adds a further uncertainty arising from its substitution of a subjective evaluation for factual analysis.

Courts have previously noted that each claim of a patent is in theory a separate patent. See *In re Cole*, 51 CCPA 919, 926, 326 F.2d 769, 775, 140 USPQ 230, 234 (1964); *Kemart Corp.* v. *Printing Arts Research Laboratories*, 201 F.2d 624, 633, 96 USPQ 159, 167 (9th Cir. 1953). In *Cole*, we referred to "elementary principles of claim interpretation" stated in *In re Handel*, 50 CCPA 918, 924, 312 F.2d 943, 948, 136 USPQ 460, 464 (1963), arising in the context of the reissue statutes that:

> * * * whenever an element or other limitation is added to or taken from a claim it becomes a claim to a different invention. Yet the whole purpose of the statute, so far as claims are concerned, is to permit limitations to be added to claims that are too broad or to be taken from claims that are too narrow. That is what the statute means in referring to "claiming more or less than he had a right to claim."

The fact that the respective disclosures are identical does not require the conclusion that the same invention is necessarily claimed in both the application and the patent. There is no reason why an applicant's remedy by way of terminal disclaimer is or should be proscribed by the reissue provisions of the statute. The statutory provision involving terminal disclaimers, 35 U.S.C. 253, and the statutory provisions involving reissues, 35 U.S.C. §§ 251, 252, are remedial in nature. See *In re Braithwaite*, 54 CCPA 1589, 1599, 379 F.2d 594, 601, 154 USPQ 29, 36 (concurring opinion); *In re Wesseler*, 54 CCPA 735, 367 F.2d 838, 151 USPQ 339 (1966).[6]

On what authority, then, should we here decide which of these two remedial tools an applicant should use? However, as between the remedy provided by a reisssued patent and that provided by a terminal disclaimer, it seems to me the public interest is better served by the terminal disclaimer provisions since the disclosure of the first patent can be made public at an earlier instance than if prosecution is protracted to permit prosecution of all the claims to which an applicant may be entitled. It is generally conceded that early publication of patents is in the public interest, hence any procedure which facilitates this end should be encouraged.

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[6] In *Wesseler*, this court referred to 35 U.S.C. 251 as a "remedial provision designed to advance both the rights of the public and the inventor" and spoke in favor of a liberal construction of these provisions "in order to secure to inventors protection for what they actually have invented." 54 CCPA at —, 367 F.2d at 849, 151 USPQ at 348.

Under 35 U.S.C. § 251, a reissue patent may be granted enlarging the scope of the claims if applied for within *two years* from the grant of the original patent. Reissue patents narrowing the scope of the claims may be granted anytime during the life of the patent. In the first of these instances, a time lapse occurs before the breadth of the claims of a patent may be determined with finality; in the latter, one never knows how narrow a patent claim may be. So if the anticipated evil is receiving a claim enlarged in scope, it seems to me to be far better from a policy standpoint to have the Patent Office machinery set in motion at the earliest moment, i.e., during the pendency of the first application. I find this objective most nearly achieved by the liberalized use of terminal disclaimers.

Should the remedial practice here approved by the majority be subjected to abuses in derogation of the public interest, the jurisdiction of the courts is adequate to protect this interest. Historically, it will be recalled that the equitable doctrine of intervening rights developed to prevent abuse of the remedial provisions permitting the reissue of patents.[7]

Finally, I agree with the statement in a current review [8] of developments in the law of double patenting that:

> * * * the present case-by-case determination as to whether or not particular inventions are "colorable variations" or are "separate and distinct" does not seem to be a desirable long-term procedure * * *

The dissent herein, it seems to me, confuses these issues still further by its substitution of factually unsupported value judgments as to whether the claims relate to "minor" improvements for the more certain standards used in *Eckel* and in *Robeson*.

I therefore concur with the reasoning and conclusion of the majority.

ALMOND, *J.*, dissenting, with whom WORLEY, *Chief Judge*, joins.

I disagree with the majority opinion. It seems clear to me that the claims of the application are directed to the identical invention claimed in appellant's patent.

Claims 1–3 of the application are drawn to a plural switch assembly, as are claims 7–11 of the patent. In essential part, all of these claims are directed to an assembly of individual switch units each comprising a rotary switch member having symbols thereon, a stationary contact structure and a window for viewing the symbols which additionally serves as an opening through which finger engaging lugs on the wheel extend.

Claims 4–8 of the application are drawn to an individual switch unit having the essential elements noted above. Patent claims 1–6 are likewise directed to the individual switch unit.

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[7] For review of the historical development of patent reissues and the current statutes, with emphasis on the respect to be given to intervening rights, see Federico, Intervening Rights in Patent Reissues, 30 Geo. Wash. L. Rev. 603 (1962).

[8] Bones, The Terminal Disclaimer and Double Patenting, 49 JPOS 864, 876 (December 1967).

The differences which exist between the application claims and the patent claims are no more than minor changes in scope and verbiage, with the application claims generally having broader recitations than the patent claims. For example, a recitation in the patent for "means extending through said units and binding them together" finds broader expression in the application as "means for mounting said unit as a common compact rigid assembly." Both of these recitations refer to bolt 44 in the drawings. Similarly, the patent claims recite lip 26, which aids in the interlocking function. I do not find this minor mechanical feature mentioned specifically in the appealed claims, but it is certainly within the recitation "means for mounting said units as a common compact rigid assembly."

There are other minor differences in the claim scope and verbiage as well. A "casing having an outer face wall * * * with a view opening" in the patent claim corresponds to "a switch panel having an open window" in the application. Similarly, the outline of the window opening and the relationship of the lugs on the rotary member relative to the opening in the window are defined more narrowly in the patent claims than in those of the application. Other *de minimis* limitations which appear in one set of claims or the other recite "means for mounting said composite stationary switch unit" (a hole for insertion of a bolt?), that the switch wheels may turn in both directions, that the positions of the switch are spaced at regular intervals, that the "digital" system is decimal or binary, and that the indicia on the wheel correspond to the signals generated by the switch contact position.

In my opinion, the majority has erred in this case by failing to distinguish between differences in the *claims* and differences in the *claimed subject matter*. It is only necessary to read the claims to find differences in the *claims*, but it is necessary to read the claims *in the light of the specification* to determine differences in the *claimed subject matter* (i.e. the invention). *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515; *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474; *In re Honn*, 53 CCPA 1469, 364 F.2d 454, 150 USPQ 652; *In re Walles*, 54 CCPA 710, 366 F.2d 786, 151 USPQ 185, 190.

It bears repeating that the disclosure of the patent and that of the application are *identical*. The claims of each are drawn to the same combination of essential elements, differing only in the addition, deletion, or recitation in different terms of elements of minor importance. In holding that such changes cause the claims to be directed to different inventions, the majority seems to overlook our previous holdings in *In re Knohl*, 55 CCPA —, — F.2d —, 155 USPQ 586; *In re Faust*, 54 CCPA 1459, 378 F.2d 966, 153 USPQ 813; *In re Griswold*, 53 CCPA 1565, 365 F.2d 834, 150 USPQ 804; *In re Bridgeford*, 53 CCPA 1182, 357 F.2d 679, 149 USPQ 55; and *In re Siu*, 42 CCPA 864, 222 F.2d 267, 105 USPQ 428.

There does not appear to be any valid attempt here to claim a different invention from that previously claimed. On the contrary, the attempt is to secure more claims to the *same* invention which was previously claimed. If there is a genuine need for such claims by appellant, his proper remedy resides in the reissue provisions of 35 U.S.C. 251.I do not believe that the intent of Congress in providing for terminal disclaimers in 35 U.S.C. 253 was to allow an applicant to obtain all the benefits of a broadened reissue patent without meeting the requirements and being subjected to the public protections of 35 U.S.C. 251 and 252. I would affirm.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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D. 181,776, B. Asquith, COMBINED LAZY SUSAN, CANISTER SET AND COVER THEREFOR, **filed** Oct. 14, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–1041, *Lincoln Metal Products Corp. etc.* v. *Bennett Asquith etc.*

D. 205,531, Ertsgaard and Gale, SNOW PLOW, **filed** Nov. 7, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2028, *Toro Manufacturing Corp.* v. *Sears, Roebuck and Co.* Consent judgment, Nov. 12, 1968.

D. 207,915, J. V. Zimmerman, TIERED PLANTER, **filed** Sept. 5, 1967, D.C.N.J. (Camden), Doc. C–922–67, *Jay V. Zimmerman Company* v. *Spencer Gifts, Inc.* Consent decree for permanent injunction, Oct. 8, 1968.

D. 208,199, Ertsgaard and Gale, SNOW PLOW HOUSING; **D. 209,305**, same; **3,359,661**, Speiser, Lindquist and Horner, POWERED IMPLEMENT, **filed** Dec. 26, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2205, *Toro Manufacturing Corp.* v. *Sears, Roebuck and Co.* Consent judgment, Nov. 12, 1968.

D. 209,305. (See D. 208,199.)

D. 212,602, R. A. Gera, SECTIONAL SOFA, **filed** Nov. 18, 1968, D.C. Md. (Baltimore), Doc. 20106C, *Schnadig Corporation* v. *Monroe Upholstering Co., Inc.*

Reg. No. 679,591. (See 2,656,508.)

Reg. No. 723,572. (See 2,656,508.)

PLANT PATENTS

GRANTED FEBRUARY 25, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,865

POINSETTIA PLANT

Paul Ecke, P.O. Box 488, Encinitas, Calif. 92024

Filed Aug. 22, 1967, Ser. No. 662,556

U.S. Cl. Plt.—86 **1 Claim**
Int. Cl. A01h *5/02*

1. A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, tough and durable plant habit, with the plant being of medium height and having the ability to grow well as a multiple stem and multiple bloom plant, an extensive root system, stiff stems which do not require staking, wide bracts of a distinctive shape and arrangement that give the plant an unusually full and complete appearance, unusually prolonged retention of the bracts, foliage and inflorescenses after reaching maturity, an early blooming habit, but having the ability to be satisfactorily brought into bloom and to full maturity in every month of the year, including those months that are ordinarily considered as out-of-season, through the exercise of proper greenhouse cultural techniques, a distinctive, attractive and graceful contour of the bracts, a compact infloresense form which creates an attractive crowned effect in each bloom, a distinctive and attractive general color tonality of the bracts corresponding to a lively creamy white or ivory color, and excellent keeping qualities and consequent suitability for home decorations.

2,866

CHRYSANTHEMUM PLANT

Eugene S. Boerner, deceased, late of Benton, N.Y., by Lincoln Rochester Trust Company, Rochester, N.Y., and Roger L. Boerner, Milwaukee, Wis., executors, assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Aug. 3, 1967, Ser. No. 658,297

U.S. Cl. Plt.—78 **1 Claim**
Int. Cl. A01h *5/02*

1. A new and distinct variety of chrysanthemum plant of the thick decorative class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a hardy and free habit of growth, a large bloom size, a very double flower petalage, and a distinctive and attractive general color tonality of the flowers corresponding to Apricot Yellow, very lightly overcast with Light Cadmium.

2,867

DIANTHUS PLANT

William Zombory and Sophia B. Zombory, Detroit, Mich., assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Aug. 17, 1967, Ser. No. 661,482

U.S. Cl. Plt.—70 **1 Claim**
Int. Cl. A01h *5/02*

1. A new and distinct variety of dianthus plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a compact habit of plant growth, an everblooming habit, attractive foliage of Andover Green color, with a silvery sheen of Artemisia Green, good flower petalage ranging from 20 to 25 petals per flower, and a distinctive and attractive general color tonality of the flowers corresponding to Pale Cinnamon Pink, with the petals edged with Carmine and the lower half of the petals being overcast with Bordeaux.

2,868

GERANIUM PLANT

Mark A. Miller, State Route 113 E.,
Milan, Ohio 44846

Filed Mar. 9, 1967, Ser. No. 622,027

U.S. Cl. Plt.—68 **1 Claim**
Int. Cl. A01h *5/02*

A geranium plant characterized particularly by its healthy growth, long lasting globular truss, velvety purple florets, and large, super-orbiculate leaves with overlapping bases.

2,869

DIEFFENBACHIA PLANT

Charles F. Chaplin, Rte. 1, Box 355,
Fort Lauderdale, Fla. 33314

Filed Aug. 14, 1967, Ser. No. 660,533

U.S. Cl. Plt.—88 **1 Claim**
Int. Cl. A01h *5/12*

1. A new and distinct variety of Dieffenbachia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a general similarity to the parent variety, *Dieffenbachia amoena*, but having a more compact plant habit, slightly shorter leaves, and shorter petioles and internodes which give the plant a more compact form, and a distinctive and highly attractive, variegated coloration of the leaves ranging from white to cream over a large, solid, irregular, central area ending outward from the midrib sometimes to nearly the marginal edge of the leaf, which sharply contrasts with dark green edge of the leaf which shades into light green around the bright central area.

PATENTS

GRANTED FEBRUARY 25, 1969

GENERAL AND MECHANICAL

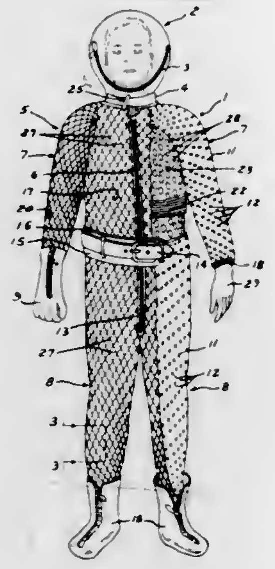
3,428,960
MULTICELL PRESSURE SUIT

Otto Schueller, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 3, 1965, Ser. No. 461,212

U.S. Cl. 2—2.1 **14 Claims**

Int. Cl. B63c *11/06*



1. In a pressure suit for use in low to zero exterior pressure environments, a comfortable form fitting garment adapted to fit and enclose a wearer in close slack condition relative to the exterior surface of the wearer, on the ground and in predetermined normal altitude pressure conditions such as in a "shirt sleeve" environment in a space vehicle comprising, an expandable and contractible resilient flexible multicellular material having a gaseous fluid medium filled and sealed therein at an absolute pressure substantially below 7 p.s.i., said multicellular material being automatically expansible by the sealed gaseous pressure therein to constrict the suit against the outer surface of the wearer when the suit enclosing the wearer is subjected to exterior surrounding pressures of less than said filling and sealing pressure, said material being contractible by increasing exterior pressures thereon above said filling and sealing pressure to shrink said multicellular material by compression of the sealed gaseous pressure fluid medium therein to relieve the constricting pressure of the material of the suit on the surface of the body of the wearer in altitude environments at a pressure of more than said filling and sealing pressure.

3,428,961
UNIVERSAL JOINT WITH GUIDED RESTRAINT SYSTEM FOR PRESSURIZED ASSEMBLIES

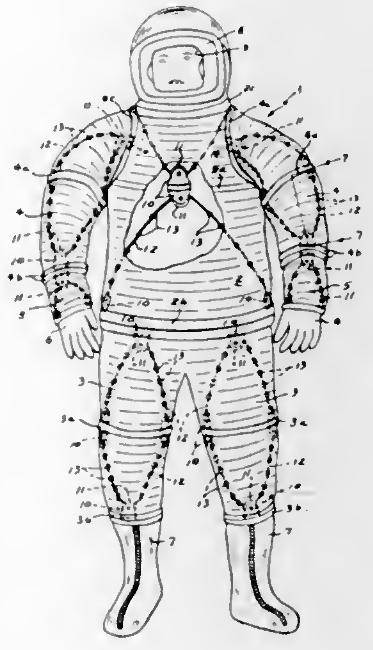
Otto Schueller, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 5, 1965, Ser. No. 506,918

U.S. Cl. 2—2.1 **3 Claims**

Int. Cl. B63c *11/06*

A pressure suit made of flexible impervious material which has bendable arm, leg and body enclosure portions that are extensible longitudinally and nonextensible transverse to the arm, leg and body portions. The suit includes annular flexible anchor means or bands which are secured within the suit around the arm, leg and body portions in spaced relation to each other at the opposite ends of each of the bendable portions in each of the arm, leg and body portions. An equal number of cable pulleys are rotatably secured in equal circumferentially spaced relation around the inside surface of each pair of the spaced anchor bands. The locations of the pulleys at one end of each of the bendable portions are staggered with respect to the locations of the pulleys on the spaced band at the other end of that bendable portion of the suit. An endless or continuous, flexible, nonextensible, cable extends across each of the bendable portions of the suit, back and forth between the pulleys which are located around the bands at the opposite ends of each of the bendable portions in somewhat zigzag fashion, and is self adjustable within the suit to prevent extension of the spacing between the pulley supporting bands and the enclosing extensible suit material therebetween while permitting the free and easy bending thereof by the occupant who is wearing the suit when the internal pressure within the suit exceeds the external pressure outside of the suit.



3,428,962
COMBINED BARBECUE APRON AND MITTENS

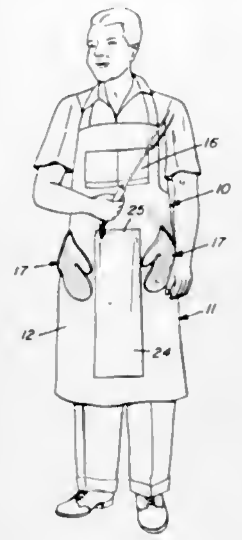
Morris L. Slimovitz, % Morris Manufacturing Co., P.O. Box 219, Newbern, Tenn. 38059

Filed May 16, 1966, Ser. No. 550,507

U.S. Cl. 2—48 **1 Claim**

Int. Cl. A41d *13/04, 19/00*

An apron for use by a person engaged in cooking or the like having a pair of mittens detachably mounted on the exterior surface thereof by "Velcro" strips which support the mittens in an inclined manner so that the wearer may insert his hands in the mittens and detach the mittens without requiring the use of an opposite hand to hold the mitten while placing it in position on the hand. A towel is supported in a similar manner from the center of the apron.



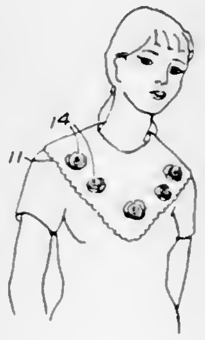
3,428,963
DECORATIVE COLLAR

Irene W. Centeck, 1427 S. Renaud, Grosse Pointe Woods, Mich. 48236

Filed Oct. 22, 1965, Ser. No. 500,509

U.S. Cl. 2—133 **4 Claims**

Int. Cl. A41b *3/00;* **A42b** *1/02, 1/04*



A removable collar or decorative headband comprising a piece of lace material adapted to be fastened to a garment and a plurality of artificial flowers. A snap fastening element is provided on each flower and a plurality of complementary snap fastening elements are cemented on the piece of lace material so that the flowers are selectively attached to the piece of lace material.

3,428,964
COMBINED TOILET FIXTURE AND BASIN

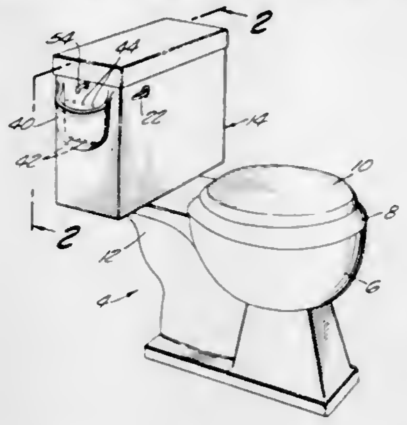
Don D. Lucas, 405 Baldwin Road, Bakersfield, Calif. 93304

Filed Apr. 11, 1966, Ser. No. 541,547

U.S. Cl. 4—3 **1 Claim**

Int. Cl. A47k *4/00*

A toilet flush tank having an external basin thereon communicating with the reservoir defined by the flush tank and filled and drained by operation of customary flush tank valving, the basin being drained when the tank is emptied, and fresh water being flushed through the external basin before the tank is refilled to the level of communication between the external basin and the reservoir.



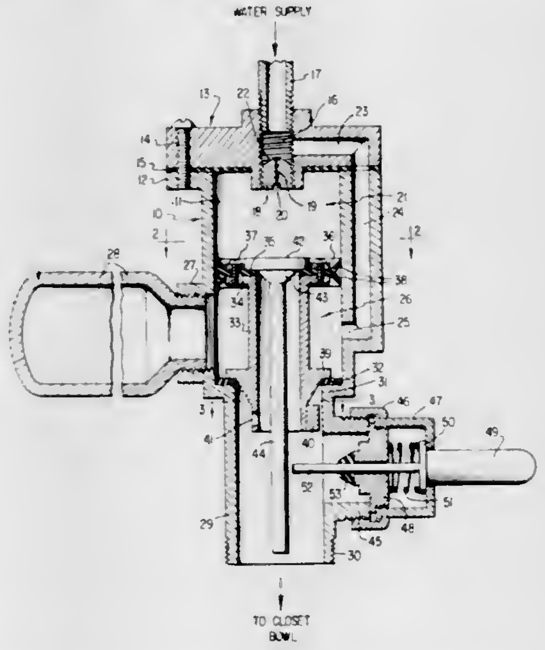
3,428,965
FLUSH VALVE MECHANISM

Henry Norwood Achey, 302 W. Crest Road, Rossville, Ga. 30741

Filed Feb. 7, 1966, Ser. No. 525,514

U.S. Cl. 4—41 **4 Claims**

Int. Cl. E03d *1/36;* **F16k** *31/12*



A flushing valve body contains a main bore within which a piston unit operates. A piston head of this unit divides the main bore into separated upper and lower chambers. A flushing water storage tank communicates with the lower chamber only of the main bore. The piston unit also includes a main valve element which engages the main valve seat of the valve body and a pilot valve is carried by the piston unit and engages a seat thereon. Water enters at the top of the main bore through a restricted passage above the piston unit and pilot valve and a branch inlet passage in the valve body conveys water to said lower chamber directly opposite said storage tank and opposite a portion of the piston unit which lies between the storage tank and the mouth of the branch inlet passage.

3,428,966
BALL COCK FLOAT

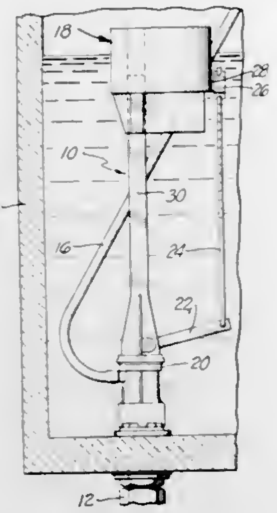
Adolf Schoepe, 1620 N. Raymond Ave., Fullerton, Calif. 92631, and Fredric E. Schmuck, 535 Century Drive, Anaheim, Calif. 92805

Filed June 23, 1966, Ser. No. 559,772

U.S. Cl. 4—56 **10 Claims**

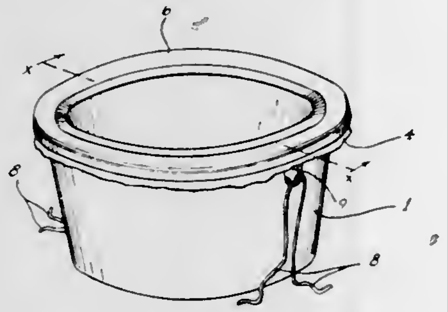
Int. Cl. E03d *1/34;* **F16k** *31/18*

A unitary float body of a ball cock float determining the water level in a toilet flush tank has rectangular cross-section, vertically elongated guide passage receiving a similar cross-section vertical ball cock guide. A water chamber in the float determines the buoyancy thereof and a vertically elongated water passage determines the minimum amount of water in said chamber. Said water passage opens downwardly into the flush tank and upwardly intermediate the water chamber in a dam formed by a sharpened body edge preventing the formation of a meniscus thereupon during the flow of water through said water passage.



3,428,967
CHILD'S CHAMBER POT

Terence O. Hughes, 40 Summerhill Close,
Haywards Heath, Sussex, England
Filed Sept. 29, 1965, Ser. No. 491,290
Claims priority, application Great Britain, Nov. 5, 1964,
45,109/64
U.S. Cl. 4—142 **6 Claims**
Int. Cl. A47k *11/06*

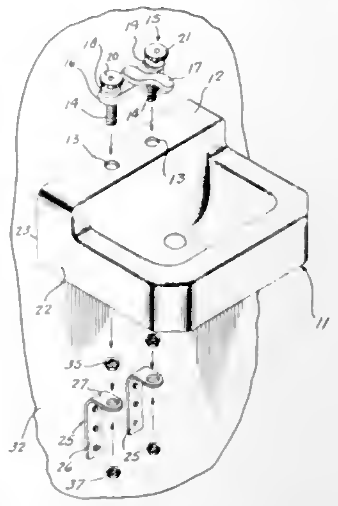


A child's chamber pot including a hollow base container with peripheral flange, the seat removably mounted on a base including an annual recess receiving the flange and a disposable liquid resistant bag with a peripheral part overlying said flange and clamped thereon by the seat.

3,428,968
SUPPORTING MEANS FOR BATHROOM WASHBOWL

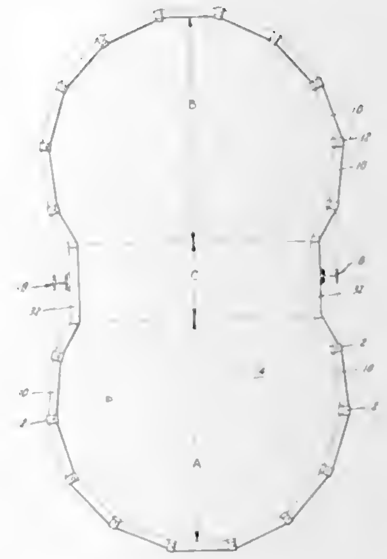
Edwin L. Ory, Jr., and John Riley, both of 624 Railroad
Ave., Lake Charles, La. 70601
Filed Oct. 28, 1966, Ser. No. 590,372
U.S. Cl. 4—170 **6 Claims**
Int. Cl. A47k *1/04;* **E03c** *1/32*

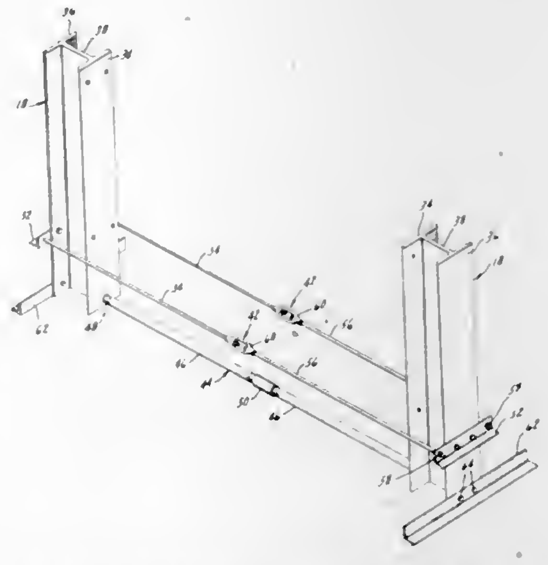
1. A lavatory assembly comprising a lavatory main body including a horizontally-extending basin portion having sidewalls terminating in substantially vertical rear abutment edges and a substantially horizontal top rear wall portion spaced above said basin portion, a faucet assembly having depending conduit means extending through said top rear wall portion, and substantially right-angled bracket means secured to said depending conduit means beneath said top rear wall portion and having vertical leg means adapted to be secured to the vertical supporting wall and being substantially co-planar with said rear abutment edges.



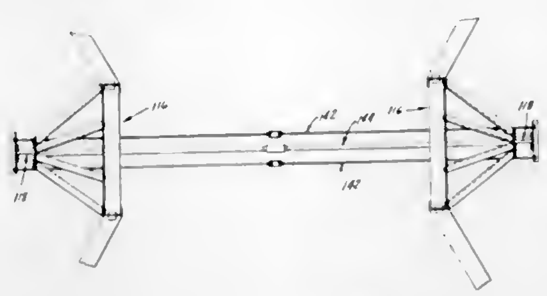
3,428,969
WATER-RETAINING RECREATIONAL STRUCTURE FOR SWIMMING POOLS AND THE LIKE

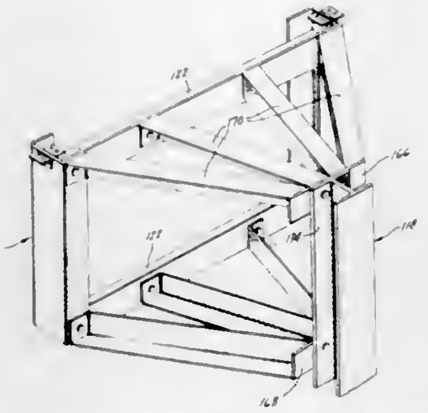
Joseph Diemond, Simsbury, Melvin Y. Gershman, West Hartford, Conn., and Henry L. Sundberg, Jr., Longmeadow, Mass., assignors to Coleco Industries, Inc., Hartford, Conn., a corporation of Connecticut
Filed July 17, 1967, Ser. No. 653,750
U.S. Cl. 4—172 **21 Claims**
Int. Cl. E04h *3/16*





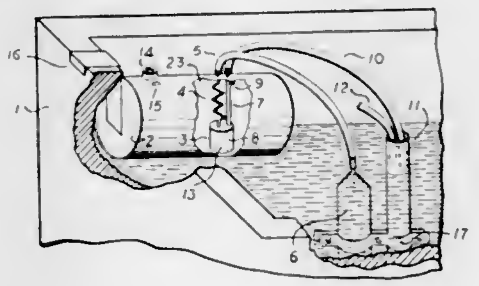
There is disclosed a water-retaining, above ground prefabricated recreational structure for swimming pools and the like which is adapted to be assembled and disassembled and which employs a substantially dumbbell-shaped peripheral configuration defined by a pair of circular components interconnected by a generally rectangular intermediate component of lesser width than the diameter of the circular components. The rectangular component has a frame assembly at each side thereof with substantially rigid wall means providing firm support for the support panel and linear member contained therein, a main vertical support member resisting outward pressures thereon and compensating means to resist displacement and bending of the main vertical support member.





3,428,970
AUTOMATIC TOILET DEODORIZER

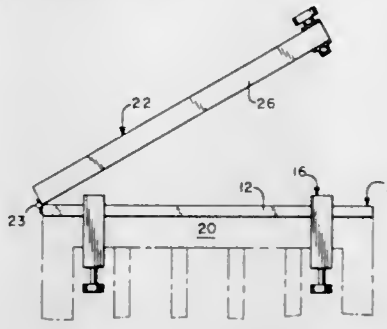
Jose M. Barcita, 500 Patrick Ave.,
Richmond, Va. 23222
Filed June 28, 1966, Ser. No. 562,929
U.S. Cl. 4—223 **10 Claims**
Int. Cl. E03d *9/02*



An automatic toilet bowl deodorizer for use in combination with a conventional flush tank having a drain pipe connected between the flush tank and a toilet bowl and an overflow pipe mounted therein, the deodorizer being operable by the normal flushing of the flush tank for dispensing a measured amount of deodorant solution into the overflow pipe. The deodorizer comprises a deodorant solution container, apparatus for mounting the container in the flush tank, a deodorant solution metering receptacle positioned in the container near the bottom thereof, a discharge conduit for connecting the metering receptacle to the overflow pipe and conducting deodorant solution from the receptacle to the overflow pipe, an inlet in said receptacle providing a communicating passage for solution from said container into said receptacle, a one-way valve in the inlet limiting the flow of deodorant solution to a direction from the container into the receptacle, and a pump connected to the receptacle via a tubing and adapted to be positioned in the water normally held in said flush tank. The pump being operable by the normal fall and rise of water in said flush tank during flushing and refilling thereof to vary the pressure within the receptacle and thereby to alternately cause deodorant solution to enter the metering receptacle through the inlet, and to cause deodorant solution to flow from the metering receptacle through the discharge conduit into the overflow pipe.

3,428,971
CRIB CLOSURES

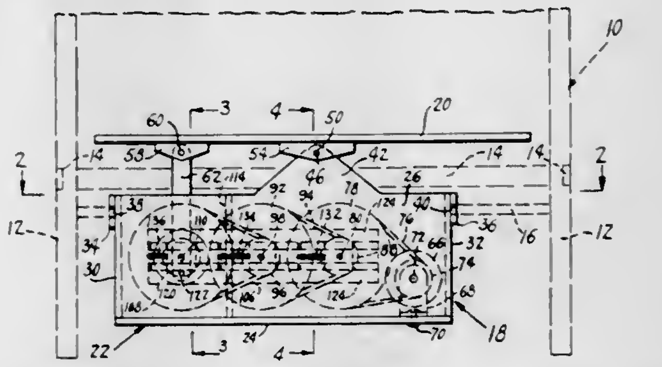
Jerry J. Finley, La Mesa, Calif., assignor of twenty-five percent to Virginia J. Booth, La Mesa, Calif.
Filed Mar. 27, 1967, Ser. No. 636,228
U.S. Cl. 5—100 **5 Claims**
Int. Cl. A47d *7/00, 13/06*



My invention relates to a closure device for open top children's cribs and includes a frame adapted to be attached to the upper frame of the crib; a member hingedly attached to said first mentioned frame and being biased in normally open position, said last mentioned member being an open frame covered with a resilient netting.

3,428,972
ROCKING ASSEMBLY

Grover L. Cauthron, 2001 Crown Ave.,
West Sacramento, Calif. 95691
Filed Sept. 27, 1966, Ser. No. 582,452
U.S. Cl. 5—109 **4 Claims**
Int. Cl. A47d *9/02*

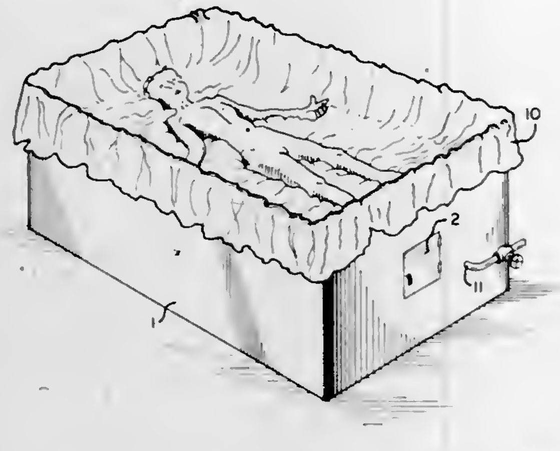


A mattress board for a bed or crib and power means for effecting oscillatory movement of the board about a transverse axis thereof intermediate its ends, the board and power means comprising a self-contained unit, and means on the unit for supporting the unit between the side rail members of a conventional bed frame.

3,428,973
FLUIDIZED SUPPORTING APPARATUS

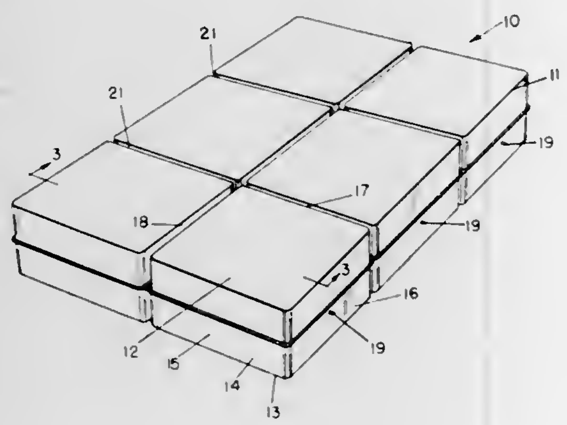
Thomas S. Hargest, 1078 Winslow Drive 29407, and Curtis P. Artz, 13 Church St. 29401, both of Charleston, S.C.; and Charles D. Thompson, Austin, and Truman G. Blocker, Jr., Galveston, Tex.; said Thompson and said Blocker, assignors to said Hargest and said Artz
Filed Mar. 17, 1966, Ser. No. 535,129
U.S. Cl. 5—347 **23 Claims**
Int. Cl. A47c *27/00*

Apparatus for and method of supporting and treating a hospital patient by a fluidized bed which includes a tank portion which is partially filled with a mass of granular material which is covered by a gas permeable flexible supporting member upon which the patient is disposed while the granular material is fluidized by the passage of air upwardly through the granular mass at a rate which will fluidize the granular mass to reduce the specific gravity thereof to a predetermined value best suited to float the patient disposed on the supporting member. The gas permeable supporting member permits the gas to pass around and in contact with the body of the patient and the temperature, humidity and character of the gas may be controlled as best suits the needs of the patient.



3,428,974
COMPARTMENTED AIR MATTRESS

James C. Stuart, 110 Francis Drive,
Louisiana, Mo. 63353
Filed May 22, 1967, Ser. No. 640,061
U.S. Cl. 5—348 **5 Claims**
Int. Cl. A47c *27/08;* **B63c** *9/28*

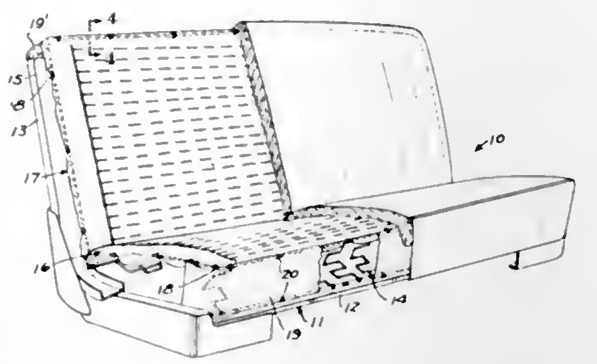


A mattress having a plurality of similar air-tight compartments filled with a fluid under pressure with each compartment having a valve for inflation and compartments being detachably connected to each other at the side walls thereof between the upper and lower walls.

3,428,975
SPRING SEAT CONSTRUCTION

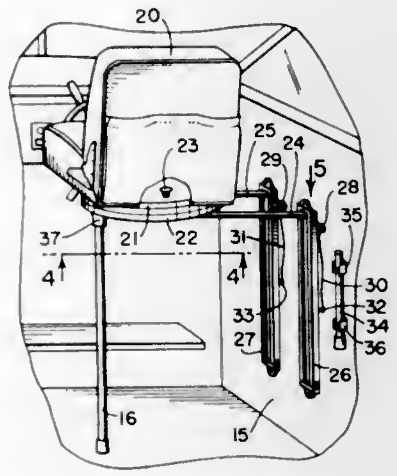
Lionel Gamelcy, Detroit, and Henry J. Tischler, Bloomfield Hills, Mich., assignors to Young Spring & Wire Corporation, Detroit, Mich., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,443
U.S. Cl. 5—354 **10 Claims**
Int. Cl. A47c *23/00, 7/02*

The spring seat construction disclosed herein comprises a seat frame having one or more spring assemblies mounted therein, insulator pads on said spring assemblies and upholstery in the form of padding on said pads. The insulator pads are made of a coherent, flexible, nonwoven, fibrous sheet of synthetic organic polymers which is made by contact bonding without the use of adhesive bonding agents and has a high strength in the dry and wet state and is isotropic. A plurality of wire elements are threaded through the insulator pad and a cord made of a twisted sheet of the same material as the sheet in the pad is fastened to the ends of the wire elements. A listing sheet and a skirt sheet of similar sheet material are fastened and extend from the edge of the spring assembly to the frame.



3,428,976
CONVERTIBLE HELMSMAN'S SEAT FOR POWER BOAT

Cecil S. Robinson, 401 Wilshire Blvd.,
Santa Monica, Calif. 90401
Filed Dec. 29, 1967, Ser. No. 694,457
U.S. Cl. 9—7 **7 Claims**
Int. Cl. B63b *29/00;* **A47c** *1/00*

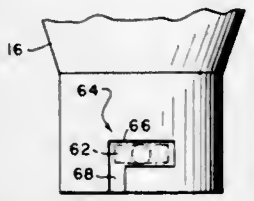


A convertible helmsman's seat is provided for power boats and includes a swivel mount secured to lateral support bars designed to ride between upper and lower positions in vertical channel members fixed to the bulkhead in the cockpit area of the boat. The seat may thus be lowered to a level corresponding to the height of a conventional seat or chair and swiveled around towards the stern of the boat to permit the helmsman's seat to be used as a comfortable lounge chair when the boat is not underway.

3,428,977
SAFETY LATCH FOR A MESSENGER BUOY

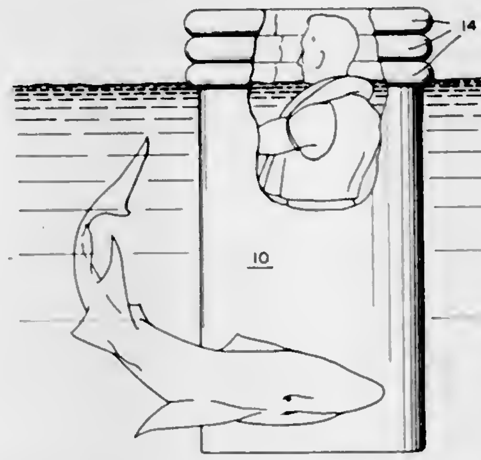
Robert Allen Jones, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1967, Ser. No. 664,217
U.S. Cl. 9—8 **4 Claims**
Int. Cl. B63b *21/52;* **B63c** *11/26*

A variable buoyancy messenger type buoy for recovering sunken objects. The buoy, being neutrally buoyant, is taken down to the working depth by a diver. A lifting pad is attached to the sunken object. The buoy is then separated from the connector-plug, allowing the buoy to ascend to the surface while paying out a messenger line.



3,428,978
SHARK SCREEN

Clarence Scott Johnson, Oxnard, Calif.
(574A Canal Road, Sarasota, Fla. 33581)
Filed Aug. 29, 1967, Ser. No. 664,218
U.S. Cl. 9—11 **3 Claims**
Int. Cl. B63c *9/16*



Screen for protecting a shipwrecked person, downed flyer, or the like, from attack by marine life, such as sharks, characterized by an imperforate bag formed of thermoplastic material having a plurality of stacked inflatable buoyant toroidal compartments at its upper end which provide a safety factor against puncture and obscure the person's head from vision in the plane of the upper edge of the top compartment.

3,428,979
SURFACE FOR WATER VEHICLES

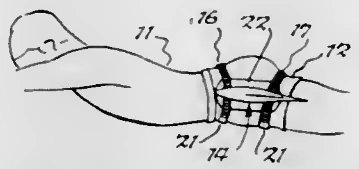
Paul C. Johnson, Spirit Lake, Iowa, assignor to Berkley & Company, Inc., Spirit Lake, Iowa, a corporation of Iowa
Filed Dec. 27, 1966, Ser. No. 604,754
U.S. Cl. 9—310 **6 Claims**
Int. Cl. A63c *15/00*

An improved water contacting surface for use in connection with articles designed for movement over water, the surface being provided with a pattern of parallelly disposed grooves for providing optimum lift/drag ratios. The formula defining the configuration is substantially $Y=a \sin bx$ wherein Y is the distance across the water contacting surface, and wherein a and b are optimized constants. Preferably, the preferred equation is as follows:

$$Y=.08 \sin (10.05x)$$

3,428,980
SWIMMING EQUIPMENT

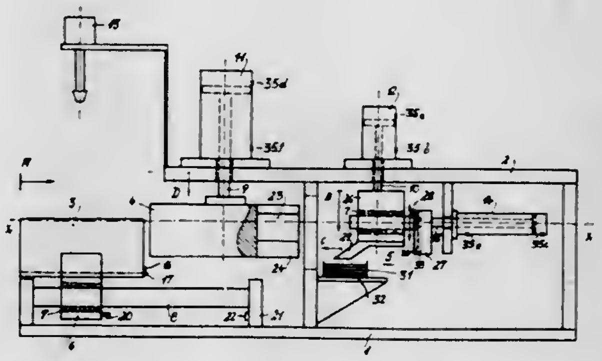
Jefferson F. Newton, 1640 Dodge Road,
East Amherst, N.Y. 14051
Filed Dec. 30, 1966, Ser. No. 606,246
U.S. Cl. 9—329 **12 Claims**
Int. Cl. B63c *9/08;* **A63b** *31/00*



It is disclosed that the efficiency of a swimmer, particularly when he is using the so-called "porpoise kick," may be increased by the use, either as an attachment or as part of a garment or other body-encasing equipment, of a pair of stabilizing fins extending laterally from the body. The fins are located symmetrically at approximately the position of the swimmer's hips and, while the main portion of each fin is substantially rigid, the trailing edges are flexible.

3,428,981
METHOD AND APPARATUS FOR MANUFACTURING SHOES

Richard Hoffmann, 72 Schillerstrasse, Hechingen, Germany
Filed Apr. 27, 1966, Ser. No. 545,675
Claims priority, application Germany, May 7, 1965,
B 81,820
U.S. Cl. 12—1 **9 Claims**
Int. Cl. A43d *25/00*

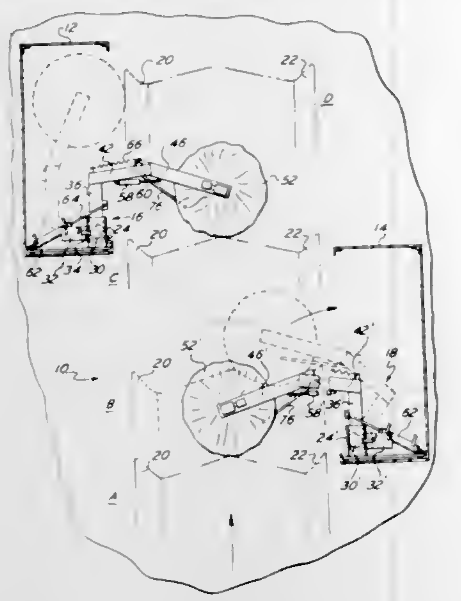


Apparatus for automatically manufacturing a multilayer shoe part, such as a front part of a shoe comprising an upper leather shaft portion with a toe cap mounted thereon and lining leather pasted thereon.

3,428,982
VEHICLE WASHER

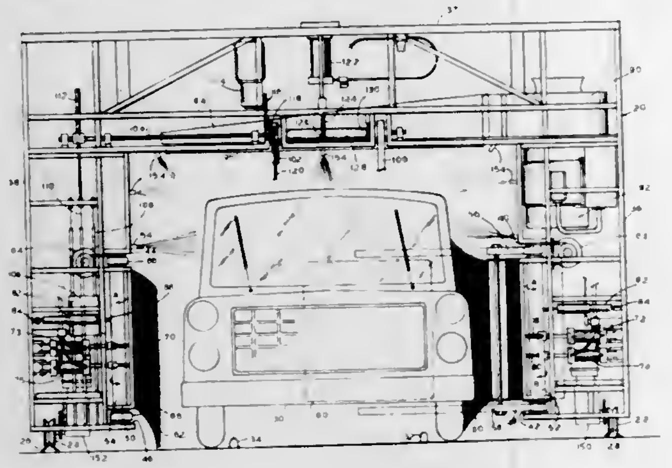
Carl C. Beer, Philadelphia, Pa., assignor to Sherman Car Wash Equipment Company, Palmyra, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 544,233, Apr. 21, 1966. This application Dec. 14, 1966, Ser. No. 601,744
U.S. Cl. 15—21 **10 Claims**
Int. Cl. A46b *15/00*

The problem of brushes forming a part of brush units on a vehicle washer getting hooked on forwardly projecting portions of vehicles passing through the washer is solved by providing a sensing arm on the brush units which causes the brush units when activated to move away from the vehicle.



3,428,983
VEHICLE WASHER

Raymond Seakan, 801 Wager St., Utica, N.Y. 13502
Filed July 3, 1967, Ser. No. 650,876
U.S. Cl. 15—21 **9 Claims**
Int. Cl. B60s *3/06*

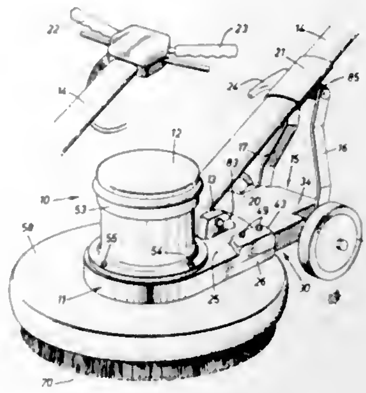


Vehicle washing apparatus for washing a parked vehicle comprising a frame having spaced columns movable under power along rails in opposite directions lengthwise of the vehicle, rotary flexible bristle brushes mounted on arms pivoted in staggered relation on the columns and adapted to swing toward the vehicle and through an angle of approximately 180 degrees and between positions extending forwardly of the frame, and rearwardly of the frame, under air pressure, the brushes being pushed forwardly of the frame on forward movement, and rearwardly on reverse movement, the brush arms completing movement through an angle of 180 degrees upon reaching an end of the vehicle, and moving inwardly and outwardly over a half of the vehicle end completing movement through the angle of 180°.

3,428,984
ADJUSTMENT MECHANISM FOR INDUSTRIAL MAINTENANCE MACHINES

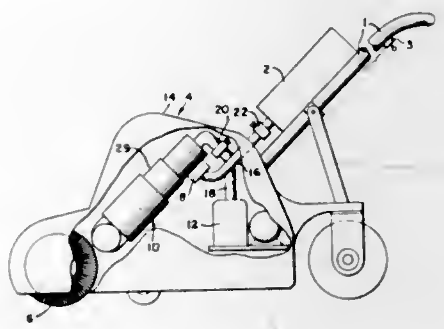
Sydney Wellington Collier, 886 The Queensway,
Toronto 18, Ontario, Canada
Filed Oct. 24, 1966, Ser. No. 588,928
U.S. Cl. 15—49 **5 Claims**
Int. Cl. A47l *11/282, 13/42;* **A46b** *13/02*

A carrier having a wheel carriage and a body portion. Mounted to the body portion is a circular brush and a motor adapted to rotate the brush. To permit adjustment of the center of gravity of the carrier, a pair of grooves is formed in the body portion and is adapted to slidably receive a pair of flanges which forms a part of the wheeled carriage. Screws pass through apertures in the body portion to engage the flanges and secure the body portion to the wheeled carriage where desired. A cover is positioned over the circular brush and has a number of keyholes through which screws pass to removably secure the cover to the body portion.



3,428,985
FOAM GENERATOR FOR RUG CLEANING MACHINE

Reed Lake Boyd, Cleveland, Ohio, assignor to The Certified Chemical & Equipment Company, Cleveland, Ohio
Filed Feb. 28, 1967, Ser. No. 619,258
U.S. Cl. 15—50 **20 Claims**
Int. Cl. A47l *11/282, 11/34, 11/40*

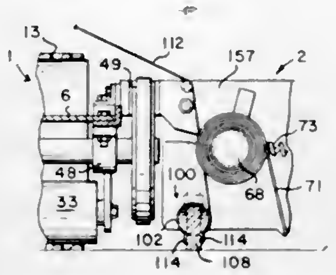


The disclosure relates to a detergent foam generator for use in combination with a pile brush having a horizontal brushing action for brushing the foam into the pile of the rug. The foam generator is positioned remote from the liquid detergent carrying tank and foaming of the detergent takes place only in the foam generator by the physical reaction of the liquid detergent entering around the periphery of the foaming chamber with air under pressure which enters the foaming chamber within the path of the detergent.

3,428,986
CROSSLANE BUFFING MACHINE

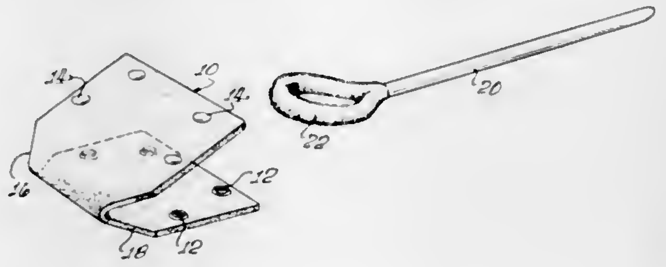
Curtis C. Rudolph, Poulsbo, Wash., assignor of one-half to James C. Burk, Poulsbo, Wash.
Continuation-in-part of application Ser. No. 429,417, Feb. 1, 1965. This application June 3, 1966, Ser. No. 555,022
U.S. Cl. 15—99 **6 Claims**
Int. Cl. A47l *11/03, 11/10, 13/28*

A crosslane buffer is provided with a traction driven, endless buffing belt which moves transversely across the surface of a bowling lane as the buffer is moved forwardly or rearwardly along the lane and is provided with a wick-type lane dressing applicating sub-assembly mounted ahead of the endless buffing belt.



3,428,987
COMBINED BRUSH AND SCOURING MAT

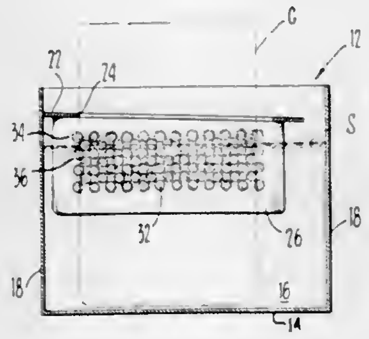
Zallo Loston, 113 S. Arnaz Drive,
Beverly Hills, Calif. 90211
Filed June 5, 1967, Ser. No. 643,423
U.S. Cl. 15—114 **1 Claim**
Int. Cl. A47l *13/12*



A cleaning implement comprising a generally rectangular piece of material having a relatively rough surface which is adapted to removing dirt and stains from ceramics or other materials having smooth surfaces. The material is used by placing it over a conventional scrubbing brush or any other frame having a long or short handle folding it to form a cover enclosing the brush, rubber, mop-type or other framework. The edges are then fastened by snaps or other joining means to retain the material in position while a surface is being cleaned. The material has randomly oriented fibres which produce a rough surface. It is supported by a conventional brush or other framework and the snaps are fastened. Cleaning of a smooth surface can then take place.

3,428,988
CREDIT CARD CLEANING APPARATUS

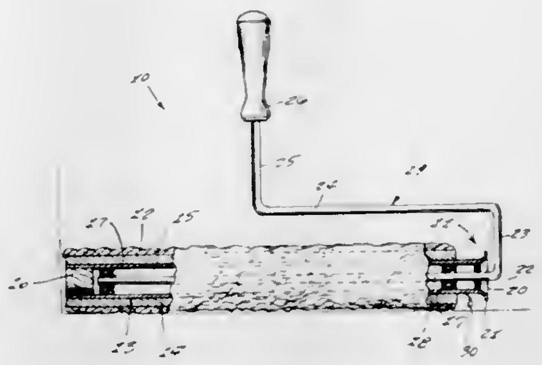
John A. Blackburn, 3601 El Camino Real at Matadero,
Palo Alto, Calif. 94306
Filed Aug. 11, 1967, Ser. No. 660,009
U.S. Cl. 15—160 **1 Claim**
Int. Cl. A46b *9/12;* **A45d** *24/44;* **B08b** *1/00*



A container for cleaning solution that has plural brush bristles between which a card is passed during insertion into and removal from the cleaning solution.

3,428,989
OPEN END PAINT ROLLER

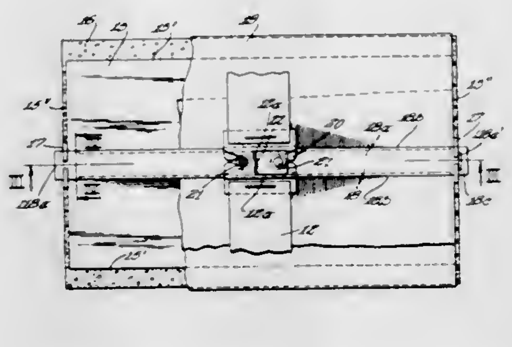
Stanley W. Baginski, 189 E. 18th St.,
Brooklyn, N.Y. 11226
Filed Aug. 21, 1967, Ser. No. 661,942
U.S. Cl. 15—230.11 **1 Claim**
Int. Cl. B05c *1/08*



A paint roller having an extended end to allow immersion of the full roller into paint without getting paint into the bearings.

3,428,990
WINDOW CLEANING APPARATUS

Clarence H. Caldwell, 828 Gunderson Ave.,
Oak Park, Ill. 60304
Filed July 5, 1966, Ser. No. 562,544
U.S. Cl. 15—232 **7 Claims**
Int. Cl. A47l *1/08*

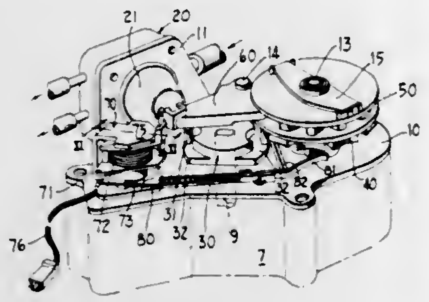


A window cleaning apparatus comprising a sponge mounted on a back plate and a belt having a pair of ends detachably connected to a link which is mounted on a longitudinal cross member that is detachably secured to the back plate. The link is formed by a pair of interconnected posts each having a portion which is of a reduced diameter to be received in notches or cutouts formed in each of the ends of the belt to form a detachable connection. The longitudinal cross member may be spaceable from the back plate to provide space to releasably affix a paper towel.

3,428,991
DRIVE MECHANISM FOR ACTUATING A WINDSCREEN WASHER PUMP FROM A WINDSCREEN WIPER MOTOR

Peter John Carpenter, Dandenong, Victoria, and John Howard Brett, Mt. Eliza, Victoria, Australia, assignors to Trico Products Corporation, Buffalo, N.Y., a corporation of New York
Filed Mar. 2, 1967, Ser. No. 620,063
Claims priority, application Australia, Mar. 4, 1966, 2,466/66
U.S. Cl. 15—250.02 **9 Claims**
Int. Cl. B60s *1/46;* **B05b** *1/10*

A pump and pump drive assembly actuated by the output of a rotary windshield wiper motor for producing a predetermined number of intermittent pump strokes after which the motor output is disengaged from the drive. A Geneva wheel is utilized to count the strokes and to drive a cam wheel and cam wheel follower which in turn actuates the pump. A solenoid energized at will positions a cam actuated lever to initiate pump operation by moving the Geneva wheel into engagement with the motor output.



3,428,992

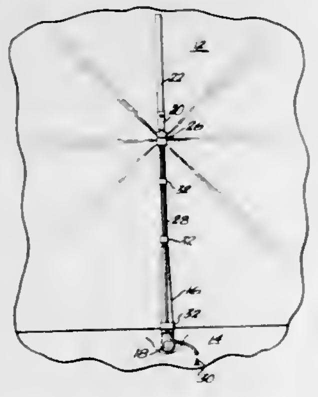
ADAPTER FOR WINDSHIELD WIPER

Rocco F. Di Giorgio, Miami, Fla., assignor to Progressive Research Corporation, Miami, Fla.

Filed Mar. 8, 1967, Ser. No. 621,543

U.S. Cl. 15—250.04 **7 Claims**

Int. Cl. A47l *1/02;* **B60s** *1/02*



A head and tube to connect along the arm of a windshield wiper blade assembly to carry water from the conventional vehicle spray head to a distribution point at about the blade connection, the head having a network of passageways to distribute the water in a generally symmetrical pattern over the area wiped by the wiper blade.

3,428,993

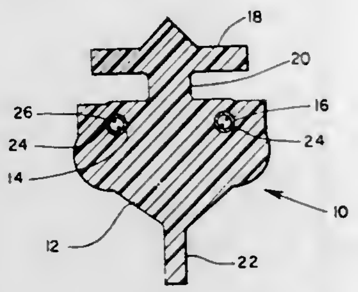
ELECTRICALLY HEATED WINDSHIELD WIPER ASSEMBLY

Edward Rickett, Littleton, Colo., assignor to The Defroster Company, Inc., Littleton, Colo., a corporation of Colorado

Filed Dec. 27, 1966, Ser. No. 604,926

U.S. Cl. 15—250.06 **10 Claims**

Int. Cl. B60s *1/32;* **A47l** *1/02*



A windshield wiper has small diameter electric heating wires embedded in the rubber blade providing a heated blade for reducing of accumulated ice, etc. The plurality of small diameter wires are encased in heat-resistant flexible coatings, maintaining the natural flexibility of the rubber blade. The heating elements, connections to lead wires, the lead wires, etc. are all encased so as to form a weather-resistant and mois.ure-proof housing.

3,428,994

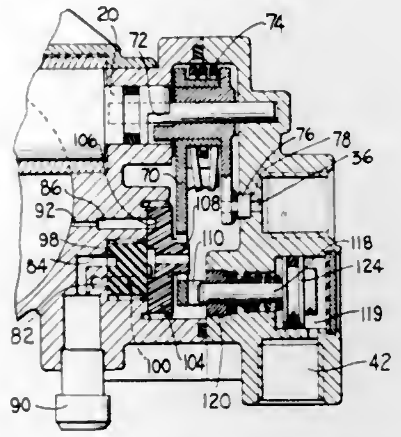
INTERMITTENT DWELL WINDSHIELD WIPER

Martin Bitzer, Kenmore, and Vitmar von Langendorff, Tonawanda, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.

Filed Nov. 30, 1967, Ser. No. 686,951

U.S. Cl. 15—250.12 **7 Claims**

Int. Cl. B60s *1/10;* **A47l** *1/02;* **F01b** *25/02*



A reciprocating air pressure motor includes a pressurized control housing having a pressure differential operated shuttle valve for directing fluid pressure alternately to opposite sides of the piston to move it back and forth; a mechanically operated pilot valve for directing fluid pressure alternately to opposite sides of the shuttle valve; a kicker asembly includes a kicker arm movable with the motor shaft and a valve arm operable to move the pilot valve back and forth, a pressure actuated stop to restrain movement of the kicker arm, a sensing valve on the valve arm for porting fluid to the stop to delay reversal of the pilot valve at a predetermined position of the shaft, thereby initiating a timed dwell period at the end of each cycle of operation; a manual control is provided having (1) an off position for interrupting communication between a pressure source and the control housing, (2) a continuous run position for porting fluid pressure from a source to the pressurized control housing while interrupting application of fluid pressure to the stop and (3) an intermittent dwell position for directing fluid pressure to the pressurized chamber and also through the valve port controlled by the valve arm to the pressure actuated stop in a windshield wiper driven by the output shaft of the motor.

3,428,995

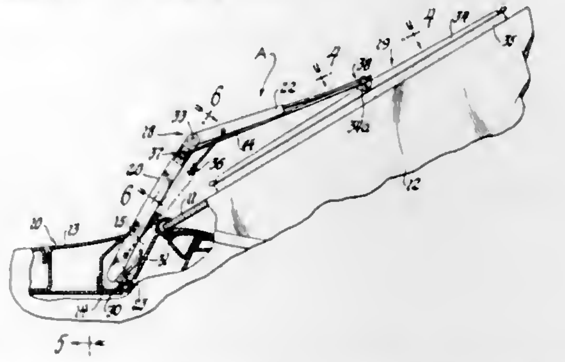
WIPER BLADE CONTROL LINK

Samuel C. Pollock, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich, a corporation of Delaware

Filed Nov. 8, 1967, Ser. No. 681,403

U.S. Cl. 15—250.23 **4 Claims**

Int. Cl. A47l *1/02;* **B60s** *1/02*



This disclosure relates to a praying mantis type windshield wiping mechanism having a wiper blade carried by a wiper arm structure which is pivoted about its longitudinal axis during its oscillatory movement to keep the wiper blade substantially perpendicular to the plane of the windshield. The wiper mechanism also includes an articulating means for moving the wiper blade relative to the wiper arm structure when the latter approaches the end of its outboard movement to increase the area wiped by the wiper blade.

3,428,996

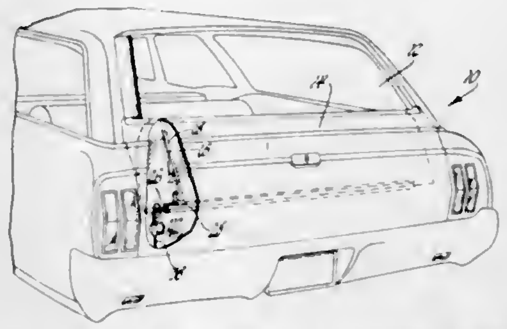
REAR WINDOW WIPER

Keith H. Carpenter, Kettering, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 606,911

U.S. Cl. 15—250.24 **5 Claims**

Int. Cl. B60s *1/06, 1/18*



The present invention relates to a straight line reciprocating wiper which is carried on a movable window of a vehicle and moves with the window as it is extended and retracted. One feature of the windshield wiper system disclosed herein is the generation of a straight line movement of the wiper across the window to be wiped which results in a very high percentage of the glass being cleaned in contradistinction to typical windshield wipers that move in an arc.

3,428,997

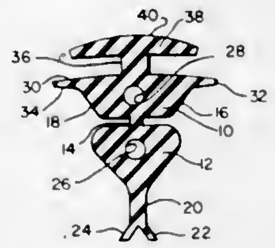
RESILIENT WINDSHIELD WIPER BLADE

Edward Rickett, Littleton, Colo., assignor to Daco, Inc., Littleton, Colo., a corporation of Colorado

Filed Aug. 28, 1967, Ser. No. 663,795

U.S. Cl. 15—250.36 **6 Claims**

Int. Cl. B60s *1/32, 1/28;* **A47l** *1/02*



A flexible, resilient windshield wiper blade having two major body portions connected by a narrow flange, with each body portion having at least one passage extending through the length thereof and, also, one body terminates a bifurcated edge to provide a squeegie action for a clean wipe by the blade along its length, particularly for curved windshields. Opposite the bifurcated edge, the blade is provided with a lateral holding flange extending the length of the blade for holding the blade support members to the windshield wiper assembly.

3,428,998

SWIVEL BEARING STRUCTURE

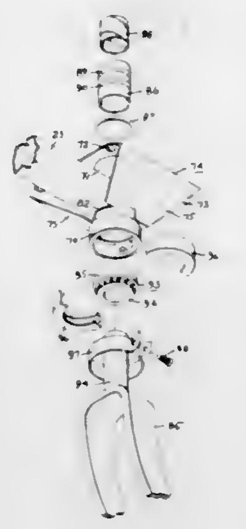
Aaron S. Craven, Jr., 505 Independence Ave., Philadelphia, Pa. 19126

Original application Feb. 4, 1965, Ser. No. 430,387. Divided and this application Aug. 12, 1966, Ser. No. 572,063

U.S. Cl. 16—21 **5 Claims**

Int. Cl. B60b *33/00;* **F16d** *63/00;* **F16c** *19/50*

1. A caster swivel bearing comprising in combination, a bearing housing and a wheel fork having a cylindrical shaft fixed thereto and extending vertically axially rotatably through an upper sleeve bearing and a lower combination radial and thrust bearing disposed within the bearing housing, said upper sleeve bearing being suspended within said bearing housing by resilient elastomer means extending between said sleeve bearing and said bearing housing, whereby said sleeve bearing is resiliently radially shiftable within said bearing housing in response to forces exerted radially through said fork shaft due to horizontal force components exerted on the fork by the carried wheel to thereby act as a shock absorber.



3,428,999

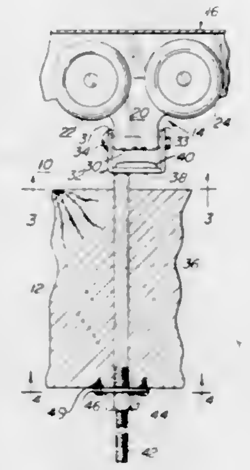
SLIDING DOOR HARDWARE

Keith W. Benson, Jr., Sterling, Ill., assignor to National Manufacturing Co., Sterling, Ill., a corporation of Illinois

Filed Jan. 5, 1967, Ser. No. 607,475

U.S. Cl. 16—103 **9 Claims**

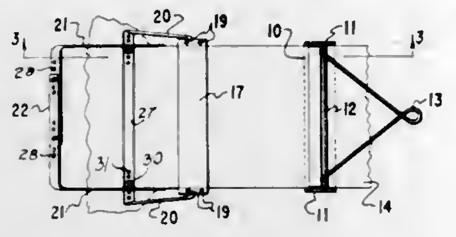
Int. Cl. E05d *13/02*



Sliding door hardware includes a track mounted above the door and a track follower mounted upon the track for movement therewith and adapted for supporting a hanger, which includes a clevis having a slot in its bottom. The slot has a portion that is orthogonal to the door. A bolt is mounted in the clevis with its head supported by the top of the clevis and its shank extending through the slot and through a hole in a cross-piece of the sliding door. To adjust the vertical position of the door, a nut is threaded upon the end of the bolt and supports the door from the bottom of the cross-piece. The bolt is moved laterally within the slot to adjust the lateral position of the door.

3,429,000
FISH SKINNING DEVICE

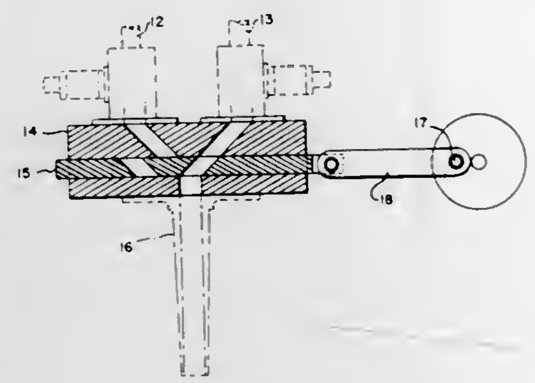
Vincent A. Graham, Salem, S. Dak. 57058
Filed Nov. 13, 1967, Ser. No. 682,013
U.S. Cl. 17—7 **6 Claims**
Int. Cl. A22c *25/17;* **A47j** *17/14*



A fish skin remover comprising a holder adapted to grasp the skin of the fish and a cutter having blades to cut a strip of skin of uniform width while a separating knife separates the strip of skin from the flesh of the fish.

3,429,001
SAUSAGE MAKING APPARATUS

William E. Swartz, McKeesport, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania
Filed Sept. 12, 1966, Ser. No. 578,553
U.S. Cl. 17—35 **3 Claims**
Int. Cl. A21c *11/00, 11/16*

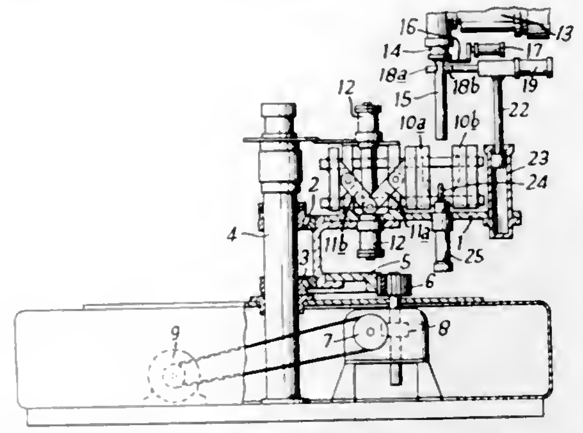


An apparatus is provided for making sausage of alternate slugs of meat having two sausage container means for delivering sausage from said containers, a stuffing horn receiving a casing to be filled, valve means between the containers and horn having a plurality of inlets, one operatively connected to each container and an outlet, means between the inlet and outlet for alternately connecting each inlet with the outlet in timed sequence to feed alternate slugs of sausage to the casing.

3,429,002
MACHINES FOR THE BLOWING OF HOLLOW ARTICLES OF THERMOPLASTIC MATERIAL

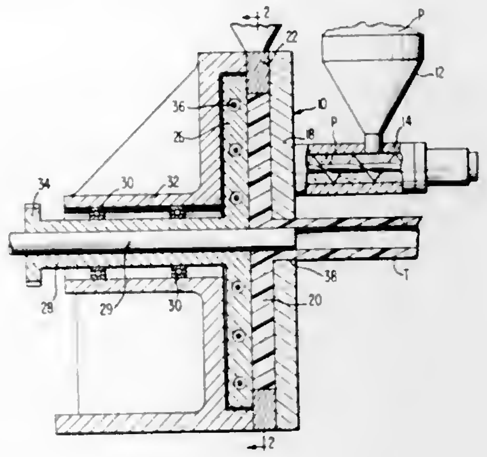
Ronald George Saffron, 291 Watling St., Dartford, Kent, England
Filed Mar. 17, 1966, Ser. No. 535,250
U.S. Cl. 18—5 **2 Claims**
Int. Cl. B29c *5/06*

There is disclosed a machine, for the blowing of hollow articles of thermoplastic material, comprising means for producing a tubular extrusion of the material in a heated and softened state, means mounted adjacent said extrusion means for severing successive lengths of said extrusion, a die carrier having a plurality of split blowing dies mounted thereon, said die carrier being movable at a constant speed in relation to the extrusion means for bringing the plurality of dies serially into and beyond an extrusion receiving position aligned with an outlet of the extrusion means, extrusion transfer means positioned adjacent to the extrusion means for engagement with each said severed length of extrusion, said transfer means being movable in a parallel path and at the same speed as the dies and serving to deliver said severed length of extrusion into an opened die, and means for blowing the length of extrusion in said die when said die is closed.



3,429,003
APPARATUS FOR EXTRUDING PRODUCTS REINFORCED BY ELONGATED CONTINUOUS FIBERS

James E. Heider, Toledo, and Thomas R. Santelli, Sylvania, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 560,355, May 13, 1966, which is a continuation of application Ser. No. 422,191, Jan. 4, 1965. This application May 22, 1967, Ser. No. 649,773
U.S. Cl. 18—12 **6 Claims**
Int. Cl. B29d *23/04;* **B29b** *5/04*

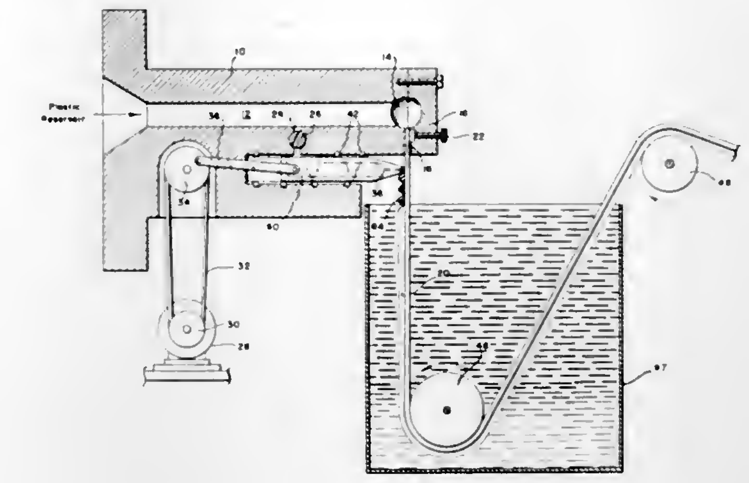


In a centripetal extruder having a melt chamber and a rotating member for generating centripetal forces in the melt chamber for extrusion, the step of introducing elongated reinforcing members in the melt chamber to be spirally swept with the substance to be extruded and ultimately positioned in a spiral arrangement through the extruded product. The reinforcing members may be introduced into the melt chamber via the same inlet passage employed for feeding the substance to be extruded. Additionally or alternatively, the reinforcing members may be introduced into the melt chamber by one or more additional inlet passages suitably positioned either laterally or peripherally with respect to the melt chamber.

3,429,004
APPARATUS FOR EXTRUDING PLASTIC RUGS

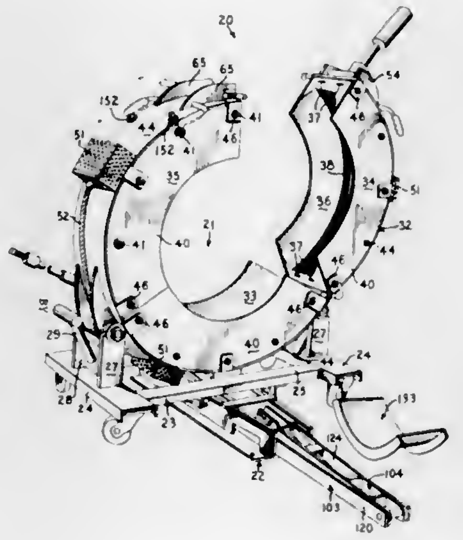
George S. Nalle, Jr., 108 W. 2nd St., Austin, Tex. 78701
Original application Feb. 25, 1964, Ser. No. 347,316, now Patent No. 3,382,122, dated May 7, 1968. Divided and this application Mar. 27, 1968, Ser. No. 716,481
U.S. Cl. 18—13 **16 Claims**
Int. Cl. B29f *3/00*

An apparatus for extruding plastic rugs simultaneously extrudes a base sheet of plastic material and extrudes a series of filaments which are intermittently contacted with the sheet to create a pile effect on the sheet. The filaments can be intermittently contacted with the sheet by various techniques such as by reciprocating motion or by rotating motion.



3,429,005
SECTIONAL TIRE MOLD

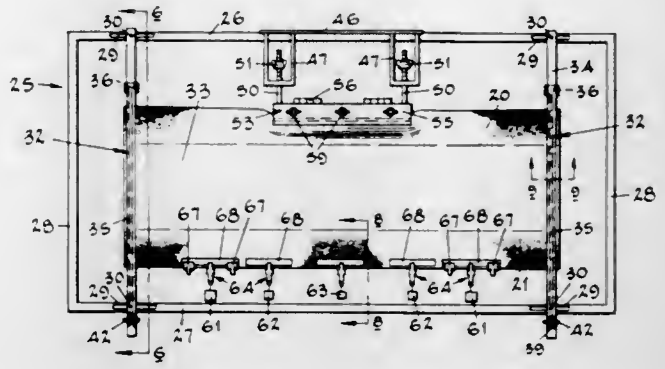
Donald M. MacMillan, Box 557, Macon, Ga. 31207; Kenneth T. MacMillan, executor of said Donald M. MacMillan, deceased
Filed Apr. 11, 1963, Ser. No. 272,376
U.S. Cl. 18—18 **10 Claims**
Int. Cl. B29h *5/02*



1. A tire mold having a plurality of matrix sections pivotally connected to form a substantially annular matrix of a predetermined circumference in a closed position thereof, at least one of said matrix sections being defined by a cavity-defining matrix body and an exterior matrix band secured thereto, said at least one matrix body and an adjacent matrix section each having end faces normally in adjacent contiguous opposed relationship in said closed position, and means for varying said predetermined circumference to adapt said mold for receiving different sized uncured tires, said circumference varying means being defined by means for relatively shifting at least said one matrix body relative to the matrix band thereof to space said adjacent end faces beyond said normal closed position thereby forming a space adapted to receive a shim for increasing said predetermined circumference in said closed position.

3,429,006
APPARATUS FOR SHAPING A THERMOPLASTIC SHEET FOR USE IN A CURVED LAMINATED GLASS UNIT

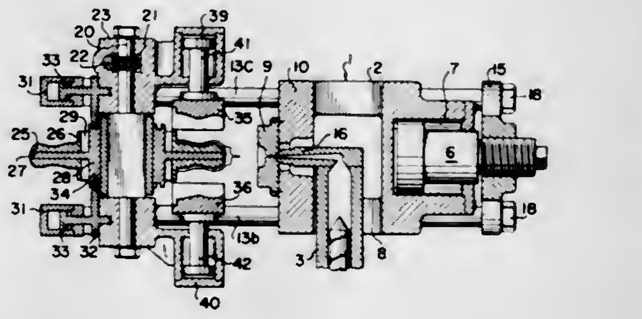
Paul T. Mattimoe and Harry E. Conner, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Original application May 20, 1963, Ser. No. 281,466, now Patent No. 3,293,343, dated Dec. 20, 1966. Divided and this application Nov. 2, 1966, Ser. No. 610,708
U.S. Cl. 18—19 **5 Claims**
Int. Cl. B29c *17/02*



Apparatus for shaping a generally rectangular thermoplastic sheet for use in a curved laminated glass unit. The apparatus includes a frame wherein the sheet, which initially has a pair of spaced rectilinear colored bands extending along and parallel to the longitudinal edges thereof, is positioned by supporting the transverse edges thereof, means for applying a tractive force to one longitudinal edge to cause the sheet to be deflected in the direction of the tractive forces intermediate the transverse edges and means engaging the other of the longitudinal edges to arrest deflection of and support such edge after it has been displaced a predetermined distance.

3,429,007
INJECTION MOLDING APPARATUS FOR MAKING SHOES

Katashi Aoki, 6037 Oaza Nanjyo, Sakaki-machi, Hanishina-gun, Nagano-ken, Japan
Filed Mar. 30, 1966, Ser. No. 543,505
Claims priority, application Japan, Apr. 1, 1965, 40/18,809
U.S. Cl. 18—30 **6 Claims**
Int. Cl. B29f *1/03;* **B29h** *5/12*

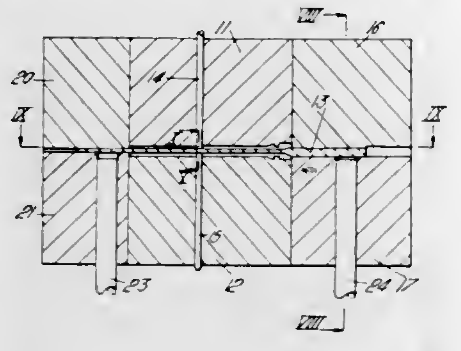


Apparatus for injection molding of shoes featuring female mold assembly with stationary section and adjustable side sections, rotating male mold assembly adjustable with respect to female mold permitting injection of molten material into resulting shoe cavity while ejecting molded shoes from and mounting shoemaking parts on male mold assembly.

3,429,008

MOLD FOR TUBE USED IN A LOOM FOR WEAVING CARPETS, ESPECIALLY AXMINSTER CARPETS

Hans Bud, London, England, assignor to English Numbering Machines Limited, Middlesex, England, a British company
Original application Feb. 26, 1965, Ser. No. 435,615. Divided and this application July 18, 1966, Ser. No. 610,710
Claims priority, application Great Britain, Mar. 3, 1964, 8,842/64
U.S. Cl. 18—42 **1 Claim**
Int. Cl. B28b *7/18, 7/10*

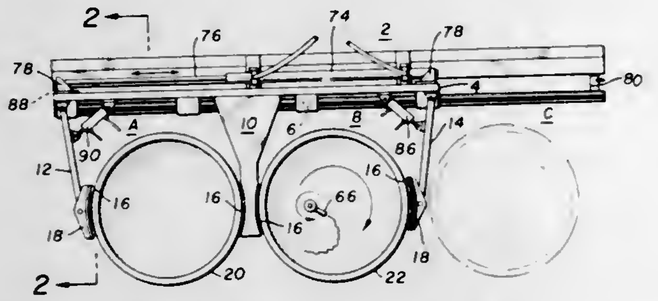


The invention discloses a mold for molding a flat-walled plastic tube for use in a loom for weaving Axminster carpets. The mold comprises two mold inserts having recesses forming a mold cavity complementary in shape to the shape of the plastic tube, a blade the ends of which are held by two pairs of additional mold inserts adjacent opposite ends of the first mentioned mold inserts extends through the mold cavity as a core and is releasably held by spring means. At least one pair of projections extend into the mold cavity on opposite sides of the mold cavity and bearing against opposite sides of the blade to center the blade during molding. Ejector pins are provided which exclusively act on the ends of the blade and release the blade from the spring means on ejection.

3,429,009

TOW CAN APPARATUS

Homer W. Goodner, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,579
U.S. Cl. 19—159 **4 Claims**
Int. Cl. D04h *9/02, 9/18*



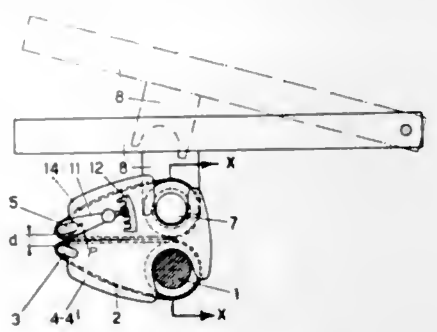
A can handling apparatus having a traversable carriage controlled to clamp and reversibly shift cans onto and off a driven turntable in timed relation.

3,429,010

DRAWING DEVICE FOR TEXTILE FIBER PREPARATION

Goffredo Fusaroli, Via Lancetti 29, Milan, Italy
Filed Aug. 13, 1965, Ser. No. 479,504
Claims priority, application Italy, Aug. 19, 1964, 18,001/64
U.S. Cl. 19—255 **4 Claims**
Int. Cl. D01h *5/86*

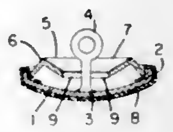
A drawing device in which the material passes between a pair of aprons, each of which is maintained taut between a rotatable roller and a tensor. At least one of the tensors is rotatable about an axis which does not cross the front edge thereof and is rigidly connected to a member rotatable about a point which may be coincident or not coincident with such axis. In addition, means are provided for locking such member and as a consequence the tensors in any one of a plurality of positions singularly spaced apart about the respective pivot axis.



3,429,011

CLOTH-COVERED BUTTON HAVING AN ATTACHMENT EYE

Carl A. G. Ihreborn, Skillingaryd, Sweden, and Conny I. R. Hedenberg, Furuvagen 24, Bankeryd, Sweden
Filed Nov. 26, 1965, Ser. No. 510,007
Claims priority, application Sweden, Nov. 26, 1964, 14,276/64
U.S. Cl. 24—113 **2 Claims**
Int. Cl. A44b *1/12;* **B68f** *7/00*

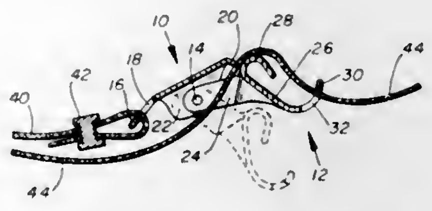


A covered button particularly utilizable for furniture and provided with an attachment loop in which a body portion having a concavo-convex surface is provided with a flange or rim portion extending perpendicularly therefrom and over which flange or rim the covering material is positioned and folded inwardly with such covering material being held in proper position within the body portion by a tension plate forced into the body portion. The attachment loop extends substantially perpendicularly from the concave surface of the body portion and passes through an aperture provided in the tension plate. The tension plate is shaped to provide an outwardly tapering surface and an inwardly tapering surface, with the outwardly tapering surface coacting with the rim or flange portion to maintain the material between the edge of the tension plate and the flange.

3,429,012

STRAP BUCKLE

Warner M. Smith, P.O. Box 687, Bristow, Okla. 74010
Filed Nov. 14, 1966, Ser. No. 594,003
U.S. Cl. 24—191 **1 Claim**
Int. Cl. A44b *11/06*

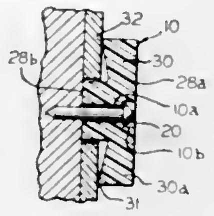


A strap retaining buckle utilizes first and second pivotal members with the strap inserted in such a manner that strapping pressure tends to normally pivot the second member into further clamping retention pressure against the strap.

3,429,013

WING HEADED FASTENER AND METHOD FOR APPLYING

Richard W. Pabich and Richard W. Treiber, Chicago, Ill., assignors to Acme Lane Company, Chicago, Ill.
Continuation-in-part of application Ser. No. 615,830, Feb. 13, 1967. This application Nov. 24, 1967, Ser. No. 689,939
U.S. Cl. 24—221 **16 Claims**
Int. Cl. B27f *7/00;* **F16b** *1/00;* **B25c** *1/04*

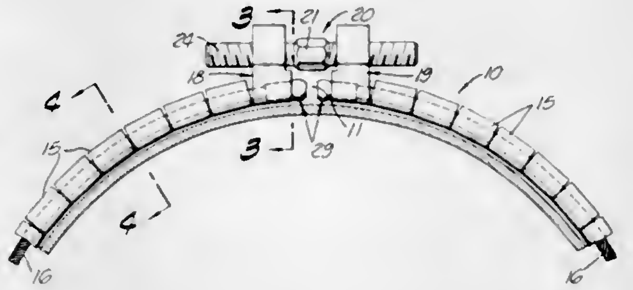


Uniquely formed wing headed fasteners that are adapted to be pivotally mounted to certain members with the nails from a tool for releasably holding a first member, such as a cabinet backing in a position relative to a second member such as a cabinet frame therebehind. The cabinet backing has a key slot formed therein and the wing headed fastener is pivotally mounted with respect thereto by a nail from the tool so that it can removably secure the cabinet backing when its wing portions contact the cabinet backing and release the cabinet backing when the fastener is rotated and the wing portions thereof are in alignment with the key slot and therefore no longer securing or contacting the cabinet backing. The fasteners in one embodiment of the invention are removably fastened to a flexible member such as a tape so that they can be positioned for rapid mounting.

3,429,014

CLAMP ASSEMBLY FOR CONFRONTING ANNULAR FLANGES

Francis J. Roche, Pomona, Calif., assignor to Castle Industries Inc. of California, Montclair, Calif., a corporation of California
Filed Dec. 4, 1967, Ser. No. 687,539
U.S. Cl. 24—279 **3 Claims**
Int. Cl. F16l *33/04*

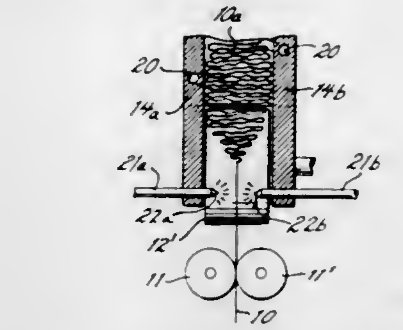


A clamping device for confronting annular flanges, which includes flexible flange encircling means composed of segments of link-like construction having end openings for receiving cables therethrough, the end opening in each case having an inner wall with a camming face for engaging one of the confronting flanges, this inner wall being bridged by a reinforcing end wall which holds the inner wall against deformation under camming forces thereon as the cables are tightened around the flanges by means of a double ended bolt having threaded engagement with head members connected to the opposite ends of the cables and positioned in adjacent relation, when the clamping device is applied to the flanges.

3,429,015

STRAND TREATMENT PROCESS AND APPARATUS

Charles A. McClure, R.D. 2, Malvern, Pa. 19355
Filed Sept. 18, 1967, Ser. No. 668,537
U.S. Cl. 28—1 **17 Claims**
Int. Cl. D04h *1/50;* **D06c** *7/00, 27/00*

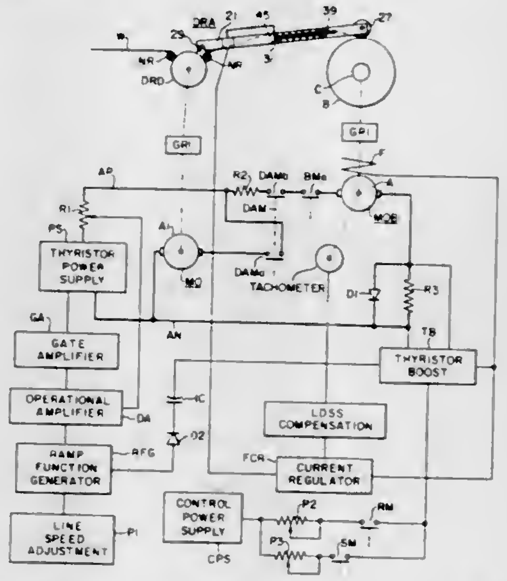


Textile strands are crimped by establishing a temperature gradient across the material and then compressing it in a laterally confining region.

3,429,016

WARP TENSION CONTROL MEANS

Francis T. Bailey, East Aurora, and Stanley E. Morgan, Williamsville, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 18, 1967, Ser. No. 610,048
U.S. Cl. 28—36 **5 Claims**
Int. Cl. D02h *13/14*



A method of setting the tension of warp W (FIG. 1) wound on a motor-driven beam B in the practice of which the tension is sensed in a linear section of individual threads T of the warp W adjacent the beam B and responsive to the tension sensed the motor MOB is adjusted to maintain the tension at the desired magnitude.

Also reeling apparatus for warp W (FIG. 1) including a motor-driven beam B, a warp delivery roller assembly DRA, a transducer means TB and TD for sensing the tension in the individual threads T of the warp W, and a field current regulator FCR for adjusting the speed of the motor so that the warp has a predetermined tension.

3,429,017

PROCESS FOR MAKING PIECE-DYEABLE FRIEZE CARPETS FROM HEAT-SET MULTICOMPONENT ACRYLIC FIBER YARN

Winfried T. Holfeld, Holiday Hills, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,901
U.S. Cl. 28—72 **7 Claims**
Int. Cl. D06c *1/08, 7/00*

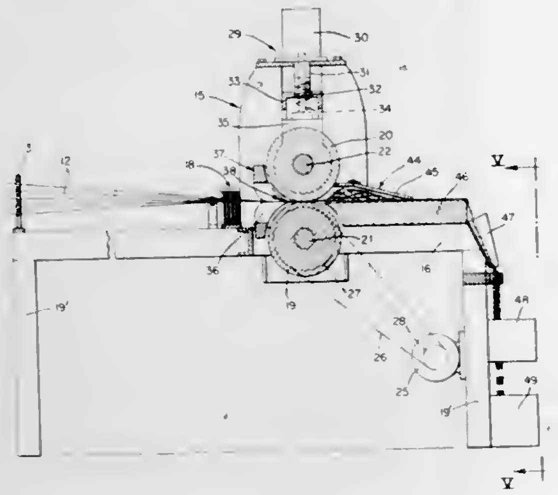
A process comprising bulking a skein of yarn of multicomponent acrylic fibers free from applied tension by subjecting the skein to elevated temperature and steam, drying the bulk yarn under relaxed conditions, heat-setting the yarn by subjecting it to steam above atmospheric pressure and then drying the heat-set yarn under relaxed conditions. This controlled process sequence provides yarns which are highly suited for making frieze carpets which can be piece dyed without loss of frieze twist in the yarns.

3,429,018
METHOD OF CONVERTING WASTE FILAMENTARY MATERIAL INTO STAPLE FIBER

Nathan Rosenstein, West Hartford, Conn., and Abraham J. Rosenstein, New Marlboro, Mass., assignors to Spunize Company of America, Inc., Unionville, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 566,451, Mar. 2, 1966, which is a division of application Ser. No. 57,070, Sept. 19, 1960, now Patent No. 3,164,882, dated Jan. 12, 1965. This application Mar. 9, 1967, Ser. No. 621,941

U.S. Cl. 28—72 **3 Claims**
Int. Cl. D02g *1/00*



A plurality of supply packages of waste synthetic filamentary material containing knots, excessive twist, excessive finish etc. are creeled and the ends of such packages are fed in the form of a web of spaced ends between counter-rotating rollers. The rollers are pressure loaded sufficiently to substantially destroy the knots and open the individual filaments. After passing the rollers the material is stuffer box crimped while still in web form and the crimps set. The resultant material is cut into staple lengths to produce a spinnable staple having three-dimensionally crimped fibers.

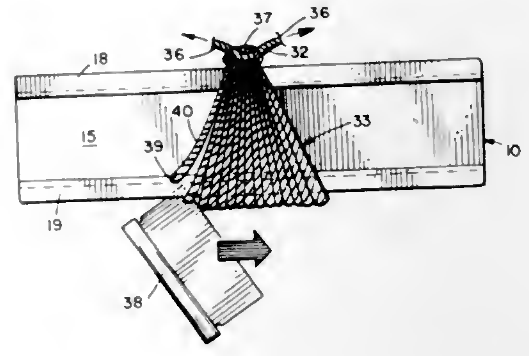
3,429,019
METHOD FOR MAKING POMPONS

Lorraine A. Linstead, Rockford, Ill., assignor to The Boye Needle Company, Chicago, Ill., a corporation of Illinois

Filed June 29, 1967, Ser. No. 649,906

U.S. Cl. 28—72 **4 Claims**
Int. Cl. D04d *7/06;* **A41h** *43/00*

An apparatus and method for making pompons. An elongated generally rectangular panel is provided with a groove along each of its longitudinal edges. A first length of yarn is inserted in one of the grooves, and a second length of yarn is wound transversely about the panel to provide a plurality of turns of yarns around the panel. The first length of yarn is then removed from the groove and tied about the turns, after which the turns are removed either by cutting the portions of the turns passing over the second groove or by sliding the turns longitudinally along the panel toward one of its ends. If the turns are cut, a round pompon may be formed, and if the turns are not cut a flattened pompon or rosette may be formed. The second groove facilitates the cutting step.

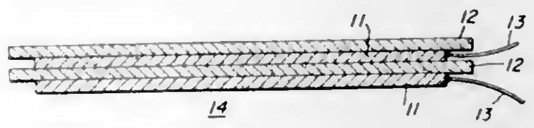


3,429,020
PROCESS FOR CONSTRUCTION OF HIGH TEMPERATURE CAPACITOR

Russell J. Diefendorf, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York

Original application Oct. 21, 1964, Ser. No. 405,421, now Patent No. 3,335,345, dated Aug. 8, 1967. Divided and this application May 23, 1967, Ser. No. 640,644

U.S. Cl. 29—25.42 **6 Claims**
Int. Cl. H01g *13/00*



Preparation of a capacitor operable at temperatures up to about 1000° C. is described. The specific method disclosed employs pyrolytic decomposition of different gaseous media in sequence to produce alternate layers of pyrolytic graphite and pyrolytic boron nitride.

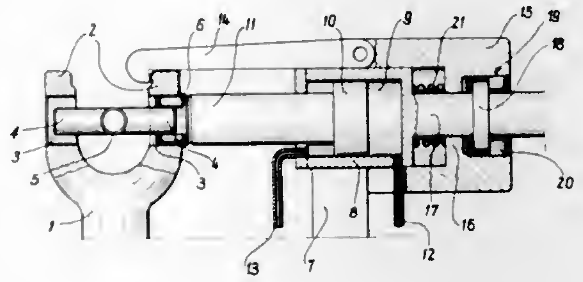
3,429,021
METHOD AND APPARATUS FOR ASSEMBLING UNIVERSAL JOINTS

Karl Spiess, Herzogenaurach, Germany, assignor to Industriewerke Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany

Filed Nov. 16, 1966, Ser. No. 594,920

Claims priority, application Germany, Dec. 10, 1965, J 29,651

U.S. Cl. 29—148.4 **4 Claims**
Int. Cl. B23p *19/02*



A method and apparatus for assembling universal joints formed by the connection of two shafts forked at their ends with a universal joint spider and having radially and axially loadable bearings arranged in bores in the shaft forks for accommodating the spider trunnions in which the reaction force resulting from the pressing-in of the

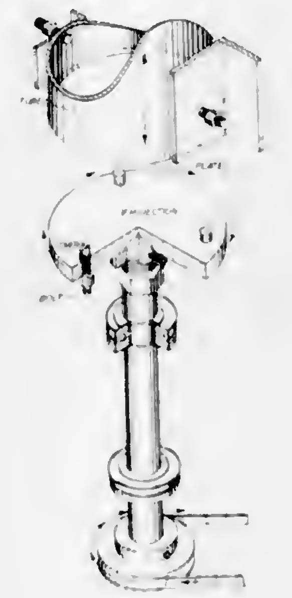
bearings into the fork arm bores is supported by holding clips on the fork arms.

3,429,022
SCRAP RECOVERY PROCESS

Earl A. Oster, Dearborn, Mich., assignor, by mesne assignments, to Environ, Inc., Wyandotte, Mich., a corporation of Delaware

Filed July 28, 1965, Ser. No. 475,532

U.S. Cl. 29—403 **15 Claims**
Int. Cl. B23a *3/00;* **B02c** *7/08*



This disclosure is concerned with a process for improving the marketability of certain types of scrap metal. This process contemplates the disassembly and cleaning of metallic discards by repeated impacts. These impacts are applied to such articles by supporting them upon a rotating horizontal plate which carries the impacting members. The scrap metal being treated is completely unconfined and is held against the impacting members only by its own inertia.

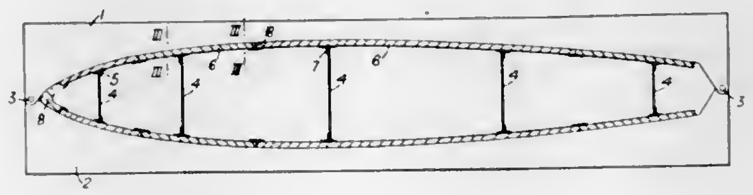
3,429,023
MANUFACTURE OF AERODYNAMIC STRUCTURES

Alan Avery Blythe, St. Albans, and Victor Gustav Lachmann, Chorley Wood, England, assignors to Handley Page Limited, London, England, a British company

Filed July 7, 1965, Ser. No. 470,180

Claims priority, application Great Britain, July 7, 1964, 27,998/64

U.S. Cl. 29—404 **4 Claims**
Int. Cl. B23q *17/00;* **B32b** *3/14;* **B64c** *3/26*



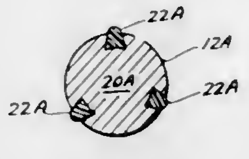
A smooth and wave free aerodynamic surface is produced by dividing sheet skin material into strips with matching contiguous edges and bonding these strips to the base structure while retaining the matching edge relationship but with the edges spaced to provide slits for boundary layer control. The base structure is first subjected to the loads and deflections it will experience in unaccelerated movement through the air and, while so subjected is measured and corrected as to contour.

3,429,024
METHOD FOR MANUFACTURING SOLDERING IRON TIPS

Mario Postorino, Newark, N.J., assignor to Gennaro Scamberti, Jr., Newark, N.J.

Filed June 20, 1966, Ser. No. 558,783

U.S. Cl. 29—417 **9 Claims**
Int. Cl. B23p *17/00, 19/02;* **B23k** *3/02*



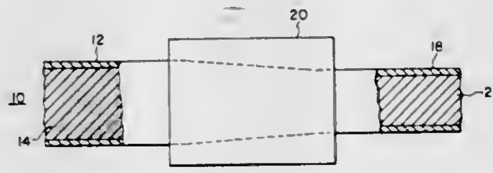
1. A method for manufacturing a removable soldering iron tip, comprising the steps of:
cutting a rod of a heat conducting material for providing a rod length corresponding to the length of the soldering iron tip;
grooving the rod length for providing a plurality of grooves around the circumference of the rod length and extending longitudinally therealong;
shaping the rod length for providing a working tip at one end thereof and for providing a soldering iron tip body;
providing inserts of a wear resistant material and corresponding to the grooves in the tip body; and
inserting the inserts into the grooves so that the inserts extend above the surface of the tip body for providing a finished soldering iron tip having a plurality of wear resistant surfaces for contacting the heating element of the soldering iron.

3,429,025
METHOD OF MAKING NON-METALLIC SWAGED FUEL ELEMENTS

William E. Baily, San Jose, Calif., and Roberto L. Colombo, Turin, Italy, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 17, 1964, Ser. No. 353,028

U.S. Cl. 29—420.5 **5 Claims**
Int. Cl. B21c *21/06;* **B22f** *3/24;* **B23p** *17/00*



Fuel elements are prepared by disposing a nuclear fuel material in a sheath, swaging the sheath to achieve a desired density and then heat treating the sheathed material.

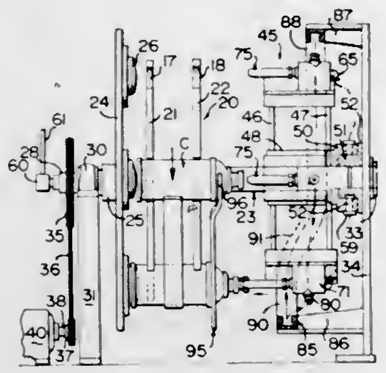
3,429,026
METHOD OF ASSEMBLING DISPENSING CONTAINERS

Alfred H. Chamberlin, Elmhurst, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed May 3, 1966, Ser. No. 547,240

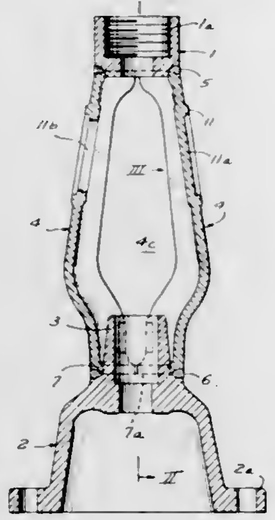
U.S. Cl. 29—421 **12 Claims**
Int. Cl. B23p *11/02, 19/04;* **B65d** *23/02*

This disclosure relates to a method and apparatus for assembling a flexible product-dispensing bag and a dispensing container body by positioning the bag within the body, thereafter inserting a conduit into the bag neck, and introducing air through the conduit into the bag to increase the axial length thereof whereby the neck of the bag passes through and interlocks with the opening of the dispensing container body.



3,429,027
VALVE AND METHOD FOR PRODUCING THE SAME

Walter Siepmann, Belecke (Mohne), Germany, assignor to Stahl-Armaturen Persta G.m.b.H., K.G., Belecke (Mohne), Germany
Filed Nov. 2, 1965, Ser. No. 513,143
Claims priority, application Germany, Nov. 9, 1964, ST 22,919
U.S. Cl. 29—463 **4 Claims**
Int. Cl. B23k *31/02;* **B23p** *15/00;* **F16k** *27/08*

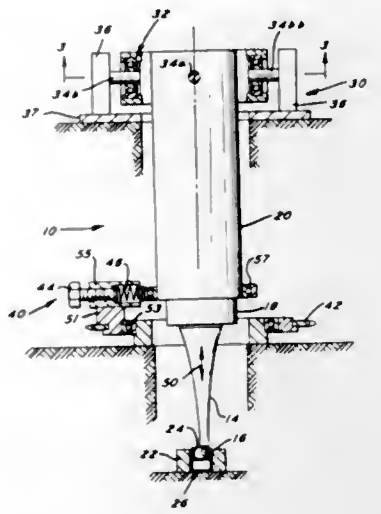


In a valve and in a method of producing the same, a bonnet including an open-ended packing box nipple. A pair of substantially trough-shaped arms have first end portions which are secured to the bonnet surrounding the nipple, and second end portions which are spaced from the nipple. The second end portions carry an annular head. A pair of mounting projections in form of outwardly extending eyes are integral with each of the first end portions so as to be located outwardly adjacent to the nipple. A packing gland comprises a packing gland portion which registers with the open end of the nipple. A fastening arrangement is mounted on the projections and is operative for urging the gland portion into the nipple.

3,429,028
VIBRATORY WELDING APPARATUS AND METHOD

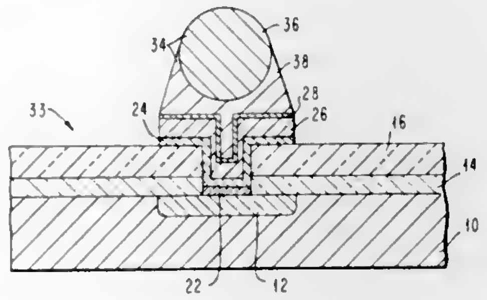
Nicholas Maropis and James Byron Jones, West Chester, Pa., assignors, by mesne assignments, to Sonobond Corporation, West Chester, Pa., a corporation of Pennsylvania
Filed June 28, 1965, Ser. No. 467,358
U.S. Cl. 29—470.1 **13 Claims**
Int. Cl. B23k *21/00, 1/06, 5/20*

Arcuate workpieces are ultrasonically welded by means of a welding tip supported so that its longitudinal axis may generate a cone having its apex at the support means while rotating the location of application of impelling force applied to said member to maintain the work pieces in intimate contact. If and when the welding tip is rotated about its longitudinal axis, the location of application of the impelling force is rotated in an opposite direction.



3,429,029
SEMICONDUCTOR DEVICE

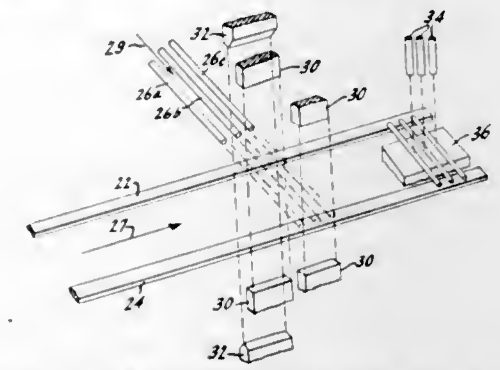
Jack L. Langdon, Poughkeepsie, and Raymond P. Pecoraro, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,322
U.S. Cl. 29—589 **11 Claims**
Int. Cl. H01l *7/16, 1/10;* **B23k** *31/02*



A method of forming an ohmic connection to a semiconductor device which includes hermetically sealing at least a portion of a metal layer which is in ohmic contact with the semiconductor by placing thereon a layer of hermetic sealing metal to which conductor means are subsequently attached.

3,429,030
METHOD OF FABRICATING SEMICONDUCTOR DEVICES

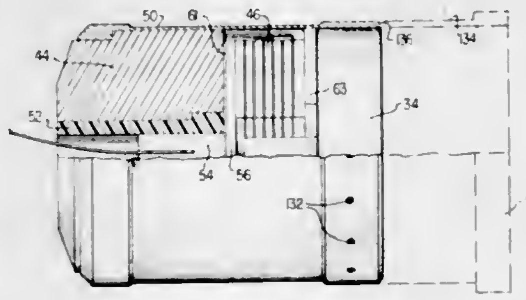
Matthew M. Bell, Westfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,290
U.S. Cl. 29—580 **4 Claims**
Int. Cl. H01l *5/02, 1/10;* **B23p** *19/00*



A method of fabricating semiconductor devices comprising providing a workpiece carrier having a pair of straps and a plurality of spaced rod groups extending between and secured to said straps, forming a flat on one rod of each of said rod groups, bonding a semiconductor pellet to said flat of each rod group, bonding an electrical connector from said pellet to another rod of each rod group, encapsulating said flat, said connector, and portions of said another rod to which said connector is bonded of each rod group, and severing each encapsulated rod group from said straps.

3,429,031
METHOD OF ASSEMBLING A FORCE TRANSDUCER

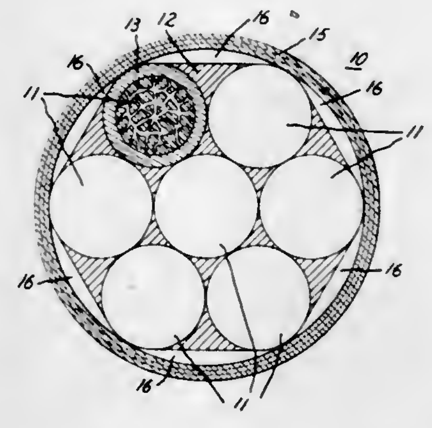
Walter P. Kistler, Clarence, N.Y., assignor, by mesne assignments, to Kistler Instrument Corporation, a corporation of Delaware
Original application Jan. 11, 1965, Ser. No. 424,527, now Patent No. 3,351,787, dated Nov. 7, 1967. Divided and this application Feb. 9, 1967, Ser. No. 627,241
U.S. Cl. 29—595 **4 Claims**
Int. Cl. G01r *3/00;* **H02n** *7/00;* **B23k** *11/10*



Disclosed is a method of assembling a preloaded module for an accelerometer. The accelerometer includes a piezoelectric means sandwiched between a pair of masses. A metal sleeve is coupled at one end to one of the masses; the metal sleeve is stretched over the piezoelectric means and is connected to the remainder of the structure by a series of circumferentially spaced spot welds that are formed in simultaneous pairs.

3,429,032
METHOD OF MAKING SUPERCONDUCTORS CONTAINING FLUX TRAPS

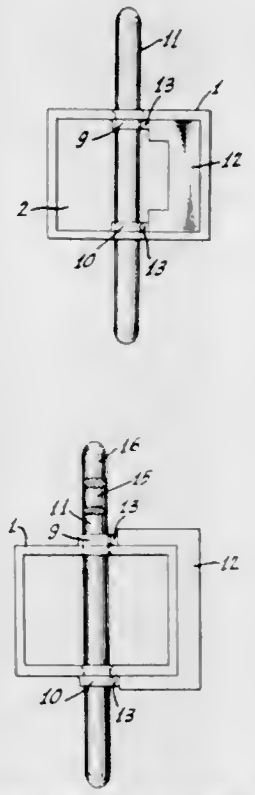
Donald L. Martin, Elnora, and Mark G. Benz, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 316,269, Oct. 15, 1963. This application June 28, 1965, Ser. No. 467,577
U.S. Cl. 29—599 **10 Claims**
Int. Cl. H01b *1/02, 3/08, 13/00*



The properties of superconductors of the niobium-tin type may be improved by the provision of flux trapping or pinning sites therein in the form of a dispersion of stable particles formed by the reaction between a metal such as zirconium, for example, and a nonmetal such as oxygen, nitrogen or carbon to form the corresponding metal oxides, nitrides or carbides. While the particle forming metal may be present as an alloying ingredient in either the tin bath through which the niobium strand is passed, or as an alloying ingredient in the niobium strand, where the superconductor is Nb_3Sn, it is preferred to use a niobium-zirconium alloy. In the process, a niobium-zirconium alloy strand is passed through a molten tin bath to form a tin coating thereon and subsequently heat treated in the presence of the nonmetal reactant whereby an Nb_3Sn superconductive layer is formed containing the stable reaction product dispersion.

3,429,033
METHOD OF SECURING A ROD TO A SUPPORTING STRUCTURE

John David Callaghan, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Original application May 27, 1965, Ser. No. 459,386. Divided and this application Feb. 19, 1965, Ser. No. 706,310
U.S. Cl. 29—600 **5 Claims**
Int. Cl. H01p *11/00;* **B21d** *39/00;* **F16b** *7/00*

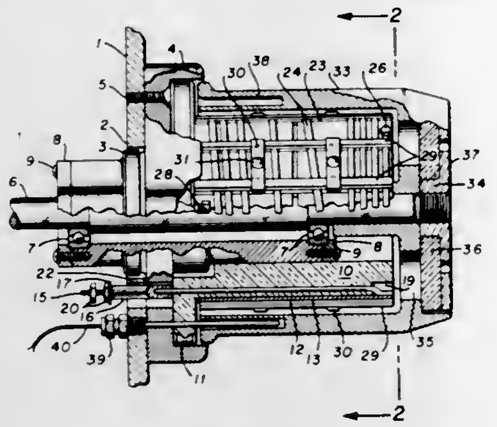


A method of securing a rod to a hollow support structure comprises the steps of forming matching holes through the hollow support structure with the structure material being flared within the structure in a direction transverse to the support structure at the internal edge of the holes, inserting a rod into the holes and passing a member having a die surface through the hollow structure so that the die surface indents a portion of the flared material and forces the material into the rod whereby the rod is locked to the supporting structure.

3,429,034
HEATED ROLL METHOD

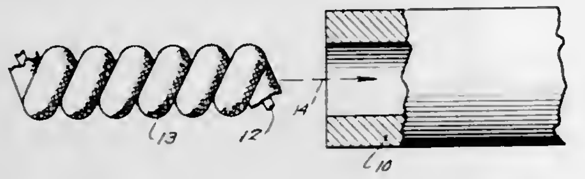
Sam W. Burdge, Cary, N.C., and Rollins S. Carter, Richmond, Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Application Nov. 1, 1965, Ser. No. 505,842, now Patent No. 3,280,305, dated Oct. 18, 1966, which is a division of application Ser. No. 331,555, Dec. 18, 1963, now Patent No. 3,273,101, dated Sept. 13, 1966. Divided and this application Mar. 29, 1966, Ser. No. 538,352
U.S. Cl. 29—611 **3 Claims**
Int. Cl. H05b *3/00;* **H01c** *1/02*

A method for wrapping and securing resistance heating elements to a non-rotatably mounted spool-shaped core which is used to heat an encompassing rotating drum includes the spacing of conductive sleeves on the core, the winding of heating element about the sleeves so that only the ends of the heating element are in contact with the sleeves and segmenting the heating element so that the thermal expansion is uniformly distributed throughout the length of the heating element.



3,429,035
METHOD OF MAKING A HEATING ELEMENT

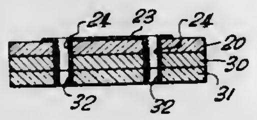
William H. Norton, deceased, late of Mundelein, Ill., by Lynn W. Norton, administratrix, Mundelein, Ill., assignor to Thermel Incorporated, a corporation of Illinois
Original application Nov. 29, 1962, Ser. No. 241,070, now Patent No. 3,217,280, dated Nov. 9, 1965. Divided and this application June 16, 1965, Ser. No. 477,998
U.S. Cl. 29—618 **3 Claims**
Int. Cl. H05b *3/00;* **H01c** *1/02*



1. The method of making an electric heater comprising covering a length of resistance wire with a layer of woven refrasil material completely encircling and covering the wire, forming the wire and material into a continuous helical shape, axially inserting the helically shaped wire and woven refrasil material into a tubular metal sheath, and swaging the tubular sheath reducing its diameter compressing said refrasil material without adding additional insulation so that said refrasil material consists of the sole insulation between the wire coils and fills the voids within the sheath.

3,429,036
METHOD OF MANUFACTURING ELECTRICAL CONNECTORS

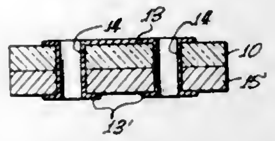
Eugene G. Freehauf, Ontario, and William P. Dugan, Monterey Park, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,553
U.S. Cl. 29—625 **20 Claims**
Int. Cl. H05k *3/18, 3/34;* **B23p** *17/04*



Broadly, the disclosure relates to a method of making integral conductor paths and through-hole tubes in circuit positioner boards on which components are to be mounted. According to the method, a temporary backing material is applied to the board, holes are formed through the assembly; the circuit is printed on the board; the holes are through-plated along with the desired circuit; and finally the backing material is stripped from the assembly to leave through-hole tubes extending from the back of the positioner board.

3,429,037
METHOD OF MAKING TUBULAR SOLDER CONNECTORS

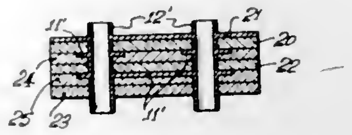
William P. Dugan and Eugene G. Freehauf, Ontario, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,257
U.S. Cl. 29—625 **7 Claims**
Int. Cl. H05k *3/06, 3/34;* **B23p** *17/00*



A method for producing solder coated tubular members which are integral with a circuit carrying board; the tubular members being adapted to receive component leads which may then be soldered for interconnection with as associated circuit path.

3,429,038
METHOD OF MANUFACTURING ELECTRICAL INTRACONNECTORS

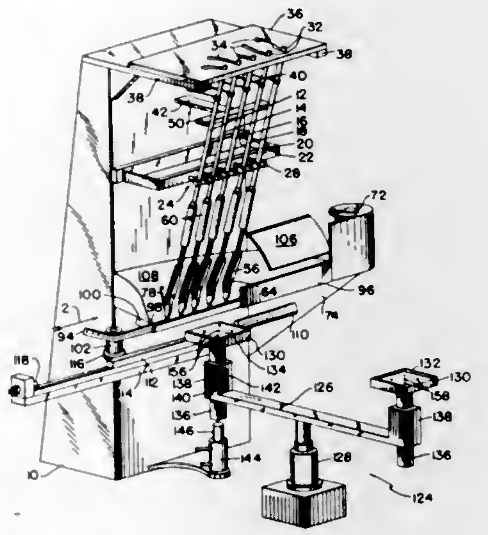
William P. Dugan and Eugene G. Freehauf, Ontario, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,259
U.S. Cl. 29—625 **9 Claims**
Int. Cl. H05k *3/06, 3/34;* **D23p** *17/00*



A method for fabricating a multi-layer circuit board having nickel tubular members integral with circuits encased within the board.

4,429,039
APPARATUS AND METHOD FOR INSERTING GROUPS OF LEAD WIRES IN A CIRCUIT BOARD

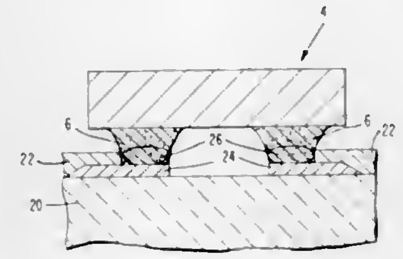
Quentin Berg, % Berg Electronics, Inc., New Cumberland, Pa. 17070
Filed May 19, 1966, Ser. No. 551,264
U.S. Cl. 29—626 **9 Claims**
Int. Cl. H05k *3/32;* **H01r** *7/06;* **B23p** *19/04*



The disclosure relates to an apparatus and method for simultaneously moving a plurality of circuit elements along independent paths from a pick-up position to a position above a circuit board and then securing the elements to the circuit board.

3,429,040
METHOD OF JOINING A COMPONENT TO A SUBSTRATE

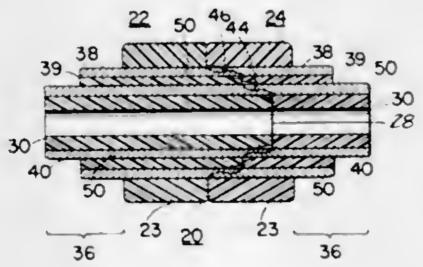
Lewis F. Miller, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 18, 1965, Ser. No. 465,034
U.S. Cl. 29—626 **14 Claims**
Int. Cl. H05k *3/30, 1/04;* **H01r** *9/04*



The ductile contacts of a microminiature circuit element are joined to connecting areas at the surface of an insulating substrate. Regions immediately surrounding certain of the connecting areas are not wet by the contact material. When the contacts and connecting ar as are heated to a temperature at which the contacts melt, the surface tension of the contact material is sufficient to prevent collapse of the circuit element and thereby positively space the element from the substrate until the contacts are fused to the connecting areas.

3,429,041
METHOD OF MAKING AN ELECTRICAL CONNECTOR

Roy A. Patton, Jr., 6030 N. Shore Drive, Grabill, Ind. 46741
Filed July 31, 1964, Ser. No. 386,649
U.S. Cl. 29—629 **15 Claims**
Int. Cl. H02g *15/08;* **H01r** *43/06;* **B29f** *1/10*

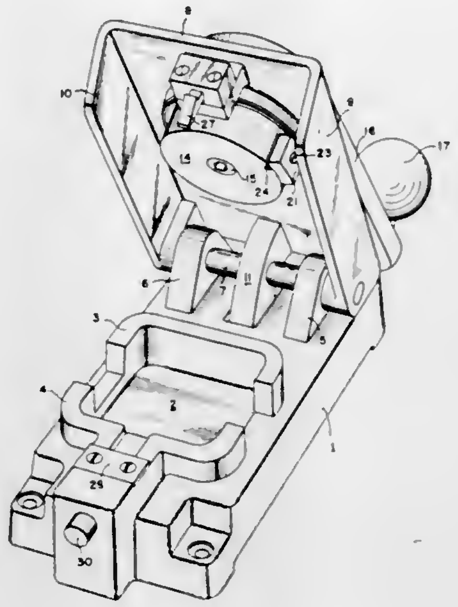


A method of fabricating electrical connector parts comprising the steps of extruding a rod of insulating material having passages therein, cutting the rod to certain lengths, and turning at least one of the ends of said rod to form steps in relation to said passages.

3,429,042
DEVICE FOR OPENING PLASTIC FILM CARTRIDGES

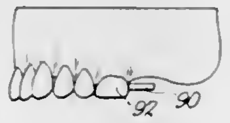
Raymond Edward Lawrence, Rochester, and Lawrence R. Witherow, Avon, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 23, 1966, Ser. No. 529,304
U.S. Cl. 30—11 **2 Claims**
Int. Cl. B67b *7/30;* **B26d** *1/28, 7/00*

An opening device for a sealed cartridge containing a roll of film which cuts from a wall of the cartridge a circular section having a diameter slightly larger than the roll of film. The periphery of said circular section tapers inwardly, so that it will fall away from, but not into, the cartridge when it is completely cut from the wall thereof.



3,429,043
DENTAL BRIDGE

James A. Andrews, Amite, and Glenn A. Bahm, Independence, La., assignors to Institute of Cosmetic Dentistry, Incorporated, Amite, La., a corporation of Louisiana
Continuation-in-part of application Ser. No. 507,180, Nov. 10, 1965. This application Mar. 14, 1968, Ser. No. 713,010
U.S. Cl. 32—5 **1 Claim**
Int. Cl. A61c *13/22*



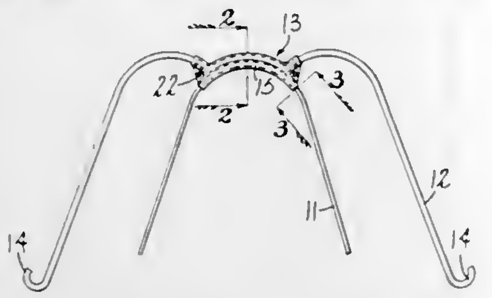
A dental bridge for positioning one or more pontics in the mouth, the bridge including a bar carried by at least one abutment adjoining the area to be bridged, and a sleeve which is adapted to frictionally embrace the bar, the pontics being carried by the sleeve. The bar and the sleeve are each constructed of a high strength, corrosion resistant metal which has the property of providing a sufficient cohesive force between the interengaging surfaces thereof to resist relative movement between the bar and the sleeve, without preventing such movement as may be necessary for separation thereof. The bar and the sleeve are each of a longitudinally curvilinear configuration, such configuration being that of an arc of a common circle.

3,429,044
ORTHODONTIC FACE BOW WITH IMPROVED ARCH WIRE CONNECTOR

James M. Rubin, 141 W. 17th St., New York, N.Y. 10011
Filed Mar. 26, 1964, Ser. No. 354,908
U.S. Cl. 32—14 **5 Claims**
Int. Cl. A61c *7/00;* **F16b** *2/06*

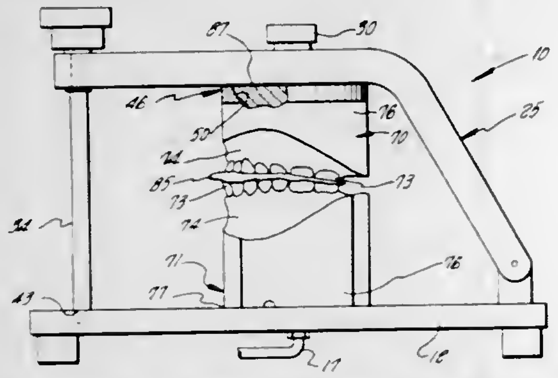
1. An orthodontic face bow comprising, an inner generally U-shaped arch wire, an outer generally U-shaped arch wire, a first yoke half disposed on one side of and engaging an intermediate portion of each of said arch

wires, a second yoke half disposed on the other side of and engaging an intermediate portion of each of said arch wires, said yoke halves together forming a connector for securing said arch wires relative one to another, and fastening means engaging said yoke halves for securing said face bow in an assembled position.



3,429,045
METHOD AND APPARATUS FOR MAKING DENTAL MOUTHPIECE

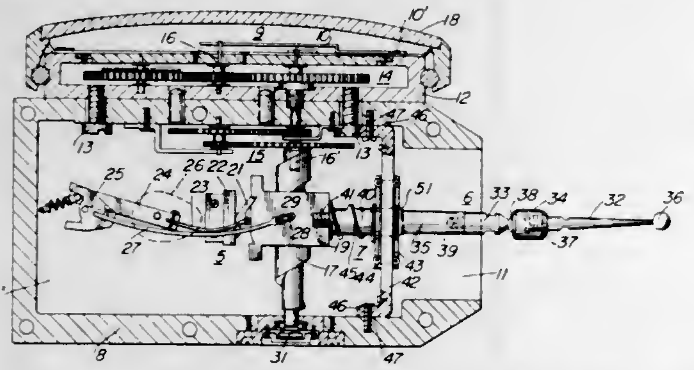
Roland M. Anderson, 2770 SW. 107th, Portland, Oreg. 97225, and Paul E. Klein, 928 Lakeshore Road, Lake Oswego, Oreg. 97034
Filed Feb. 1, 1966, Ser. No. 524,134
U.S. Cl. 32—32 **7 Claims**
Int. Cl. A61c *11/00*



An apparatus and method for forming an anatomically contoured dental mouthpiece. A dental articulator has a base for mounting a plaster model of one dental arch, and a model of an opposing dental arch is secured to a hinged bracket secured to the base. A wax bite is used to align the models with respect to each other in the articulator. A vacuum molding means forces a warmed thermoplastic mouthpiece blank over the model secured to the base, and the hinged bracket is subsequently positioned to force the opposing arch model into the blank to form the contoured mouthpiece.

3,429,046
SINE-TEST REGISTER-ACTIVATING MECHANISM

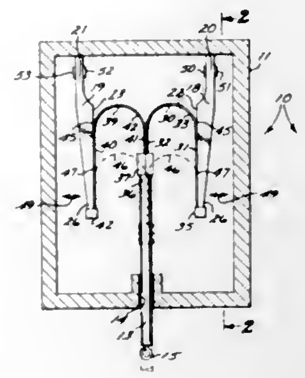
Charles F. Harris, 2717 Hampton Court, Chicago, Ill. 60614
Filed June 8, 1966, Ser. No. 556,191
U.S. Cl. 33—172 **4 Claims**
Int. Cl. G01b *3/22, 5/00*



A gauging device having a test arm which rides vertically on roller plates with the rollers thereof seated in vertically aligned grooves on a mounting bracket to eliminate lateral movement. The arm at one of its ends is connected to a gauging device having a dial pointer, the other end of the arm engaging the work-piece to be tested.

3,429,047
DISPLACEMENT MEASURING DEVICE

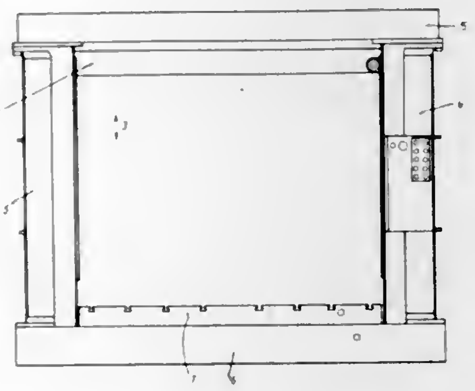
George H. Redpath, 711 W. 18th St., Apt. C, Costa Mesa, Calif. 92627
Filed June 27, 1966, Ser. No. 560,542
U.S. Cl. 33—172 **10 Claims**
Int. Cl. G01b *3/22, 5/30*



A displacement measurement device including a displacement rod slidably mounted on a frame between a pair of cantilever beams fixed to said frame with a bowed flat spring member connected to said rod and to the free end of each respective cantilever beam so that the spring causes a bending moment on the cantilever beams as a function of the position of the rod and strain gauge means on the beams can indicate the position of the rod by the indication of the strain gauges.

3,429,048
GAUGING PRESS

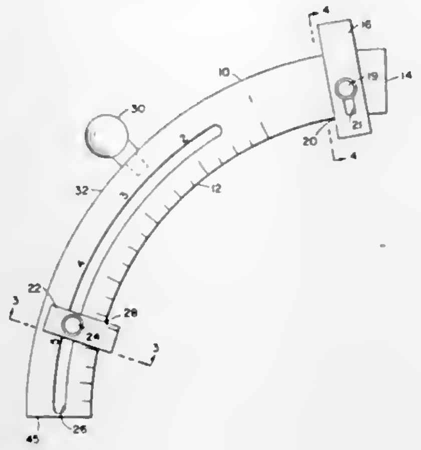
Haas Eberhard, Heilbron (Neckar), Germany, assignor to August Lapple G.m.b.H., & Co., Heilbronn (Neckar), Germany, a company
Filed July 26, 1966, Ser. No. 568,005
Claims priority, application Germany, July 28, 1965, L 40,128
U.S. Cl. 33—174 **4 Claims**
Int. Cl. G01b *3/34*



A device for bringing gauging pattern elements into engagement with parts to be tested comprises a frame formed of four vertical columns, a work table at the bottom of said columns, a stationary threaded spindle in each of the columns, a slide mounted for vertical movement with respect to the columns, nuts rotatably carried by the slide engaging each of the spindles and driving means for the nuts also carried by the slide. The work table is mounted for horizontal movement on rollers which can be lifted off of their guides to fix the table in position.

3,429,049
GRIP MEASUREMENT GAUGE FOR BOWLING BALLS

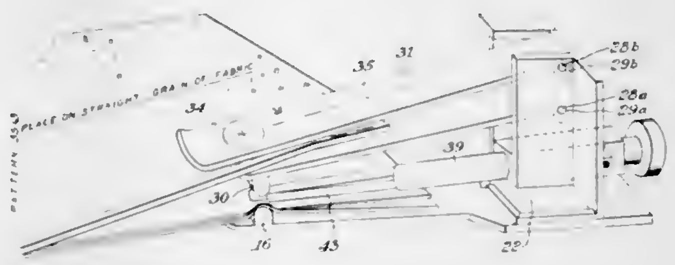
Lowell G. Snoddy, 419 Warner St. NW., Huntsville, Ala. 35805
Filed May 25, 1967, Ser. No. 641,299
U.S. Cl. 33—174 **3 Claims**
Int. Cl. G01b *3/38;* **A61b** *5/10*



A grip measurement gauge for bowling balls employing a gauge body contoured to the surface of bowling ball and having one fixed insert probe and another movable insert probe mounted on the side of the gauge body, on which side is a distance scale which permits the reading of the edge distance between thumb and finger holes in which are placed the insert probes.

3,429,050
PATTERN MARKER

Helen A. McCarty, Box 131, Trinity, Tex. 75862
Filed June 22, 1967, Ser. No. 648,025
U.S. Cl. 33—189 **5 Claims**
Int. Cl. G01b *5/14*

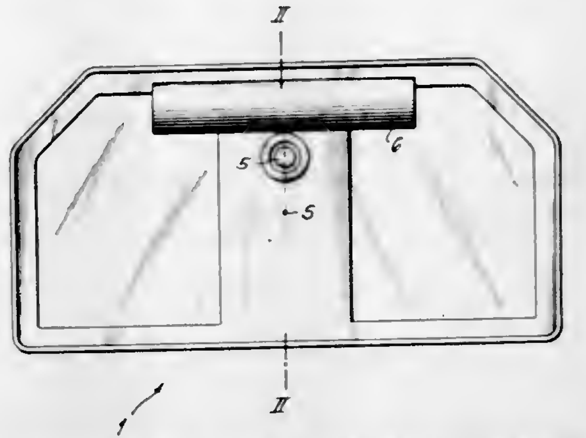


A pattern marker for marking dots or lines on the inside or outside of material without the use of tracing paper. The marker includes a base and a pad, a pivotal hollow tube having a piece of chalk fitted in one end, a pivotal bar with a second pad, the pivotal bar is moved to press the chalk to making a mark on the material, and a pivotal bar having a locating circle for locating the marker in a desired location.

3,429,051
DAMPING ARRANGEMENT FOR DAMPING THE SWINGING MOVEMENT OF A MEMBER ABOUT A SWING AXIS

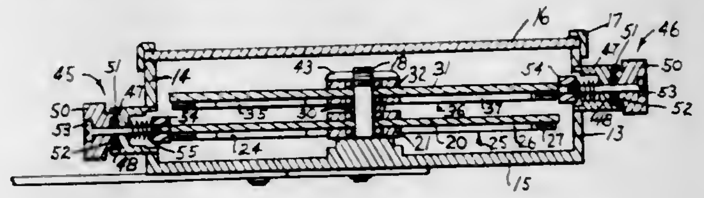
Hans Lutz and Otto Gailing, Ilsfeld, and Werner Klingbeil, Heilbronn, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany
Filed Sept. 8, 1965, Ser. No. 485,766
Claims priority, application Germany, Sept. 10, 1964, B 78,507
U.S. Cl. 33—220 **9 Claims**
Int. Cl. G01c *9/08, 9/00, 15/12*

An elongated container fixed to a pendulous body above the swing axis of the latter and partly filled with damping liquid so that during swinging of the pendulous body to opposite sides from its rest position, the liquid in the elongated container will flow to the respective end of the container to dampen the swinging movement of the pendulous body.



3,429,052
DEVICE FOR DAMPENING DIAL AND INDICATOR OSCILLATIONS IN AN INSTRUMENT FOR MEASURING ANGULAR BODY MOVEMENTS

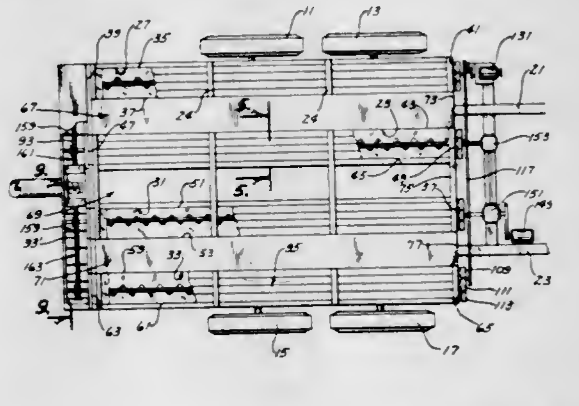
William H. Hembd and James H. Harrand, Spokane, Wash., assignors to Jack R. Leighton, Spokane, Wash.
Filed June 30, 1967, Ser. No. 650,388
U.S. Cl. 33—220 **7 Claims**
Int. Cl. A61b *5/10;* **B23q** *17/04;* **G01c** *9/08*



The disclosure describes a sensitive instrument having a circular dial and a circular indicator for measuring the angular body movements of human beings. Dampening devices are mounted to the backs of the dial and indicator. Each of the dampening devices has an annular rim that is U-shaped in cross section to form an enclosed groove with the dial or indicator. The groove is partially filled with a high density liquid, such as mercury, for resisting the oscillationary movement of the dial or indicator.

3,429,053
GRAIN DRYER WITH CONTROLLED GRAIN PASSAGEWAYS

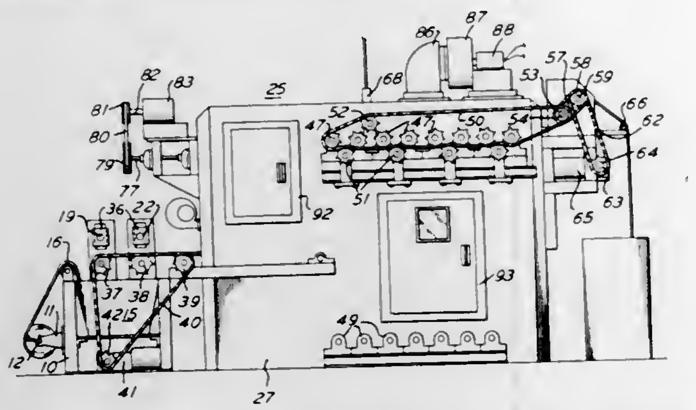
Herbert P. Behlen and Dale L. Plugge, Columbus, Nebr., assignors to Behlen Manufacturing Company, Inc., Columbus, Nebr., a corporation of Nebraska
Filed Apr. 20, 1967, Ser. No. 632,436
U.S. Cl. 34—56 **10 Claims**
Int. Cl. F26b *19/00*



A grain dryer comprising a plurality of horizontally disposed grain passageways having upper and lower ends, blower means adapted to force air of a predetermined temperature through the grain in the passageways and a valve means at the lower end of the passageways which are movable between open and closed positions, each of the valve means being comprised of a plurality of butterfly valves.

3,429,054
APPARATUS FOR TREATING NARROW FABRICS

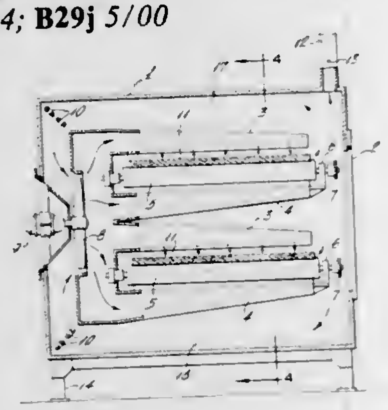
Geoffrey Roy Walker, Philadelphia, and Hilmar Roessel, Oreland, Pa., assignors to Quality Weaving Company, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,229
U.S. Cl. 34—60 **8 Claims**
Int. Cl. F26b *5/14, 3/04, 13/04*



Apparatus for treating narrow fabrics with a suitable impregnant for preventing shrinkage and also if desired for improving the hand, and then curing and drying the fabric in a continuous operation.

3,429,055
METHOD FOR HEAT TREATMENT

Lars-Gunnar Bergh, Bankeryd, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Continuation-in-part of application Ser. No. 606,458, Dec. 30, 1966. This application Feb. 12, 1968, Ser. No. 709,856
Claims priority, application Sweden, Sept. 16, 1963, 10,102/63
U.S. Cl. 34—13.8 **2 Claims**
Int. Cl. F26b *3/04;* **B29j** *5/00*

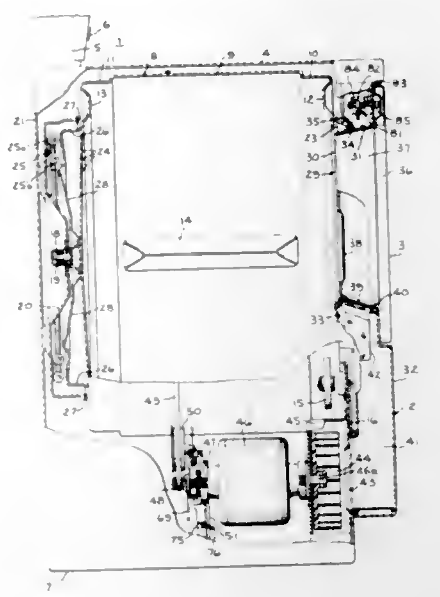


A method for heat treatment of dry fibre boards in which the heating medium is blown perpendicularly against the boards and is maintained between 160° C. and 235° C. to heat the boards and at the same time prevent local overheating in random areas due to exothermic reactions occurring within the boards.

3,429,056
CLOTHES DRYER WITH SELECTIVE CLUTCH FOR DRUM ROTATION

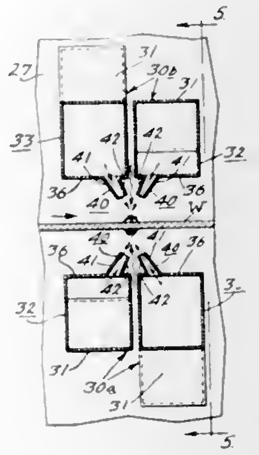
Matt F. Metzger, Jeffersonville, Ind., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 474,068, July 22, 1965. This application Nov. 30, 1967, Ser. No. 690,694
U.S. Cl. 34—133 **6 Claims**
Int. Cl. F26b *11/04;* **F16d** *11/04*

A clothes dryer with a motor having a first shaft to drive the dryer air circulating means and a second shaft to drive the dryer drum through a pulley when the second shaft is connected to the pulley. A positive engagement clutch normally connects the second shaft and the pulley and manually controllable means are included to disengage the clutch.



3,429,057
DRYERS

John R. Thygeson, Sr., Fox Chase Manor, Pa., assignor to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 5, 1966, Ser. No. 599,294
U.S. Cl. 34—160 **13 Claims**
Int. Cl. F26b *3/04, 17/04, 13/02*



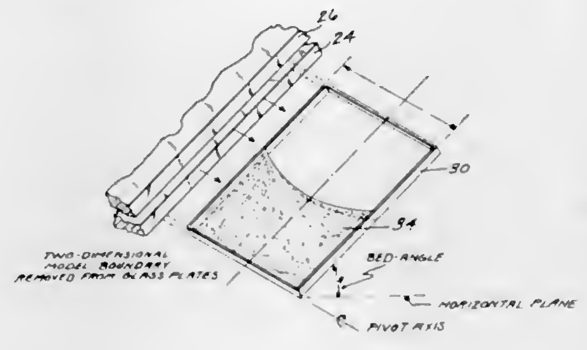
The present invention relates to dryers having means for supplying gaseous drying medium to a web-like or granular material conveyed through the dryer, and more particularly to a novel nozzle arrangement for a dryer, which nozzle arrangement insures an even, unbroken stream of gaseous drying medium upon the material to be dried.

In the preferred embodiment of the invention, a dryer is provided having means for supporting and conveying a web-like or granular material therethrough. In one embodiment, interiorly of the dryer is at least a pair of pressure or blow boxes arranged above and below the path of travel of the web-like material, which boxes are positioned transversely of the web. Each of the blow boxes comprises a pair of ducts positioned adjacent one another, each including an air nozzle which projects outwardly from the duct towards the web-like material and which is inclined towards the nozzle projecting from the adjacent duct. The nozzles are spaced from the web so that the gaseous medium flowing from the one nozzle

converges and merges with the gaseous medium flowing from the other nozzle forming a common stream at least at the path of travel of the web, and preferably before impingement of the gaseous medium upon the web.

3,429,058
REDUCED GRAVITY LIQUID CONFIGURATION SIMULATOR

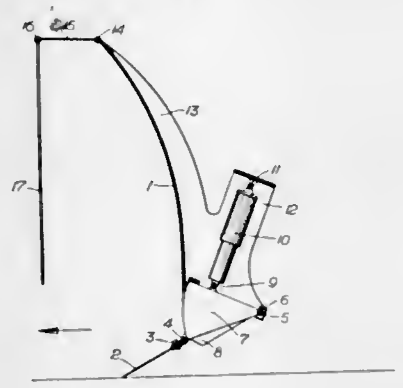
William A. Olsen, Jr., Lakewood, and Isadore I. Pinkel, Fairview Park, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 27, 1967, Ser. No. 635,327
U.S. Cl. 35—49 **16 Claims**
Int. Cl. G09b *23/06*



A reduced gravity liquid configuration simulator for liquid containers including a pair of spaced, flat, parallel glass plates having a relatively thin, peripheral gasket therebetween to form a closed liquid-receiving space between the plates and interiorly of the gasket. A test (i.e. rocket fuel) liquid is disposed in said space to partially fill the same. The gasket is of a preselected thickness whereby the glass plates are spaced from each other a distance permitting the test liquid to contact both plates. Suitable selective tilting means are provided to position the glass plates at preselected angles to the horizontal whereby the configuration of the test liquid between the glass plates may be observed as the plates are tilted to said preselected angles, each such angle providing a reduced gravity effect on the test liquid ranging from 1 to near "zero" gravity. With this construction, there is provided a two-dimensional view of a (transverse) section of a fuel tank subjected to reduced gravity fields.

3,429,059
CLEARING BLADE FOR SNOWPLOWS

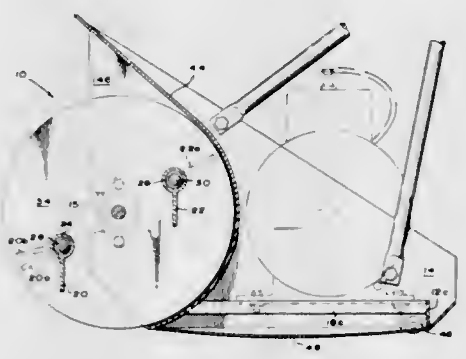
Gottfried Reissinger, 7 Weilheimerstrasse, 8124 Seeshaupt, Germany
Filed Aug. 6, 1965, Ser. No. 477,896
Claims priority, application Germany, Aug. 10, 1964, R 38,559
U.S. Cl. 37—42 **6 Claims**
Int. Cl. E01h *5/06*



A clearing device for attachment to a snowplow which comprises a clearing blade having a forwardly directed front surface, and a support carrying the blade. A roll sector is pivotally secured to the support and has a front face. Spring suspension means are disposed between the support and the roll sector, in order to permit a swinging movement of the roll sector. The latter has in its normal position the upper end of its front face adjacent the lower end of the clearing blade. A clearing strip is pivotally connected to the lower end of the front face of the roll sector. Limiting means are secured to the bottom of the roll sector which limits the swinging movement of the clearing strip by engagement of the latter with the limiting means.

3,429,060
SNOW REMOVAL APPARATUS

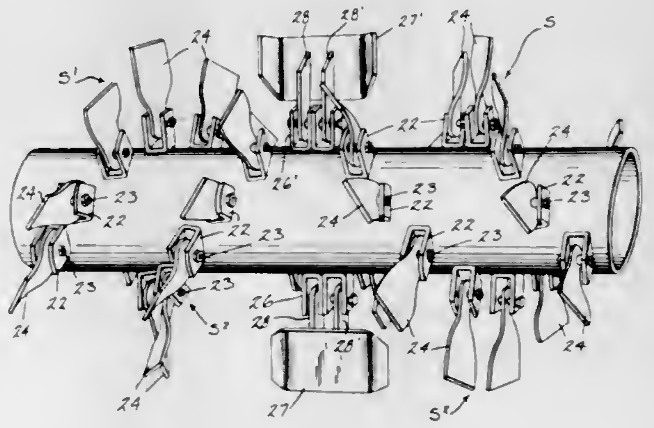
Clayton B. Merry, Star Rte., Leavenworth, Wash. 98826
Filed Aug. 27, 1965, Ser. No. 483,244
U.S. Cl. 37—43 **4 Claims**
Int. Cl. E01h *5/09*



A snow removal device in which the device normally rests on a downwardly dished skid pan and has a front deflector and a pair of front wheels between which combination snow severing and throwing blades are journal mounted on cross-rods and are free to swing radially of the wheel axis. An engine is mounted to the rear of the skid pan for machine balance and a rearwardly extending steering handle is provided which when raised tilts the front wheels into ground (snow or ice) engagement.

3,429,061
SNOW THROWERS

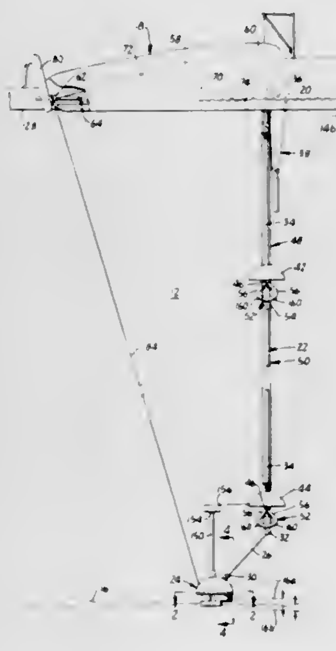
Joseph Haban, Mound and Marquette, Racine, Wis. 53400
Filed Feb. 1, 1966, Ser. No. 524,248
U.S. Cl. 37—43 **6 Claims**
Int. Cl. E01h *5/09;* **A01d** *49/00, 55/20*



A snow thrower having a horizontal auger housing with a drum rotatable therein, pivoted rigid thrower blades intermediate the length of the drum for directing snow toward an intermediate discharge conduit, the drum having two helical series of closely spaced rigid flails on one side of the discharge, one series within the other, disposed to feed snow in one direction toward said thrower means, and having two helical series of flail members, one within the other, on the other side of the discharge, arranged to deliver snow in the opposite direction, the flails being formed by bars pivoted to the drum and having intermediate twists so that the planes of the outer ends form the helical path.

3,429,062
DEEP WATER HARVESTING SYSTEM

Arthur J. Nelson, Santa Barbara, Calif.
(1998 Broadway, San Francisco, Calif. 94109)
Filed Mar. 11, 1966, Ser. No. 533,623
U.S. Cl. 37—57 **22 Claims**
Int. Cl. E02f *3/94, 3/88, 3/90*



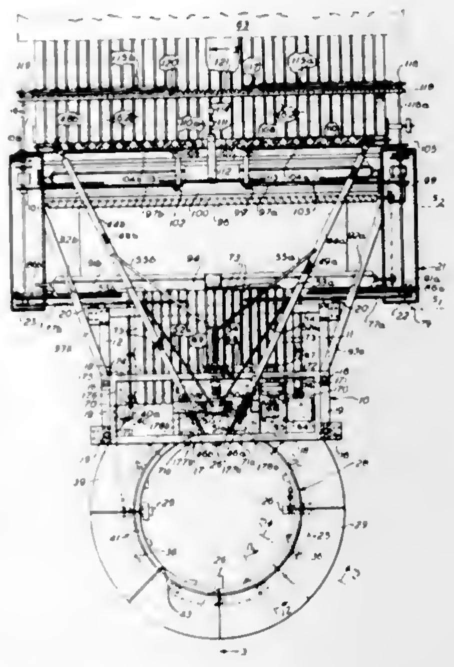
This apparatus comprises a harvester for gathering and size classification of aggregate disbursed on the floor of a body of water, and recovery of the aggregate to a receptacle by a transfer means designed to be unhampered by turbulent action of a disturbed sea surface.

The harvester is buoyantly supported with monitoring and control means to automatically adjust its position responsive to depth and undulations in the floor for a maintained degree of penetration in said floor. Furthermore, the harvester elements are articulatively connected to flex in response to irregularities for contiguous contact with said floor. The transfer means is varied: when all gathered material is sought then simple application of a pump suction provides the feed for said transfer; when undesirable fines would be entrained, then a secondary classifier is employed propelling the accumulated material for a sufficient confining trajectory through the open water body. The heavier sought aggregate is collected for feed to a jet pump with clear pressure water secured from a source free of contamination. The uncollected fines fall free into the trail of the advancing harvester. Crushers are employed to recover material that is rejected because of excessive size. Means are provided to assure level of the apparatus and, in the event of power failure, discharge of the piping to prevent back flow into the pumping apparatus.

3,429,063
SHEET FEEDING AND SPREADING APPARATUS

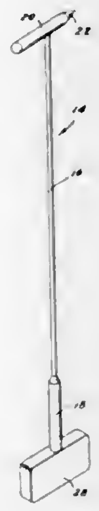
Wayne E. Myers, Rochester, N.Y., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 528,327
U.S. Cl. 38—143 **12 Claims**
Int. Cl. D06f *67/04;* **D06c** *3/00, 3/06*

The present machine comprises two diverging conveyor chains adapted for gripping the corners of one edge of a sheet to carry the sheet through the machine in a suspended condition and simultaneously to tauten the leading edge. The suspended portion is so carried through first and second spreading stations spaced from each other lengthwise of the machine. Each spreading station includes a pair of spreading belts running sidewise in opposite directions from the center of the machine and having ripples for imparting a wavy motion to the sheet to spread the sheet sidewise and to de-wrinkle the same. Following each pair of spreading belts is a flipper roller having flaps to help in drawing the sheet across the spreading belts. Also, a roller having spiral ridges respectively running clockwise and counterclockwise from the center thereof is provided ahead of the second spreading belt to help in lifting the suspended portion of the sheet and in spreading the same.



3,429,064
IDENTIFICATION TAG

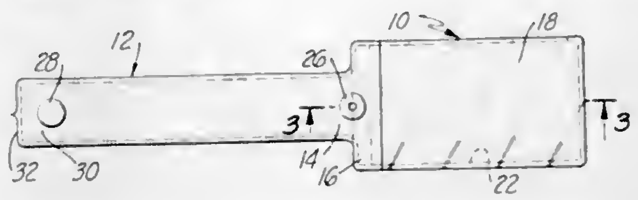
Cosmo Davi, 102 Shawomet Ave.,
Somerset, Mass. 02726
Filed June 13, 1966, Ser. No. 557,012
U.S. Cl. 40—20 **7 Claims**
Int. Cl. G09f *3/08, 3/02*



An identification tag for use with fabric-type materials and including a card on which identifying indicia is adapted to be imprinted, and a connecting member joined to said card and being formed of a plastic material in a one-piece construction, the connecting member having a cross bar located at an end thereof that is insertable through the materials for securing said card thereto.

3,429,065
LUGGAGE TAG

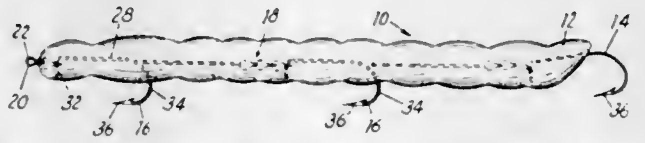
Donald A. Long, 936 Uclan Drive, Burbank, Calif. 91504, and Walter W. Mosher, Jr., 738 Fairmount, Burbank, Calif. 91501
Filed Apr. 7, 1967, Ser. No. 629,144
U.S. Cl. 40—21 **7 Claims**
Int. Cl. G09f *3/16, 3/18*



An identification pocket member is formed with an access slot through one side for the insertion of identification material into a pocket formed therein. One end of a strap for fastening the tag to luggage is secured to the pocket member free of the access slot, said strap being looped and having a free end releasably secured to the pocket member normally extending across and obstructing the access slot to retain the identification material in the pocket.

3,429,066
CHAIN REINFORCED PLASTIC WORM FISH LURE WITH HOOK SHANKS THREADED ON CHAIN

Bingham A. McClellan, Traverse City, Mich., assignor to Burke Flexo-Products Company, Traverse City, Mich.
Filed Aug. 9, 1967, Ser. No. 659,421
U.S. Cl. 43—42.24 **6 Claims**
Int. Cl. A01k *85/00*

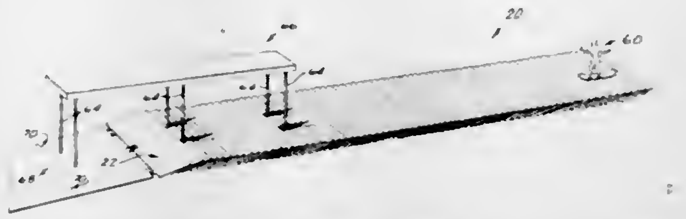


An elongated plastic body of worm or eel-like shape having a metal chain molded in the body and extending therealong with one link exposed at the front end. The links of the chain are of folded sheet metal forming a loop at the folded end, with lapped ends of the sheet having holes therethrough receiving the looped end of adjacent links. Plural hooks spaced along the body have straight shanks extending longitudinally within the body with right angle bends on their front end extending through the holes in one link to eyes on the ends of the bent portions in retained engagement with the opposite sides of the links. The curved hook ends of the hooks are threaded through the holes in a rearwardly spaced link of the chain with the barbed ends projecting from the body and faced forwardly. A rear hook has a right angle bend and eye on the front of its shank similarly engaged through the rear link of the chain, with a straight portion of its shank embedded in the body and projecting rearwardly from the body to a forwardly curved hook and barbed end.

3,429,067
GAME AND PLAY APPARATUS FOR PHYSICALLY PRODUCING A TRAVELLING WAVE FOR PROPELLING A WAVE-RIDING OBJECT THEREALONG

Warren L. Yancey, 2539 E. Santa Fe,
Fullerton, Calif. 92631
Filed May 13, 1966, Ser. No. 550,045
U.S. Cl. 46—116 **11 Claims**
Int. Cl. A63h *13/00;* **G09f** *19/08;* **A63b** *71/00*

The specification discloses game and play apparatus for physically producing a travelling wave (which in one preferred form of the invention simulates in appearance a beach wave such as that found in surf along a beach) for propelling along the crest of a wave a wave-riding object (which in one preferred form may simulate a human surfer or surf-rider) in a manner which very closely resembles the actual movement of a human surf-rider or surfer on a surfboard along the crest of a real, conventional beach wave. In certain forms, the wave-riding object may alternately simulate a boat, a canoe, a fish, a torpedo, or some other desired type of simulation object which is desired to be propelled forwardly along the crest of the simulated wave for game or play purposes, and the invention in certain forms is also provided with score-indicating means for indicating the relative success or lack of success, or degree of achievement, attained by a particular player of the game who has initiated a propelling of his or her particular wave-riding object along the crest of the travelling wave.



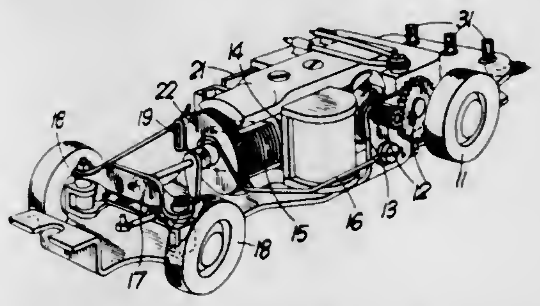
3,429,068
WINKING AND BLINKING DOLL EYES AND ACTUATION THEREFOR

Robert Gardel, New York, Egon Gorsky, Brooklyn, and Richard S. Turshen, Elmont, N.Y., assignors to Dollac Division, Jacoby-Bender, Inc., Woodside, N.Y.
Filed Aug. 11, 1964, Ser. No. 388,752
U.S. Cl. 46—169 **14 Claims**
Int. Cl. A63h *3/40, 3/28*

A doll is disclosed having a motor driving a sound device and an oscillatory actuator element for moving weighted eyes to open and/or closed position. The actuator comprises a cam with a double edge coacting with a cam follower carried by the eyeball. The double cam can rock the eyeball in respective rotative directions and a tip portion of the actuator member can engage a member carried by the eyeball to rock the eyeball in a single direction. Thus, reversible movement of the actuator member in its own path with respect to the eyeball can effect double blinking.

3,429,069
ELECTRICALLY POWERED VEHICLES

Archibald Sargeant, Bognor Regis, England, assignor to Rosemount Engineering Company Limited, Bognor Regis, Sussex, England, a British company
Filed May 24, 1966, Ser. No. 552,540
Claims priority, application Great Britain, May 24, 1965, 21,983/62
U.S. Cl. 46—244 **12 Claims**
Int. Cl. A63h *33/26*

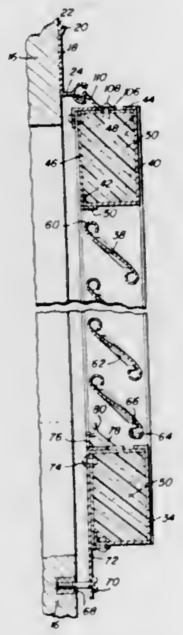


An electrically powered vehicle, particularly a toy vehicle, has at least one drive motor energized by contacts on the vehicle co-operating with fixed conductors and has steering means on the vehicle operatively responsive to the voltage applied to the fixed conductors. In one arrangement, the steering mechanism is spring-biased in one direction and moved against the bias electromagnetically, a brake being provided to stop movement of the steering mechanism on any interruption of the power supply.

3,429,070

AWNING SHUTTER

Willard Hurst, % Willard Awning Shutter Co., 4210 NW. 35th Court, Miami, Fla. 33142
Filed Jan. 24, 1967, Ser. No. 611,303
U.S. Cl. 49—158 **10 Claims**
Int. Cl. E06b *3/00, 5/00*

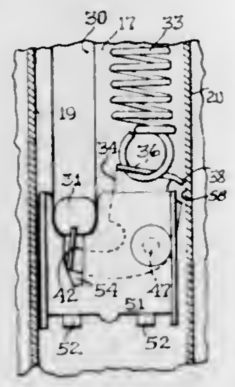


A shutter for windows, glass doors or any other type of opening which are pivotally supported for orientation in an outwardly inclined position to serve as a shutter and also longitudinally slidable supported so that the shutters may be stored in a position alongside of the window or other opening with the shutters being securely anchored in their various positions. The shutter includes assembly features including hollow frame components filled with a foam plastic material to insulate against noise, vibration and also the frame and slats of the awning are so associated the the slats are inserted into a self-centering hole in the frame members with the side of the hole contacting the slat at two opposite positions to prevent the slat from being scratched while being assembled.

3,429,071

SASH LOCK FOR REMOVABLE SASH WINDOWS

Irving H. Phillips, Chicago, Ill., assignor to James C. Wilborn & Sons, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 26, 1967, Ser. No. 633,801
U.S. Cl. 49—181 **4 Claims**
Int. Cl. E05d *15/22, 13/12, 17/00*

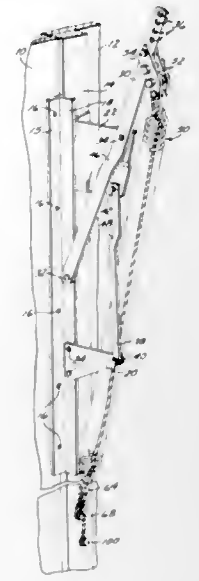


A spring sash balance for removable sliding sash windows having an automatic sash balance locking member actuated by the window when the same is to be removed or pivoted relative to the mounting sash.

3,429,072

COILED SPRING ASSEMBLIES

Douglas Charles Sammons, 9052 Torres St., Orange, Calif. 92667
Filed July 14, 1967, Ser. No. 653,474
U.S. Cl. 49—203 **2 Claims**
Int. Cl. E05d *15/40;* **E05f** *11/04, 11/08*



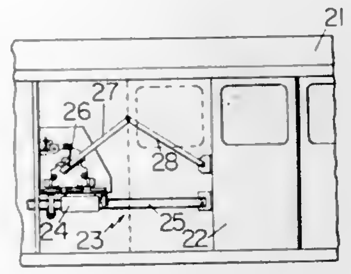
The specification describes a novel coiled spring and safety cable assembly employed as part of the actuating and over-center mechanism of a door opening mechanism of a kind suitable for use in operating overhead doors, such as garage doors.

The safety cable extends from a point at the exterior of the elongated coiled spring and is threaded between adjacent coils at one end of the spring into and along the interior of the latter. At the other end it is threaded between adjacent coils to the exterior of the spring. The portion of the cable which is disposed within the spring has a length not less than that of the portion of the spring which lies between the point of entrance and emergence of the cable when the spring is stretched in maximum degree. The cable has dimension, at the point of entry into and emergence from the interior of the spring, sufficiently great to insure that the cable will be pinched between the adjacent coils of the spring through which it is threaded in any degree of extension of the spring including maximum extension.

3,429,073

COMPACT DOOR OPERATOR

Benjamin Whitehead Tucker, Jr., South Orange, N.J., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 27, 1966, Ser. No. 589,964
U.S. Cl. 49—280 **13 Claims**
Int. Cl. E05f *15/4*

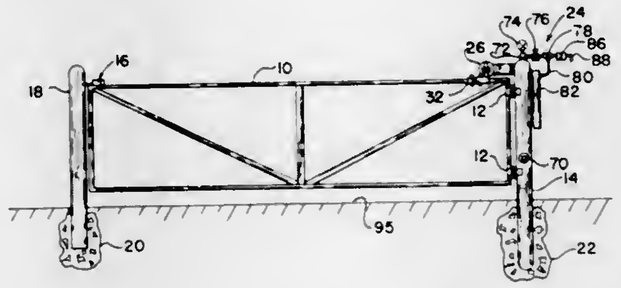


A closure apparatus including a support structure, a sliding door mounted on the structure for lateral movement between open and closed positions, a motor for operating the door, switch means for controlling the motor, a locking plate rotatably mounted on the structure, a linkage interconnecting the door and the locking plate for rotating the locking plate in response to lateral movement of the door, and a locking arm pivotally mounted on the structure and angularly displaceable relative thereto to three selected positions to operate the switch means for respectively unlocking and opening, unlocking and closing and locking and closing the door.

3,429,074

AUTOMATIC GATE DEVICE

Herbert D. Horton, 3506 Oakwood, Odessa, Tex. 79760
Filed Aug. 28, 1967, Ser. No. 663,842
U.S. Cl. 49—286 **8 Claims**
Int. Cl. E06b *11/06;* **B61l** *29/08;* **B05f** *15/20*

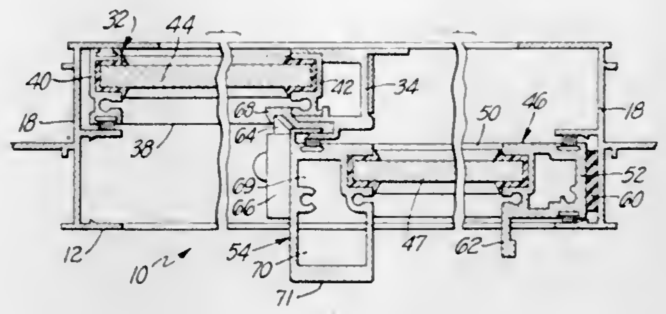


An automatically opening gate which is suspended from a gate post and movable from the closed to the open position in the usual manner. The gate post provides a pressure source for the gate actuating system by charging the post with "Dry Ice" or solid carbon dioxide. The gate actuating system is energized in response to a vehicle rolling over a flexible tube. The flexible tube is connected to a pressure responsive piston which actuates a three-way valve to thereby enable the carbon dioxide gas pressure to move the piston of a hydraulic cylinder, wherein the piston of the cylinder moves a lost motion assembly which in turn both unlatches and opens the gate. A time delay is built into the system to provide ample time for a vehicle, along with a trailer, to pass through the gate.

3,429,075

CLOSURE HAVING HIGH LOAD BEARING CHARACTERISTICS

Abraham Grossman, Northridge, Calif., assignor of one-half to Thomas P. Mahoney, Malibu, Calif.
Filed Nov. 28, 1966, Ser. No. 597,310
U.S. Cl. 49—425 **5 Claims**
Int. Cl. E05d *15/08;* **E06b** *3/46*

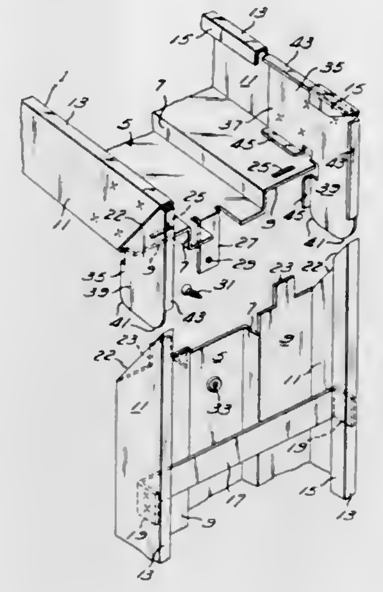


The closure of the invention is characterized by the fact that it incorporates on the sliding sash a monumental inner stile which acts as a rigidifying member to enable the closure to carry loads which it could not ordinarily carry because of the relatively small cross section of the extrusions of the frame and the extrusions constituting the remaining components of the sliding sash.

3,429,076

DRY WALL SHEET METAL FRAME

Francis J. Fortsch and Harold E. Sullivan, Warren, Ohio assignors to The American Welding & Manufacturing Company
Filed Sept. 12, 1967, Ser. No. 667,262
U.S. Cl. 49—504 **1 Claim**
Int. Cl. E06b *1/04*

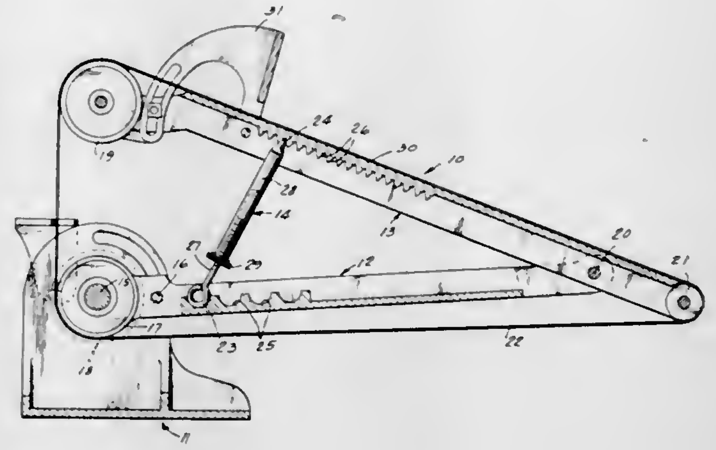


A multipart hollow sheet metal frame generally rectangular in cross section which can be assembled in an opening in an existing wall without damage to the wall by comparatively unskilled workmen using a few simple tools and which will grip the walls after assembly therewith and resist forces tending to move or distort the frame.

3,429,077

SANDER

Lyndon V. Grover, 341 W. Arden Blvd., Glendale, Calif. 91203
Filed Apr. 15, 1966, Ser. No. 542,811
U.S. Cl. 51—148 **6 Claims**
Int. Cl. B24b *21/00, 25/00*



A sander includes two pivotally connected arms supporting three pulleys about which an abrasive belt extends adjacent to one of said arms and receiving backing support, elongated adjustment means having pivotal connections at both ends with a series of recesses in each arm, the pivotal connection between the arms and the adjacent pulley being so arranged that the abrasive belt remains adjacent to the backing surface for all positions of the arms.

3,429,078

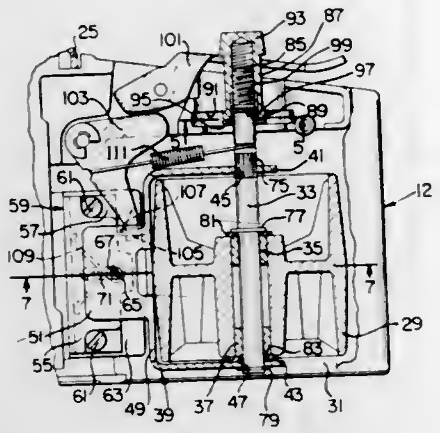
BELT-TRACKING CONSTRUCTION FOR BELT-TYPE SANDING DEVICES AND THE LIKE

Jacobus J. Beckering, Bel Air, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Oct. 27, 1966, Ser. No. 590,026

U.S. Cl. 51—148 **7 Claims**

Int. Cl. B24b *21/00, 23/06, 25/00*



A portable, belt-type sanding device which includes a housing having a motor therein. Drive and idler pulley means are disposed on opposite sides of the motor and have belt means entrained thereover which also is disposed above and below the motor. A novel means is provided to adjust the idler pulley means to insure belt-tracking and means is provided to tension the belt.

3,429,079

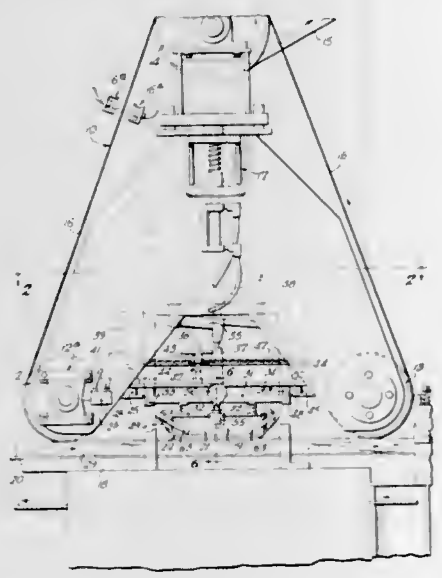
SANDING PLATEN

Vaughn H. Winebarger, P.O. Box 4157, Lynchburg, Va. 24502

Filed June 8, 1965, Ser. No. 462,174

U.S. Cl. 51—141 **3 Claims**

Int. Cl. B24b *21/00, 23/06, 25/00*



A sanding platen having movable bands engaging a liquid filled bag to lift portions of the bag away from contact with a flexible member engaging a sanding belt so that only selected portions of the belt are biased against a workpiece.

3,429,080

COMPOSITION FOR POLISHING CRYSTALLINE SILICON AND GERMANIUM AND PROCESS

Raymond L. Lachapelle, Reading, Pa., assignor to Tizon Chemical Corporation, Flemington, N.J., a corporation of New Jersey

No Drawing. Filed May 2, 1966, Ser. No. 546,538

U.S. Cl. 51—309 **10 Claims**

Int. Cl. C04b *31/16;* **C01b** *33/00*

Compositions which in the presence of water have a pH within the range from about 4.5 to about 14 are provided for polishing crystalline silicon and crystalline germanium. These are composed of at least one silicon or germanium polishing compound having a particle size not in excess of about 20 microns and an oxidizing compound to increase the polishing effectiveness of the polishing compound.

A process for polishing crystalline silicon and crystalline germanium is also provided, using an aqueous slurry of such compositions.

3,429,081

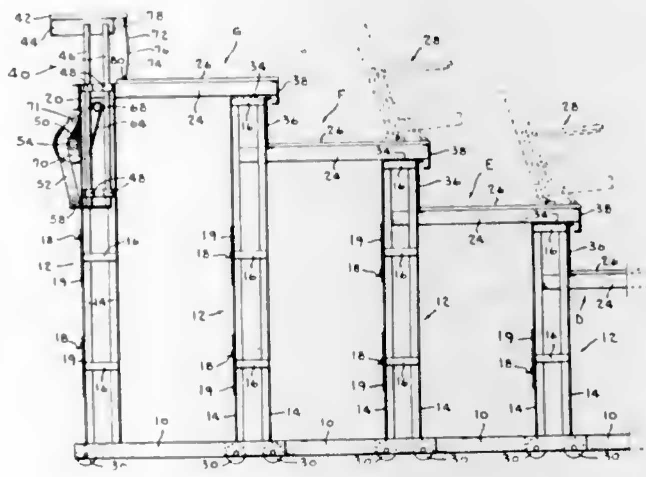
TELESCOPING CHAIR RISER STRUCTURE

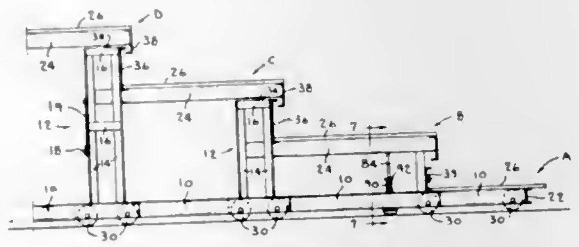
Claude G. Robinson, Whitefish Bay, and Robert McClelland, Butler, Wis., assignors to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 20, 1964, Ser. No. 390,885

U.S. Cl. 52—9 **13 Claims**

Int. Cl. E04h *3/12;* **A47c** *1/12, 4/00*





12. A telescoping seating structure including a plurality of sections adapted for movement between retracted and extended positions wherein each of such sections is comprised of:
- a pair of wheeled carriage members;
- a vertical column on each of said carriage members;
- a horizontally extending arm on each of said columns adapted to be supported on the top of the columns of the next adjacent section toward the front of the seating structure when the structure is in extended position;
- a first load bearing member mounted on said vertical columns and extending between the upper portions thereof, said first load bearing member having a support surface thereon extending substantially the length thereof;

- a second load bearing member mounted on said horizontally extending arms and extending between the forward ends thereof, said second load bearing member having a support surface thereon extending substantially the length thereof, said support surfaces of said first and second load bearing members positioned at substantially the same elevation;
- a horizontally disposed spectator supporting platform member extending between said first and second load bearing members and supported on the respective support surfaces of said first and second load bearing members; and
- said first load bearing member having a closure portion thereon extending vertically upwardly from said support surface thereon, said closure portion operative to prevent objects from falling from the rear of said platform member down underneath said seating structure.

3,429,082

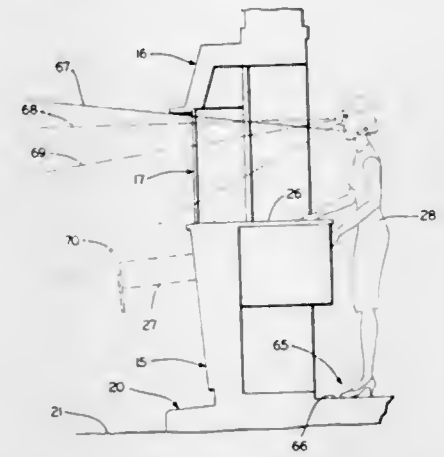
BANK DRIVE-UP WINDOW CONSTRUCTION

Nacy L. Strickland, North Canton, Dale O. Kettering, Canton, and Leo J. Grosswiller, Jr., East Canton, Ohio, assignors to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio

Filed Oct. 11, 1965, Ser. No. 494,477

U.S. Cl. 52—28 **12 Claims**

Int. Cl. E04h *14/00;* **E06b** *1/38;* **A47f** *9/00*



Bank drive-up window construction of the bay-window type having a self-supporting canopy secured to the building wall and extending outwardly and then downwardly in cantilever fashion, a base spaced below the canopy and glass means connected to the downward extension of the canopy and extending downwardly to the base member and being connected to and supported thereby, the canopy not being supported by the glass means and base member. The canopy includes spaced sheet metal members with a metal honeycomb structure sandwiched therebetween. A deal drawer is movable through an opening in the base member between an inner teller-accessible position and an outer customer-accessible position.

The glass means includes spaced side portions and a front portion extending at substantially right angles to each other in horizontal cross section forming generally right-angle corners spaced outwardly from the building, opposed edges of the front and side portions at the corners extending at substantially 45° in horizontal cross section, and corner molding strips at said corners.

Light means is located beneath the outward extension of the canopy, and light directing means is provided beneath the light means comprising a horizontal honeycomb structure having vertical openings.

A horizontal teller supporting surface is formed on the inside of the window assembly, the relationship between the vertical height and inward spacing of the teller supporting surface and the bottom of the downward extension of the canopy combining to shade direct sunlight from the eyes of a teller of average height positioned on the teller supporting surface.

3,429,083

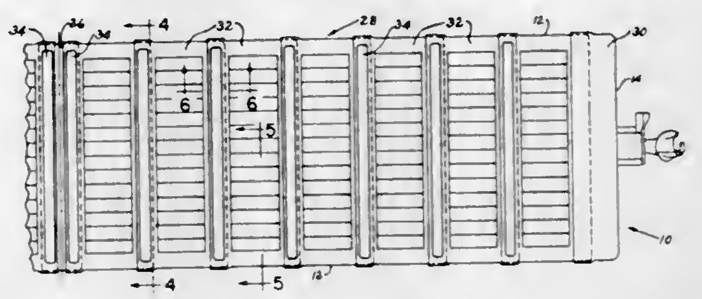
ROOF STRUCTURE FOR RAILWAY CARS

Donald F. Voros, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Mar. 27, 1967, Ser. No. 626,102

U.S. Cl. 52—53 **6 Claims**

Int. Cl. B61d *17/12;* **E04c** *1/39;* **E04d** *1/30*



A lightweight roof structure for a railway box car formed of a plurality of plastic panels. The plastic panels include a projecting channel-shaped rib along a marginal portion extending transversely of the car, the rib overlapping a marginal portion of the adjacent panel in nested relation and adhesively secured thereto along each side of the rib to form a double seal for minimizing water leaks. The amount of lapping between adjacent panels permits a variable length roof structure to accommodate varying car lengths without a change in roof design.

3,429,084

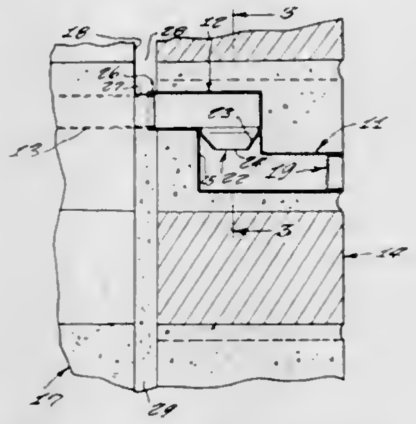
INSECT-PROOF WEEP HOLE

Ben Brewer, 1332 Konnarock Road, Kingsport, Tenn. 37662

Filed July 10, 1967, Ser. No. 652,333

U.S. Cl. 52—101 **1 Claim**

Int. Cl. E04b *1/72;* **E04h** *9/16;* **E04f** *17/00*



A duct assembly, to permit circulation of air, and drain condensation from between walls and to prevent invasion of insects, the duct assembly including a screen and an ant trap chamber.

3,429,085

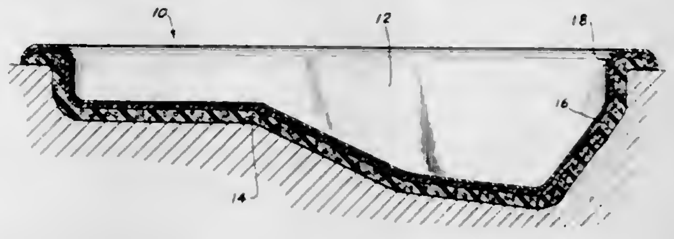
SWIMMING POOL

Albert H. Stillman, Jr., Nesconset, N.Y., assignor to Pal Pools, Inc., Suffolk County, N.Y.

Filed July 6, 1967, Ser. No. 651,577

U.S. Cl. 52—169 **4 Claims**

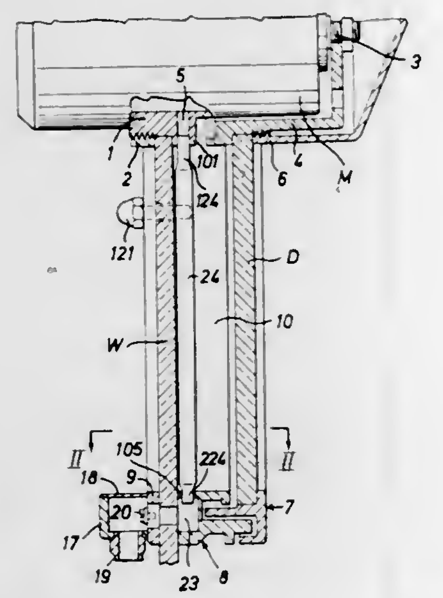
Int. Cl. E02d *27/32;* **E04c** *2/24;* **B29h** *7/20*



A swimming pool formed in the ground in which the sides of the excavated ground provide a form against which a foam, such as urethane foam, may be sprayed, the foam constituting the wall of the pool. The foam may be sprayed in a first less dense layer and then in a second more dense layer. The foam may be covered with a liner such as a vinyl liner.

3,429,086
ROTARY APPARATUS FOR PREVENTING OBSCURING OF THE VISIBILITY THROUGH A WINDSHIELD BY THE PRESENCE OF CONDENSATE OR WATER SPLASHED THEREON

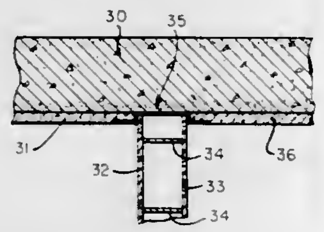
Pier Gianni Speich, 7C Via Domenico Chiodo, Genoa, Italy
Filed Jan. 23, 1967, Ser. No. 616,745
Claims priority, application Italy, Jan. 24, 1966, 1,670/66
U.S. Cl. 52—171 **7 Claims**
Int. Cl. B60s *1/02;* **B64d** *15/16*



A transparent disc is mounted on a motor shaft so as to rotate rapidly in front of and parallel to a windshield in spaced relation therefrom so as to form a gap therebetween. A rotatable labyrinth joint member is provided at the periphery of said disc and a corresponding complementary fixed labyrinth joint member is mounted on the windshield. The windshield has a hole in which is mounted an electrical motor provided with a shaft coupled to said disc to drive the same and a metal duct is fastened substantially radially with respect to said disc, between a hole in the motor casing and a hole in a grounded metal part integral with said fixed labyrinth joint member whereby the duct electrically grounds the casing of the motor; the duct contains electrical leads connecting a source of current with the motor winding.

3,429,087
BUILDING STRUCTURE

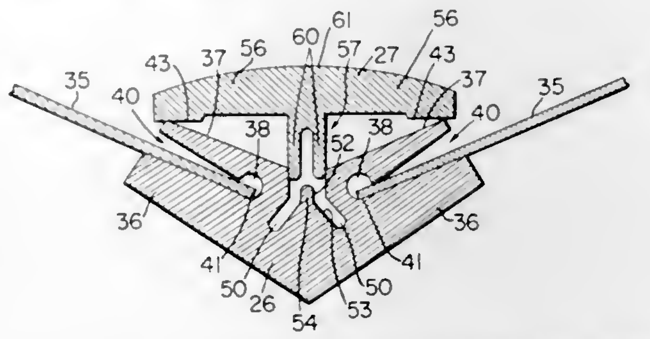
Bobby W. Phillips, % Phillips Plastering Co., Inc., 141 NE. 46th St., Oklahoma City, Okla. 73105
Filed Sept. 9, 1966, Ser. No. 578,343
U.S. Cl. 52—250 **3 Claims**
Int. Cl. E04b *1/38, 2/72, 1/60*



1. In a building structure with a wall and joint structure having a first wall including a first structural supporting means and a first finishing layer hung on said first structural supporting means, said first finishing layer having a first marginal edge; a partition teminator means having a mid-portion adjacent said marginal edge, a first flange means joined to one edge of said mid-portion and extending along the surface of said first finishing layer away from said marginal edge, and a second flange means joined to another edge of said mid-portion generally parallel to the first flange means and extending away from said marginal edge in the opposite direction from said first flange means, said second flange means being securely anchored to said first wall; and a second wall, substantially perpendicular to the first, including a second structural supporting means and a second finishing layer hung on said second structural supporting means, said second finishing layer having a second marginal edge; said partition terminator intervening between said finishing layers for substantially the entire length of the adjacent portions thereof and said first and second walls being held in substantially fixed relationship in respect to one another in said building structure, the improvement characterized in that: with said second finishing layer hung in place on said second structural supporting means, said first flange means has an exposed portion which extends perpendicular to said second finishing layer along the surface of said first finishing layer, and said second finishing layer is in snug-fitting. slideable fact-to-face engagement with the midportion of said partition terminator means.

3,429,088
MECHANICAL JOINT MEANS

Frederick Katzman, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,666
U.S. Cl. 52—463 **8 Claims**
Int. Cl. E04b *2/72;* **B63b** *3/16;* **F16b** *5/00*

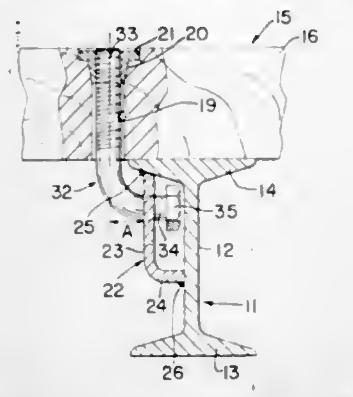


This disclosure relates to a mechanical joint which basically requires only two component parts and enables a pair of metal sheets, or the like, to be mechanically fastened together in a high-strength fluid-tight manner. The mechanical joint presented is particularly adapted for use in boat constructions and similar structures.

3,429,089
FLOOR ATTACHING ASSEMBLY FOR RAILROAD CAR FLOORS

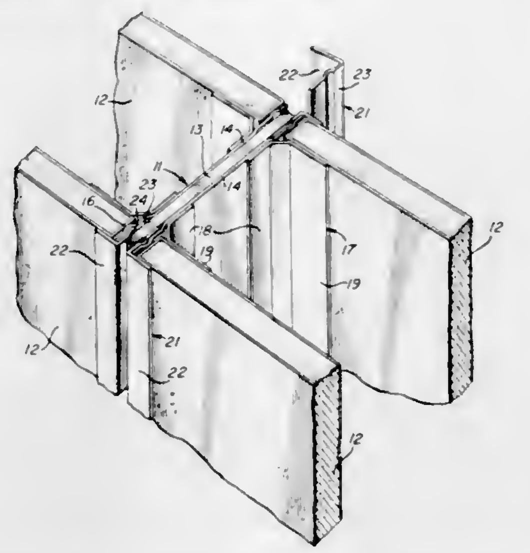
Steve L. Suvada and Richard C. Snyder, Michigan City, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,509
U.S. Cl. 52—483 **4 Claims**
Int. Cl. E04b *5/43, 5/10;* **B61d** *17/10*

A railroad car floor consisting of a plurality of transversely extending floor boards having predrilled openings which are connected to the longitudinally extending stringers of a railroad car underframe. The connection of the floor boards to the longitudinal stringers is by means of an L-shaped bolt having a vertical threaded member which is disposed within the predrilled openings of the floor boards, the bolt also including a laterally bent portion extending horizontally through a T-shaped slot provided in an angle-shaped section which is connected to a side of the stringer. The laterally bent portion has a relationship with respect to the T-slot which permits lengthwise and crosswise adjustment of the L-shaped bolt to accommodate variations in the positioning of the floor boards.



3,429,090
PANEL WALL STRUCTURE

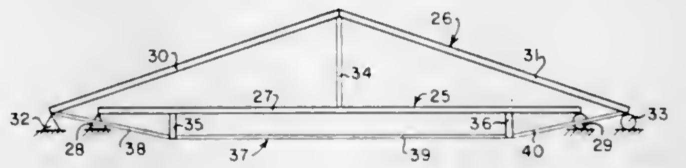
John W. Metelnick, Evanston, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed May 27, 1966, Ser. No. 553,503
U.S. Cl 52—481 **3 Claims**
Int. Cl. E04b *2/76, 2/28;* **E04c** *2/46*



A plurality of wall panels are supported in upright position by resilient interengagement with a support assembly so that a wall may be set up or taken down easily without nails or screws, and the wall panels may be used again in constructing a new wall. Each wall panel is positioned adjacent the support assembly, and a vertically disposed strip adapted to bear against one surface of the wall panel adjacent one edge thereof is snapped into engagement with a complementary part on the support assembly.

3,429,091
LONG SPAN STRUCTURES

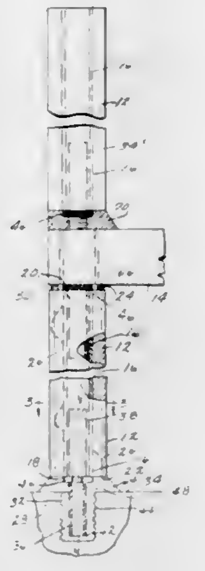
Josef Dundr, 8 Happy Hollow Lane, Austin, Tex. 78703
Filed May 1, 1967, Ser. No. 635,082
U.S. Cl. 52—639 **7 Claims**
Int. Cl. E04b *1/32, 7/08;* **E04c** *3/10*



The present invention relates to long span structures for roofs and bridges which includes a primary system of structural members partially supported independently of a complementary system wherein interaction members offer internal support for the primary syystem and stress the complementary system.

3,429,092
STRUCTURAL FRAMES AND METHODS AND MEANS THEREFOR

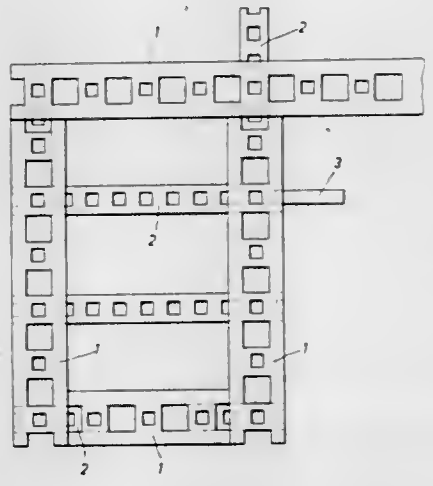
Edward D. Perry, Adelphi, and Wayne C. Hart, Glen Arm, Md., assignors to Dyna Structures, Baltimore, Md., a joint venture
Filed May 26, 1966, Ser. No. 553,116
U.S. Cl. 52—648 **45 Claims**
Int. Cl. E04b *1/22;* **E04h** *1/00;* **E02d** *27/42*



A structural framing system utilizing preformed columns and beams and connections therefor which provide a rigid structural frame for both single and multistory structures. The columns which include axially extending bores are located, supported and connected to succeeding column tiers by connector spindles and radially extending collar means. The beams which comprise precast concrete include transversely extending bores which align with and receive the connector spindles extending from subjacent columns and can span a plurality of columns. A compressible gasket means can be interposed between the beam and the underlying column to define a bearing pad receiving space which is filled with a settable bearing pad forming material.

3,429,093
SERIES OF STRUCTURAL PLUG-IN COMPONENTS FOR ERECTION OF SCAFFOLDING, FRAMEWORKS OR THE LIKE

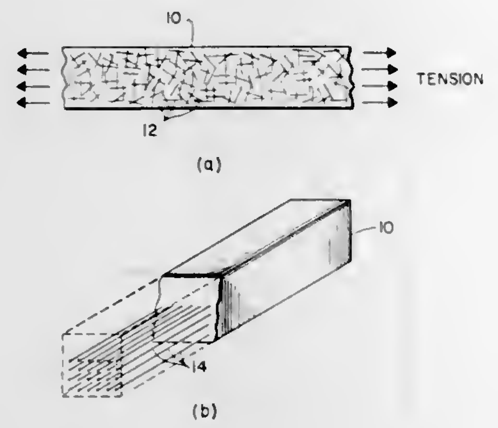
Albert Hufgard, 15 Antoniusweg, 8752 Rottenberg, Germany
Filed Aug. 23, 1966, Ser. No. 574,447
U.S. Cl. 52—648 **16 Claims**
Int. Cl. E04h *12/00;* **A63h** *33/08;* **E04g** *1/12*



A series of elements which may be interconnected to form intricate structures without the utilization of intermediate fasteners.

3,429,094
TWO-PHASE CONCRETE AND STEEL MATERIAL

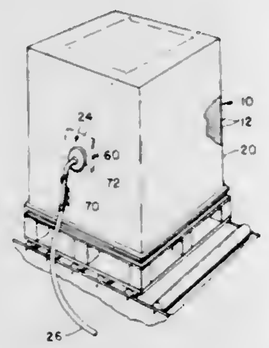
James P. Romualdi, Pittsburgh, Pa., assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 246,819, Dec. 24, 1962. This application July 7, 1965, Ser. No. 471,505
U.S. Cl. 52—659 **18 Claims**
Int. Cl. E04c *5/01, 3/20*



Two-phase material comprising concrete and substantially straight steel wire of a diameter of at most about 0.3 inch and a modulus of elasticity of about 27 to 32 million p.s.i. with average spacing between wires not greater than 0.5 inch and with the material characterized by a substantially increased cracking strength. A method providing two-phase material with increased cracking strength by incorporating substantially straight steel wires in a concrete mix with adjustment of the concrete mix to a water/cement ratio enabling distributing to a maximum average spacing between wires of no greater than 0.5 inch.

3,429,095
METHOD OF FORMING A PALLETIZED LOAD

Gale Huson, Palatine, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,918
U.S. Cl. 53—24 **5 Claims**
Int. Cl. B65b *63/02, 1/20, 13/02*

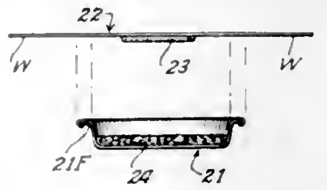


A method of forming a palletized compressed load involving the surrounding of the load with an impervious sheet of plastic material, evacuating the interior of the enclosure to shrink the load in all directions and, while maintaining vacuum pressure, strapping the shrunk and enclosed load.

3,429,096
METHOD OF MAKING AN APPLICATOR PACKAGE

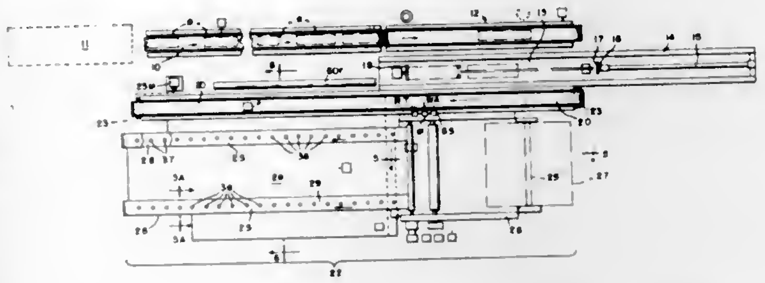
Elmer W. Griese, Jr., Skokie, Ill., assignor to Ekco Containers, Inc., a corporation of Illinois
Filed Feb. 12, 1965, Ser. No. 432,368
U.S. Cl. 53—37 **2 Claims**
Int. Cl. B65b *3/04, 7/28;* **B05c** *1/06*

The following specification sets forth in detail a novel method of manufacturing a hermetically-sealed package containing a liquid in mass quantities by high-speed machines.



3,429,097
WRAPPER DISPENSING AND ROLL WRAPPING MECHANISM

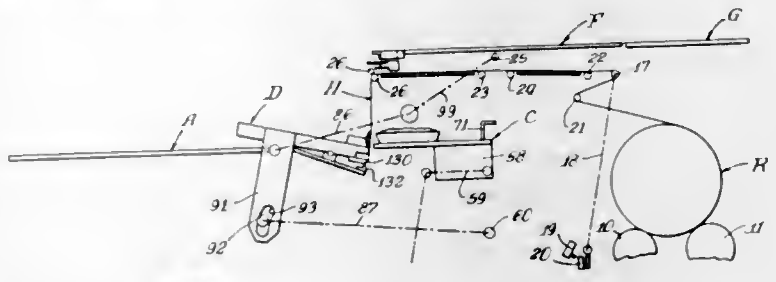
Ronald J. Jasper and George W. Gustafson, Hoquiam, Wash., assignors to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash.
Filed Sept. 17, 1965, Ser. No. 488,082
U.S. Cl. 53—66 **12 Claims**
Int. Cl. B65b *57/02, 57/12, 11/04*



A counter-roll wrapping system wherein individual counter rolls are advanced endwise along a conveyor table and a counter roll wrapper strip is dispensed simultaneously and at the same rate with the counter roll. The strip is severed in lengths corresponding to the lengths of the counter rolls and dispensed onto the conveyor table so as to follow the movement of the counter roll to a stop position. As the wrapper strip is dispensed, adhesive is applied to the edges thereof and, at the stop position, the counter roll is ejected and rolled across the wrapper strip with the adhesive causing the wrapper to adhere to the roll.

3,429,098
AUTOMATIC WRAPPING MACHINE

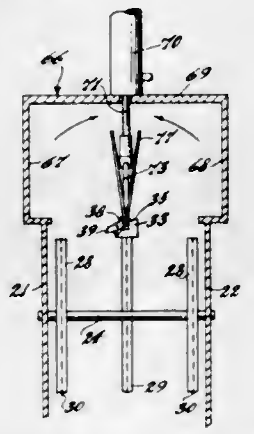
Fritz F. Treiber, Niles, Ill., assignor to Corley-Miller, Inc., a corporation of Ohio
Filed Oct. 24, 1965, Ser. No. 504,350
U.S. Cl. 53—77 **18 Claims**
Int. Cl. B65b *57/00, 11/48, 51/10*



An automatic wrapping machine having package forming means extending along a path and with structure for preliminarily placing wrapping film around the package including an in-feed conveyor beneath the path, a transfer platform adjacent the in-feed conveyor and movable toward and away from the in-feed conveyor to receive a package from the in-feed conveyor and then move to a spaced location whereby the package elevator can move downwardly to a position adjacent the transfer platform and the in-feed conveyor and with the elevator having clamping means for the leading edge of the wrapping film to draw the film downwardly whereby movement of the package onto the elevator will cause preliminary wrapping of the film about the package. The package elevator is movable upwardly and the package movable from the elevator into said path to complete the wrapping of the film about the package. The wrapping film is positively controlled at all times with positive gripping means on the elevator and with structure to cut off the film and at the same time insure the insertion of the new leading edge into the gripping means. Additionally, better control of the film is provided by a concave roller for support of the supply roll of film and positive cycled means which maintain the film taut as the package elevator moves upwardly with the package thereon. Additionally, the pressure and time of pressure application and final sealing of the package by pressing it on a hot plate are variably controlled by pressure roller means movable to different positions to provide the variable control.

3,429,099
APPARATUS FOR FORMING AND FILLING TEAR-STRIP ENVELOPES

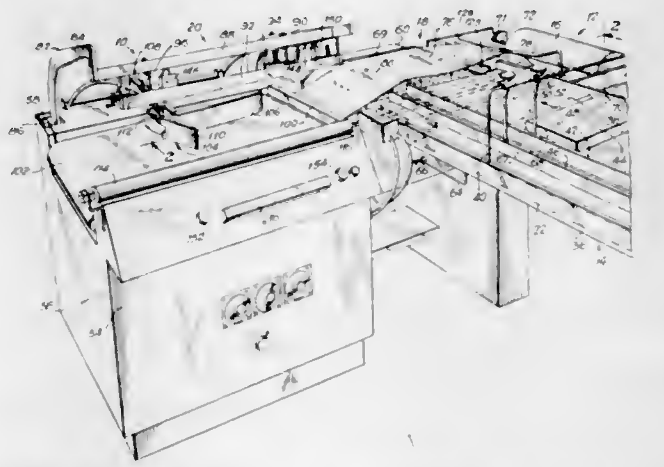
George C. Sparks, 101 Rorer St., Erdenheim, Pa.
Filed Apr. 4, 1966, Ser. No. 539,785
U.S. Cl. 53—133 **3 Claims**
Int. Cl. B65b *61/18, 9/00, 51/10*



This invention discloses a method of and apparatus for packaging wherein a horizontally supported sheet is depressed along an elongate portion to fold the sheet into upstanding facing panels between which contents is deposited, the panels finally being pressed into securement with each other.

3,429,100
METHOD AND APPARATUS FOR SEALING FILM-WRAPPED PACKAGES

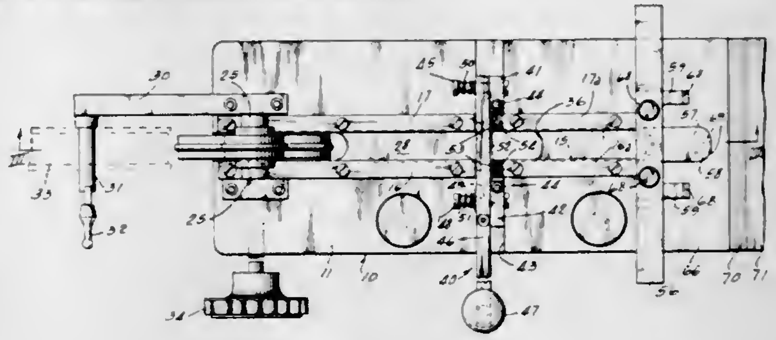
Seymour Zelnick, Orange, and Alfred C. Monaghan, Warren Township, Plainfield, N.J., assignors to Weldotron Corporation, Newark, N.J., a corporation of New Jersey
Filed July 12, 1966, Ser. No. 564,683
U.S. Cl. 53—182 **8 Claims**
Int. Cl. B65b *9/06, 51/30, 43/36*



Apparatus is provided for wrapping articles automatically between upper and lower layers of heat shrinkable or nonshrinkable film, including means for feeding said film layers into article wrapping position, with the upper film layer spaced from the lower film layer by blowing gas against the inner surface of said upper film layer, and means for pushing the article between the spaced layers, after which the layers of film are sealed around the article and the wrapped article may be transmitted through means for shrinking the film around the article.

3,429,101
FILM MOUNTING ASSEMBLY

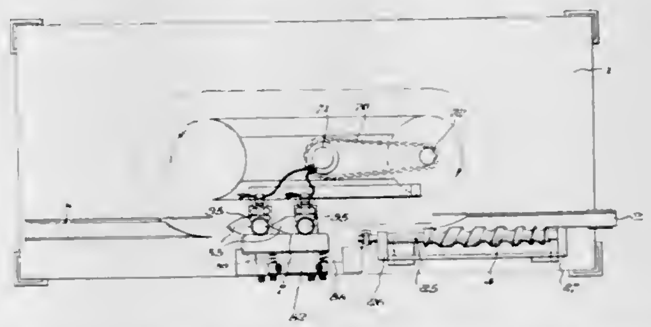
Thomas P. Anderson, Hubbard Woods, and Robert Beispel, Skokie, Ill., assignors to Microseal Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1966, Ser. No. 520,382
U.S. Cl. 53—255 **14 Claims**
Int. Cl. B65b *5/00, 55/00, 63/00*



A film mounting assembly for mounting cut pieces of microfilm into microfilm receiving pockets formed in film record cards and including guide tongues for guiding the cut piece of microfilm into the record card pocket and means for moving the cut film piece along a channel in the mounting assembly and between the tongues.

3,429,102
SEALING MACHINE

Robert E. Heffner, Lower Burrell, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1966, Ser. No. 599,802
U.S. Cl. 53—333 **11 Claims**
Int. Cl. B67b *3/20;* **B21d** *51/50;* **B65b** *7/28*

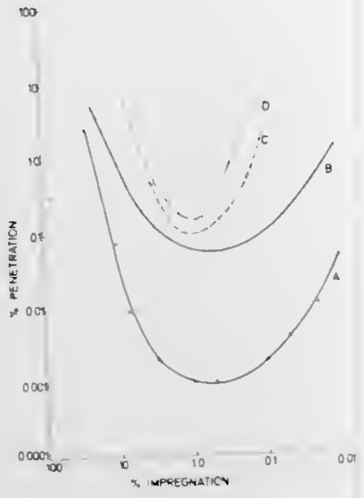


A sealing machine having a multiplicity of container carriers secured to an endless conveyor, and adapted to clampingly engage filled containers having closures loosely applied thereon is provided with a straight edge thread forming blade along a straight side of the path of travel of the carriers, to progressively seal each closure to each container. A screw feed for supplying unsealed containers to the carriers and means for receiving the sealed containers from the carriers may be used.

3,429,103
CHARCOAL FOR USE IN TRAPPING SYSTEMS

Roland Taylor, Egremont, Cumberland, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed July 27, 1966, Ser. No. 568,161
Claims priority, application Great Britain, July 28, 1965, 32,382/65
U.S. Cl. 55—71 **2 Claims**
Int. Cl. B01d *53/04, 53/16*

Activated charcoal is provided by impregnating charcoal with an iodide of hydrogen, iron, nickel, alkali metals or alkaline earth metals. Trapping systems utilizing the activated charcoal are particularly effective for removing methyl iodide which is produced during the release of fission products from irradiated fissile material.



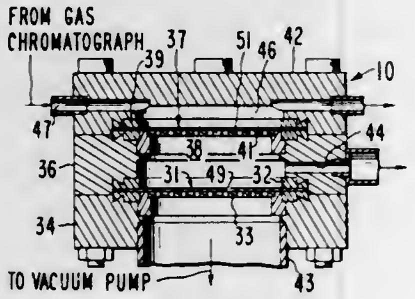
3,429,104
EXTRACTION PROCESS AND PRODUCT

Julian J. Hirshfeld, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 26, 1965, Ser. No. 459,073
U.S. Cl. 55—74 **8 Claims**
Int. Cl. B01d *53/02*

Phenols can be readily removed from fluids by passing the liquid or gas in intimate contact with fibers of polymers of acrylonitrile.

3,429,105
STAGED GAS INLET SYSTEM FOR GAS ANALYZERS AND GAS ANALYZING SYSTEM FOR EMPLOYING SAME

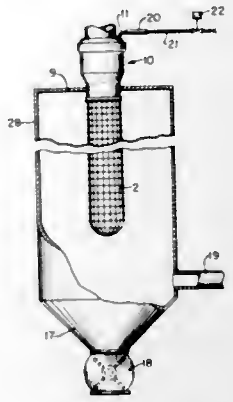
Peter M. Llewellyn, Menlo Park, and Duane P. Littlejohn, Santa Clara, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Continuation-in-part of application Ser. No. 511,794, Dec. 6, 1965. This application July 6, 1966, Ser. No. 563,235
U.S. Cl. 55—158 **10 Claims**
Int. Cl. B01d *13/00*



An inlet system for a gas analyzer which separates certain gaseous constituents from a mixture of gases to provide a highly enriched sample to the analyzer while at the same time allowing the fluid pressure conditions on the down stream side of the separator to remain substantially independent of the fluid pressure conditions on the upstream side. A pair of spaced permeable membranes free of holes and of which the ratio of the permeabilities of the permanent gases to the nonpermanent gases is less than unity comprise the separating elements. Vacuum pumping means are provided for reducing the pressures across the membranes.

3,429,106
AEROSOL FILTERING APPARATUS

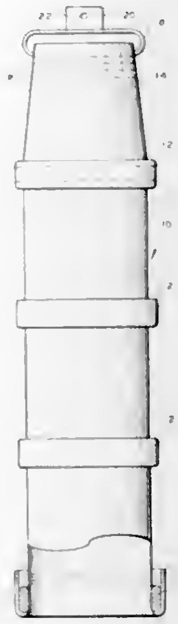
Harry I. Abboud, 5845 Clematis, Baton Rouge, La. 70808
Continuation-in-part of application Ser. No. 381,407, July 9, 1964. This application May 22, 1967, Ser. No. 640,146
U.S. Cl. 55—292 **11 Claims**
Int. Cl. B01d *29/28*



A gas cleaning apparatus connected to the mouth of a filter bag wherein the gas cleaning apparatus includes coaxial tubular members, the inner being provided with a restriction at the bottom.

3,429,107
FILTER BAG WITH ATTACHED ENCIRCLING RING

John H. Graves, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 18, 1966, Ser. No. 565,824
U.S. Cl. 55—378 **3 Claims**
Int. Cl. B01d *29/14*



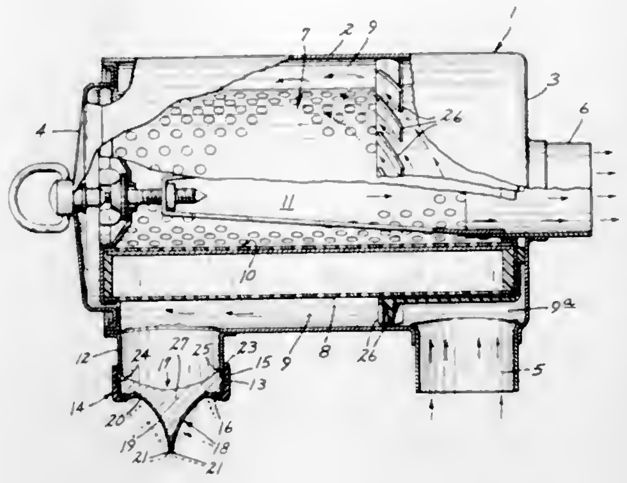
The life of fiber glass filter bags using encircling rings for holding the bags open during backflowing to remove filtered solids is substantially increased by encasing each ring in a fiber glass casing, preferably double-walled, and stitching the casing to the wall of the bag.

3,429,108
AUTOMATIC-UNLOADING DUST VALVE FOR CENTRIFUGAL AIR CLEANERS

Robert E. Larson, Minneapolis, Minn., assignor to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Delaware
Continuation of application Ser. No. 233,672, Oct. 29, 1962. This application Mar. 3, 1967, Ser. No. 620,556
U.S. Cl. 55—432 **2 Claims**
Int. Cl. B01d *45/06*

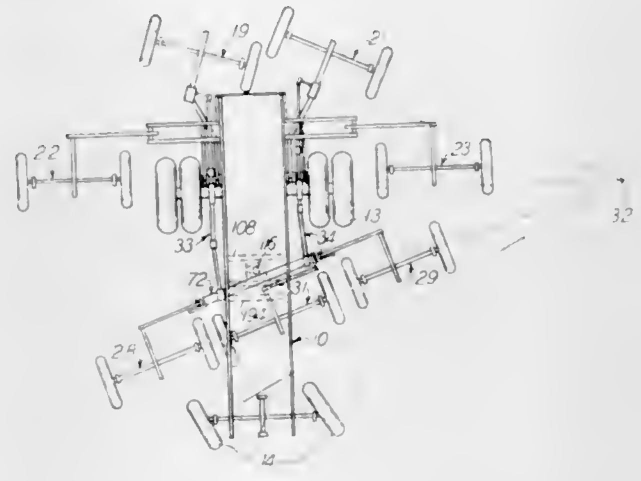
An air cleaner for internal combustion engines and the like having a dust particle outlet with a tubular member

extending outwardly therefrom having a resilient diaphragm affixed across the outer end, said diaphragm having an aperture therein with a resilient tubular discharge neck affixed thereto an intermittently movable between open and closed positions in response to changes in pressure conditions within said air cleaner for preventing the dust particles from bridging across said exit opening.



3,429,109
GANG LAWNMOWER

Sherman C. Heth and Evan T. Lewis, Racine, Wis., assignors to Jacobsen Manufacturing Company, Racine, Wis., a corporation of Wisconsin
Filed May 19, 1965, Ser. No. 456,979
U.S. Cl. 56—7 **13 Claims**
Int. Cl. A01d *75/30*

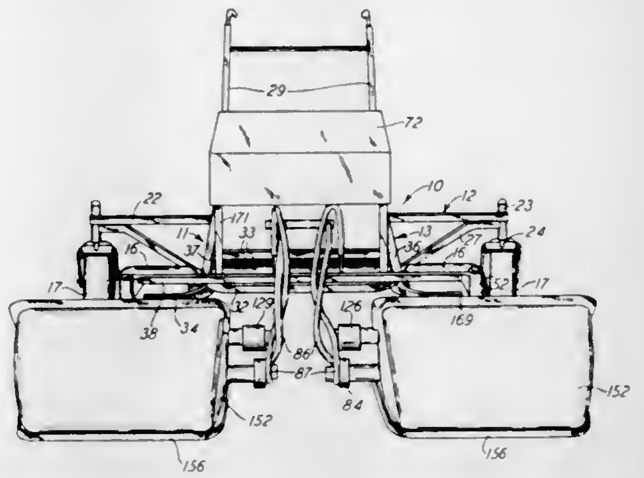


A gang lawnmower having the plurality of mowers pivotally supported on a tractor with the pivot means providing for mower articulations so that the mowers can steer about the turning center of the tractor, the mowers can be raised to inoperative positions, and the mowers will pivot to follow the contour of the ground as well as pivot to a folded position when raised. Steering arms are provided between the mowers for steering and alignment of the mowers in the operative and inoperative positions, respectively.

3,429,110
GANG LAWNMOWER

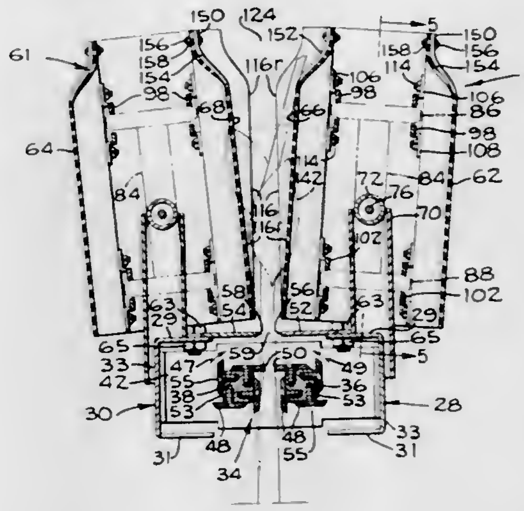
Raymond K. Strasel, Winthrop Harbor, Ill., assignor to Jacobsen Manufacturing Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 9, 1965, Ser. No. 478,049
U.S. Cl. 56—7 **11 Claims**
Int. Cl. A01d *35/12, 75/30*

A gang lawnmower including a ground supported and steerable tractor with supporting means or a frame. A vertically movable frame is supported on the tractor frame, and a plurality of lawnmowers are guided by the vertically movable frame. The mowers have connections to the movable frame, such that the weight of the frame, and the weight of the grass catchers and other parts, do not fall upon the mowers. Pivotal connections exist between the frame and the mowers, for pivoting the mowers in all directions for tracking and riding over irregular ground. The entire unit is hydraulically powered.



3,429,111
HARVESTING APPARATUS

Olin L. Looker, Milford, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 30, 1965, Ser. No. 510,628
U.S. Cl. 56—108 **3 Claims**
Int. Cl. A01d *45/02*



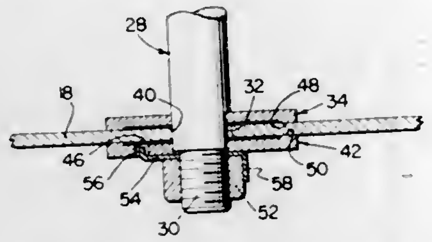
The pull knives of a corn harvester have beveled edge surfaces which are generally tangential to their orbits of rotation and are synchronized to have the same angular position. The beveled knife edges grip the cornstalks. Undulated plant gathering belts run above spaced ear abutment plates, the latter being equidistant from the ground at opposed points, at all points along their length.

3,429,112
LAWNMOWER ROTARY BLADE FRICTION CLUTCH

Richard M. Fegan, Taylors, and Henry B. Wells III, Pickens, S.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 7, 1966, Ser. No. 585,031
U.S. Cl. 56—295 **1 Claim**
Int. Cl. P01d *55/18;* **F16d** *7/02*

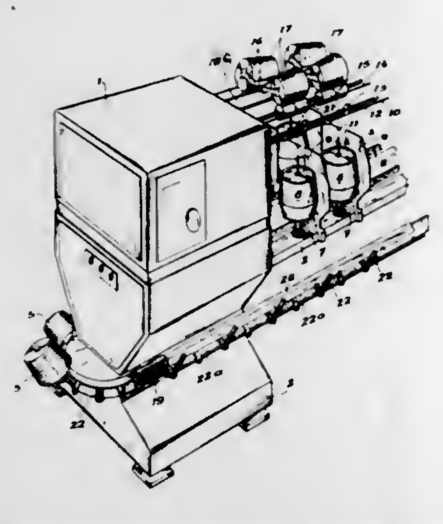
1. A rotary lawnmower comprising a frame, wheels supporting said frame, a motor, the shaft of which is adapted to be generally vertically disposed, said motor being supported by said frame, and said motor shaft being provided with a threaded end and a flattened portion con-

tiguous with said threaded end, said flattened portion forming a shoulder axially disposed away from said threaded end, a first washer having a non-circular opening therein, which opening is of substantially the same configuration as, but slightly larger than the cross-section of said shaft at said flattened shaft portion, a blade having a hole sufficiently large to permit rotation of said blade about the axis of said shaft at said flattened shaft portion, a second washer having a non-circular opening like the non-circular opening of said first washer, said blade and said washers being so adapted to mount on said shaft at said flattened portion that said first washer bears against said shoulder, said second washer locates adjacent to said threaded end, and said blade is sandwiched between said washers, a nut threaded on said shaft end and adapted to press said washers against said blade, and locking means coupling said nut to said second washer to prevent rotation of said nut.



3,429,113
TWO-FOR-ONE TWISTING MACHINE

Klaus Nimtz and Gustav Franzen, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed July 25, 1967, Ser. No. 655,907
Claims priority, application Germany, July 29, 1966, P 40,091; Oct. 14, 1966, P 40,584; Dec. 16, 1966, P 41,016; July 13, 1967, P 42,587
U.S. Cl. 57—34 **27 Claims**
Int. Cl. D01h *7/86, 13/30, 9/14*

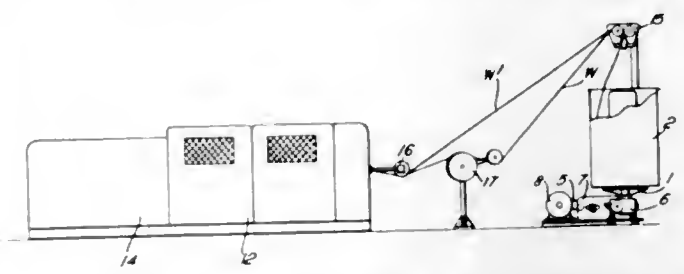


Two-for-one twisting machine having a conveyor below spindle level with support means for receiving full bobbins and for conveying them along the machine to the respective spindles, together with automatic threading and treatment material supply devices.

3,429,114
APPARATUS FOR HANDLING WIRE AND OTHER FILAMENTARY MATERIAL

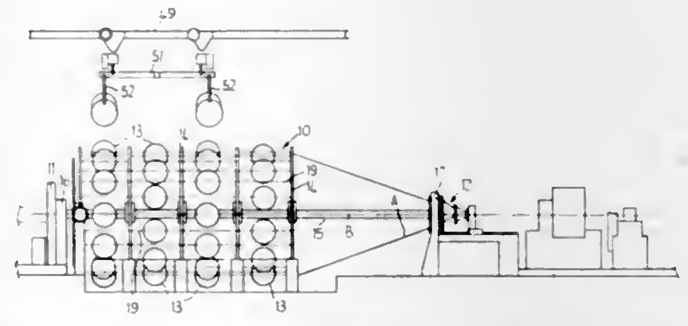
Frank Lea, Eccleston, near St. Helens, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed Dec. 8, 1965, Ser. No. 512,458
Claims priority, application Great Britain, July 7, 1965, 28,809/65
U.S. Cl. 57—34 **6 Claims**
Int. Cl. B65h *49/18;* **D01h** *13/00*

An apparatus for withdrawing wire from a bin in which it is stored in superposed helical turns comprising a high-speed wire haul-off means and means for rotating the bin in a direction and with a speed such that the balloon effect of the wire being withdrawn is eliminated or greatly reduced.



3,429,115
MACHINE FOR MAKING CABLES OR ROPES

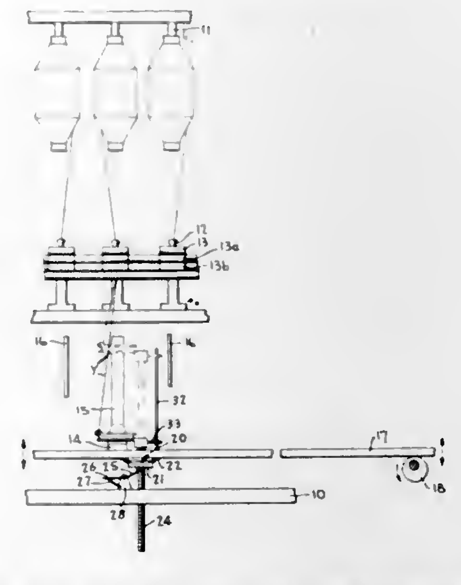
Geoffrey Purdy, Hartshead, and George N. Walton, Royton, England, assignors to David Bridge & Company Limited, a corporation of Great Britain
Filed Oct. 12, 1967, Ser. No. 674,934
U.S. Cl. 57—52 **9 Claims**
Int. Cl. D01h *9/00*



Rotatable carriage carries pivotally mounted cradles, each adapted to receive a bobbin of wire or the like. Remotely controlled means load a number of bobbins simultaneously into the carriage, and means within each cradle temporarily support bobbin until remotely controllable pintles carried at the sides of cradle move into engagement with bobbin and rotatably support it.

3,429,116
TEXTILE MACHINE

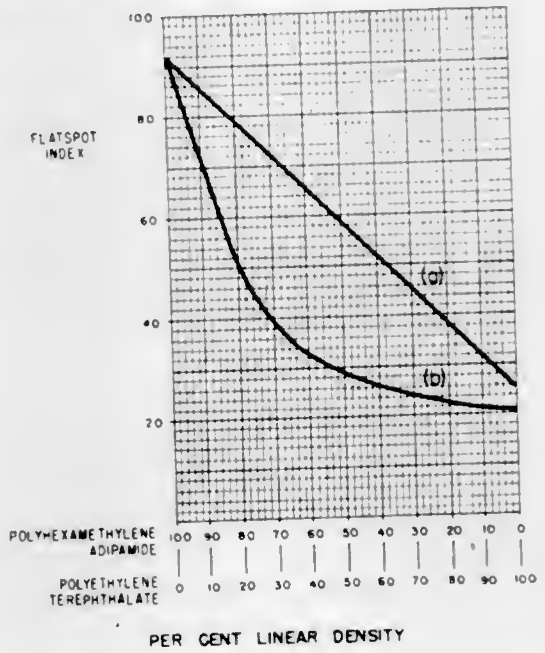
Thomas E. Pitts, Cranston, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed May 8, 1967, Ser. No. 636,963
U.S. Cl. 57—99 **9 Claims**
Int. Cl. D01h *13/06, 7/52;* **F16h** *35/00*



A random doff textile machine capable of applying a filling wind to a bobbin, and having a plurality of stations, each comprising supply means, guide means, means for taking up a finished product, and means common to all of the stations which will permit the individual doffing of a bobbin at any of the stations and the readying of the station for further operation is described. As a preferred embodiment, a random doff spinning machine having a plurality of spinning stations, each comprising a roving supply, draft rolls, and a bobbin for taking up spun yarn, and means common to all of the spinning stations capable of limited vertical movement for mounting a ring and traveller is described. The ring and traveller will move with the ring rail but are constructed and arranged to have a predetermined advance permitting the application of a filling wind to the bobbin.

3,429,117
COMPOSITE NYLON CONTINUOUS FILAMENT YARNS

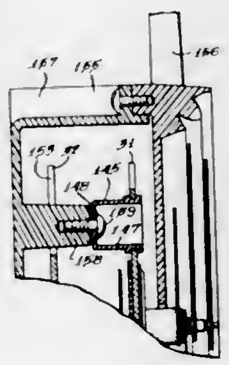
David L. Sherer, Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 21, 1965, Ser. No. 489,016
U.S. Cl. 57—140 **5 Claims**
Int. Cl. D02g *3/02*



Continuous filaments of nylon and polyester are intimately blended together to produce a yarn blend. Twisted blended yarns are then plied together to make a tire cord which has been found to give reduced flatspotting properties.

3,429,118
CLOCK MOVEMENT MOUNTING MEANS

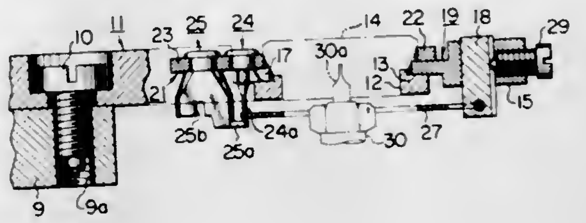
Ivar Jepson, South Duxbury, Mass., and John W. Morgan, Elmhurst, and James W. Richmond, Bensenville, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Application Aug. 18, 1965, Ser. No. 480,578, which is a division of application Ser. No. 322,218, Nov. 7, 1963, now Patent No. 3,248,867, dated May 3, 1966, and Patent No. 3,389,452, dated June 25, 1968. Divided and this application Apr. 11, 1968, Ser. No. 720,733
U.S. Cl. 58—52 **10 Claims**
Int. Cl. G04b *29/02*



A clock comprising frame means including a pair of spaced apart plates for supporting the movement of said clock and mounting means connected to one of said plates and having a wall portion disposed between plates, said wall portion having opposite sides facing toward respective ones of said plates, and each of said plates being formed with a cutaway portion therein disposed to face an adjacent side of said wall portion, thereby permitting direct access thereto from either side of said frame means.

3,429,119
REGULATOR OF TIMEPIECE

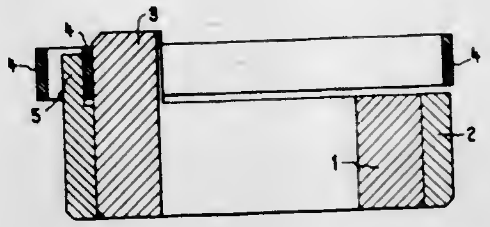
Munetaka Tamaru, Tokyo, Japan, assignor to Citizen Tokei Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed May 8, 1967, Ser. No. 636,824
Claims priority, application Japan, May 13, 1966, 41/43,696/66
U.S. Cl. 58—113 **6 Claims**
Int. Cl. G04b *7/14*



A regulator of timepiece provided with a regulator pin which is positioned within an elongated interruption of circumferential recess formed in a ring part of a stud holder, in order to reduce the overall dimension of the regulator.

3,429,120
DEVICE FOR FIXING THE INNER END OF A TIMEPIECE HAIRSPRING AND FOR ITS CENTERING AND TRUING IN THE FLAT

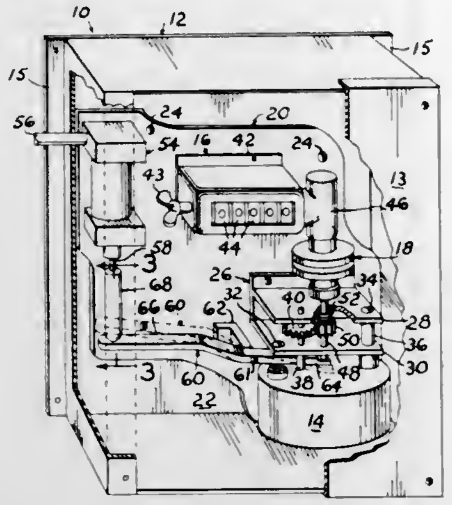
Arnold Charpilloz, 2735 Bevilard, Switzerland
Filed June 13, 1966, Ser. No. 557,292
Claims priority, application Switzerland, July 6, 1965, 9,468/65
U.S. Cl. 58—115 **2 Claims**
Int. Cl. G04b *17/32*



A hairspring is fixed in centered position and has its coils located in a plane perpendicular to the balance staff by clamping the inner end of the spring between axially fixed extensions on the inner and outer rings of a collet adapted to be placed on the balance staff. The axial extensions are in the form of a 30° inner annular segment and a 60° outer annular segment which are overlapped to clamp a hairspring end, are relatively adjustable to effect centering of the hairspring and which project above the support surface upon which the hairspring rests so that the clamping engagement affixes the hairspring while automatically locating its coils in a plane perpendicular to the balance staff opening of the collet and allowing relative rotation of the collet rings to effect centering of the hairspring with respect to the balance staff opening of the collet.

3,429,121
EQUIPMENT OPERATING TIME RECORDER

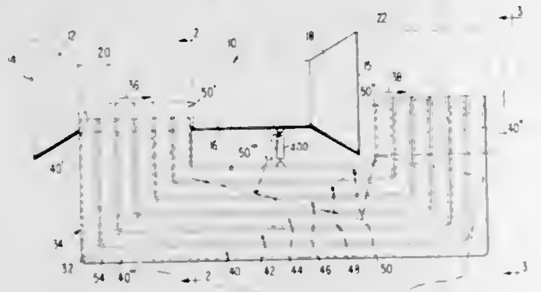
Alva D. Parker, Box 94717, Oklahoma City, Okla. 73109
Filed Aug. 3, 1967, Ser. No. 658,184
U.S. Cl. 58—145 **6 Claims**
Int. Cl. G04b *5/20*



A spring wound clock is mounted within a housing and drivably connected with a disk register through a pair of gears and a friction clutch. A pressure cylinder within the housing is connected with and operated by the equipment to be timed. A lever, pivotally mounted intermediate its ends and extending between the cylinder and the pair of gears, actuates and releases the clutch for driving and stopping the register in response to pressure applied to or released from the cylinder.

3,429,122
HEAT PIPE REGENERATOR FOR GAS TURBINE ENGINES

Milton F. Pravda and William J. Levedahl, Baltimore, Md., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 7, 1966, Ser. No. 592,549
U.S. Cl. 60—39.51 **5 Claims**
Int. Cl. F02c *7/10;* **F02g** *1/00;* **F28d** *15/00*

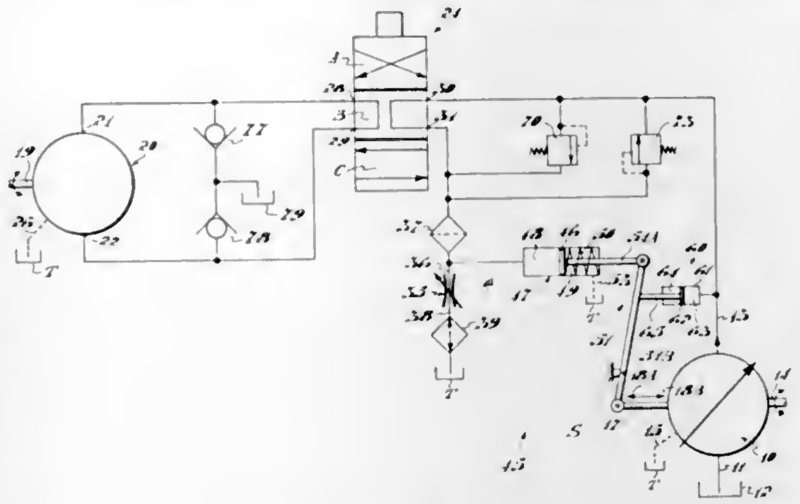


An improved regenerative heat exchange system for a gas turbine engine utilizing heat pipes to effect isothermal heat transfer between the exhaust gases from the turbine section and the compressed air passing to the combustion chamber. In one form, the heat pipes are of tubular construction and include inner and outer tubular members forming capillary flow passages therebetween. The evaporator sections of the heat pipes are selectively movable in and out of the path of the combustion products exiting from the turbine section of the engine.

3,429,123
SPEED CONTROL SYSTEM

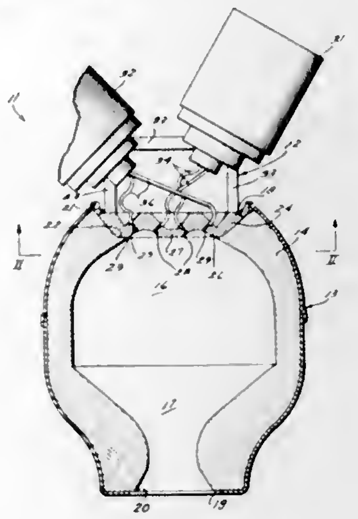
Robert K. Burroughs, Batavia, Ohio, assignor to R. K. Le Blond Machine Tool Company, Cincinnati, Ohio, a corporation of Delaware
Filed Aug. 29, 1967, Ser. No. 664,128
U.S. Cl. 60—53 **8 Claims**
Int. Cl. F16h *39/46, 39/50*

A speed control system is disclosed including a pump having a movable control member for varying the pump output which is acted upon by a restoring force tending to resist movement, a fluid motor driven by the pump, and a feedback circuit acting on the control member for establishing and maintaining the motor speed at a constant value notwithstanding fluctuations in loading of the motor. The feedback circuit includes a variable orifice in the motor exhaust line and a movable feedback piston which exerts a force on the control member to maintain the pump output and motor speed at a value corresponding to the orifice setting. The piston force necessary to overcome the restoring force and move the pump control member is derived from a pair of oppositely directed forces acting on the piston which are each substantially larger than the restoring force exerted on the pump control member. The opposing forces are generated by using a large feedback piston having one face directly exposed to the upstream orifice pressure and another face acted upon by a spring having a large spring rate. Derivation of the piston force in this manner renders the feedback circuit relatively insensitive to the magnitude of the pump restoring force, thereby enabling the speed control system to be used, without adjustment, with different pumps exhibiting widely varying restoring force characteristics.



3,429,124
CAPILLARY TUBE FEED FOR ROCKETS

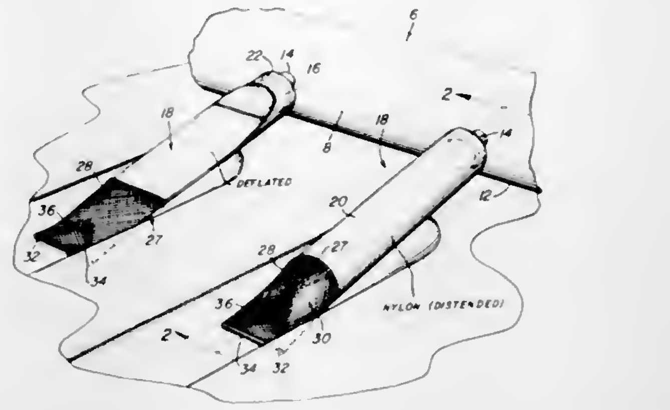
Leo R. Bell, Sherman Oaks, and Joseph A. Peterson, Long Beach, Calif., assignors to TRW Inc., a corporation of Ohio
Continuation of application Ser. No. 212,679, July 26, 1962. This application Sept. 15, 1966, Ser. No. 579,779
U.S. Cl. 60—258 **7 Claims**
Int. Cl. F02k *9/02, 7/02*



A pulsing rocket motor having fuel and oxidizer valves spaced from the injector head to provide a heat barrier. The propellant lines between the valves and the injector are of small diameter and thickness to maximize radiation and minimize heat conduction. These lines may be bundled, and a vacuum breaker line and valve may be provided to minimize dribbling after a propellant valve is closed.

3,429,125
IRRIGATION PIPE WITH EROSION PREVENTING OUTLETS

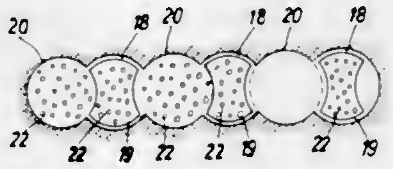
Victor L. Shotton, Rural Route, Sublette, Kans. 67877
Filed June 19, 1967, Ser. No. 647,090
U.S. Cl. 61—12 **6 Claims**
Int. Cl. E02b *13/00*



The pipe line shown serves, as usual, to transport field irrigating water from a well or other source and is equipped at longitudinally spaced points with suitable outlets, for example, flanged outlets commonly known as dispensing nozzles. To cope with crop row erosion, an erosion preventing sleeve is attached to each nozzle. Each uniquely fabricated sleeve impedes the water flow, reduces velocity, and diffuses the water short of its stitched terminal lips. Experimental use of the improved sleeves has acceptably solved the crop row erosion problem.

3,429,126
METHOD OF PRODUCING A CONTINUOUS BORE PILE WALL

Gino Wey, Kiefernweg 6, Russelsheim (Main), Germany
Filed Jan. 21, 1966, Ser. No. 522,273
U.S. Cl. 61—35 **5 Claims**
Int. Cl. E02d *5/34, 5/12*

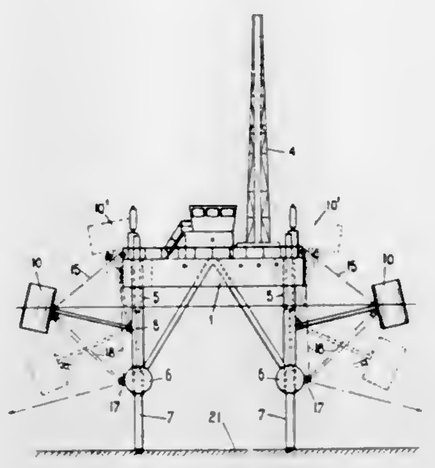


The method disclosed herein is for constructing a continuous wall of piles for retaining walls, the sides of excavations and the like, and comprises boring a plurality of holes such that in the final ararngement of bore holes the distance between the centers of two adjacent holes is less than the diameter of each hole, placing a filling material or removable filling member which can be shaped to the profile of an adjacent overlapping bore hole in each hole before boring an overlapping adjacent hole and thereafter filling the bore holes with concrete and/or injecting cement grout into the filling material.

3,429,127
METHOD AND APPARATUS FOR ESTABLISHING A FIXED SUPPORT OF A BUOYANT BODY IN ROUGH WATER

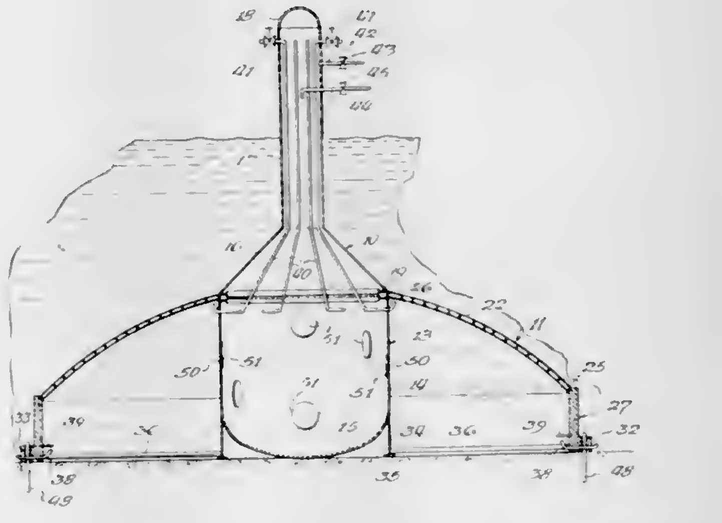
Jacobus M. Donkers, Amsterdam, Netherlands, assignor to Verschure & Co's Scheepswerf en Machinefabriek N.V., Amsterdam, Netherlands, a Dutch limited-liability company
Filed Feb. 11, 1966, Ser. No. 526,772
Claims priority, application Netherlands, Feb. 17, 1965, 6501996
U.S. Cl. 61—46.5 **3 Claims**
Int. Cl. E02b *17/02*

An offshore drilling rig is provided with extensible supporting legs and auxiliary buoyancy devices. The latter raise the rig above its normal buoyancy level so that the legs may be extended and locked whereafter the auxiliary buoyancy is suddenly terminated to set the legs.



3,429,128
OFFSHORE STORAGE STRUCTURE

Donald Claude Stafford, Hinsdale, and Robert Simons Chamberlin, Western Springs, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Apr. 21, 1967, Ser. No. 632,697
U.S. Cl. 61—46.5 **14 Claims**
Int. Cl. E02b *17/00;* **B65d** *89/10*

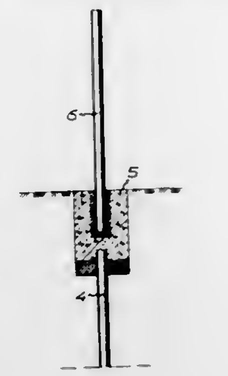


Provided is an offshore liquid storage tank which rests submerged supported on the floor of a body of water. The tank is comprised of two vessels, both of which contribute to floating buoyancy and to controlled submergence of the tank at a desired site.

3,429,129
METHOD FOR PRODUCING FOUNDATIONS FOR COLUMNS AND THE LIKE

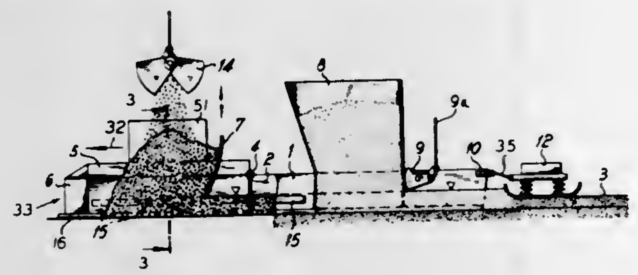
Jan Erik Johansson, Slattervagen 1C, Lund, Sweden, and Karl-Erik Nyman, Vastra Kanalgatan 5, Malmo, Sweden
Filed July 6, 1967, Ser. No. 651,431
Claims priority, application Sweden, July 15, 1966, 9,697/66
U.S. Cl. 61—50 **4 Claims**
Int. Cl. E02d *5/22, 5/54, 27/12*

A method for producing foundations or footing for columns including pouring in a hole a first layer of concrete, driving through the unset concrete a pile extending below the hole and projecting above the first layer of concrete to achieve lateral stability and subsequently pouring a second layer of concrete into the hole whereby the footing area can be minimized without loss of support.



3,429,130
DAM CONSTRUCTION

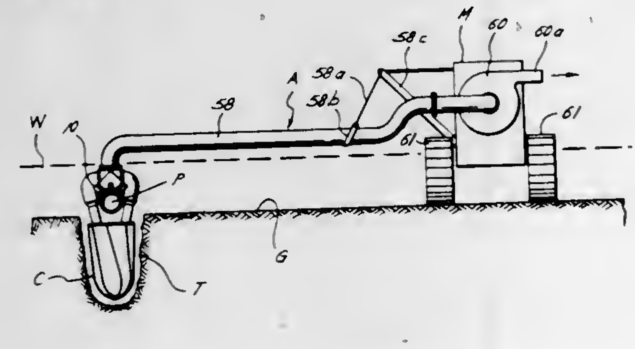
Alfred Feiner, Porz-Westhofen, and Rudolf Hamann and Clemens Schopf, Cologne-Poll, Germany, assignors to Strabag Bau-A.G., Cologne-Deutz, Germany
Original application May 3, 1963, Ser. No. 277,809, now Patent No. 3,299,642, dated Jan. 24, 1967. Divided and this application Oct. 12, 1966, Ser. No. 586,250
Claims priority, application Germany, Nov. 14, 1962, St 19,964
U.S. Cl. 61—63 **13 Claims**
Int. Cl. E02b *7/06, 8/00;* **E01c** *19/12*



Apparatus for erection of dams having an internal sealing apron. Spaced partition walls are moved over the ground, and during such movement, the apron material is deposited between the partition walls and fill material is deposited outwardly of each of the partition walls. Compactors are provided for compacting the deposited materials. The desired height can be built up by depositing of successive levels, one atop the other, of the materials.

3,429,131
PIPELINE TRENCHING APPARATUS

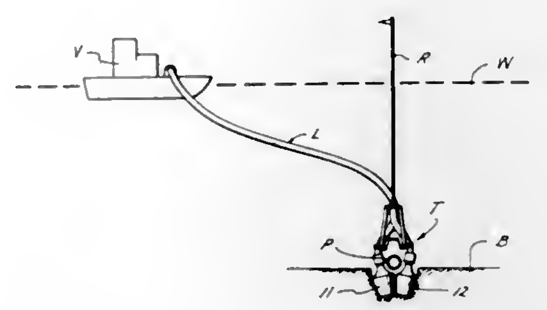
Charles F. Martin, 3515 Bluebonnet, Houston, Tex. 77025
Filed Mar. 22, 1967, Ser. No. 625,201
U.S. Cl. 61—72.4 **10 Claims**
Int. Cl. E02f *5/02*



A trenching apparatus for travel on a pipeline and having a substantially vertical cutter removably mounted below the pipeline to dig a single trench therebelow and into which the pipeline subsequently is positioned.

3,429,132
SUBMARINE PIPELINE TRENCHING MACHINE

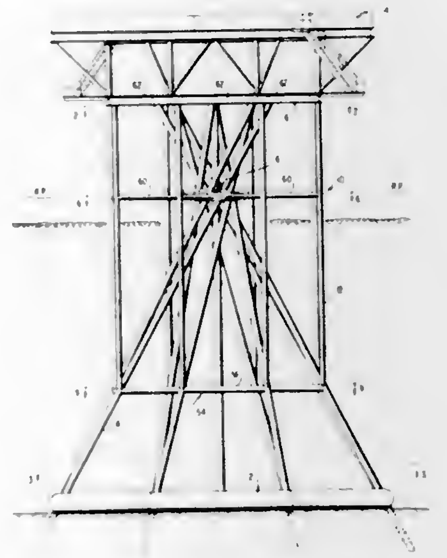
Charles F. Martin, 3515 Bluebonnet, Houston, Tex. 77025
Continuation-in-part of application Ser. No. 625,201, Mar. 22, 1967. This application Nov. 20, 1967, Ser. No. 684,287
U.S. Cl. 61—72.4 **10 Claims**
Int. Cl. B63b *35/04*



An apparatus for forming a trench for a submarine pipeline wherein two substantially vertically disposed cutting cages are supported from a framework which rides above the pipeline and are rotated in opposite directions for cutting a single trench below the pipeline. A flexible hose is connected between a pump and an inlet tube opening inside each of the cutting cages to remove the cut formation.

3,429,133
OFFSHORE TOWER

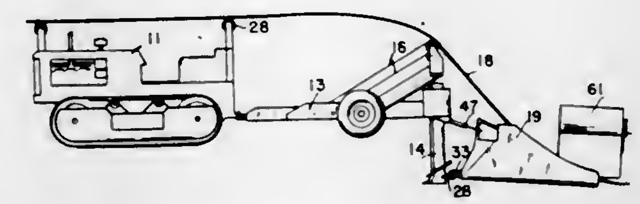
Ferdinand R. Hauber, Galena Park, Tex., assignor to Brown & Root, Inc., Houston, Tex., a corporation of Texas
Filed Apr. 19, 1967, Ser. No. 631,966
U.S. Cl. 61—46.5 **8 Claims**
Int. Cl. E02b *17/02*



A tower suitable for use in offshore well operations and the like including a plurality of upwardly extending, generally straight legs spaced about and disposed in a swirling pattern generally along the exterior surfaces of two mutually intersecting, oppositely directed, upper and lower conoidal surfaces of revolution developed concentrically about a single vertical axis. Connecting means rigidly support the legs in spaced relation. A hollow toroidal base secured to the lower ends of the legs provides sufficient buoyancy to float the tower in the water and may be selectively flooded to cause the tower to rest on the seabed.

3,429,134
CONDUIT IMPLANT ATTACHMENT

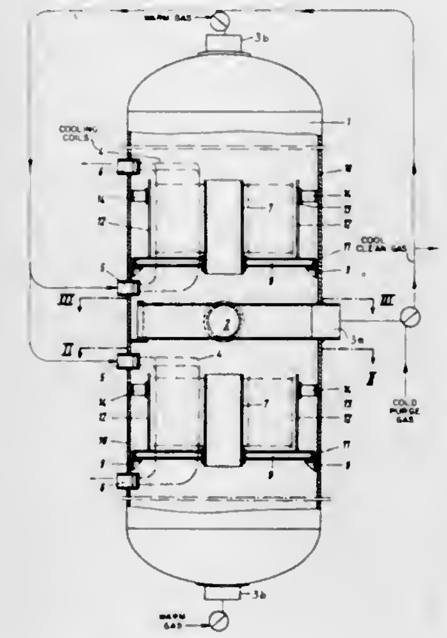
Eugene R. Coffey, 107 Duncan St., Montrose, Colo. 81401
Continuation-in-part of application Ser. No. 446,815, Apr. 9, 1965. This application June 8, 1967, Ser. No. 644,528
U.S. Cl. 61—72.6 **5 Claims**
Int. Cl. F16l *1/00;* **E02f** *3/62*



A tractor-towed mole type device incorporating an improved hitch for more efficiently injecting flexible conduit beneath ground surfaces of irregular contour and further incorporating elements providing improved conduit bedding in disturbed earth structures and means for selectively raising a loop of conduit above the earth surface for service access purposes.

3,429,135
DOUBLE-FLOW REGENERATOR

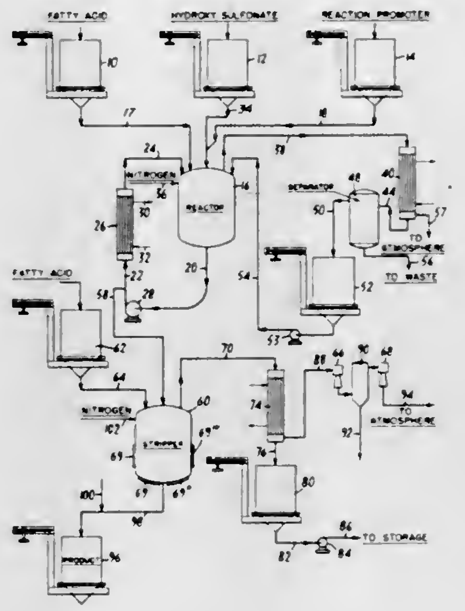
Günther Rückborn, Munich-Grunwald, Friedl Donhauser, Amberg, and Johann Huber, Grossbesselohe, near Munich, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany
Filed Dec. 17, 1965, Ser. No. 514,612
Claims priority, application Germany, Dec. 19, 1964, G 42,321
U.S. Cl. 62—13 **9 Claims**
Int. Cl. F25j *5/00, 3/08*



In a double-flow regenerator, the provision of heat exchange coils in the coldest portions of the regenerator, near the central outlet, and the use of cool, clean air withdrawn from the regenerator as a heat exchange fluid through said coil so as to warm said fluid to avoid the liquid phase during a subsequent expansion step of said fluid, and at the same time, providing a regenerator temperature profile wherein small temperature differences between the regenerator and fluids flowing therethrough are obtained in both the warm and cold portions thereof.

3,429,136
PROCESS FOR PREPARING HYDROXY-SULFONATE ESTERS

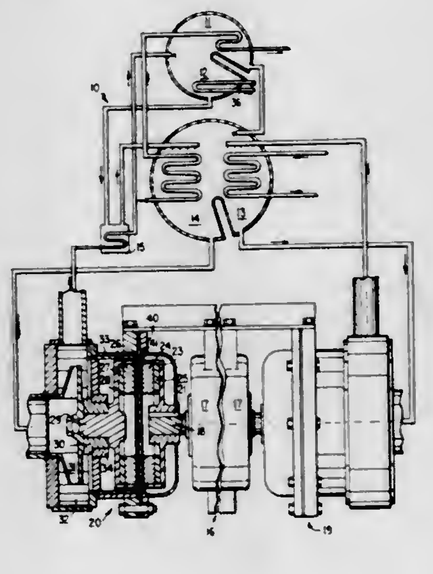
Ernest Knowlton Holt, Tenafly, N.J., Herbert H. Mueller, Riverside, Conn., and Warren J. Urban, Teaneck, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Dec. 11, 1964, Ser. No. 417,577
U.S. Cl. 62—114 **6 Claims**
Int. Cl. C11d *1/14;* **C07c** *143/90*



This application discloses a novel method for the manufacture of esters of hydroxy sulfonates for use as detergents. Hot hydroxy sulfonate esters are cooled from temperatures in the order of 350° to 500° F., which are encountered in the preparation of such compounds, to a temperature below about 330° F., at which temperature the ester products may be safely exposed to the atmosphere, by injecting into the hot molten ester mass from 1 to 50 pounds of water per pound of ester. Cooling is sufficiently rapid that no detectable amounts of hydrolysis occurs.

3,429,137
MAGNETIC DRIVE PUMP FOR USE IN REFRIGERATION SYSTEMS

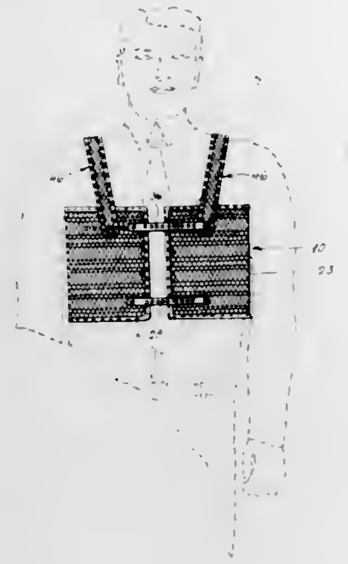
John Law, Manlius, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 28, 1967, Ser. No. 656,851
U.S. Cl. 62—141 **1 Claim**
Int. Cl. F25d *15/00*



A magnetic drive pump for use in an absorption refrigeration system, having coil disposed intermediate rotating drive and follower magnets for sensing resulting variation in the magnetic flux linking the coil to provide a control signal indicative of loss of magnetic coupling.

3,429,138
COOLING VEST

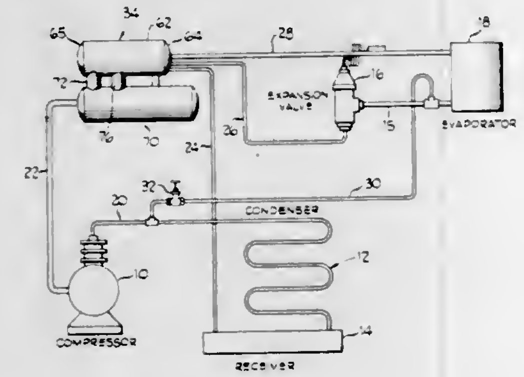
Isaac Goldmerstein, 210 Riverside Drive,
New York, N.Y., 10025
Filed Apr. 27, 1967, Ser. No. 634,368
U.S. Cl. 62—259 **5 Claims**
Int. Cl. F25d *23/12;* **A41d** *13/00*



A cooling vest formed of a rectangular strip of material shaped to form a wide band body. The band-shaped body is formed of a single rectangular ply of nylon or plastic mesh material on one side thereof and a series of rectangular three-ply strips on the other side thereof. Each strip is formed of an inner ply of thin corrugated metallic foil of highly heat and cold conductive material, a thin outer ply of fabric, and an intermediate ply of absorbent evaporator material such as sponge including a thin band of cotton and cross pieces of sponge placed thereon in crosswise fashion for connecting the sponge pieces together. The three-ply strips are secured at their ends to the ends of the nylon or plastic mesh material. Detachable fastening means such as perforated straps on one end of the band body and coacting lugs on the other end detachably connect the ends of the band body to each other. Shoulder straps attached to the topmost three-ply strip support the vest from the shoulders of the wearer.

3,429,139
REFRIGERATION SYSTEM INCLUDING ACCUMULATOR MEANS

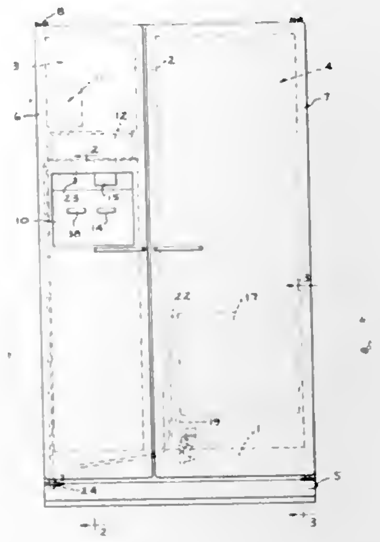
Daniel D. Wile, Whittier, Shizuo R. Adachi, Glendale, and David S. Brainard, Alhambra, Calif., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 1, 1967, Ser. No. 657,680
U.S. Cl. 62—278 **2 Claims**
Int. Cl. F25b *41/00*



A refrigerant flow control apparatus for use with a defrosting system in which liquid refrigerant is returned to the compressor in a controlled manner to prevent damage to the compressor from slugs of condensed refrigerant. The principal improvement resides in a separate liquid refrigerant storage chamber which increases the capacity of the unit for retarding liquid refrigerant.

3,429,140
HOUSEHOLD REFRIGERATOR INCLUDING ICE AND WATER DISPENSING MEANS

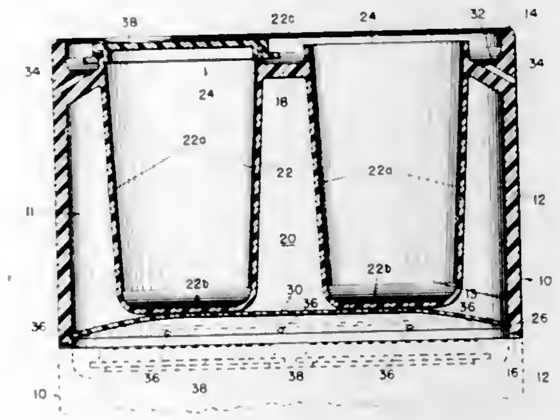
Frederick M. White, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 657,940, Aug. 2, 1967. This application Feb. 9, 1968, Ser. No. 704,493
U.S. Cl. 62—339 **10 Claims**
Int. Cl. F25d *23/12;* **B67d** *5/62*



A household refrigerator comprising freezer and fresh food compartments includes an ice and cold water service area on the freezer door and water supply means for supplying water cooled in the fresh food compartment to the service area.

3,429,141
REFRIGERATIVE DISH

Evelyn J. Halseth, E. 12724 8th Ave., Spokane, Wash. 99214
Filed Sept. 19, 1966, Ser. No. 580,435
U.S. Cl. 62—372 **3 Claims**
Int. Cl. F25d *3/08*

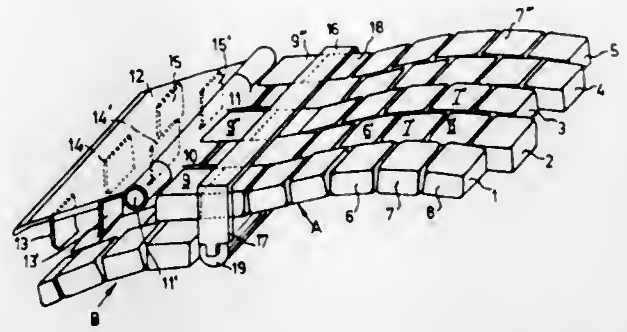


A portable refrigerative dish of one piece construction having juxtaposed cavities opening oppositely to each other to contain foodstuff and ice in isolation from each other while transfer of heat between the cavities is optimum.

3,429,142
WATCH BAND ADJUSTABLE CLASP

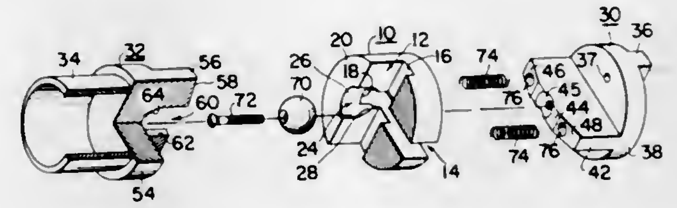
Louis L. B. Brunet, Annecy, France, assignor to S. A. Zuccolo Rochet & Cie, Annecy, France, a company of France
Filed May 24, 1967, Ser. No. 640,872
Claims priority, application France, May 26, 1966, 63,008
U.S. Cl. 63—4 **7 Claims**
Int. Cl. A44c *5/02, 5/04;* **A44b** *19/00*

This disclosure concerns a flexible wrist watch band composed of spaced transverse links of a given length forming two distinct chains each with a free end, these ends being arranged in partially overlapping relation, a guide loop pivoted at the end of one chain through which the other end passes, a terminal plate hinged to the other end and on this terminal plate at least one pair of elastically deformable, claw-like members are separated from one another by a distance at least equal to the length of the links and fitting between at least some of these links for releasably securing the two chains in clasped relation.



3,429,143
UNIVERSAL JOINT

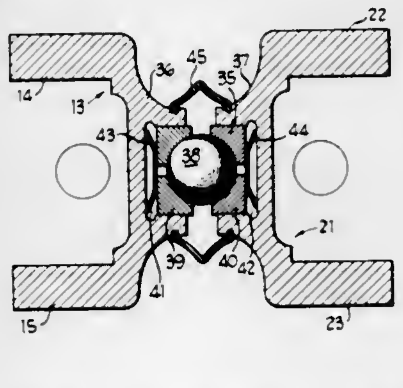
Daniel R. Sabre, 560 Bryn Mawr Ave., Bryn Mawr, Pa. 19010
Filed Dec. 22, 1966, Ser. No. 603,816
U.S. Cl. 64—8 **12 Claims**
Int. Cl. F16d *3/22, 3/77*



This invention relates to a universal joint particularly adapted for use in the drive of automobiles. In addition to providing for the usual universal type coupling, the universal joint disclosed herein is constructed to accommodate relative axial movement between the rear and the propeller shaft as the latter is moved rearwardly and forwardly from a normal drive position such as occurs under conditions of "wrap up" and "wrap down."

3,429,144
CENTER BEARING DOUBLE CARDAN JOINT

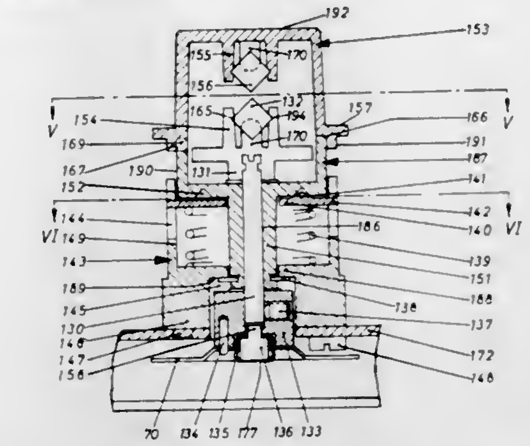
Arthur M. McIntosh, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 17, 1967, Ser. No. 661,346
U.S. Cl. 64—17 **7 Claims**
Int. Cl. F16d *3/26, 3/30*



A double cardan joint provided with a floating bearing positioned between two yoke members of the joint for maintaining their alignment.

3,429,145
CAM CARRIAGE FOR KNITTING MACHINE

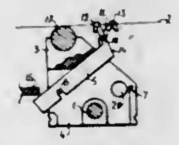
Herbert Schurich, Berlin, Germany, assignor to Firma Karl Steinhof Apparatefabrik, Berlin, Germany, a corporation of Germany
Filed Aug. 22, 1966, Ser. No. 574,191
Claims priority, application Germany, Aug. 27, 1965, St 24,319
U.S. Cl. 66—78 **14 Claims**
Int. Cl. D04b *15/36*



Cam carriage for knitting machine in which a star wheel is rotated by engagement with the butts of a set of knitting needles across which the star wheel is moved to determine the pattern of knit by selectively displacing certain needles into a retracted position, a selector knob being rotatable about the wheel axis to establish a chosen starting position into which the star wheel is returned by a magnetic coupling upon disengagement of its teeth from the needle butts upon completion of a traverse of the carriage.

3,429,146
ELECTRICAL WARP STOP MOTION FOR TEXTILE MACHINE

Jaroslav Cvach, Kdyne, Czechoslovakia, assignor to Elitex, Sdruzeni podniku textilniho strojirenstvi, Liberec, Czechoslovakia
Filed Jan. 18, 1965, Ser. No. 426,197
Claims priority, application Czechoslovakia, Jan. 22, 1964, 358/64
U.S. Cl. 66—163 **6 Claims**
Int. Cl. D04b *35/14;* **D02h** *13/08;* **D03d** *51/28*



A plurality of spaced support members are mounted with a pair of electrically conductive members extending between these support members. Each of the support members has a switching member pivotally mounted on one of the contact members for movement between a raised position in which the support member is hooked onto a running thread, and for gravity descent when the thread breaks so as to engage the second electrically conductive contact member and close a circuit for producing a signal.

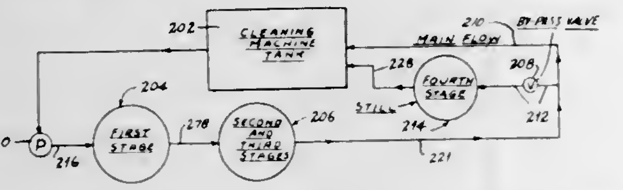
3,429,147
TUBULAR SEAMLESS WARP-KNITTED STOCKING

Marius Antoine Perrier, Lyon, France, assignor to J. B. Martin-Velours Peluches, Soieries-S.A., Geneva, Switzerland, a Swiss company
Continuation of application Ser. No. 505,182, Oct. 25, 1965. This application Mar. 29, 1968, Ser. No. 717,462
Claims priority, application France, Feb. 8, 1962, 42,272
U.S. Cl. 66—195 **7 Claims**
Int. Cl. D04b *21/00, 11/28, 9/46*

The warp-knitted seamless stocking has unreinforced leg sections such as the welt, heel and toe, formed by the same fixed number of sets of yarns. The selected reinforced fabric sections are achieved by a change in the stitch construction in said selected sections without the use of or introduction of any additional yarn or sets of yarns into the fabric structure.

3,429,148
MULTI-STAGE FILTER SYSTEM FOR DRY CLEANING

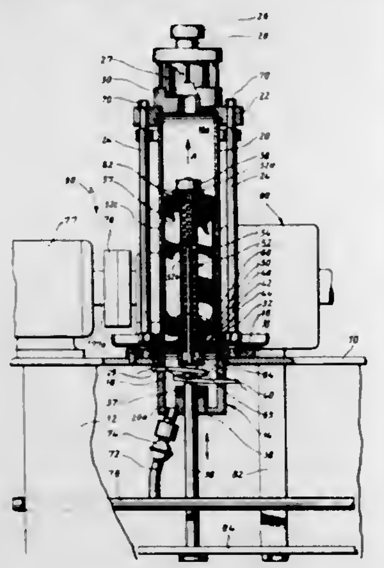
George M. Worthington, 7817 Grove Ave., Shrewsbury, Mo. 63119
Filed Jan. 3, 1966, Ser. No. 518,477
U.S. Cl. 68—18 **6 Claims**
Int. Cl. B01d *25/04*



An improved multi-stage dry cleaning system for removing lint, dirt, fatty acids, and color from dry cleaning solvents. A filter means is used in one stage presenting a fresh area of filter media as it becomes clogged with solvent. The filter is unwound from a reel to a motor driven wind-up reel. A pressure-sensitive switch operates upon the back pressure to control the movement of the filter media when it becomes clogged. The system also employs a package battery of annularly positioned cylindrical cartridges for filtering in another stage.

3,429,149
APPARATUS FOR PERMEATING FIBROUS MATERIALS WITH LIQUIDS

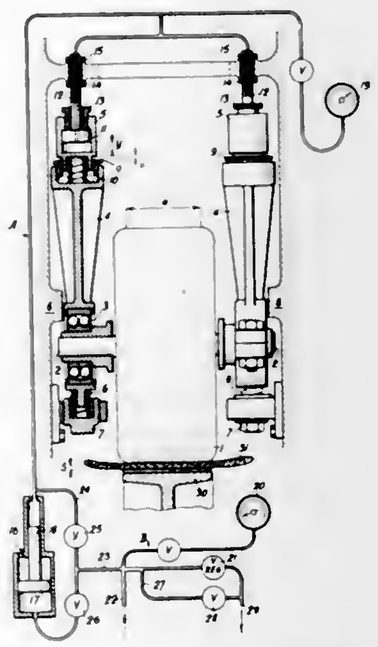
Hans Ellner, Stuttgart-Weilimdorf, Germany, assignor to Hans Ellner, Stuttgart, Germany, a firm
Filed June 13, 1966, Ser. No. 557,128
Claims priority, application Germany, Dec. 23, 1965, E 30,723
U.S. Cl. 68—150 **13 Claims**
Int. Cl. D06f *17/02, 35/00*



An apparatus for saturating permeable material with liquid in which a perforated carrier projecting to one side of a piston reciprocably arranged in a cylinder filled with liquid serves to carry the permeable material for movement with the piston and which the piston and the carrier are arranged and constructed so that during reciprocation of the piston liquid contained in the cylinder is forced through the material carried by the carrier.

3,429,150
LEATHER ROLLING MACHINE

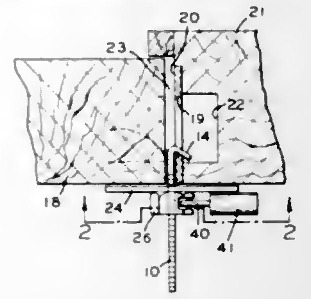
Bohuslav Plechac, Otrokovice, Václav Velísek, Myslocovice, Václav Machovsky, Tlumacov, Bozetech Kadlcík, Otrokovice, and Stefan Molćan, Hulin, Czechoslovakia, assignors to Strojosvit narodni podnik, Krnov, Czechoslovakia
Filed Oct. 19, 1966, Ser. No. 587,908
Claims priority, application Czechoslovakia, Oct. 20, 1965, 6,319/65
U.S. Cl. 69—46 **9 Claims**
Int. Cl. C14b *1/34;* **F15b** *15/14, 7/00*



A rolling machine particularly for rolling sheet material such as leather. The rolling machine has at least one rolling disk for mechanically compacting the leather. The rolling disk is supported for rotary movement by bearings which in turn are carried by a support means providing through spring means a cushioned support for the rolling disk in such a way that the latter will smoothly engage the edges of the leather sheet material. A hydraulic pressure-fluid device coacts with the disk to press the latter against the leather sheet material.

3,429,151
PORTABLE LOCK

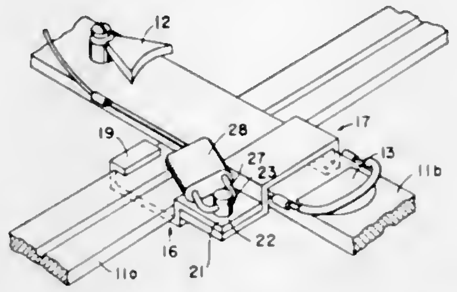
Richard I. N. Weingart, P.O. Box 1526, Nassau, Bahamas
Continuation-in-part of three applications, Ser. No. 552,553, May 24, 1966; Ser. No. 615,651, Feb. 13, 1967; and Ser. No. 645,778, June 13, 1967. This application June 23, 1967, Ser. No. 648,485
U.S. Cl. 70—14 **6 Claims**
Int. Cl. E05b *73/00;* **E05c** *19/18*



A portable lock having a bar with a hook at one end for insertion between a door and frame, and a locking nut movable on the bar into engagement with the door and frame, and means for securing the nut against reverse movement.

3,429,152
SKI LOCK

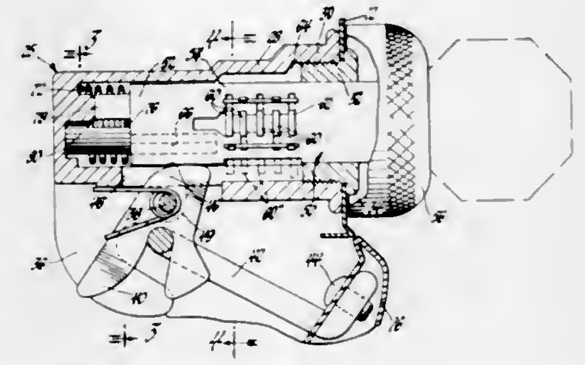
Forest J. Whitaker, 39 Ivy Drive, Orinda, Calif. 94563, and John B. McInerney, 2666 78th Ave., Oakland, Calif. 94605
Filed May 29, 1967, Ser. No. 641,993
U.S. Cl. 70—58 **5 Claims**
Int. Cl. E05b *73/00;* **A63c** *11/00;* **A44b** *21/00*



Inter-fitting brackets are provided, each fitting transversely across a ski, preferably between the toe and heel binding fittings thereof. In assembled position the brackets require that the skis be crossed at wide angles. Locking means is provided to maintain the brackets in assembled position. With the skis locked in wide angle position, theft is discouraged because one walking with skis thus positioned would be conspicuous and recognized as a thief. Further, transporting skis in this position on conventional automobile ski racks is either impossible or extremely conspicuous.

3,429,153
VEHICLE BODY COMPARTMENT LATCH AND LOCK

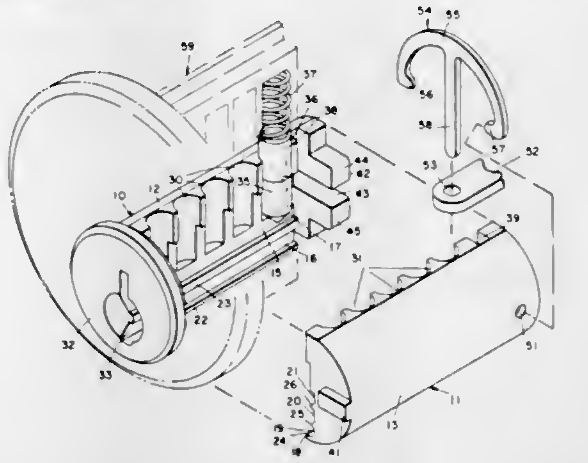
Joseph J. Magyar, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,069
U.S. Cl. 70—84 **4 Claims**
Int. Cl. E05b *65/44, 63/12;* **E05c** *3/12*



A latch and lock assembly for a vehicle body glove compartment door includes a housing mounted on the instrument panel and rotatably carrying a forked bolt engageable by a keeper on the glove compartment door, with the housing also rotatably mounting a latch operating key-operable lock cylinder or plug having a cylindrical detenting surface portion engageable with the bolt to hold it in latched position, with a slot being provided in the detenting portion for permitting free rotation of the bolt and opening movement of the door when the cylinder is rotated to register the slot with the rotational plane of the bolt. Key-operated tumblers are provided to lock the cylinder against releasing rotation, and a coil torsion spring operates in two directions to bias the cylinder to a neutral or normal bolt detenting position from either its bolt releasing position or its locked position.

3,429,154
LOCK PLUG

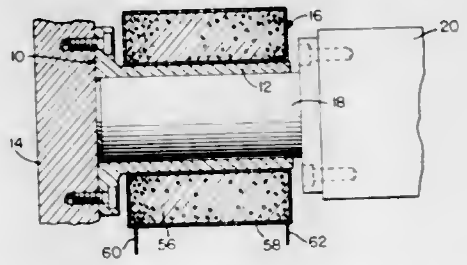
Jerome Schwartz, Philadelphia, Pa., assignor to Taylor Lock Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1966, Ser. No. 587,444
U.S. Cl. 70—375 **6 Claims**
Int. Cl. E05b *27/04*



A lock plug of plastic material comprising plural sections in facing relation with each other, their nonfacing surfaces defining a cylinder, with a disc like face piece fixed to one end of one section concentric with the cylinder, and interfitting locating formations on the face piece and another of the sections.

3,429,155
POSITIONING CONTROL SYSTEM

Eugene W. Hines, Grand Blanc, Mich., assignor to E. W. Hines Associates
Filed Jan. 12, 1966, Ser. No. 520,113
U.S. Cl. 72—9 **2 Claims**
Int. Cl. B21b *37/12, 37/02;* **B21j** *15/24*

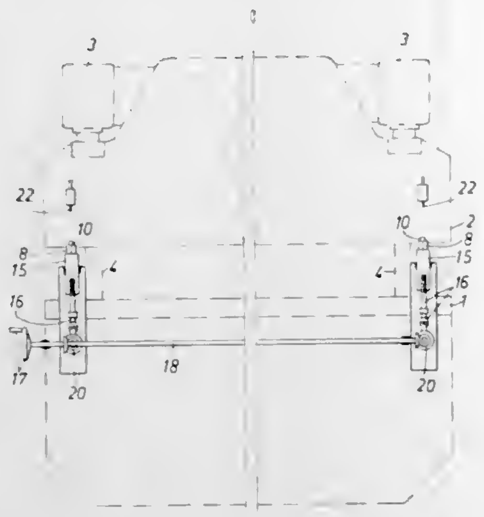


A positioning control system in which a single metallic core or bar of a magnetostrictive device is effectively and operatively associated with an element required to be moved in response to a flow of electric current metered or controlled through a gaging or control device. One end of the bar is secured against movement while the other end is free to move in response to the magnetostrictive effect generated by the current flow. The device may also include, in another preferred embodiment, an encircled mass of die rubber which is functionally responsive to the movement of the metallic bar and translates such movement to the element required to be moved.

3,429,156
DEVICES FOR BOTTOM STROKE STOP IN HYDRAULIC EDGE PRESSES

Egon Åke Lennart Eriksson, Skelleftea, Sweden, assignor to Ursvikens Mekaniska Verkstads AB, Ursviken, Sweden, a joint-stock company
Filed June 6, 1966, Ser. No. 555,585
Claims priority, application Sweden, June 10, 1965, 7,668/65
U.S. Cl. 72—26 **5 Claims**
Int. Cl. B21j *7/26, 9/20, 7/46*

A bottom stroke stop device for use in hydraulic edge presses or press brakes including a pair of limit switches supported from the bed of a press at opposed ends respectively of the press ram in a selectively adjustable manner, said switches being respectively engageable by respective abutment means at the opposed ends of said press ram, said switches being each operatively coupled to the actuating valves of the respective hydraulic cylinder means for control of such valves to selectively control the location of the lowermost end of the ram stroke and maintain the ram in the desired alignment relative to the press bed.



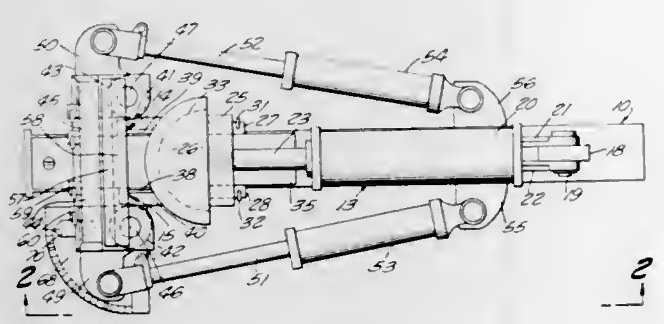
3,429,157
TUBING BENDER

Gerald W. Huth, Burbank, Calif., assignor to Huth Manufacturing Corporation, Burbank, Calif., a corporation of California

Filed Feb. 21, 1966, Ser. No. 528,936

U.S. Cl. 72—32 **8 Claims**

Int. Cl. B21d *7/24;* **B21c** *51/00*



An apparatus for bending tubing employing a hydraulic ram operated die and pivotal shoes. Different size dies and shoes can be readily and quickly attached or removed from the apparatus. A depth of bend indicator is provided for indicating the depth of bend of tubing.

3,429,158
PROTECTIVE CLADDING AND LUBRICANT FOR MECHANICALLY DEFORMABLE REACTIVE METALS

Robert E. McDonald, George A. Reimann, and Fred H. Patterson, Oak Ridge, Tenn., and Carl F. Leitten, Jr., Indianapolis, Ind., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Nov. 28, 1966, Ser. No. 597,483

U.S. Cl. 72—47 **4 Claims**

Int. Cl. B21c *23/22, 23/32, 29/00*

The hot-working or mechanical deformation of a reactive metal, i.e., a metal normally oxidizable at an elevated temperature, is facilitated by providing the metal with a coating of molybdenum, tungsten, or certain alloys thereof. These coating materials protect the underlying metal from oxidation and contamination and also provide a lubricant for the mechanical deformation of the metal when the materials are oxidized. The oxides of molybdenum, tungsten, and alloys thereof are volatile above certain temperatures so as to provide a mechanically formed metal structure that is essentially free of surface oxides and virtually free of coating material.

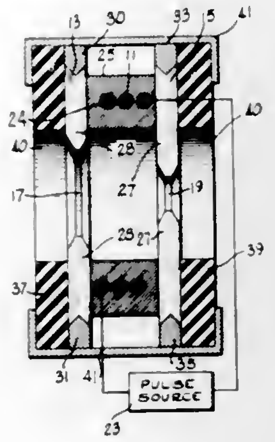
3,429,159
FORMING APPARATUS

Paul Wildi, San Diego, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed June 27, 1967, Ser. No. 649,290

U.S. Cl. 72—56 **10 Claims**

Int. Cl. B21d *26/14;* **B23p** *17/00*



Apparatus for forming a plurality of conductive work pieces or portions thereof by energy acquired from a transient magnetic field. The apparatus comprises a conductive coil which produces a transient magnetic field when current pulses are passed therethrough. The field is shaped by a field shaper means positioned adjacent to the coil which shaping means defines a plurality of apertures, each aperture being of a size for accommodating one of the work portions. Means are provided for placing selected ones of the apertures in operative condition.

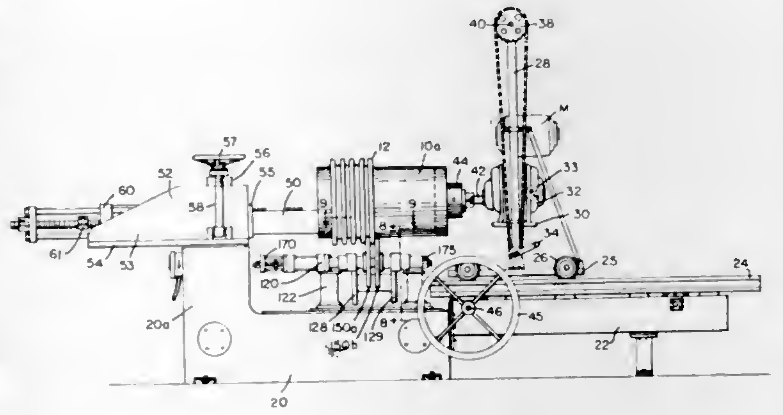
3,429,160
METHOD AND APPARATUS FOR FORMING METAL BELLOWS EXPANSION JOINTS

James W. Banks, Mount Carmel Road, Parkton, Md. 21120

Filed Aug. 13, 1965, Ser. No. 495,008

U.S. Cl. 72—77 **10 Claims**

Int. Cl. B21b *13/20, 19/00;* **B21d** *51/00*



A novel method and apparatus for forming metal bellows expansion joints having successive peripheral convolutions formed therein, including a bed, a rotatable chuck on which a cylindrical work piece is fixedly mounted, a motor for positively driving the rotatable chuck, and a freely rotatable internal forming roll mounted for transverse movement within the forming head. A pair of spaced, freely rotatable external forming rolls are fixedly mounted on the bed of the apparatus, power means for moving the internal forming roll transversely against the inside of the cylindrical work piece, and thereby forcing metal between the spaced external forming rolls to form a peripheral convolution in the work piece, and means for moving the rotatable chuck longitudinally on the bed for forming successive peripheral convolutions in the work piece.

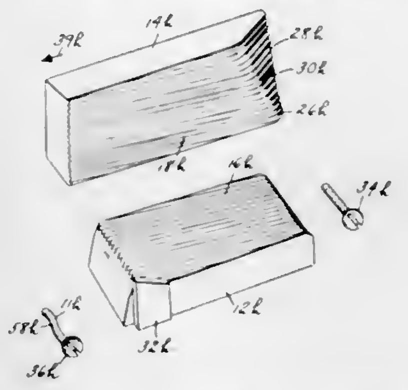
3,429,161
MEANS AND METHOD OF MAKING SPIRAL BINDING FASTENERS

Milton Morse, Fort Lee, N.J.
(41 Honeck St., Englewood, N.J. 07631)

Filed Oct. 11, 1966, Ser. No. 589,479

U.S. Cl. 72—88 **10 Claims**

Int. Cl. B21d *17/04;* **B21h** *3/06;* **B23g** *9/00*



A pair of first and second thread rolling dies having working surfaces and movable with respect to each other with an unthreaded blank disposed therein, one of the dies having a depression, the other of the dies having a corresponding projection, whereby as said blank is rolled between said dies, it enters said depression and is bent so that at least a portion of said blank is deviated from its central axis.

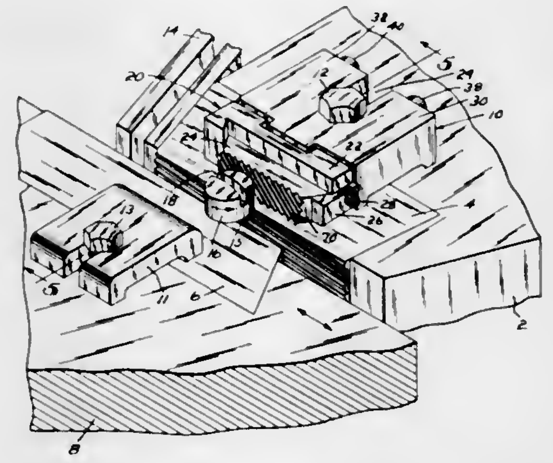
3,429,162
MEANS FOR DEBURRING SCREW HEADS

Roger W. Orlomoski, Paxton, Mass., assignor to Reed Rolled Thread Die Co., Holden, Mass., a corporation of Massachusetts

Filed Dec. 19, 1966, Ser. No. 602,839

U.S. Cl. 72—90 **5 Claims**

Int. Cl. B21b *17/04;* **B26d** *7/00*



The object of this invention is to provide a mechanism which will remove burrs from the slotted head of a screw blank while a thread is being formed on the blank by the well known thread rolling process. The invention may be used to deburr all types of screw heads among the most common of which are fillister heads, pan heads, oval heads, flat heads slotted conventionally and hexagon heads slotted across the corners.

3,429,163
PLANT FOR STRAIGHTENING AND SEVERING STRIP METAL

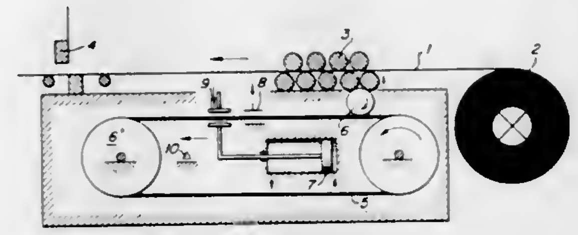
Curt Münchbach, Pforzheim-Sonnenberg, Germany, assignor to Irma Ungerer, nee Dollinger, Pforzheim, Germany

Filed Dec. 13, 1966, Ser. No. 601,388

Claims priority, application Germany, Jan. 8, 1966, U 12,345

U.S. Cl. 72—131 **6 Claims**

Int. Cl. B21f *11/00;* **B21d** *1/02;* **B21b** *15/00*



A plant for straightening strip metal and for severing the strip while the same is at a standstill. The plant includes straightening rolls which are driven for intermittently advancing the strip being operated upon in adjustable steps corresponding to the length of the sections to be severed from the strip. The drive for the rolls includes an endless belt which is intermittently moved by a piston having an adjustable stroke. The endless belt is intermittently advanced by means of stationary and displaceable gripping jaws by a piston and are adapted to drive the straightening rolls by means of an intermediate transmission device.

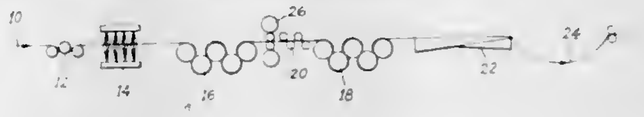
3,429,164
METHOD OF PROCESSING FERROUS STRIP

Kasimir Oganowski and Marvin B. Pierson, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Apr. 8, 1966, Ser. No. 541,259

U.S. Cl. 72—161 **5 Claims**

Int. Cl. B21b *15/00, 27/06;* **B21c** *19/00*



Method of processing ferrous strip to produce nonfluting table-flat strip including steps of working the strip while heated to a specific temperature range, quenching the worked strip, and continuously leveling said strip.

3,429,165
METAL STRIP PLANING MACHINES OPERATING BY ALTERNATE BENDINGS

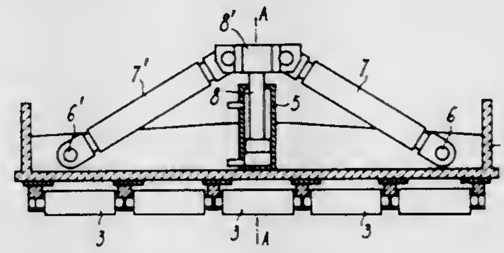
Claude Guillot, L'Horme, France, assignor to Compagnie des Ateliers et Forges de la Loire (St. Chamond, Firminy, St. Etienne, Jacob-Holtzer) Paris, France

Filed June 2, 1967, Ser. No. 643,248

Claims priority, application France, June 7, 1966, 64,464

U.S. Cl. 72—165 **4 Claims**

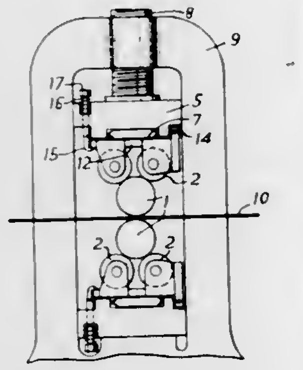
Int. Cl. B21d *1/02, 3/02;* **B21b** *39/08*



A metal strip planing machine operating by alternate tension and bending, comprising planing rollers bearing against a plurality of counter rollers, wherein the beam supporting the bearings of the counter rollers is supported in turn by a single hydraulic actuator adapted to alter the shape of said beam and therefore the shape of the axes of the planing rollers.

3,429,166
ROLLING MILL

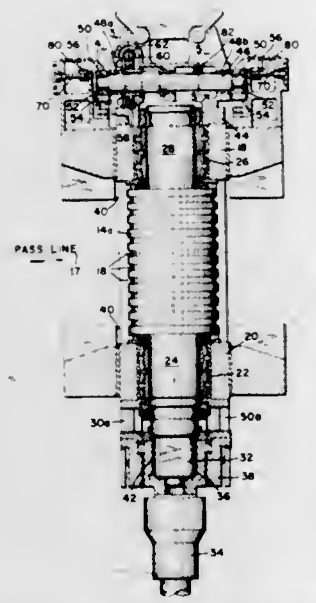
William A. Baker, Walton-on-Thames, and John R. Hartree, and Robert Gould, Banbury, England, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Mar. 7, 1966, Ser. No. 532,165
Claims priority, application Great Britain, Mar. 9, 1965, 10,059/65
U.S. Cl. 72—242 **9 Claims**
Int. Cl. B21b *13/14, 29/00, 31/32*



A rolling mill, especially suited to prevent or correct bad shape of strip being rolled, has flexible work rolls each loaded by two or more rows of individually short backing rolls, which through carriers receive loading force so applied, as from hydraulic capsule means, as to be effective to provide substantially equal force from each backing roll on a work roll, the backing roll support also including resilient means, at least separately for the end backing rolls of each row, that can counteract the load force so as to permit compensation for mismatch between strip width and loaded length of work rolls.

3,429,167
AXIAL ROLL ADJUSTING MECHANISM

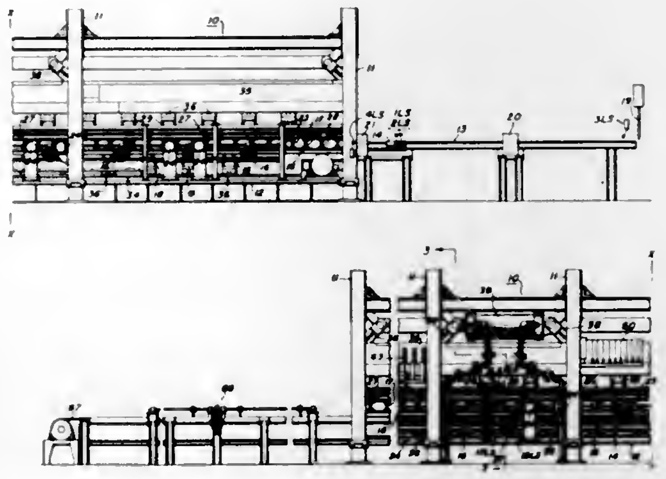
Donald Sieurin, Northboro, and William J. Hill, Holden, Mass., assignors to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 12, 1966, Ser. No. 542,172
U.S. Cl. 72—247 **8 Claims**
Int. Cl. B21b *31/18, 27/00*



An apparatus for axially adjusting a work roll journalled for rotation between bearing chocks. The apparatus includes a rotatable shaft extending through one of the bearing chocks in a direction transverse to the rotational axis of the work roll. The ends of the shaft form eccentrics extending beyond the sides of the bearing chock. The eccentrics are journalled within bearing blocks slidably abutting a fixed reference surface, the latter extending in a plane transverse to the rotational axis of the work roll. Rotation of the shaft and its eccentrics thus causes the work roll to be axially displaced relative to the fixed reference surface.

3,429,168
ROD BENDING METHOD AND APPARATUS

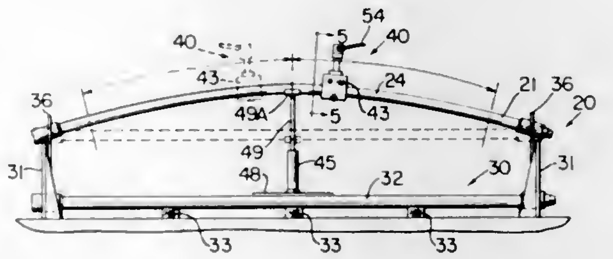
William J. Pearson, Bethlehem, and Charles R. Nippert, Sr., Allentown, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Apr. 11, 1967, Ser. No. 629,971
U.S. Cl. 72—296 **5 Claims**
Int. Cl. B21d *11/04, 31/00*



An apparatus for simultaneously effecting a plurality of bends in a rod to form a zig-zag member for use as the web section of an open-web joist structure, including means for either manual or fully automatic operation. A method of producing the zig-zag members including feeding, bending, and ejecting the workpiece in which the member produced is dimensionally accurate regardless of the resilience of the material used.

3,429,169
APPARATUS FOR AND METHOD OF STRAIGHTENING BOW MEANS IN AN ELONGATED MEMBER

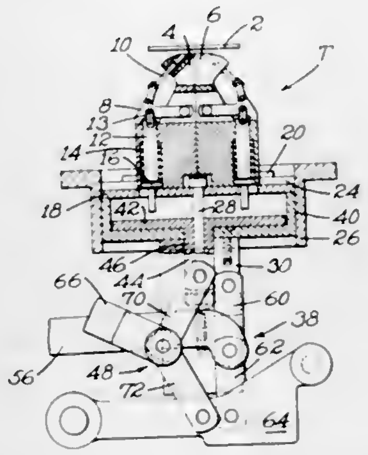
Elvin G. Boice and Lip Fou Wong, Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,540
U.S. Cl. 72—297 **36 Claims**
Int. Cl. B21d *11/02, 3/00, 9/05*



This disclosure relates to an improved apparatus for and method of removing bow means in an elongated member such as an elongated pipe wherein such pipe is supported so that its bow means is accessible and deforming means such as peening hammer means is utilized to peen the pipe in path means adjacent the line of maximum concave curvature of such bow means to cause a change in the structure of such pipe along such path means which creates compressive fiber stresses in such pipe which straighten such bow means.

3,429,170
COMPONENT INSERTERS

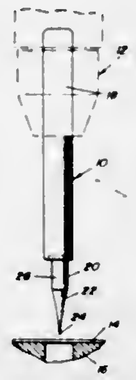
Vincent P. Romeo, Danvers, Mass., assignor to USM Corporation, Boston, Mass., a corporation of New Jersey
Filed June 17, 1966, Ser. No. 558,474
U.S. Cl. 72—325 **4 Claims**
Int. Cl. B21d *31/02, 41/04;* **B21j** *7/16*



A machine for trimming and/or clinching the spaced leads of components mounted upon a board and having the leads extending through the board. The mechanism includes a pair of reciprocable cutting and clinching elements which are mounted for angular rotation to orient said elements in accordance with the orientation of the leads passing through the board. The mechanism also includes means for simultaneously reciprocating the cutting and clinching elements.

3,429,171
RADIUS SPIN DRILL

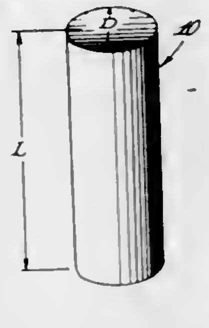
Joseph J. Feher, 128 Riverside Drive N., Bricktown, N.J. 08723
Filed Oct. 21, 1965, Ser. No. 499,938
U.S. Cl. 72—325 **17 Claims**
Int. Cl. B21d *31/02;* **B21b** *1/00, 3/00*



A sheet metal piercing and extruding member defining an elongated shank member adapted to be supported and driven at one end by a rotary member and including a second work-engaging end portion provided with a terminal end portion gradually tapering in diameter toward its free terminal end, the cross-sectional shape of the tapering end portion being circular throughout its length and therefore completely free of cutting edges adapted to remove material from a sheet of material through which the tapering end portion is being advanced during rotation of the shank member.

3,429,172
METHOD OF MAKING GEAR FORGING APPARATUS

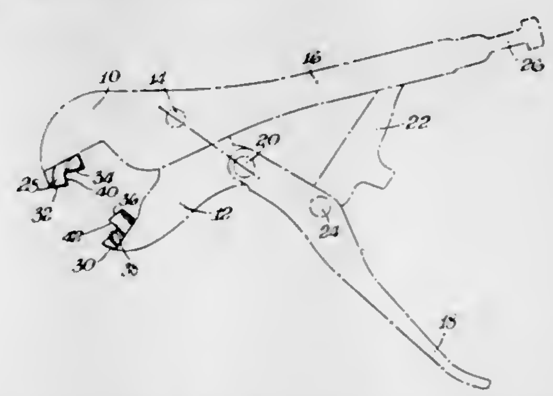
Kurt F. Lierse, Wickliffe, and James A. Timura, Cleveland Heights, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 5, 1965, Ser. No. 493,047
U.S. Cl. 72—344 **8 Claims**
Int. Cl. B21d *22/02, 45/00*



This invention relates to die forging apparatus which causes the forged article to follow the punch until the article is released from the die, thereby preventing damage to the punch formed portion of the article. Specifically, this invention relates to spiral gear forging apparatus which releases the gear from the die before the gear is released from the punch, thereby protecting the spiral gear teeth. The invention includes the method of making forged articles to protect punch formed portions of the articles.

3,429,173
WIRE CRIMPING TOOL

Seebohn Vernon Waddell, 1202 Kirkwood Highway, Newark, Del. 19711
Filed July 27, 1967, Ser. No. 656,489
U.S. Cl. 72—409 **9 Claims**
Int. Cl. B21d *9/08, 37/12*

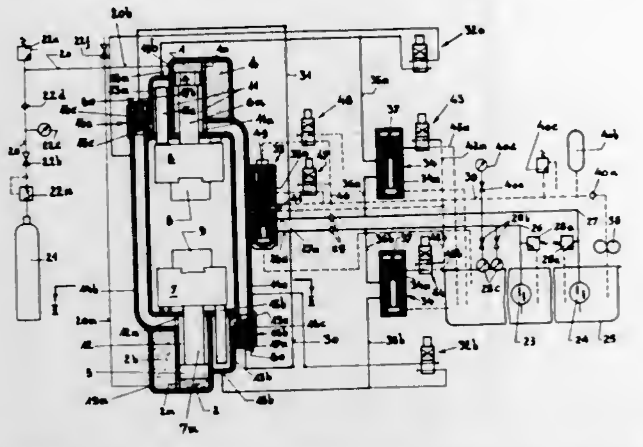


A tool having jaws and appropriate handles for actuating the jaws is fitted with stepped jaw dies having faces. The opposing die faces are substantially parallel and form acute angles with the respective vectors representing the directions of jaw movement.

3,429,174
PRESSES

Karl Fracke, Coburg, Bavaria, Germany, assignor to Langestein & Schemann Aktiengesellschaft, Coburg, Bavaria, Germany, a company of Germany
Filed Feb. 9, 1966, Ser. No. 526,234
Claims priority, application Germany, Feb. 10, 1965, F 45,183
U.S. Cl. 72—453 **4 Claims**
Int. Cl. B21j *9/18, 9/12;* **B30b** *1/32*

An impact forming machine having a pair of air operated press platens each provided with an expelling piston and cylinder device and a coupling piston and cylinder device. The expelling cylinder of each platen is connected with the coupling cylinder of the other platen through a blocking valve arranged, in one position, to couple the expelling cylinder with the coupling cylinder so that the platens can be brought together and, in another position, to isolate the expelling cylinder from the coupling cylinder and connect the expelling cylinder with



the source of hydraulic pressure so that the platens can be moved apart.

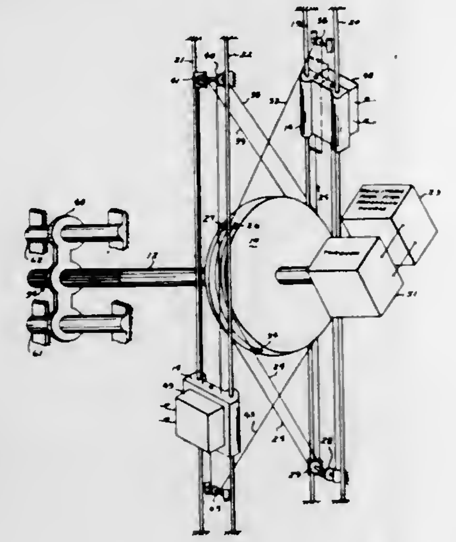
3,429,175
SINUSOIDAL LINEAR OSCILLATOR

Mackey J. Real, Jr., O'Fallon, Ill., Paul M. Jeglum, N.A.F. El Centro, Calif., and Boris E. Bright, Holloman Air Force Base, N. Mex., assignors to the United States of America as represented by the Secretary of the United States Air Force

Filed Mar. 14, 1967, Ser. No. 623,522

U.S. Cl. 73—1 **5 Claims**

Int. Cl. G01c *25/00*



A rotor, with a large moment of inertia, is mounted on a torsion bar to obtain sinusoidal oscillations of the rotor. The rotor is connected to a test pallet through cabling to convert the sinusoidal oscillations of the rotor to sinusoidal movement of the test pallet. The test pallet is mounted on guide rails to restrict the motion of the test pallet to a single axis, with the guide rails being aligned with the local gravity vector to eliminate any cross acceleration component due to gravity. A torque is applied to the torsion bar to just balance the losses of the system so that the test pallet motion will be undamped.

3,429,176
CHROMATOGRAPHIC EQUIPMENT SAFE FOR USE IN HAZARDOUS ATMOSPHERES

William Henry Topham, Chattenden, Rochester, Kent, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England

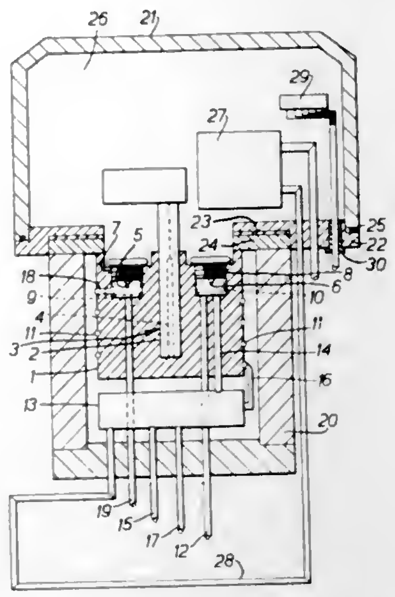
Filed July 14, 1965, Ser. No. 471,938

Claims priority, application Great Britain, July 15, 1964, 29,079/64, Pat. No. 1,111,442

U.S. Cl. 73—23.1 **10 Claims**

Int. Cl. G01n *31/08*

A chromatographic analyzer which is inherently safe in hazardous atmospheres and does not require an explosion-proof housing is provided, which comprises segregating all electrical connections and other potential sources of ignition from the sample, the sample carrier



gas and the ambient atmosphere, and utilizes a heater which is incapable of raising the temperature of the non-segregated components to the ignition temperature of the ambient atmosphere.

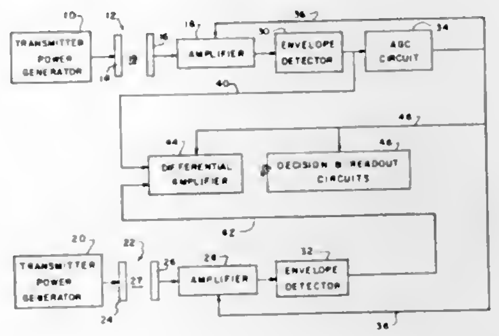
3,429,177
METHOD FOR DETECTING HYDROGEN GAS

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Albert C. Krupnick, Huntsville, Ala., and Daniel P. Lucero, Placentia, Calif.

Filed Apr. 15, 1966, Ser. No. 543,774

U.S. Cl. 73—24 **5 Claims**

Int. Cl. G01n *29/02, 25/00, 31/00*



A hydrogen gas detector comprising a pair of detector transducers, each of which includes a transmitter and receiver separated by an airgap. An acoustic wave of 1 mc. p.s. is transmitted across the airgap of one transducer and a 10 mc. p.s. wave, the thermal molecular relaxation frequency of hydrogen, is transmitted across the airgap of the other transducer. The presence of hydrogen in the gas mixture in the airgap will result in an increase in the velocity of the 10 mc. p.s. wave, but not in the velocity of the 1 mc. p.s. wave. The detector includes electronic apparatus for comparing and detecting any change in the velocity of the two waves and thereby also detecting the presence of hydrogen gas.

3,429,178
MEASURING SYSTEM

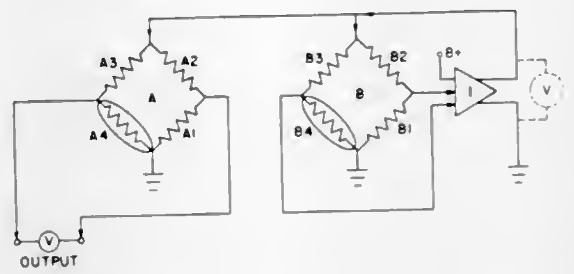
Enoch J. Durbin, 246 Western Way, Princeton, N.J. 08540

Filed Jan. 7, 1965, Ser. No. 423,936

U.S. Cl. 73—27 **16 Claims**

Int. Cl. C01n *31/00;* **G01r** *17/10*

A measuring system is provided having two measuring impedance elements each of which comprises an element of a normally balanced circuit configuration. These elements are differentially responsive to the condition to be measured but are equally responsive to ambient conditions. A feedback path from the output of one of the balanced circuit configurations is utilized to maintain



both circuits in a balanced condition when unbalances are caused by a change in the ambient environment; however, changes in the condition to be measured will cause the feedback path to produce an uncompensated unbalance which may be sensed and indicated directly.

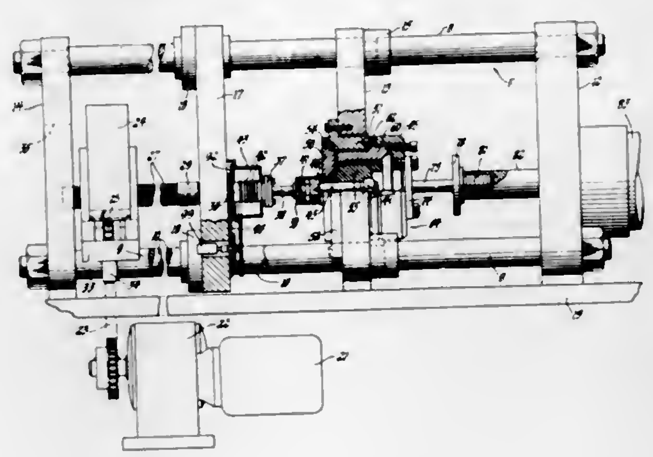
3,429,179
FASTENER TESTER

Donald R. Bowen, Bloomfield Hills, and Raymond G. Fischer, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,906

U.S. Cl. 73—133 **3 Claims**

Int. Cl. G01m *15/00;* **G01l** *3/26*



A machine for testing threaded fasteners, drivers for them, and assemblies embodying threaded fasteners. Driving and reaction torques, clamping force, fastener tension, angular position of the driver, and driving speed may be measured and indicated or recorded coordinately. Assemblies of varying stiffness may be simulated.

3,429,180
OVERSPEED MONITOR TESTING APPARATUS

Tyge Flensburg Vind, Finspang, Sweden, assignor to Stal-Laval Turbin AB, Finspang, Sweden

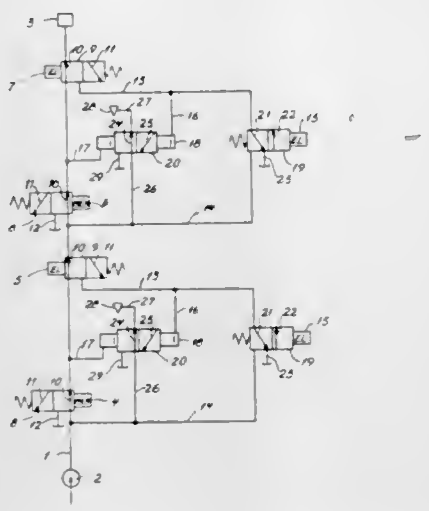
Filed July 3, 1967, Ser. No. 650,763

Claims priority, application Sweden, July 14, 1966, 9,622/66

U.S. Cl. 73—168 **3 Claims**

Int. Cl. G01m *19/00*

A device for the testing of overspeed monitors for hydraulically operated servomotors and particularly those which actuate stop emergency valves with which electrical generating machines, such as steam turbines, are equipped. The device is arranged to test in pairs the functioning of two or more even numbered overspeed monitors connected in series in hydraulic oil pipes leading to the servomotors for the emergency stop valves. The device includes an arrangement of valves controlled by pressure differences; it includes a pressure-actuated signal lamp arranged to give during the testing of the functioning of a pair of the overspeed monitors, and in response to each change in the received signal, one impulse in a series



of impulses causing the blocking devices for the slides in a pair of the monitors involved, to release in sequence, starting with the blocking device for the slide in the second monitor, counting in the direction of flow of the hydraulic oil, and thereafter to block the slides concerned, in the reverse sequence.

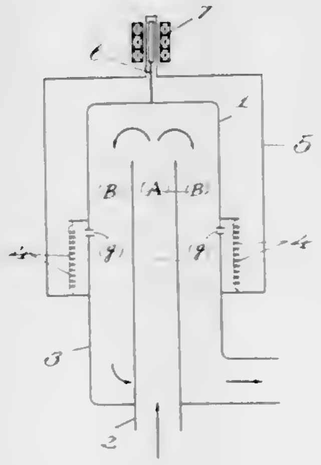
3,429,181
FLOW METER

Kamekichi Shiba, No. 159, Kago-cho, Bunkyo-ku, Tokyo, Japan

Filed Oct. 22, 1965, Ser. No. 500,666

U.S. Cl. 73—228 **1 Claim**

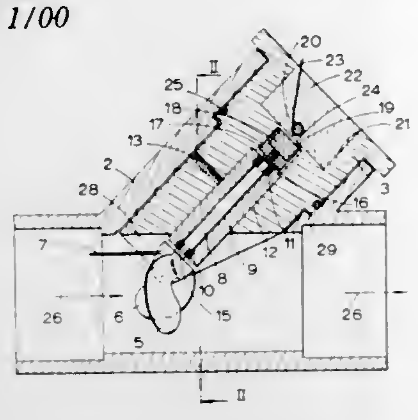
Int. Cl. G01f *1/06*



A flow meter including stationary tube means, movable tube means having at least one pressure receiving surface and at least one edge spaced by an annular gap from a corresponding end edge of the stationary tube means, resilient means connected to the movable tube means and biased to yieldably resist the increase of the actual length of the gap, and means for measuring the amount of fluid fed into and out of the flow meters through the stationary tube means as a function of the displacement of the movable tube means relative to the stationary tube means.

3,429,182
FLUID FLOW METERS

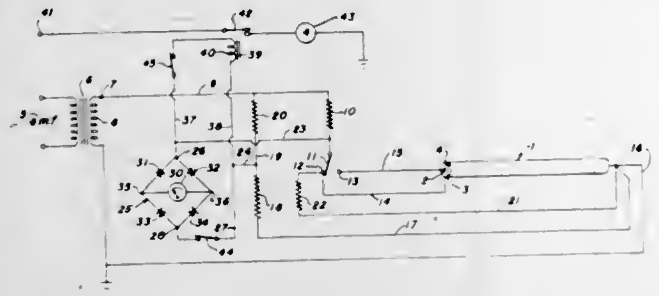
William Alexander Wemyss, Northwood, England, assignor to B. Rhodes & Son Limited, Essex, England, a British corporate body
Filed Aug. 19, 1966, Ser. No. 573,525
Claims priority, application Great Britain, Sept. 2, 1965, 37,556/65
U.S. Cl. 73—229 **6 Claims**
Int. Cl. G01f *1/00*



The shaft of a flow meter intersects the fluid passage at a predetermined angle and the flow measuring blades are fixed to a shaft at substantially the same angle of inclination whereby the blades during their rotation pass through a position at which they lie parallel with the fluid flow. The shaft is rotatably carried by the plug member received within a branch of the conduit element guiding the fluid, and the outer end of the shaft carries a magnetic transducer whereas the plug element carries a pick-up element isolated from the shaft.

3,429,183
TEMPERATURE AVERAGING SYSTEM

John E. Lindberg, 1211 Upper Happy Valley Road, Lafayette, Calif. 94549
Filed July 14, 1966, Ser. No. 565,161
U.S. Cl. 73—362 **8 Claims**
Int. Cl. G01k *5/18;* **G08b** *21/00*

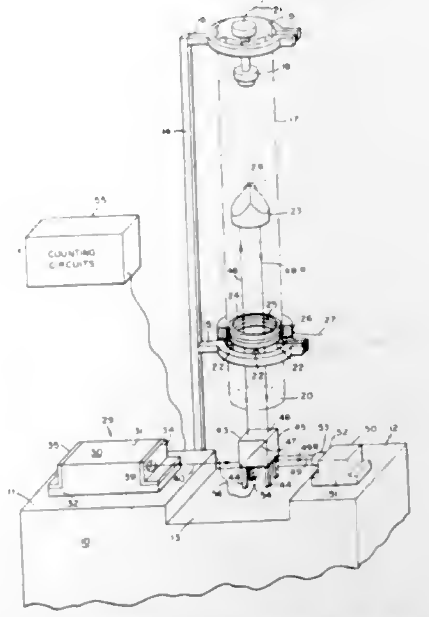


A combined fire detector and average temperture measurement device, having a unitary detector responsive to both conditions which is connected in a bridge circuit. The detector has center conductor with a high linear temperature coefficient of resistivity positioned coaxially to a conductive tubular housing and separated by a critical temperature responsive material. The bridge circuit contains switching devices which connect either the center conductor and an indicating circuit for sensing average temperature or the critical temperature sensor and an alarm through the bridge circuit.

3,429,184
GRAVITY METER

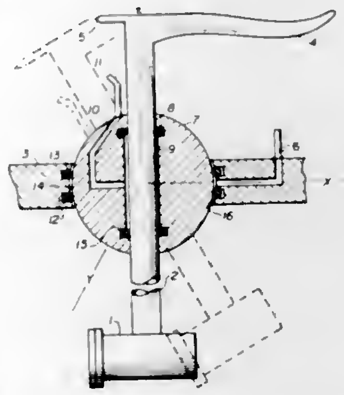
James T. Russell, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 27, 1965, Ser. No. 459,485
U.S. Cl. 73—382 **9 Claims**
Int. Cl. G01p *15/00;* **G01m** *1/12;* **H01s** *3/00*

A half reflecting transparent surface divides the light output of a continuous laser into a vertical beam directed towards a free-falling reflector in a vessel holding a vacuum and a reference beam directed towards a stationary reflector. A prism, disposed in the paths of the reflected beams, combines the reflected beams into one beam thereby producing a changing interference fringe pattern due to the movement of the free-falling reflector. A photodetector monitoring the interference fringe pattern produces an output voltage representative thereof. A voltage to frequency converter receiving the photodetector output produces a pulsed output having a repetition rate representative of the input voltage. The output of the voltage to frequency converter is stored during consecutive and equal time intervals in different binary counters. The difference in binary output of the counters is then representative of the acceleration of the free-falling reflector due to gravity.



3,429,185
OMNI-DIRECTIONAL VACUUM GAUGE PROBE

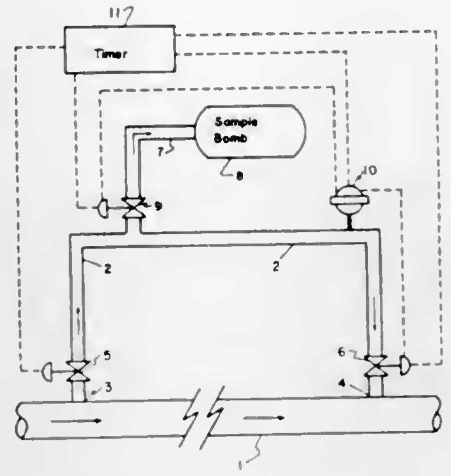
Robert J. Piper, Huntington Beach, and James A. Craig, El Toro, Calif., and Richard A. Dutton, Chesterfield, Mo., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed July 18, 1967, Ser. No. 654,283
U.S. Cl. 73—420 **1 Claim**
Int. Cl. B60c *25/00*



A vacuum gauge system is provided which is capable of movement in any direction within a container having a vacuum atmosphere for measuring the effective pressure or molecular flux in any direction therein. Several embodiments are shown which provide not only omni-directional movement of the gauge but also provide an improved vacuum seal system at the entrance to the vacuum system. One apparatus illustrative of the omni-directional gauge includes a ball joint seal at the entrance to the vacuum atmosphere thereby providing a pump out port for preventing external air from entering the vacuum system while also providing three-dimentional movement of the gauge. Another species of the invention shows the gauge attached to a bellows arrangement having push rods entering the vacuum atmosphere which are capable of swinging and compressing or extending the bellows and gauge arrangement.

3,429,186
GAS SAMPLE COMPOSITOR

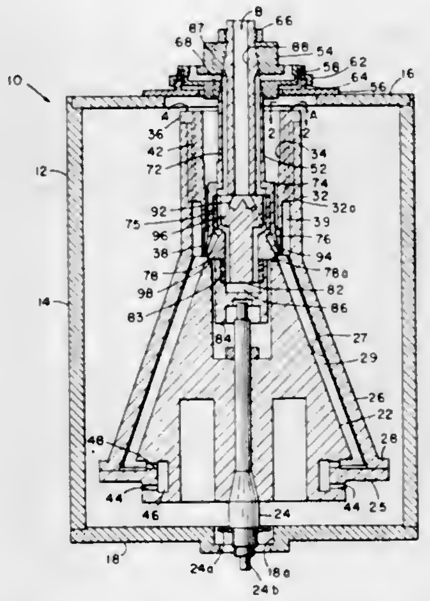
Jerry L. Price and Thomas C. Singleton, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 585,898
U.S. Cl. 73—421.5 **5 Claims**
Int. Cl. G01n *1/22, 1/00*



An apparatus for sampling a gas flowing through a line comprising a valved chamber for isolating a portion of said gas, a pressure sensitive means within said chamber for adjusting the pressure of the gas therein to a first predetermined level, a sample container for receiving the gas in said chamber, said container being maintained at a pressure lower than a second predetermined pressure in said chamber and means for transferring said gas from said chamber to said container.

3,429,187
RING SLIT CONIFUGE

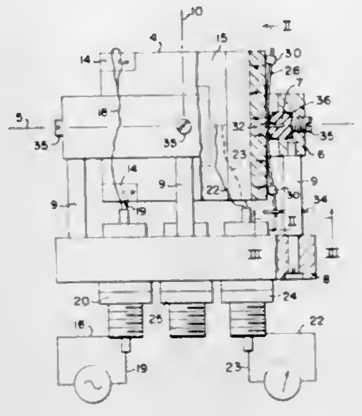
Werner Stöber, Penfield, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 22, 1967, Ser. No. 685,003
U.S. Cl. 73—432 **5 Claims**
Int. Cl. G01l *19/00*



A centrifugally operated device for producing a true particle size spectrum from an aerosol. The device continuously recirculates clean air along a conically shaped annular channel. At the entrance to the channel the aerosol is injected through an adjustable ring slit. High capacity of the device is obtained by using capillary tubes to accelerate the air and maintain laminar flow at the high rates of flow.

3,429,188
ANGULAR VELOCITY MEASURING DEVICE

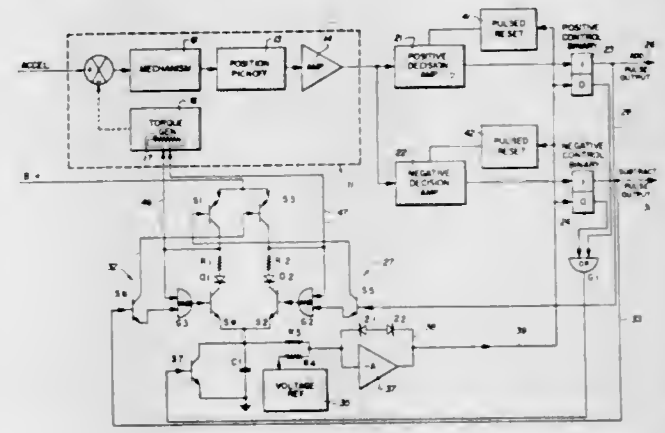
John J. Buckley, Baltimore, and Joseph W. Shearer, Jr., Glen Burnie, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1965, Ser. No. 482,811
U.S. Cl. 73—505 **5 Claims**
Int. Cl. G01p *15/10, 15/14*



A vibratory gyro device having a hollow cylindrical vibratory element suported about its circumference in a nodal plane equidistant its opposite ends, includes a reed-like flexure spring pivotally mounted at its midlength in coincidence with such nodal plane and extending at its opposite sides therefrom into vibratory coupling with the outer surface of the cylindrical vibratory element to act as a nulling means for unwanted cross-coupling vibrations which otherwise appear in the output of such vibratory element. By changing the angular attitude of the flexure spring, its effectiveness can be adjusted to suit requirements.

3,429,189
PULSE TORQUING DIGITAL ACCELEROMETER AND METHOD

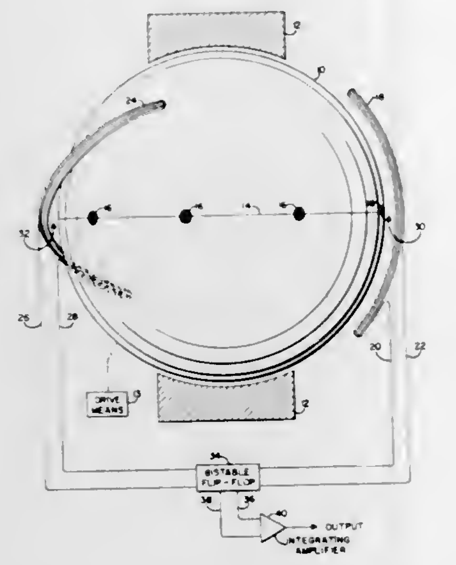
Heinrich Friedrich Krabbe, Concord, Calif., assignor to Systron-Donner Corporation, Concord, Calif., a corporation of California
Filed Jan. 25, 1965, Ser. No. 427,713
U.S. Cl. 73—517 **10 Claims**
Int. Cl. G01p *15/08*



A digital accelerometer with a mass for sensing acceleration in either a positive or negative direction and producing a pulse output for a predetermined deviation. A restoring torque generator for the mass is coupled to a capacitor through a switch. The capacitor is allowed to charge when a pulse is received thus supplying energy to the restoring torque generator. Charging of the capacitor is terminated when the voltage across it reaches a predetermined reference level thus terminating the restoring torque.

3,429,190
CONTROL APPARATUS

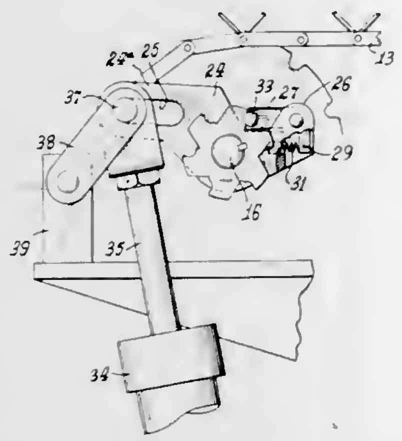
Henry A. Dinter, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,795
U.S. Cl. 74—5.6 **3 Claims**
Int. Cl. G01c *19/28*



Gyroscope pickoff apparatus in which two arc-shaped coils of wire are positioned on opposite sides of the gyroscope rotor so as to sense the passage of small magnetic inserts on the rotor. The coils are inclined with respect to each other so that the time of passage varies with the position of the rotor.

3,429,191
VARIABLE STOCK FEEDER

Felix Kraujalis, Aurora, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois
Filed Mar. 30, 1967, Ser. No. 627,117
U.S. Cl. 74—142 **10 Claims**
Int. Cl. F16h *27/02*

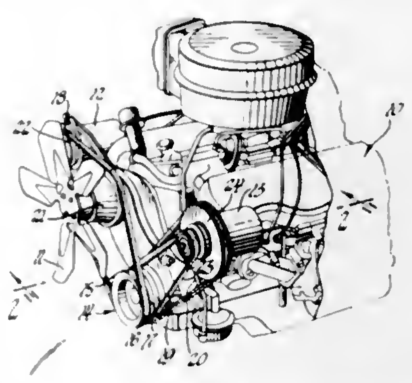


Intermittent drive mechanism for a variable stock feeder or like apparatus, which includes means to develop a low velocity starting speed, a high velocity intermediate speed and a low velocity stopping speed.

3,429,192
ACCESSORY DRIVE

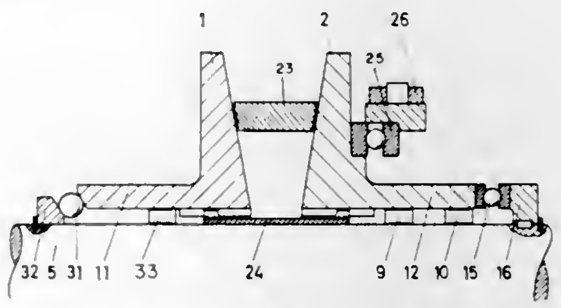
Raymond W. Allen, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 593,576
U.S. Cl. 74—217 **5 Claims**
Int. Cl. F16h *9/00;* **F16d** *27/08;* **F25b** *27/00*

A two-speed accessory drive for an engine driven accessory wherein the accessory is driven at relatively high speeds of rotation relative to engine speed in the low speed range of engine speed and at relatively low speeds relative to engine speed at relatively high engine speeds.



3,429,193
CONE PULLEY TRANSMISSION

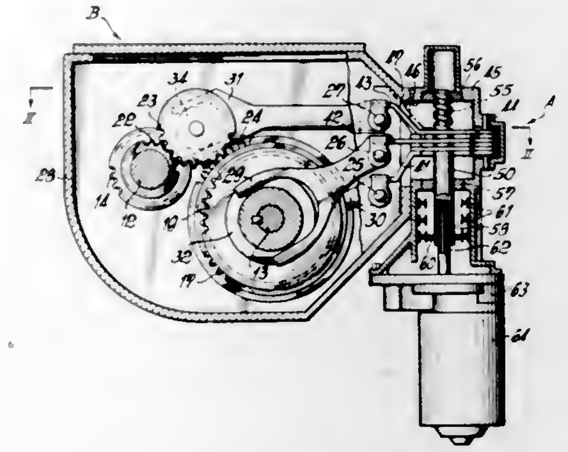
Herbert Steuer, Bad Homburg vor der Hohe, Germany, assignor to Reimers Getriebe A.G., Zug, Switzerland
Filed May 19, 1967, Ser. No. 639,826
Claims priority, application Germany, May 25, 1966, R 43,338
U.S. Cl. 74—230.17 **8 Claims**
Int. Cl. F16h *55/56*



A cone pulley transmission in which each of two pulleys which are connected by a belt or chain consists of a pair of conical disks which are movable relative to each other in a direction opposite to the movement of the disks of the other pair for varying the speed ratio, and in which at least one disk of each pair is rotatably supported on a shaft by no more than two bearings, one of which extends substantially at a right angle to the forces which are exerted upon this disk by the driving belt when the speed ratio of the transmission is approximately 1:1.

3,429,194
TRANSMISSION CONTROL DEVICE

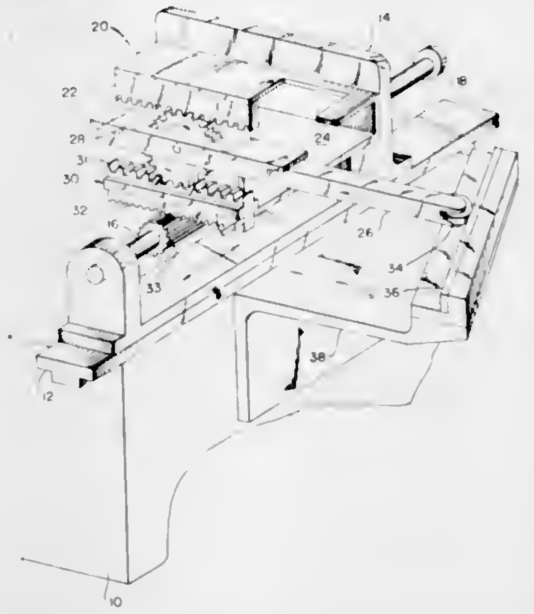
Helmut Espenschied, Buhlertal, and Johann Jäckel, Baden-Baden, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Jan. 18, 1967, Ser. No. 610,156
Claims priority, application Germany, Jan. 21, 1966, B 85,489
U.S. Cl. 74—337.5 **16 Claims**
Int. Cl. F16h *5/06*



When a control shaft is turned, a single cam thereon is shifted in axial direction for selectively engaging and displacing actuating members which effect shifting of a transmission.

3,429,195
LEAD MECHANISM

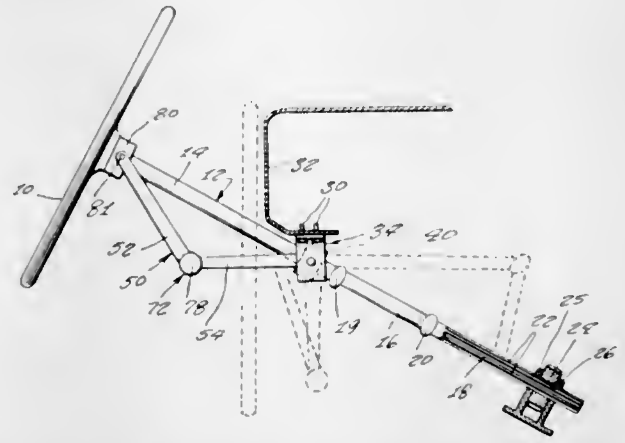
Arthur B. Bassoff, Oak Park, Mich., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 660,686
U.S. Cl. 74—422 **10 Claims**
Int. Cl. F16h *1/04*



Lead generating mechanism comprising a rotary shaft, a sine bar inclined to the shaft, a slide actuated by the sine bar movable transversely of the shaft, a stationary rack, a gear on the slide, and a long stroke rack movable parallel to the slide and having means connecting it to the shaft for rotating the shaft.

3,429,196
AUTOMOBILE SAFETY STEERING

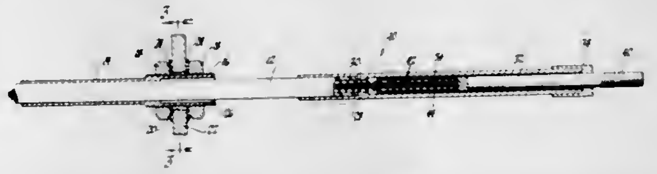
Ralph M. White, 92 Atlee Drive, Rochester, N.Y. 14626
Filed Apr. 3, 1967, Ser. No. 627,748
U.S. Cl. 74—493 **7 Claims**
Int. Cl. B62d *1/18*



An adjustable steering wheel and column that is both adjustable to a desired position for proper driving comfort and which will simultaneously swing downward and forwardly under impact of the driver in the event of a collision. The steering column includes a rear section, a forward section and an intermediate section connected by universal joints to the adjacent ends of the rear and forward sections. A fixed bracket on the dashboard carries a pivotal bearing block through which the rear steering column section slidably extends. A pair of arms forming a toggle linkage are pivotally connected together at adjacent ends by a friction shock absorbing joint with the other end of one arm pivotally connected to the fixed bracket and the other end of the other arm pivotally connected to a bearing collar on the rear steering column section adjacent to the steering wheel. Limit stops on the fixed bracket engageable with the end of the arm connected thereto limit the extent of opening of the toggle linkage. The friction joint will hold the toggle arms at any desired angular relationship to accommodate adjustment of the steering wheel at any desired position and under impact will yield to permit movement of the steering wheel and column forwardly towards the dashboard.

3,429,197
MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY

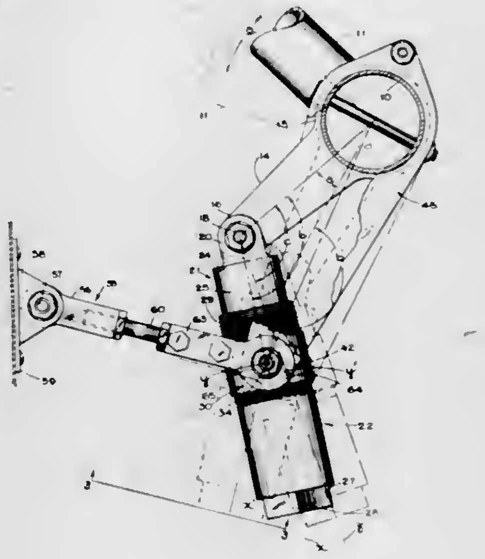
Stanley L. Loewenstern, Philadelphia, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,561
U.S. Cl. 74—502 **6 Claims**
Int. Cl. F16c *1/20*



A motion transmitting remote control assembly including a flexible conduit having first and second ends. A first rigid sleeve is disposed about the conduit adjacent the first end and is remotely spaced from the second end of the conduit. The sleeve is adapted for attachment to a support structure and the conduit extends through the sleeve and away from the sleeve to the first end which is spaced a short distance from the sleeve. A rigid fitting, a movable unsupported sleeve, is secured to the first end of the conduit so that the conduit, between the first sleeve and the unsupported sleeve, is free to bend along the length thereof to allow the unsupported sleeve to move transversely of the longitudinal axis of the first sleeve. A motion transmitting core element is movably disposed in the conduit and has a bar connected thereto slidably disposed in and extending from the unsupported sleeve.

3,429,198
PIVOTING SPRING CAPSULE TRIM APPARATUS FOR HELICOPTER ROTOR COLLECTIVE PITCH CONTROL

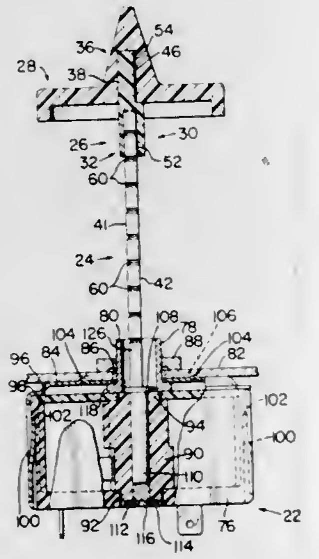
Robert J. Bretl, Menominee, Mich., assignor to R. J. Enstrom Corporation, Menominee, Mich., a corporation of Michigan
Filed Mar. 28, 1967, Ser. No. 626,474
U.S. Cl. 74—523 **5 Claims**
Int. Cl. G05g *1/04*



For use in a helicopter collective pitch control system, a compression spring capsule on a trunnion mount, exerting its force against a lever on the pitch control torque shaft, supplies torsional moment to achieve trim at design r.p.m., throughout the entire range of blade pitch angles. When the pilot positions the collective pitch control to reduce the blade pitch angle, increased compressive deflection of the spring capsule turns it on its trunnion mount, more nearly into alignment with the lever, thus to reduce the torsional moment it exerts on the shaft. By adjusting the trunnion mount position and the precompression of the spring, the curve of torsional moment exerted by the spring capsule may be closely matched to the curve of torsion applied by the rotating rotor.

3,429,199
SWITCH CONSTRUCTION AND METHOD

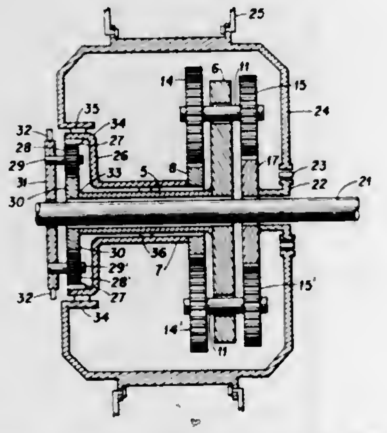
Fred V. Kenyon, Anaheim, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 4, 1966, Ser. No. 525,049
U.S. Cl. 74—548 **3 Claims**
Int. Cl. F16c *1/06;* **H01h** *9/00*



This application discloses a switch with a rotatable operating shaft connected to said switch at the near shaft end and having a far shaft end. An integral plastic connector has a frictional tubular near connector end with an inner tubular surface frictionally telescoped over said far shaft end and has a far connector end with an outer surface to be frictionally telescoped within a connector receiving switch manipulator opening. A switch manipulator is operatively connected to said outer surface of said connector.

3,429,200
AUTOMATIC SPEED CHANGE TRANSMISSION

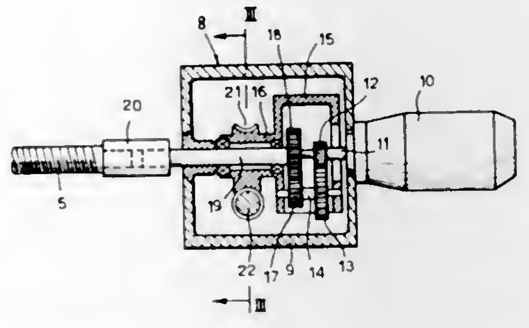
Carl J. Green, 1704 McClain Road, Knoxville, Tenn. 37912
Filed Aug. 23, 1966, Ser. No. 574,419
U.S. Cl. 74—674 **1 Claim**
Int. Cl. F16h *3/74, 37/06, 47/04*



An automatic speed change transmission infinitely variable from a rest position of the driven member to a 1:1 ratio between input and output torques. A single input torque is divided into two inputs which are transmitted through separate, but interdependent, power trains to a single output shaft. Feedback torque values determine the relative contribution of each power train to the output torque.

3,429,201
GEAR ADJUSTMENT FOR MACHINE TOOL TRANSMISSION

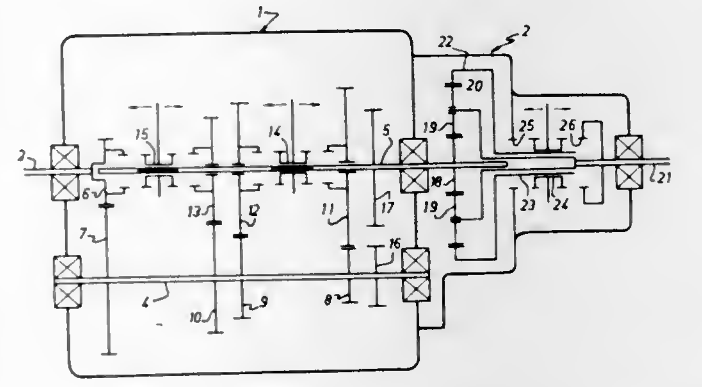
Mose Zucchellini, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Sept. 8, 1966, Ser. No. 577,886
Claims priority, application Italy, Sept. 17, 1965, 21,035/65
U.S. Cl. 74—675 **4 Claims**
Int. Cl. F16h *1/16, 1/22, 35/06*



A machine tool slide control having a constant speed motor with a geared connection to an output shaft through planet gears and a variable speed motor connected through a worm screw and worm gear to a planet carrier of the planet gears. The worm screw is rotatable in eccentric bushings which are adjustably secured to a gear box by means of screws passing through arcuate slots in the bushings.

3,429,202
GEAR BOXES

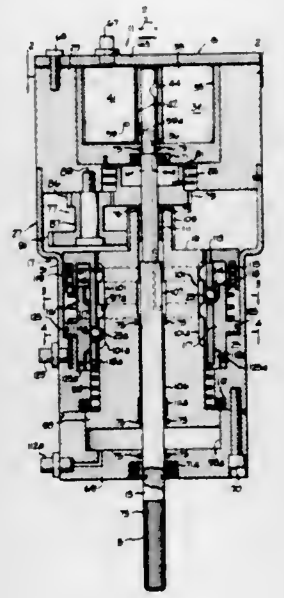
Georges Camille Eugène Galicher, 19 Rue de Chartres, Neuilly-sur-Seine, France
Filed July 7, 1966, Ser. No. 563,589
Claims priority, application France, Aug. 19, 1965, 28,818
U.S. Cl. 74—740 **4 Claims**
Int. Cl. F16h *5/28, 15/46;* **G05g** *11/00*



A transmission assembly is comprised of a main transmission capable of providing a plurality of selectable speed ratios and connected in series with a shiftable two-speed reduction gear unit, preferably of the planetary type. A pivotally mounted shift lever is provided for shifting both the main transmission and the reduction gear unit, the shift lever having two arms each terminating in an operating key and arranged so that the operating keys can alternatively engage the connecting arms for shifting the main transmission, the shift lever having means for actuating a control device for controlling the shifting of the reduction gear unit, thereby providing a second range of speeds with only one shift lever.

3,429,203
HYDRAULIC REACTOR CONTROL DRUM DRIVE

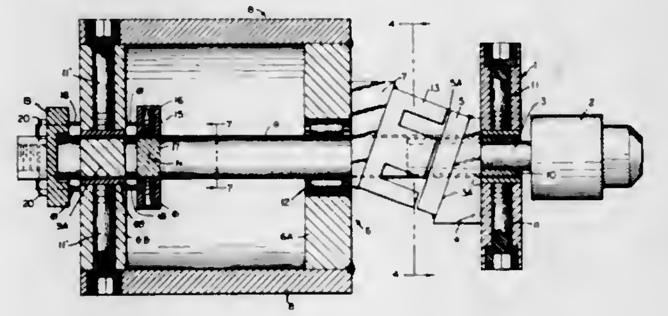
John C. Bass, Cardiff, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,449
U.S. Cl. 74—822 **16 Claims**
Int. Cl. B23b *29/24;* **G05g** *5/06*



A drive mechanism incorporates an indexing means. The indexing means provides for incremental rotation of a drive shaft and, in addition, for free rotation thereof, depending upon selective operation of locking means.

3,429,204
TWIST DRILL DRIVE

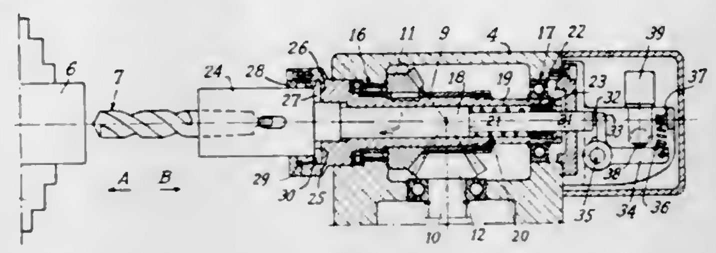
Edward W. Smith, 47 Lovell Road, Melrose Highlands, Mass. 02177
Continuation-in-part of application Ser. No. 452,627, May 3, 1965. This application Aug. 23, 1967, Ser. No. 663,929
U.S. Cl. 77—5 **9 Claims**
Int. Cl. B23b *41/00;* **B24b** *9/00;* **H02k** *33/00*



A twist drill drive mechanism having a pair of inertia elements interconnected by a torsion shaft with means for maintaining these inertia elements in torsional oscillation at the resonant frequency of the mechanism. The torsion shaft has a nodal point at the resonant frequency of the mechanism and this drill is supported at the nodel point by means for rotating the mechanism. Means are provided adjacent or near one of the inertia elements for securing a drill bit.

3,429,205
MACHINING DEVICE HAVING SELECTIVELY CONTROLLED FEED SPEEDS

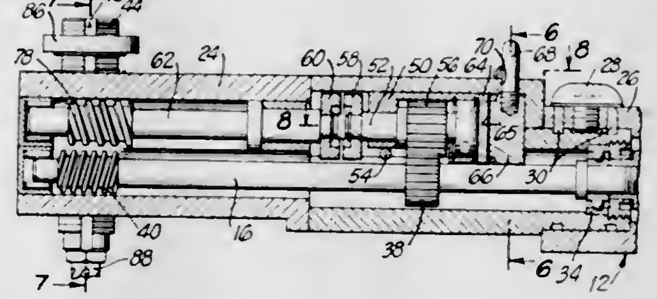
Jules Louis Jeanneret, 13, 21 Rue Henri-Gelin, Niort, France
Filed Nov. 24, 1965, Ser. No. 509,481
Claims priority, application France, Nov. 26, 1964, 996,330
U.S. Cl. 77—32.7 **3 Claims**
Int. Cl. B23b *47/24*



A machining device in which a tool can be moved towards and into a workpiece respectively at two different feed rates, the tool being moved longitudinally between two limit positions against resilient means upon contact of the tool and workpiece and actuating a switch to actuate means for changing the tool feed rate.

3,429,206
RIGHT ANGLE POSITIVE FEED DEVICE

Robert C. Quackenbush, Glendale, Calif., assignor of one-half to Arthur B. Quackenbush, Glendale, Calif.
Filed Aug. 8, 1966, Ser. No. 571,068
U.S. Cl. 77—34.7 **13 Claims**
Int. Cl. B23b *47/24, 47/04*

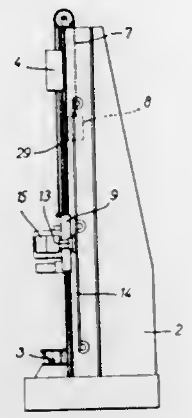


A housing has parallel main device and feed shafts rotatable by an air drive motor. A unitary feed screw and spindle having the axis thereof at right angle to the shafts is rotatable in a single direction and is axially movable in feed and retraction strokes. The main drive shaft is worm and worm wheel connected for constantly driving the feed screw and spindle, while the feed shaft is connected between the main drive shaft and the feed screw portion of the feed screw and spindle through a clutch, a worm and a worm wheel feed nut on said feed screw portion. Clutch engagement rotates the feed nut faster than the feed screw and spindle driving the same axially in the feed stroke, and clutch disengagement stops the feed nut driving the feed screw and spindle in the retraction stroke. The clutch is operated manually and a stop collar can be set to jam the feed screw and spindle to stall the air drive motor at the end of the feed stroke.

3,429,207
PHOTOELECTRICALLY CONTROLLED COPYING APPARATUS

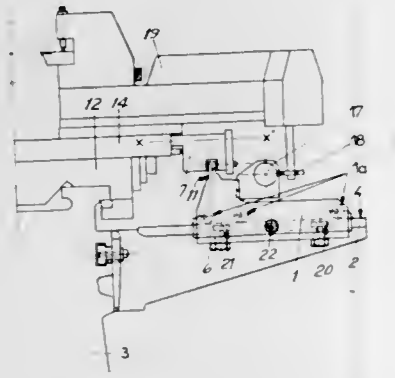
Willy John, Selb, Germany, assignor to Gebruder Netzsch, Selb, Germany
Filed Aug. 14, 1964, Ser. No. 389,643
Claims priority, application Germany, Aug. 16, 1963, N 21,675
U.S. Cl. 82—14 **7 Claims**
Int. Cl. B23b *3/28;* **B23a** *35/00*

A method and apparatus for reproducing contours of a workpiece from a two-dimensional contour pattern and more specifically for contouring unworked blanks of the raw material for insulators made of procelain or similar materials, the contouring being effected with the aid of a photoelectric tracer apparatus tracing a contour pattern.



3,429,208
MOVABLE SUPPORTS FOR THE LONGITUDINAL MASTER IN COPYING DEVICES

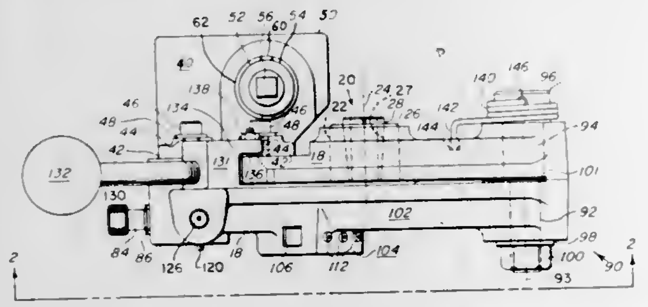
Henri René Bruet, Paris, France, assignor of one-half to Etablissements A. Cazeneuve, La Plaine-Saint-Denis, Seine-Saint-Denis, France, a French company
Filed Sept. 16, 1966, Ser. No. 580,061
Claims priority, application France, Sept. 22, 1965, 32,195
U.S. Cl. 82—14 **9 Claims**
Int. Cl. B23b *3/28;* **B23a** *35/00*



A lathe wherein rollers engage and guide the carriages during operation to suppress all play during displacement of the carriages.

3,429,209
DUPLICATING DEVICE FOR A LATHE

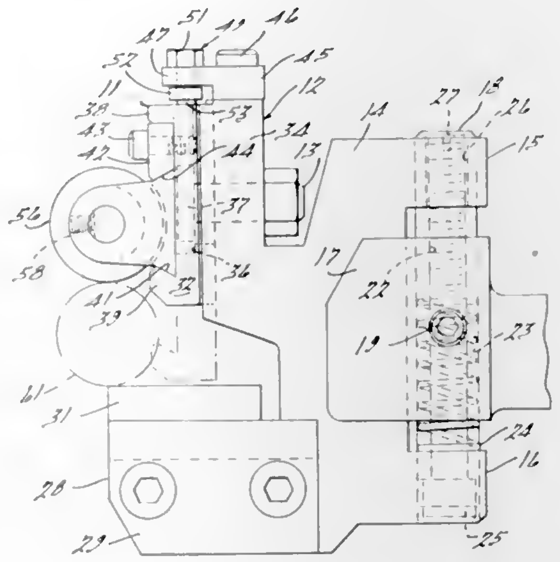
Charles F. Reichert, 63 Valley Road, Norwood, Mass. 02062
Filed Mar. 1, 1967, Ser. No. 619,784
U.S. Cl. 82—14 **12 Claims**
Int. Cl. B23b *3/38;* **B23c** *9/00*



Attachments for the tailstock and cross slide of a lathe; including a template holder for fastening to the tailstock, a combined template follower, cutting tool holder and work support adapted for fastening to the cross slide and cooperating with a template in the template holder to reproduce the template contour on a work-piece rotated in the headstock of the lathe and supported at the cutting tool by the work support to thereby make possible repetitive production of copies of a sample which is used as the template in the template holder.

3,429,210
SHAVING TOOL

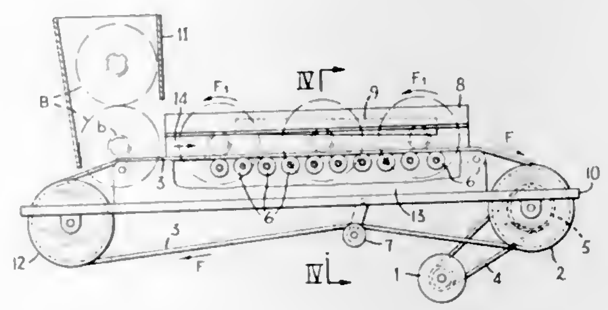
John Richard Scaduto, 14460 E. State Fair, Detroit, Mich. 48205
Filed Mar. 16, 1967, Ser. No. 623,590
U.S. Cl. 82—35 **5 Claims**
Int. Cl. B23b *29/10*



The invention pertains to a backup roller for a shaving tool holder which is adjustable laterally across the face of the holder to be located in a position at which backup pressure is desired. The laterally adjustable roller employed on the holder is utilized for shaving a screw machine part. One or a plurality of the holders are moved simultaneously or seriatim into engagement with a rotating screw machine part for performing an operation thereon.

3,429,211
APPARATUS FOR TRIMMING THE NECK OF HOLLOW PLASTIC ARTICLES

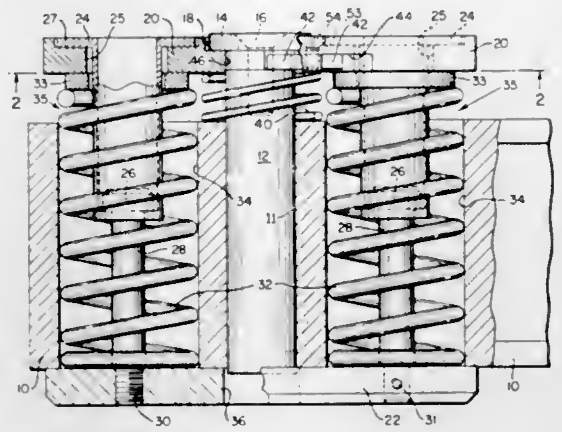
Claude Pelot, Besancon, Dubbs, France, assignor to Solvay & Cie, Brussels, Belgium, a Belgian company
Filed Dec. 27, 1965, Ser. No. 520,301
Claims priority, application France, Dec. 30, 1964, 377
U.S. Cl. 82—46 **6 Claims**
Int. Cl. B26d *1/02;* **B23b** *5/00*



Apparatus for cutting flash from the necks of molded hollow plastic bodies comprises stationary guide means and movable guide means which engage grooves in the necks of the bodies and transport the bodies by their necks past a deflashing tool which is adjustably positioned relative to the stationary guide means so as to achieve uniform deflashing.

3,429,212
PUNCH RETAINER FOR UNITARY CUTTING ASSEMBLY

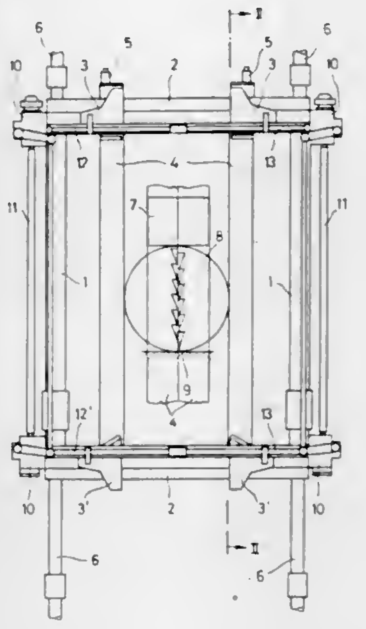
Ralph L. Weisbeck, Cheaktowaga, N.Y., assignor to Unipunch Products, Inc., a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,652
U.S. Cl. 83—140 **16 Claims**
Int. Cl. B65f *1/02*



A punch retainer for securing a punch against displacement from its holder, which retainer is conveniently actuatable from above the holder for movement between a punch-retaining position and a punch-releasing position without removal of the retainer from the device.

3,429,213
SAWING MACHINE

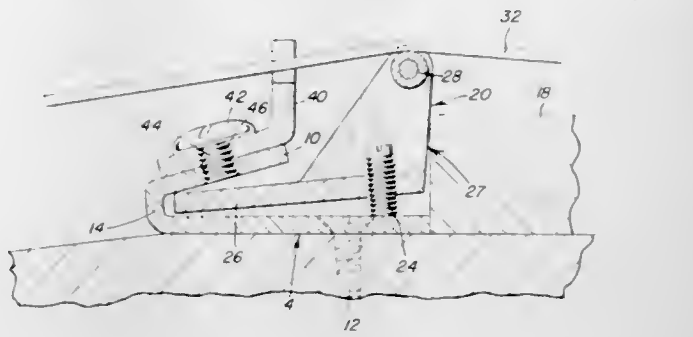
Paul Stolzer, Achern, Baden, Germany, assignor to Keuro Maschinenbau G.m.b.H. & Co. K.G., Baden, Germany
Filed Oct. 14, 1966, Ser. No. 586,749
Claims priority, application Germany, Oct. 14, 1965, K 57,391
U.S. Cl. 83—647 **9 Claims**
Int. Cl. B26d *5/08*



A sawing machine has a frame formed of vertical transverse members with an arrangement for moving the frame up and down. Blocks slidably mounted on the transverse members have saw blades stretched between them. Threaded spindles carried by the transverse members engaging in nuts connected to the blocks produce horizontal movement of the blades. The spindles are reversed on the return stroke so that the blades move out of sawing engagement with the workpiece. The direction of cutting strokes of the saw blades can be changed from a straight to an arcuate direction.

3,429,214
NUT-MOUNT FOR FINGERBOARDS

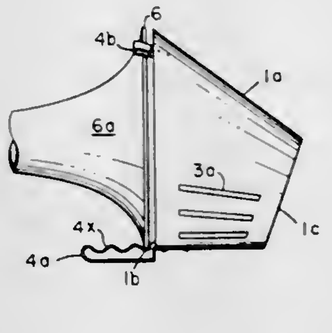
Ralph S. Jones, Sr., Frederick, Md., assignor to Micro-Frets Corporation, Frederick, Md., a corporation of Maryland
Filed June 2, 1966, Ser. No. 554,701
U.S. Cl. 84—314 **5 Claims**
Int. Cl. G10d *3/00*



This is a nut mounting for stringed instruments which guides, spaces and supports the strings in micrometric adjustable relation in such a manner as to prevent their wearing down the mounting. Further, the nut mounting herein, substantially decreases friction between various strings and the mounting, thereby allowing the strings to return easily to normal tension after playing pressure may be released.

3,429,215
EXTERIOR SHELL MUTE FOR BRASS MUSICAL INSTRUMENTS

Gerald H. Finch, 511 E. Sabara Ave., Apt. E-208, Las Vegas, Nev. 89105
Filed Apr. 3, 1967, Ser. No. 628,151
U.S. Cl. 84—400 **8 Claims**
Int. Cl. G10d *9/06*

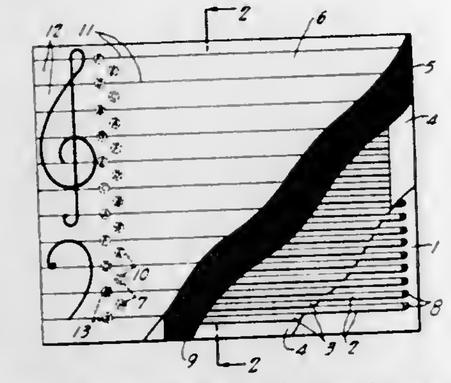


A cup-type mute for brass musical instruments having an asymmetrical shape and comprising a hollow body closed at its forward end and of tapering section of increasing width rearwardly from the closed end with a plurality of lengthwise slots in the periphery of the body intermediate its ends. The mute being removably attached to the bell of the instrument by spring clips which permit a plurality of attachment positions varying the spacing of the open rear end of the body from the rim of the instrument.

3,429,216
MUSIC-NOTE INDICATING DEVICE

Sidney J. Lawrence, 229 Oakford St., West Hempstead, N.Y. 11552
Filed Apr. 26, 1966, Ser. No. 545,472
U.S. Cl. 84—471 **20 Claims**
Int. Cl. G09b *15/02, 15/00*

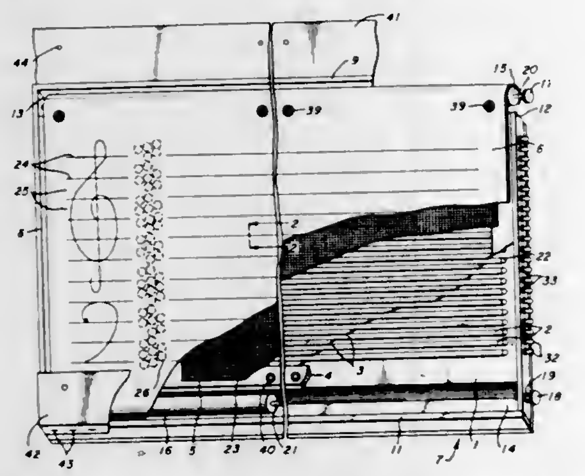
A music-note indicating device wherein a panel of music staff indicia is selectively associated with electrical transmission means and note indicating means so that



selective contact of the panel results in sounding and/or visual display of an appropriate note.

3,429,217
MUSIC-NOTE INDICATOR

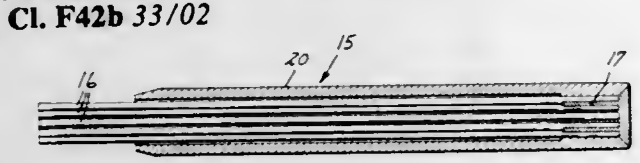
Sidney J. Lawrence, 229 Oakford St.,
West Hempstead, N.Y. 11552
Continuation-in-part of application Ser. No. 545,472, Apr. 26, 1966. This application July 3, 1967, Ser. No. 650,980
Filed July 3, 1967, Ser. No. 650,980
U.S. Cl. 84—471 **17 Claims**
Int. Cl. G09b *15/04*



A music note indicating device wherein one of several panels of music staff indicia can be selectively associated with transmission means and note indicating means so that selective contact of the panel results in sounding and/or visual display of an appropriate note.

3,429,218
PRIMER POCKET CLEANER FOR USE IN RELOADING FIREARM CARTRIDGES

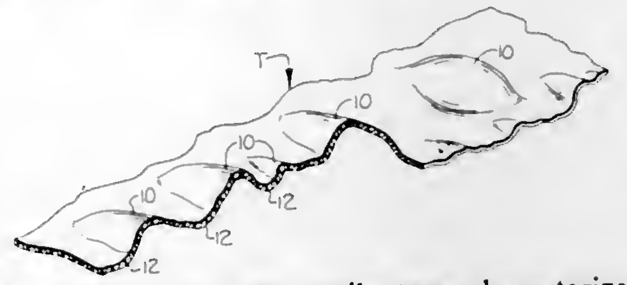
Ole N. Olson, 2909 Quentin Ave. S.,
Minneapolis, Minn. 55416
Filed July 31, 1967, Ser. No. 657,364
U.S. Cl. 86—24 **1 Claim**
Int. Cl. F42b *33/02*



A bundle of elongated cylindrical wires fixedly attached together at one end and to one end of a hollow cylindrical handle which extends coaxially along the bundle of wires a substantial distance toward the opposite end thereof. Each of the wires is cut approximately perpendicular to the longitudinal axis thereof and the ends of all of the wires lie in approximately a plane perpendicular to the longitudinal axis thereof. The handle allows slight rotational movement of the wires about the longitudinal axis thereof while substantially preventing relative transverse movement. In operation, the apparatus is twisted within the primer pocket and the edges of the wires adjacent the free end thereof present a slight cutting edge which removes foreign matter from the surface.

3,429,219
TEXTILE TAPE AND METHOD OF FORMING SAME

William A. Wood, Jr., Greensboro, N.C., assignor to The Duplan Corporation, Winston-Salem, N.C., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,848
U.S. Cl. 87—2 **6 Claims**
Int. Cl. D04c *1/02;* **D04h** *17/00;* **D05c** *15/00*

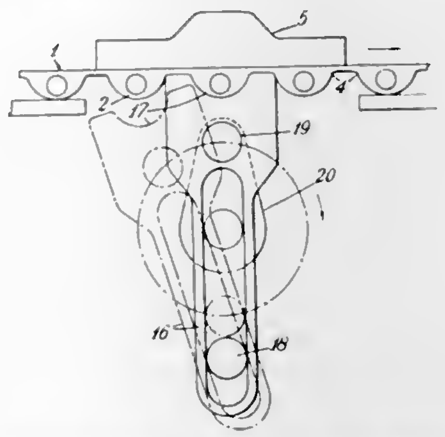


1. An elongate, narrow textile tape characterized by increased bulk and substantial stretchability and recoverability and comprising a plurality of thermoplastic yarn ends successively extending from one side of the tape to the other in a sinuous path and being braided together, said tape being crinkled and having randomly disposed and irregularly raised and depressed areas heat-set therein, said raised and depressed areas imparting substantial stretchability and recoverability to said tape, and said tape being substantially straight and flat and being within the range of about ⅛" to ¼" wide when extended to substantially its limit of stretchability, but returning to its crinkled condition when relaxed.

6. A method of forming an elongate, narrow textile tape characterized by increased bulk and substantial stretchability and recoverability, said method comprising the steps of braiding a plurality of thermoplastic yarn ends and forming a substantially flat, narrow textile tape therefrom, feeding the tape into a confined area and forming randomly disposed and irregularly raised and depressed areas in the tape, and heat-setting the randomly disposed and irregularly raised and depressed areas in the tape to crinkle the tape and impart substantial stretchability and recoverability thereto, the tape assuming a substantially straight and flat condition when extended to substantially its limit of stretchability, but returning to its crinkled condition when relaxed.

3,429,220
SMALL ARMS AMMUNITION BELT

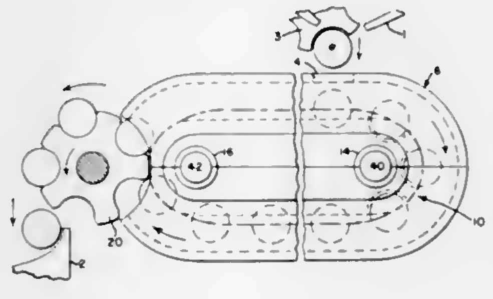
Basil Wanless Kelley Goode, Masons Vernham Dean, Andover, Hampshire, England
Filed Oct. 6, 1966, Ser. No. 584,823
Claims priority, application Great Britain, Oct. 11, 1965, 43,119/65
U.S. Cl. 89—33 **10 Claims**
Int. Cl. F41d *9/00;* **F41c** *25/00;* **F42b** *9/26*



An ammunition belt for use with automatic firearms of small and medium calibre, which is formed of flexible or resilient non-metallic sheet material which is moulded to form ammunition pockets integrally therewith. The belt is usable in combination with an automatic small arms firearm having an open chamber and a feed piece which is mounted for pivotal and reciprocable movements so as to engage successively the pockets of the belt.

3,429,221
CONSTANT VELOCITY CONVEYOR MECHANISM

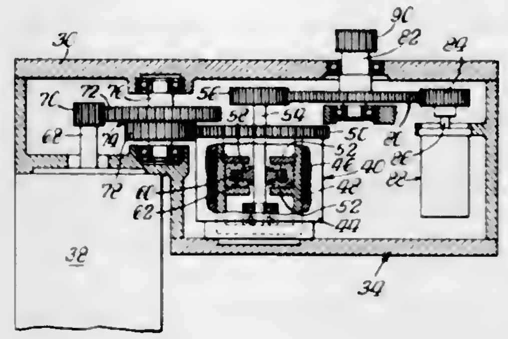
Robert G. Kirkpatrick, Shelburne, Vt., assignor to General Electric Company, a corporation of New York
Filed Dec. 18, 1967, Ser. No. 691,478
U.S. Cl. 89—33 **4 Claims**
Int. Cl. F41d *9/02;* **F41c** *25/10*



An improved conveyor mechanism for transferring rounds of ammunition between a high rate of fire automatic weapon, such as a modern "Gatling-gun," and an ammunition storage device, the conveyor mechanism including a flexible, endless belt comprising a plurality of round-carrying elements pivotally linked together on opposite sides of a cartridge or round pocket, wherein the round centerline is vertically displaced from the centerlines through linking pins at each side of the pocket, a pair of drive sprockets, and wherein guide means for the conveyor belt hold the pin connection centerlines at an effective constant radial distance from the center of the drive sprockets so as to cause the conveyor belt to follow a constant and defined geometric path about the sprocket centerline while maintaining a constant linear velocity as well as a constant angular velocity with respect to sprocket drive shaft r.p.m.

3,429,222
DRIVE MEANS FOR CUPOLA OF TANK VEHICLE

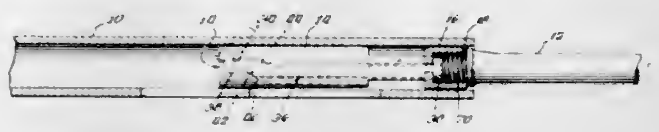
Donald H. Whiston, Arlington Heights, and Edward J. Flannery, Park Ridge, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 8, 1968, Ser. No. 719,405
U.S. Cl. 89—41 **10 Claims**
Int. Cl. F41h *7/08*



Drive means for a rotatable cupola of a tank vehicle, comprising a constant speed electric motor, a power gear train arranged between the motor and the cupola, and a pair of magnetic particle clutches interposed in the gear train and adapted to be optionally electrically energized for establishing a torque coupling in the gear train whereby to effect rotation by the motor of the cupola in either direction.

3,429,223
ROTATING LOCK FOR AUTOMATIC FIREARM

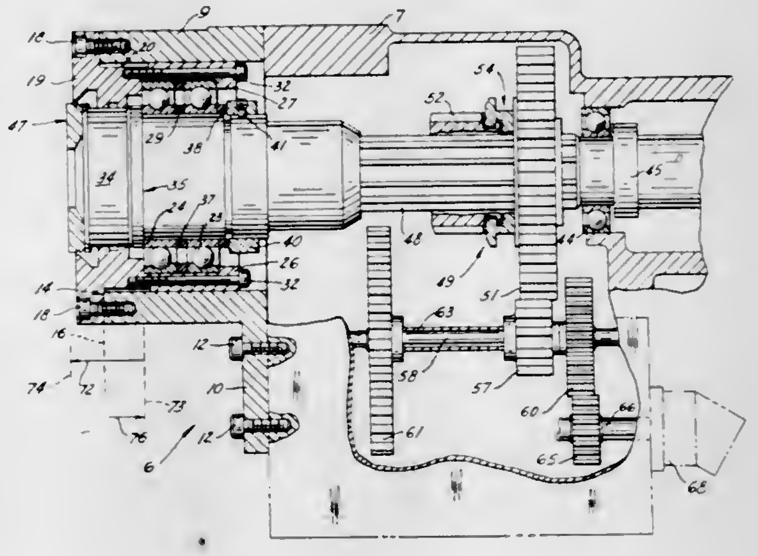
Robert Charles Seccombe, 946 Glencoe Road,
Glencoe, Ill. 60022
Continuation-in-part of application Ser. No. 576,349, Aug. 31, 1967. This application Feb. 28, 1968, Ser. No. 708,939
U.S. Cl. 89—172 **7 Claims**
Int. Cl. F41d *5/12*



A rotating lock for a recoil operated firearm including an ejector stud affixed to the receiver of the firearm and engaging a substantially axial cam track formed in the surface of the firearm bolt. The cam track is an open ended cam track being open at the front end of the bolt and terminating at a point adjacent the rear end of the bolt, and has its rear portion radially offset from the front portion and connected thereto by a laterally curved segment. The opposed surfaces of the laterally curved segment are formed at different angles to the axis of the bolt, the recoil angle being shallower than the counter recoil angle to facilitate rapid unlocking and recoil of the bolt and to allow counter recoil and locking of the bolt with the barrel and chambering of the cartridge without deformation or violence. The ejector stud is positioned to engage the base of a spent cartridge to eject it from the firearm.

3,429,224
TEMPERATURE COMPENSATED SPINDLE POSITIONER

John G. Osburn, Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed June 14, 1966, Ser. No. 562,999
U.S. Cl. 90—11 **15 Claims**
Int. Cl. B23c *9/00;* **B23q** *5/54;* **F16c** *35/04*



The disclosure relates to the mounting and drive for a spindle, wherein the mounting is particularly constructed to compensate for an expansion of the spindle due to any rise in temperature.

3,429,225
ELECTROHYDRAULIC DISPLACEMENT CONTROL WITH MECHANICAL FEEDBACK

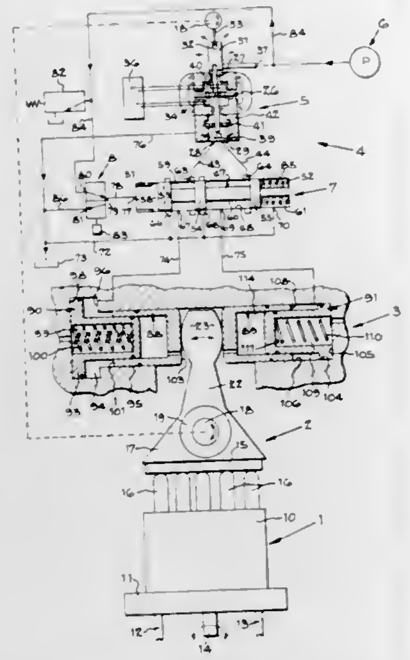
Albert Keyworth, Camarillo, Calif., assignor to Abex Corporation, New York, N.Y., a corporation of Delaware

Filed June 9, 1966, Ser. No. 556,379

U.S. Cl. 91—3 **11 Claims**

Int. Cl. F15b *13/16, 5/00;* **F04b** *1/02*

The displacement of a variable volume pump or motor is controlled by a servovalve of the jet discharge type having a movable jet tube which is responsive to an electrical input to establish a pressure differential between a pair of fluid lines in accordance with the magnitude of the electrical signal. The pressure differential is applied to operate opposed hydraulic motors which position the displacement changing means of the pump or motor. A resilient feedback spring is connected mechanically from the displacement changing means to the jet tube, and as the displacement changing means is moved by the hydraulic motors, the spring increasingly urges the jet tube toward its null position. Shut-off valve means are responsive to loss of a hydraulic actuating pressure to block flow from the servovalve to the hydraulic motors and to release pressure fluid acting on the fluid motors in case of pressure failure.



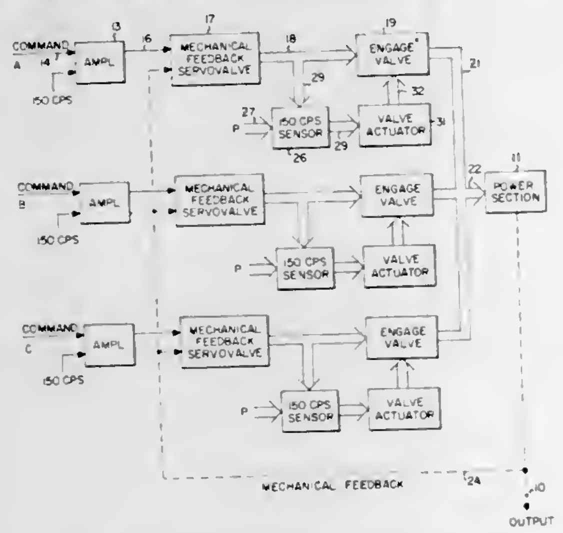
3,429,226
CONTROL APPARATUS

Robert F. Rasmussen, Brooklyn Center, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

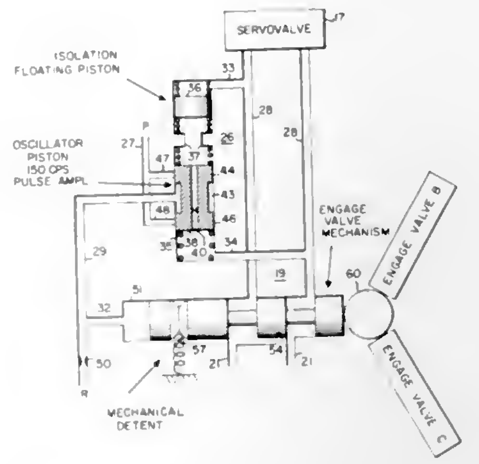
Filed Oct. 23, 1965, Ser. No. 503,386

U.S. Cl. 91—6 **18 Claims**

Int. Cl. F01b *25/04;* **F15b** *13/044, 9/10*



A three channel redundant system includes a power section for positioning attitude control means of an aircraft. The three channels include monitoring provisions that can absorb a concurrent failure in two channels, but provides that the third channel will be operational on the power section, to improve reliability of the system.



3,429,227
POWER OPERATED TOOLS

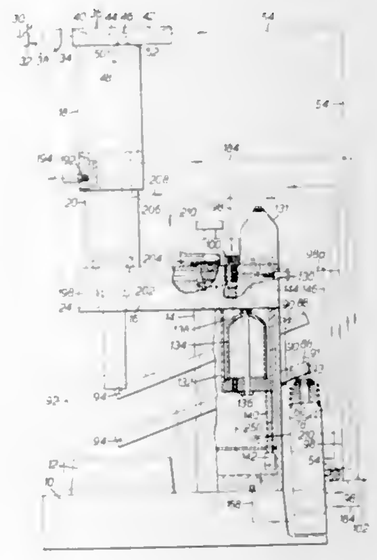
Stephen Stanworth, 34 Reedley Road, Burnley, England

Filed May 10, 1966, Ser. No. 551,030

Claims priority, application Great Britain, May 18, 1965, 20,899/65

U.S. Cl. 91—38 **9 Claims**

Int. Cl. F15b *21/02, 15/17;* **F01b** *7/18*



A pneumatically operated power tool including a cylinder with a constant pressure operated differential piston for a working stroke and an external fluid cylinder and piston device for a return stroke. An air cushion for the differential piston, a quick opening valve for the external fluid cylinder, and a time delay device are also provided.

3,429,228
FRICTION-FREE FLUID METER

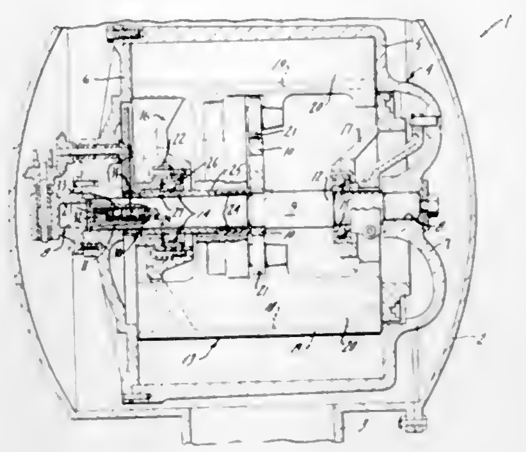
John T. Stoica, North East, Pa., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Nov. 30, 1966, Ser. No. 597,990

U.S. Cl. 91—58 **8 Claims**

Int. Cl. F01c *1/00, 21/16;* **F16c** *25/02*

A petroleum meter of the rotating vane, positive displacement type mounted on a non-rotating, adjustable horizontal shaft. A rotor positioning means incorporating a ball trapped between a pair of special adjusting screws is provided in the hollow end of the rotor shaft. The meter is designed so that it can be adapted for use in either a vertical or horizontal run.



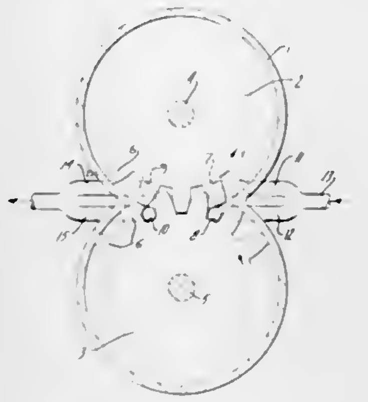
3,429,229
FLUID DRIVE MECHANISM

Russell W. Henke, Elm Grove, Wis., assignor to Jordan Controls, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 17, 1966, Ser. No. 587,199

U.S. Cl. 91—87 **10 Claims**

Int. Cl. F01c *1/18;* **F15c** *1/14*



A fluid operated motor or generator having a stepped output. Hydraulic fluid is supplied to the interior of the outer casing, which contains a pair of meshing gears, through a pair of inlet ports and one inlet port is located within the circle inscribed by the outer tips of the teeth of one of the gears, while the second inlet port is located within the circle inscribed by the outer tips of the teeth of the second gear. The inlet ports are arranged with respect to one another so that one port will be closed by the corresponding gear teeth while the other inlet port is open.

In addition, a pair of outlet ports are similarly arranged on the opposite side of the centerline of the casing from the inlet ports.

Pulsating hydraulic fluid having a substantially uniform pulse width, is supplied to the inlet ports to thereby provide a stepped output for the gears.

3,429,230
FLUID DRIVEN MOTOR

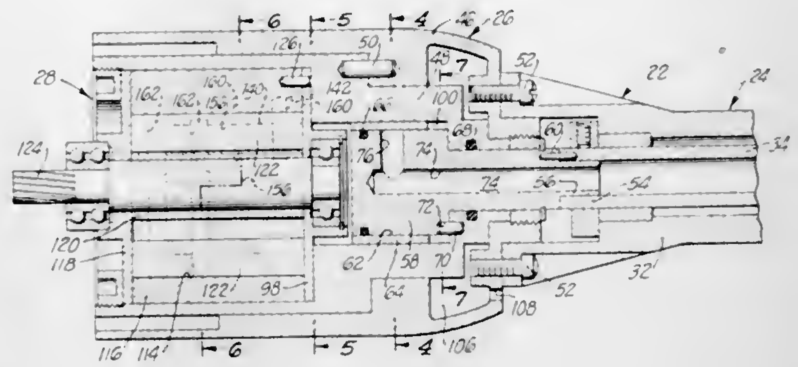
Robert C. Quackenbush, Glendale, Calif., assignor of one-half to Arthur B. Quackenbush, Glendale, Calif.

Filed Nov. 28, 1966, Ser. No. 597,418

U.S. Cl. 91—121 **12 Claims**

Int. Cl. F01c *1/30, 21/12*

A fluid inlet and a fluid exhaust are connected to one side of a rotary valve, and first and second pairs of fluid passages are connected between the other side of the valve and a rotor chamber of a reversible rotary motor. Movement of the valve body to a first position connects the fluid inlet through one of the first pair of fluid passages into the rotor chamber, while sealing off the other of said first pair at the valve and connecting both of the second pair of fluid passages to the fluid exhaust. Movement of the valve body to a second position connects both of the first pair of fluid passages to the fluid exhaust, one of the second pair of fluid passages to the fluid inlet and seals off the other. The first pair of fluid passages opens into the rotor chamber circumferentially spaced from the second, and one of each pair opens into the rotor chamber axially spaced from the other, although both passages of each pair are connected adjacent the rotor chamber.



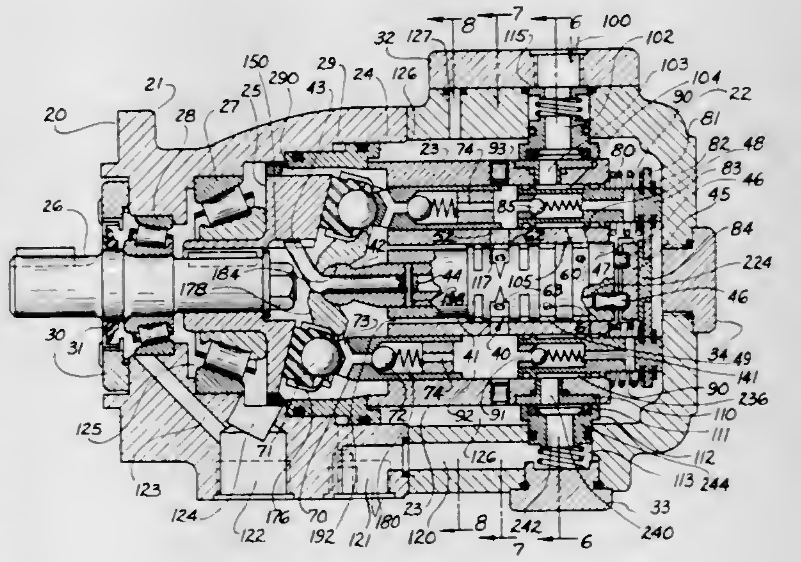
3,429,231
FLUID MOTOR

Robert E. Raymond, Zanesville, Ohio, assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York

Filed Apr. 18, 1966, Ser. No. 543,284

U.S. Cl. 91—175 **10 Claims**

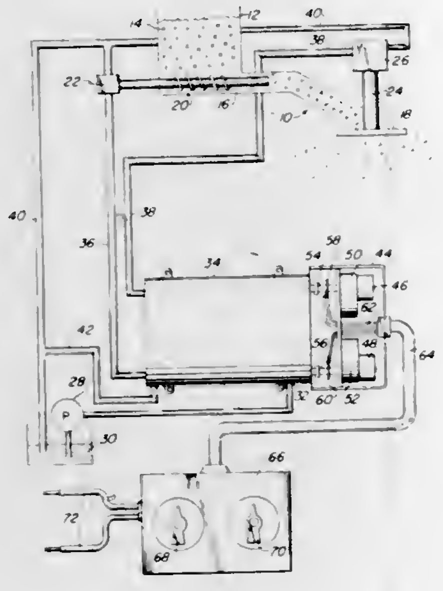
Int. Cl. F01b *3/00;* **F01l** *33/02;* **F15b** *11/08*



A fluid motor of the axial piston type that includes inlet check valves which are inoperative when the mechanism operates as a fluid but which automatically become operative during overrun conditions when the mechanism must function as a pump to perform a braking function. The motor further includes cylinder chamber relief valves that prevent pressure build-up in the cylinder chambers when valving is being effected. In addition the motor includes a cylinder barrel mounted for axial movement relative to a spool type timing valve as well as pulsating means for vibrating the cylinder barrel to reduce break away friction and eliminate hydraulic locking effects on the pistons and timing valve.

3,429,232
REMOTE CONTROL ELECTRIC ACTUATING DEVICE

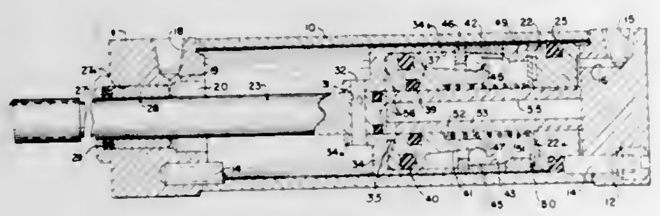
Paul C. Weiss, Evanston, Ill., assignor to Fluid Power Accessories, Inc., Wheeling, Ill., a corporation of Illinois
Filed Sept. 22, 1966, Ser. No. 581,263
U.S. Cl. 91—412 **8 Claims**
Int. Cl. F16b *11/04;* **F01b** *23/00;* **F03c** *1/06*



Electrically controlled hydraulic valve arrangements with integral hydraulic override whereby the flow of fluid through one valve controls in part the operation of the other valve; the two valves being connected to operate different hydraulically driven motors connected respectively to a conveyor mechanism and a spreader mechanism for distribution of sand or aggregate.

3,429,233
RESISTANCE STROKE CONTROL CYLINDER

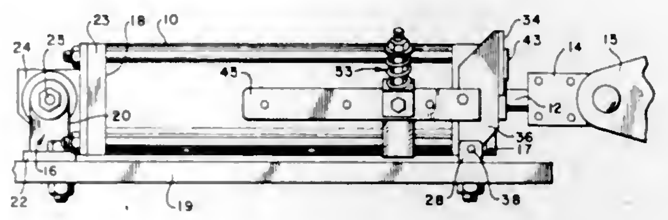
Lee A. Wright, Kellering, Ohio, assignor to Compressed Air Service Company, Moraine, Ohio, a corporation of Ohio
Filed Oct. 6, 1966, Ser. No. 584,754
U.S. Cl. 92—24 **10 Claims**
Int. Cl. F15b *15/26*



The cylinder includes ports at its respective opposite ends for alternately admitting and discharging fluid thereby to reciprocate a power piston contained within the cylinder, this piston being fixed to a piston rod. The piston rod carries a radially expandible locking ring which is actuated by a fluid operated, actuating piston carried by the piston rod for axial movement relative thereto. Fluid under pressure admitted to one face of the power piston also acts on the actuating piston to urge the locking ring into locking engagement with the bore of the cylinder. After this lock has been achieved, the power piston may move only a limited amount before it is positively stopped. The lock is released when fluid is admitted to the other end of the cylinder.

3,429,234
SUPPORT AND DAMPENING MEANS

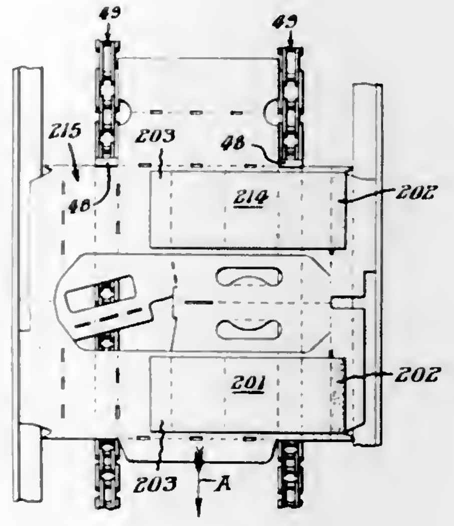
John J. Taylor, Medina, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Sept. 19, 1966, Ser. No. 580,531
U.S. Cl. 92—143 **13 Claims**
Int. Cl. F01b *29/08;* **F16m** *1/02;* **F16f** *15/04*



A cylinder containing a reciprocal piston and a mount for the cylinder. The mount is designed to dampen vibrations caused when the piston reciprocates within the cylinder, to keep the piston axially aligned with the cylinder, thereby preventing the rod of the piston from binding in the cylinder end from which the rod protrudes.

3,429,235
APPARATUS FOR FORMING AND ATTACHING FULL CELL INSERTS TO BOTTLE CARRIERS

Edward M. Ackley, Haddonfield, N.J., assignor to Julian B. Slevin Co., Incorporated, Lansdowne, Pa., a corporation of New Jersey
Filed Oct. 7, 1966, Ser. No. 585,723
U.S. Cl. 93—37 **7 Claims**
Int. Cl. B31b *1/18, 1/62*

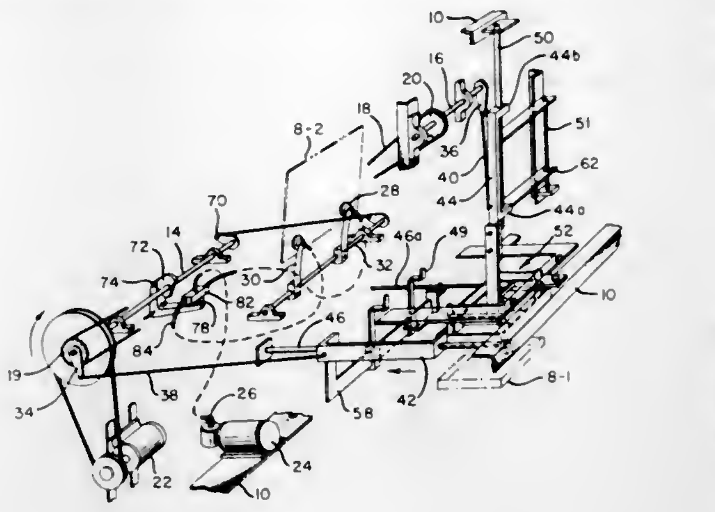


Auxiliary apparatus is disclosed for attachment to a known form of right angle gluer (or other known form of bottle-carrier erecting machine) for forming and adding to the flat main carton blank, as it moves through the right angle gluer, a pair of full-cell partition inserts.

3,429,236
BOX FOLDING MACHINE

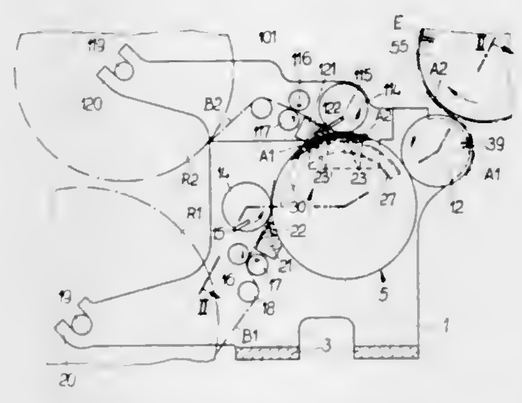
Arthur E. Randles, Jr., 707 Warrington Road, Redwood City, Calif. 94063
Continuation-in-part of application Ser. No. 482,847, Aug. 26, 1965. This application Aug. 29, 1966, Ser. No. 582,785
U.S. Cl. 93—51 **6 Claims**
Int. Cl. B31b *1/06, 1/44*

A box folding machine including a horizontally reciprocable carriage for delivering box blanks from a magazine to folding station, a vertically reciprocable carriage supporting plunger-type folding mechanisms and blank pick-off and feed fingers, all driven directly from a single shaft for simplified timing.



3,429,237
APPARATUS FOR APPLYING TRANSPARENT MATERIAL TO WINDOW OPENINGS OF ENVELOPE BLANKS AND THE LIKE

Hermann Subklew, Neuwied, Germany, assignor to Winkler & Dunnebier Maschinenfabrik und Eisengiesserei KG, Neuwied am Rhine, Germany, a corporation of Germany
Filed Sept. 1, 1967, Ser. No. 665,060
Claims priority, application Germany, Nov. 2, 1966, W 42,706
U.S. Cl. 93—61 **4 Claims**
Int. Cl. B31b *1/82, 1/12*

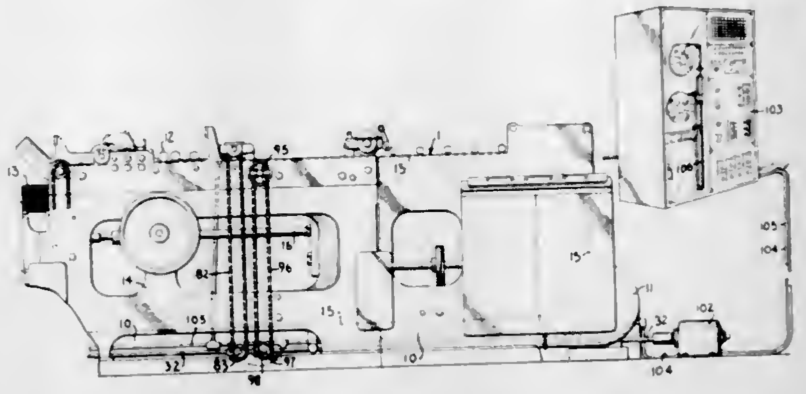


A machine for making envelopes and the like includes an apparatus containing a number of units corresponding to the number of window openings in each envelope blank, which feed and cut strips of generally transparent material and transmit them to a central rotary suction roller provided with groups of suction apertures, each group having its own suction air control. Selected apertures transmit the strips to means applying them to the blanks.

3,429,238
AUTOMATION OF ENVELOPE MACHINE ADJUSTMENTS

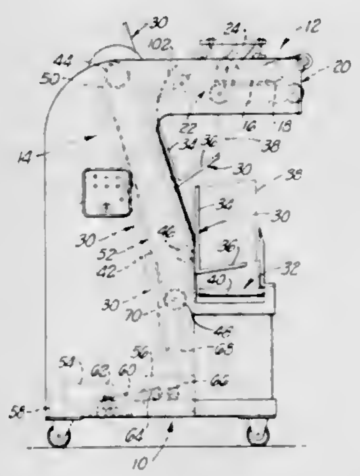
James W. Lenk, Shawnee Mission, Arthur H. Burnett, Prairie Village, and Kenneth D. May, Overland Park, Kans., assignors to Berkley Machine Company, Kansas City, Mo., a corporation of Missouri
Filed Oct. 16, 1967, Ser. No. 675,376
U.S. Cl. 93—61 **11 Claims**
Int. Cl. B31b *19/00*

The adjustable mechanisms of an envelope making machine each have a rotatable adjustment shaft associated therewith which is independent of any normal drive members. A rotatable master shaft extends along the machine and a controlled motion transmitting take-off member is connected between each of the adjustment shafts and the master shaft. The take-off members include electrically operated clutches for selectively engaging and disengaging the master shaft from the adjustment shafts and electrically operated brakes are supplied where necessary for selectively disengaging the normal drive means of the adjustable mechanism during adjustment. A computer is adapted to translate input signals related to blank dimensional changes for the next envelope run to output signals defining corresponding coordinated rotations of a master adjusting motor driving the master shaft, actuations of the clutches and actuations of the brakes.



3,429,239
STACKER FOR NEWSPAPERS AND THE LIKE

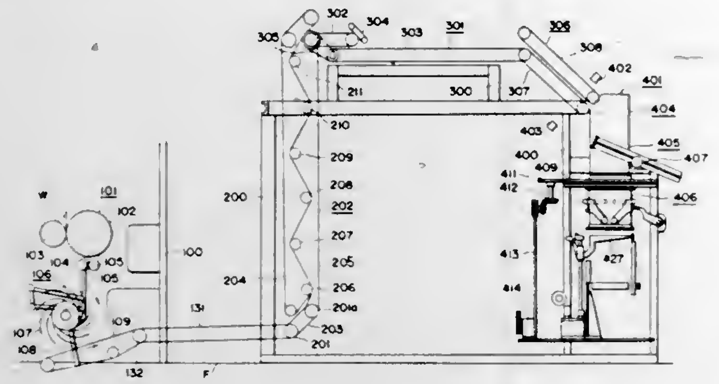
John R. Murchison, Culver City, John C. Darnall, Van Nuys, and Clarence Morgan Brassell, Encino, Calif., assignors to Development and Control Limited SA, Luxembourg, Luxembourg, a Luxembourg corporation
Filed Feb. 15, 1966, Ser. No. 527,436
U.S. Cl. 93—93 **26 Claims**
Int. Cl. B65h *33/00;* **B65g** *57/00, 47/74*



A device for stacking newspapers and the like having receptacles mounted along spaced intervals of a conveyor chain for intercepting a stream of newspapers discharged toward the stacking region in a substantially continuous stream. The receptacles are first moved to a position just above the continuous stream, are restrained in this position by suitable latch means and are then rapidly accelerated by a lost motion device including a spring biasing member so as to cleanly intercept the stream of newspapers as soon as a predetermined number of newspapers is stacked on the receptacle which has previously been moved through the stacking region. The lost motion device acts to provide for uniform charging of the biasing spring members to insure rapid acceleration of the temporarily restrained receptacle so as to quickly and cleanly intercept the stream to provide an accurate count of the newspapers stacked upon each receptacle.

3,429,240
APPARATUS FOR AUTOMATICALLY PROCESSING SECTIONS FROM ROTARY PRESS

Katsumi Kawai, Nagoya, Gohei Suzuki, Tokyo, and Yoshito Kitamura, Kawasaki, Japan, assignors to Ikegai Tekko Kabushiki Kaisha and Kabushiki Kaisha Chubu Nippon Shinbunsha, Tokyo and Nagoya, Japan, respectively
Filed Sept. 25, 1967, Ser. No. 670,314
U.S. Cl. 93—93 **4 Claims**
Int. Cl. B65h *33/00, 29/34*

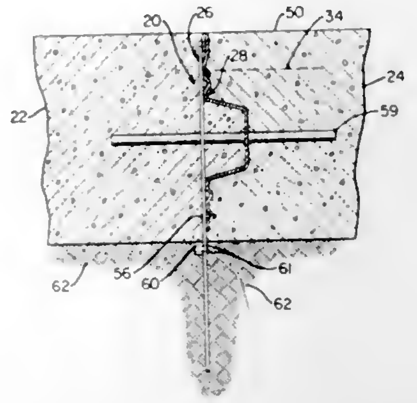


A main guide normally guides sections from a rotating delivery fan on a traveling transport belt to put them in overlapped relation at predetermined equal intervals on the belt. Each time but slightly before the fan effects a predetermined number of complete revolutions an auxiliary guide ascends near the position of the main guide while the main guide swings in the direction of rotation of the fan. Then the sections are guided by the auxiliary guide until the last one in a predetermined number of the sections determined by the predetermined number of complete revolutions of the fan is guided by the auxiliary guide descending. The moved main guide overlaps the next section from the delivery fan on the preceding section on the belt with a predetermined increased interval to mark off a group consisting of the predetermined number of the sections. Then the main guide swings back to its original position. The groups of sections marked off are successively transferred to a second endless belt traveling at such a higher speed that the increased interval provides a space by which one group is separated from the adjacent group of sections. An upper retractable pile board receives one group of sections to form a pile on it. The space followed by the group serves to retract the upper pile board to permit the pile on the latter to fall upon a lower retractable pile board. After rotation through an angle of 180°, the lower pile board receives another pile of sections from the upper board. The superposed piles fall upon a delivery board descending and are transferred to a set of delivery rollers followed by ascending movement of the delivery board.

3,429,241
CONCRETE FORM

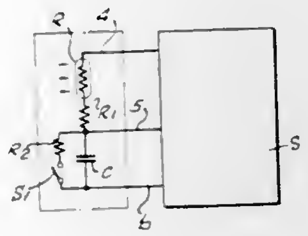
Duane C. Burton, Boulder, Colo., assignor, by mesne assignments, to The Ankortite Company, Inc., Franklin Park, Ill., a corporation of Delaware
Filed Nov. 28, 1966, Ser. No. 597,337
U.S. Cl. 94—17 **15 Claims**
Int. Cl. E01c *11/02, 23/02*

A concrete form used in forming a contraction joint and an elongated member for use in such joint. The concrete form comprises a plurality of aligned stakes each of which has a generally vertically disposed body portion, a top portion and a support means disposed beneath the top portion generally transversely to said body portion, and an elongated relatively rigid sheet material member having means disposed in supporting engagement with at least a portion of the transversely disposed support means of two or more of said stakes. The joint forming member comprises upper and lower longitudinally extending, generally co-planar portions and a longitudinally extending key deformation portion interposed between and connected to the upper and lower portions, said upper planar portion having an upper edge, said member including means formed within the upper planar portion or adjacent said planar portion for engaging a generally horizontally disposed support means of a supporting structure to support said member whereby the upper edge of said member may be disposed along a predetermined grade level.



3,429,242
AUTOMATIC SHUTTER TIMING NETWORK

Masateru Yoshida and Tadamichi Mori, Kitatama-gun, Tokyo-to, Japan, assignors to Citizen Tokei Kabushiki Kaisha, Shinjuku, Tokyo-to, Japan, a corporation of Japan
Filed July 6, 1965, Ser. No. 469,639
Claims priority, application Japan, July 7, 1964, 39/53,566
U.S. Cl. 95—10 **3 Claims**
Int. Cl. G01j *1/52;* **G03b** *7/08*



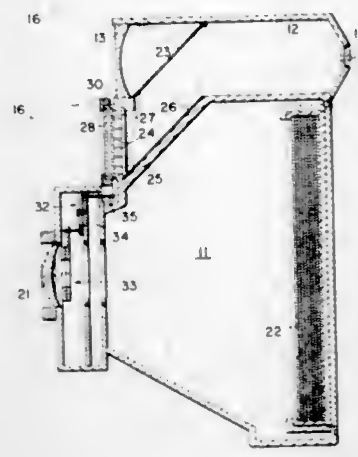
A camera automatic shutter includes a shutter closing switching network controlled by a timing network comprising a photoconductor, a first resistor and a capacitor connected in series and a second resistor connected through a switch across the capacitor, the capacitor being connected to the switching network control input. The photoconductor is non-linear in the high illumination range and the first and second resistor are of such values as to compensate for such non-linearity.

3,429,243
EXPOSURE VALUE COMPENSATOR

Eldridge R. Boyle, Jr., Charlottesville, Va., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,892
U.S. Cl. 95—10 **14 Claims**
Int. Cl. G01j *1/22*

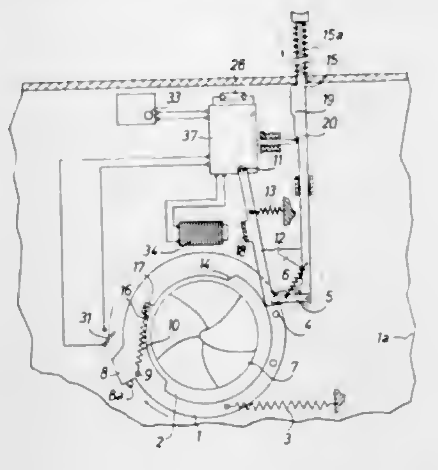
An instrument for predicting photographic exposure effects by which all significant highlights in a field of view may be detected and compared against a luminous

background representing the integrated intensity of illumination. The comparison is made using a photometric comparator which causes a superposition of integrated, diffused scene light over image light deriving from the same scene. Exposure correction factors are readily derived from the photocomparator.



3,429,244
SHUTTER ACTUATING ARRANGEMENT

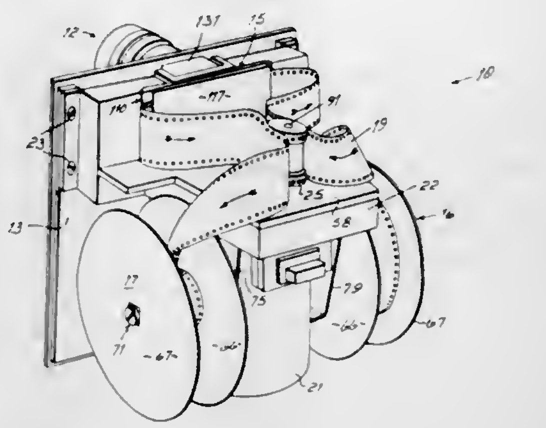
Erwin von Wasielewski, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Dec. 1, 1966, Ser. No. 598,258
Claims priority, application Germany, Dec. 1, 1965, A 50,927
U.S. Cl. 95—10 **10 Claims**
Int. Cl. G01j *1/00, 1/52;* **G03b** *9/00*



1. In a shutter actuating arrangement for maintaining a shutter in an open position depending upon the intensity of ambient light, in combination, actuating means adapted to move between an inoperative position and an operative position in which it maintains said shutter in open position; means permanently tending to move said actuating means into inoperative position; electromagnetic means tending to move said actuating means in operative position upon energization; electrical indicator means adapted to indicate the sufficiency of ambient light for exposure purposes; a shutter opening member adapted to move the said shutter into said open position thereof; photosensitive means the resistance of which varies with the intensity of ambient light; a source of direct current; and switching means comprising a first transistor connected to said electromagnetic means and said indicator means for operating same; a second transistor for driving said first transistor between conducting and nonconducting states, said electromagnetic means and said indicator means being energizable and operable when said first transistor is in the conducting state; and means coupling said photosensitive means to said second transistor for controlling the latter in relation to the intensity of the ambient light.

3,429,245
SEQUENCE CAMERA

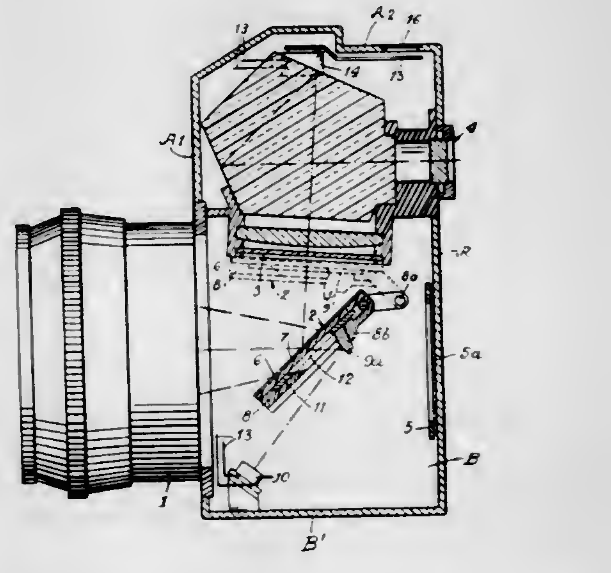
Warren D. Novak, Chappaqua, N.Y., assignor to Mosler Research Products, Inc., Danbury, Conn., a corporation of Delaware
Filed Sept. 30, 1966, Ser. No. 583,295
U.S. Cl. 95—11 **14 Claims**
Int. Cl. G03b *19/00, 9/10, 1/04*



A high speed sequence camera particularly useful for surveillance work. The camera has a large film capacity, e.g. 300 feet, and yet is extremely compact and quiet. The camera comprises a motor having a takeup reel and a supply reel disposed on opposite sides of the motor and of a two-piece rotary shutter. The reels are mounted on novel mounts which prevent rattling. A single sprocket wheel engages the film before it enters the film gate and after it emerges the film gate. A claw engages a perforation of the film beneath the main aperture of the film gate and is effective to pull the film through the film gate. The takeup reel, sprocket, film advance claw and rotary shutter are driven from the motor through flexible drive belts.

3,429,246
MIRROR REFLEX CAMERA

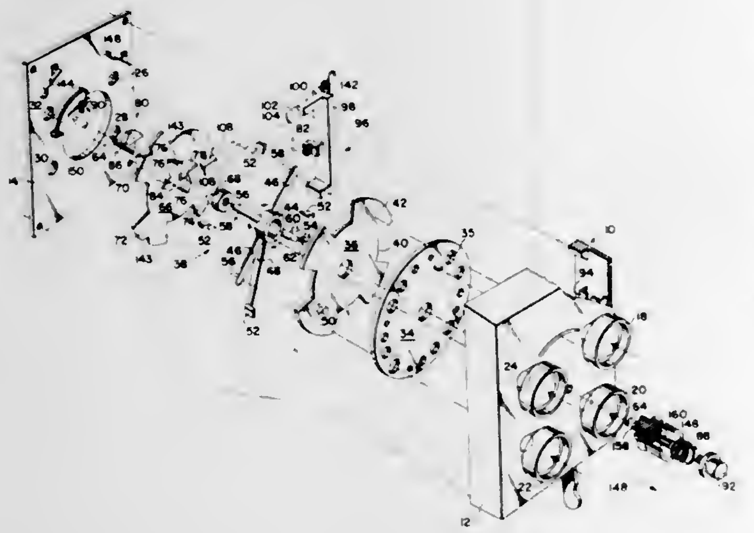
Helmut Ebertz, Stuttgart-Mohringen, Germany, assignor to Zeiss-Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed June 29, 1966, Ser. No. 561,581
Claims priority, application Germany, July 24, 1965, Z 11,671
U.S. Cl. 95—42 **2 Claims**
Int. Cl. G03b *19/12;* **G01j** *1/00, 1/52*



A mirror reflex camera which is equipped with a photoelectric light meter whose photoelectric element is arranged inside the camera on the bottom wall thereof and is energized by a portion of the light beam entering the camera objective. This portion of the light beam is deflected onto the photoelectric element by a single curved mirror having a spherical or aspherical convex reflecting surface. This mirror is fixedly attached to the rear of the customary pivotally mounted transparent mirror which reflects another portion of the light beam entering the camera objective into the viewfinder of the camera.

3,429,247
PHOTOGRAPHIC SHUTTER

Christopher R. Rice, Wakefield, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a Corporation of Massachusetts
Filed Oct. 12, 1966, Ser. No. 586,081
U.S. Cl. 95—61 **5 Claims**
Int. Cl. G03b *9/20*

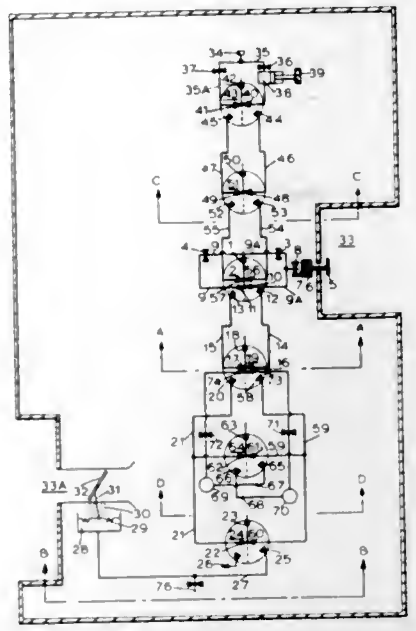


1. A shutter for photographic apparatus including at least one exposure aperture comprising:
   (a) a blade mounted for opening and closing movement in one direction relative to said exposure aperture;
   (b) a support mounted for said movement relative to said aperture in said direction;
   (c) a cantilever spring mounted on said support for movement therewith, said spring being connected intermediate its ends to said shutter blade;
   (d) actuating means for moving said support and spring in said direction; and
   (e) retaining means mounted in the path of movement of the free end section of said spring for engaging and resisting movement thereof and flexing said spring in response to movement of said base;
   (f) said retaining means being positioned to permit said spring to escape following predetermined flexure thereof whereby energy stored in said flexed spring is released to impart rapid opening and closing movement to said shutter blade in said direction.

3,429,248
PRESSURE CONTROL SYSTEMS FOR CLOSED CHAMBERS

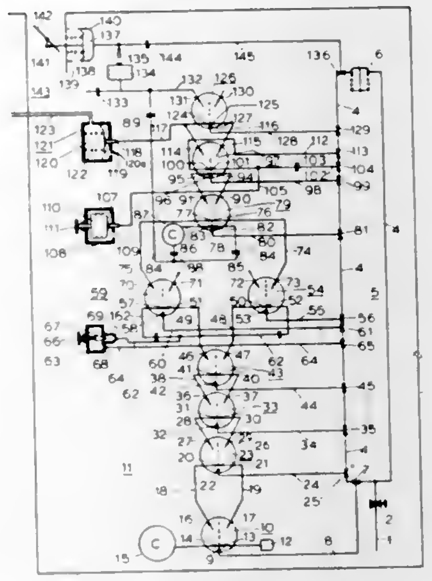
Owen D. A. C. Furlong, East Coker, near Yeovil, Somerset, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Aug. 5, 1966, Ser. No. 570,530
Claims priority, application Great Britain, Sept. 22, 1965, 40,489/65
U.S. Cl. 98—1.5 **15 Claims**
Int. Cl. B64d *13/04;* **F15c** *1/12*

A pressure control system wherein the pressure in a chamber for example an aircraft cabin, is maintained by fluid operated logic components which have no moving parts.



3,429,249
PRESSURISATION OF ENCLOSED CHAMBERS UTILISING FLUID LOGIC DEVICES

Owen Desmond Furlong, East Coker, Somerset, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Nov. 21, 1966, Ser. No. 595,881
Claims priority, application Great Britain, Jan. 18, 1966, 2,386/66
U.S. Cl. 98—1.5 **6 Claims**
Int. Cl. B64d *13/04;* **F15c** *1/08, 1/14*

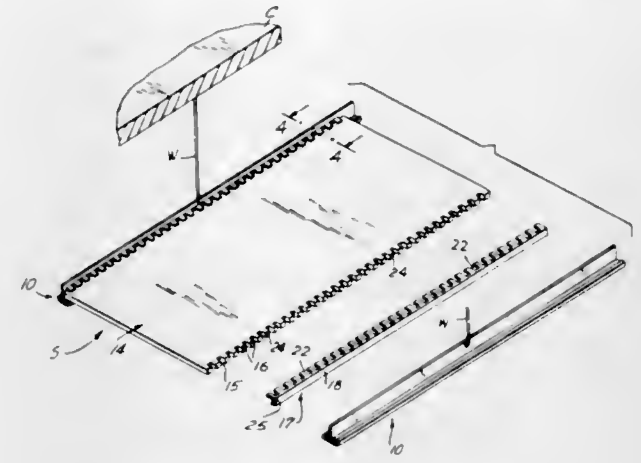


An arrangement employing fluid amplifier devices for controlling the rate of change of pressure in an enclosed chamber such as an aircraft cabin. The sensed rate of change controls the pressure of one control nozzle and a predetermined bias pressure controls a second control nozzle in opposition to the first control nozzle. The sensed signal must overcome the predetermined bias signal before it can effect a change in the pressure in the cabin.

3,429,250
VENTILATING CEILING CONSTRUCTION

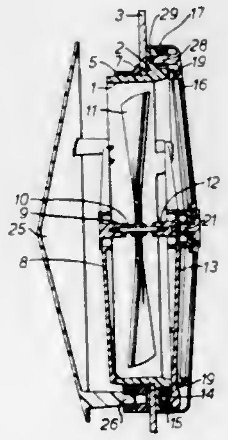
Michael J. Kodaras, Scarsdale, N.Y., assignor, by mesne assignments, to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 17, 1962, Ser. No. 188,189
U.S. Cl. 98—40 **7 Claims**
Int. Cl. F24f *7/00, 13/08;* **E04b** *5/54*

2. In a ventilating ceiling construction of the type having a main ceiling and a ceiling suspended below the main ceiling, defining a plenum chamber between the main and the suspended ceiling, said suspended ceiling comprising rectangular panels, inverted T support having means for supporting the edges of the panels of the suspended ceiling, each of said panels having passages near the edges thereof and extending through the thickness of the panels, said passages comprising notches in uniformly spaced relation in the longitudinal edges of the panels, venting sliders, slidably adjustable in position and carried by a longitudinal edge portion of at least one of each pair of two contiguous panels, each of said sliders being U-shaped and having a pair of legs straddling the edge portion of the panel, one of said legs having a series of spaced apertures, movable into and out of registry with the passages, thereby to control the venting passages between the plenum and the room, depending on the setting of said sliders, the other of said legs being of width less than that of the first named leg and of depth less than the depth of the notches in the edges of said panels.



3,429,251
SELF-DRIVEN ROTARY VENTILATOR

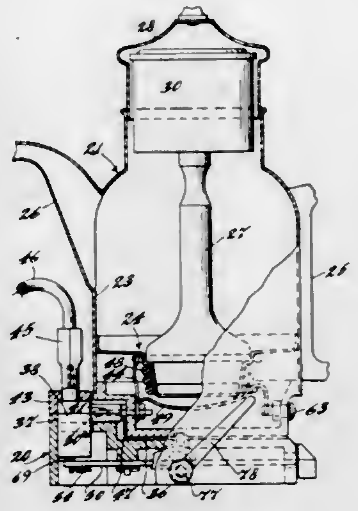
Reginald W. Simon, 14 Wellington Road, St. John Wood, London NW. 8, England
Filed Apr. 20, 1967, Ser. No. 632,232
U.S. Cl. 98—94 **10 Claims**
Int. Cl. E06b *7/02*



A ventilator of the self-driven rotary type comprises an annular casing mounted in an aperture in a window pane or the like by a cooperating radial flange and a threaded locking ring, a rotor is mounted in bearings in opposed spiders on the inner and outer ends of said casing, and a manually controlled air passage area varying unit is mounted on the inner end of said casing and a weather guard is mounted on the locking ring at the outer end of the casing.

3,429,252
COFFEE MAKER AND BREWER

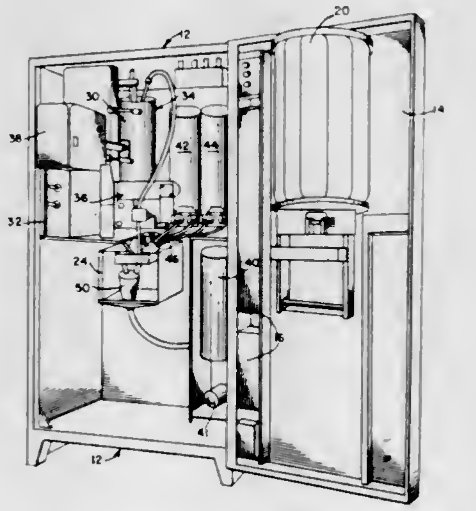
Angelo Colonna, 2114 Bowler St., Philadelphia, Pa. 19115
Continuation-in-part of application Ser. No. 635,560, May 2, 1967. This application July 1, 1968, Ser. No. 741,767
U.S. Cl. 99—281 **4 Claims**
Int. Cl. A47j *31/00;* **F27d** *11/00*



The present invention involves a coffee brewer and container which is used initially to brew the coffee and then subsequently to warm the coffee, as well as serve the coffee. The coffee brewer and server comprises a base, and a brewer and server assembly which fits into the base. The brewer and server assembly is selectively locked in the base. A selector lever controls the cycle position.

3,429,253
APPARATUS FOR HOT BEVERAGE BREWING

Charles T. Breitenstein, Elk Grove Village, Donald C. Pearl, Lake Zurich, and Walter A. Eliason, Chicago, Ill., assignors to Canteen Corporation, Chicago, Ill., a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,360
U.S. Cl. 99—283 **14 Claims**
Int. Cl. A23f *3/00;* **A47j** *31/00*



1. A hot beverage brewing apparatus comprising:
(1) a stationary table with an opening therein,
(2) a brew chamber resting on said table with the interior of the chamber in communication with said opening,
(3) a reusable foraminous filter resting on said table between said cylinder interior and said opening,
(4) a plurality of scrapers each having an edge surface operably adjacent said filter,
(5) means for feeding leachable beverage solids into said chamber whereupon said solids fall onto said filter,

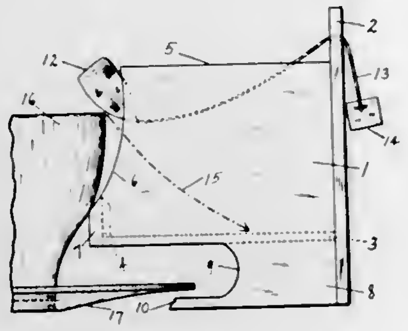
(6) means for feeding hot liquid into said chamber for brewing mixture with said solids,

(7) brew control means for accelerating the brewing of beverage from said mixture and for passing said brewed beverage through the filter and said opening, and

(8) a drive mechanism operative consequent to passage of said beverage for sliding said filter past said scrapers to effect removal of the leached solids from said filter during said slide movement.

3,429,254
TEA BAG DISPOSERS

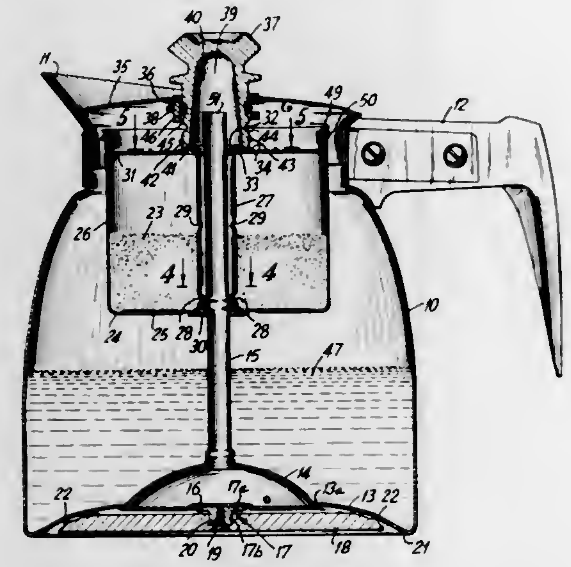
Louis W. Rosen, 70—25 Yellowstone Blvd., Forest Hills, N.Y. 11375
Filed Nov. 21, 1967, Ser. No. 684,669
U.S. Cl. 99—290 **4 Claims**
Int. Cl. A47f *31/44*



My invention relates to a device wholly independent in structure and capable of standing on its own legs, whether or not in operational proximity to a cup, or cup and saucer, and having a compartment of sufficient capacity for the reception of a plurality of steeped tea bags that may be transferred to it from such cup through channeled means while held aloft or through slidable contact against a portion of said cup, the provisions being such that no drippings from said bag in the course of such transfer will collect anywhere except in said compartment.

3,429,255
COFFEE PERCOLATOR

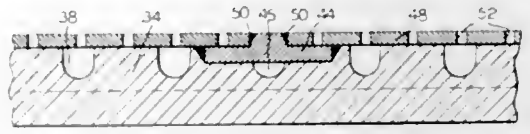
Alfonza Pedalino, Commack, N.Y., assignor to Peter L. Cardiello, Brooklyn, N.Y.
Filed Jan. 4, 1967, Ser. No. 607,267
U.S. Cl. 99—305 **6 Claims**
Int. Cl. A47j *31/04, 31/44*



A self-timing coffee percolator with a heat retaining element and a by-pass arrangement for water passing up the percolating stem. When the element absorbs heat, the circulating water is by-passed away from the coffee solids. When the heat source is removed, circulating water is passed through the coffee solids. The heat retaining element retains sufficient heat to percolate coffee for a given period of time. The heat retaining element is insulated from the pot everywhere except directly under the pump of the percolator. A watertight connection connects the element to the pot. The various components of the pot have a degree of "play," and a force exerted by a two-position by-pass control interacts with that "play" to provide self-alignment and by-pass sealing.

3,429,256
APPARATUS FOR SEPARATING THE COMPONENTS OF A SUSPENSION

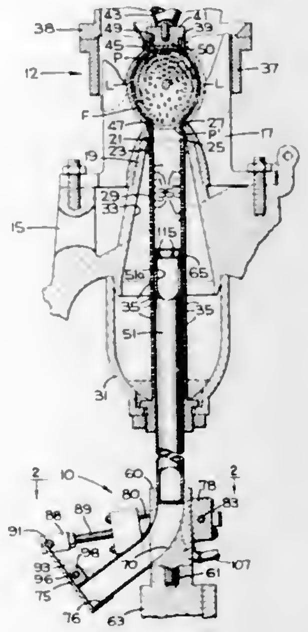
Gilbert Bailleau, Limay, France, assignor to Cellophane Investment Co., Ltd., Alderney, Channel Islands, Great Britain, a corporation of Great Britain
Filed Apr. 25, 1966, Ser. No. 544,786
Claims priority, application France, May 20, 1965, 17,689
U.S. Cl. 100—121 **10 Claims**
Int. Cl. B30b *9/20;* **B01d** *33/06;* **B21b** *27/02*



6. In a device for separating the components of a suspension, pressing rollers which comprise a shaft, braces attached to said shaft, a perforated sleeve portion overlying the assembly of shaft and braces, said sleeve portion having lengthwise ribs and crosswise grooves on the outer surface thereof, and a plurality of perforated plate elements attached to said sleeve by means of circular straps embedded in the sleeve portion, which straps are provided with shoulders to facilitate attachment of the perforated plate elements.

3,429,257
FRUIT PROCESSING APPARATUS

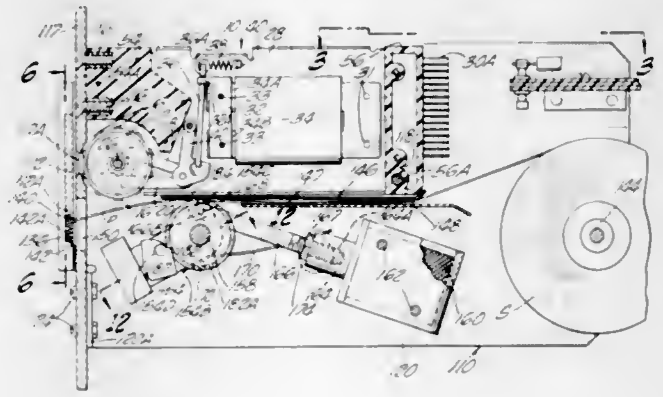
Wilber C. Belk, Lakeland, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 537,820
U.S. Cl. 100—213 **11 Claims**
Int. Cl. B30b *9/02*



1. Fruit processing apparatus for applying pressure to a fruit to squeeze it and for extracting the juice therefrom, said apparatus comprising pressure-applying means which includes cooperating cups and a tubular plunger, said plunger having an open inlet end mounted for communication with the interior of said fruit and a discharge end opposite to and in communication with said inlet end for discharge of the fruit residue after the extraction of the juice and a gate movable from a position closing the discharge end of said plunger to a position spaced from said discharge end, a fluid-actuated pressure-applying system connected to said gate for maintaining a predetermined maximum pressure on the fruit pulp at the interior of said fruit during the juice extracting process, and control means for selectively varying the fluid pressure in said system to vary said predetermined maximum pressure.

3,429,258
ELECTRICALLY ACTUATABLE COUNTER-PRINTER ASSEMBLY

Albert J. Baranoff and Wolfgang F. Langheinrich, Santa Ana, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, a corporation of Delaware
Continuation of application Ser. No. 582,399, Sept. 27, 1966. This application Apr. 10, 1968, Ser. No. 720,409
U.S. Cl. 101—79 **22 Claims**
Int. Cl. B41l *45/00;* **B41j** *1/60;* **B41f** *1/08*

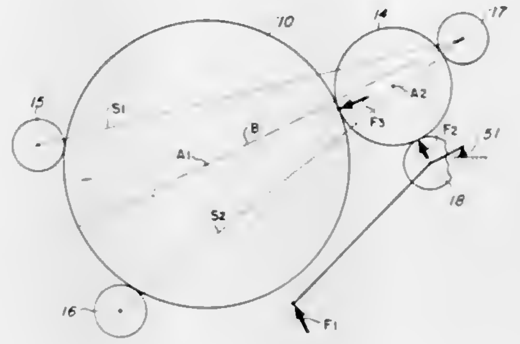


A counter wheel with indicia for visual readout and also for printing is mounted between a pair of spaced plates and such counter wheel is rotated equal incremental arcuate distances upon corresponding successive energization of electromagnetic means mounted between the spaced plates. One of such plates is a printed circuit board having conducting portions thereof cooperating with a brush carried by the counter wheel. A plurality of such assemblies or modules each having an individual counter wheel may be assembled in side-by-side relationship in modular form so that when one wheel is rotated a full revolution corresponding, for example, to 10 incremental distances an adjacent counter wheel may be moved one-tenth of one revolution. Each of such electromagnetic means involves a pawl and ratchet arrangement which assures proper indexing of the counter wheel for accurate visual readout and printing purposes. The counter wheel brush has bifurcated portions of unequal lengths so as not to be naturally resonant at the same frequency.

3,429,259
PRESSURE TRANSFER REPRODUCTION MACHINE

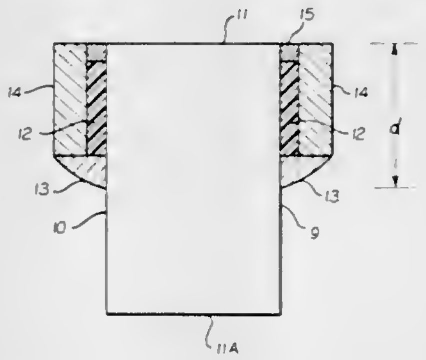
Lyman H. Turner, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,549
U.S. Cl. 101—132 **7 Claims**
Int. Cl. B41l *9/10*

A reproduction apparatus of the pressure-transfer type incorporating a three-way roller bearing support for the rotatable copy drum and driving pressure roll, toggle type force generating means for holding the pressure roll in pressure contact with the copy drum, a foldable paper tray, automatic gripping means for attaching the transfer sheet to the copy drum, means for separating copies from the transfer sheet, and programming control means adapted at the last copy programmed to release the gripping means whereby the transfer sheet is expelled with the last copy.



3,429,260
MINIATURE INITIATOR FOR ELECTRO-EXPLODING DEVICE

Sidney A. Corren, 163 Cherry St., Katonah, N.Y. 10536
Filed Feb. 13, 1967, Ser. No. 615,671
U.S. Cl. 102—28 **2 Claims**
Int. Cl. F42b *3/10*

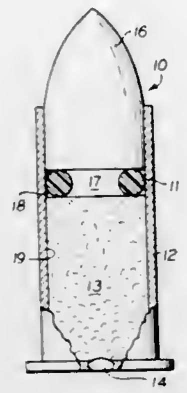


An electroexplosive device, comprising an insulated body portion with an electroconductive shaft member mounted within an electrically conductive sleeve positioned about the insulated shaft member and with an electrically conductive plastic resistor member electrically connecting the shaft member and the electrically conductive sleeve member across the face of the insulator.

3,429,261
ROUND OF FIXED AMMUNITION HAVING IMPROVED GUN BORE EROSION CHARACTERISTICS

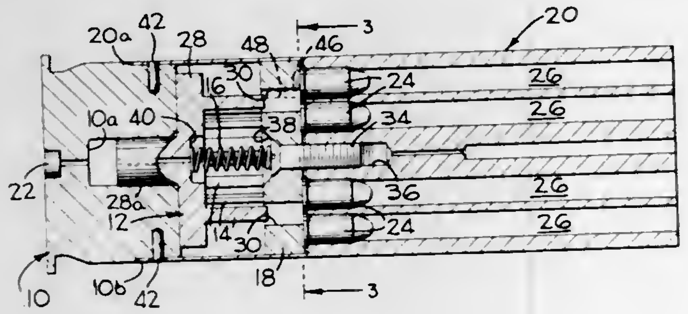
Herbert M. Goldstein, 23 Hastings Road, Massapequa, N.Y. 11758
Filed Oct. 6, 1965, Ser. No. 493,488
U.S. Cl. 102—38 **7 Claims**
Int. Cl. F42b *5/00, 9/00*

An improved round of fixed ammunition provided with a vaporizable annular member of erosion protective material surrounding the propellant charge within the cartridge casing, the erosion protective material being composed of a silicon-based, noncarbonaceous material and a vapor depositable metallic material dispersed in the carrier material. Upon firing of the round, the protective member is vaporized by the hot propellant gases and the resulting vapors are carried thereby into the gun bore and as an inert laminar layer surrounding such hot gases to protect the gun bore from erosion thereby, and to deposit a sacrificial metallic material film upon the gun bore which film further protects the gun bore from erosion by hot gases and serves to lubricate the passage therethrough of projectiles from subsequently fixed rounds.



3,429,262
MULTI-PELLET CARTRIDGE

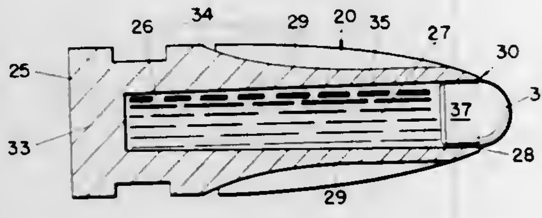
William L. Kincheloe, San Jose, and Robert B. Benton, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,974
U.S. Cl. 102—38 **15 Claims**
Int. Cl. F42b *5/02, 9/04*



A multi-pellet cartridge for single-shot and repeating firearms, with a barrel-like body containing a plurality of discrete bores for loading with standard sub-caliber cartridges and a self-contained mechanism for firing all the sub-caliber cartridges simultaneously.

3,429,263
MARKING PROJECTILE AND METHOD OF USE

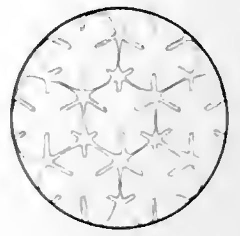
James B. Snyder, W. 35 Pacific Ave., Spokane, Wash. 99204; John D. Lont, 14823 12th NE., Seattle, Wash. 98155; and George M. Lont, 1107 Oakland Ave., Boise, Idaho 84706
Filed Apr. 17, 1967, Ser. No. 631,452
U.S. Cl. 102—92.7 **8 Claims**
Int. Cl. F42b *11/18, 13/26*



A marking projectile adapted to be projected along a trajectory to impact upon a surface at a predetermined location and constructed and arranged to discharge and deposit a marking agent contained therein over an area greater than would normally occur; and the method of projecting said projectile by means of a conventional firearm and applicable to the functions of surveying.

3,429,264
SOLID ROCKET PROPELLANTS

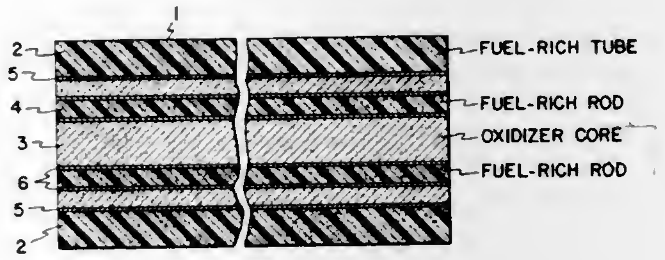
Wilhelm Oversohl, Waldkraiburg, and Fritz Clausen, Aschau, Germany, assignors to Nitrochemie G.m.b.H., Aschau, Germany, a corporation of Germany
Filed Nov. 25, 1966, Ser. No. 597,128
Claims priority, application Germany, Dec. 1, 1965, N 27,705; Apr. 9, 1966, N 28,362
U.S. Cl. 102—100 **6 Claims**
Int. Cl. F42b *9/14, 5/16*



The invention relates to novel solid rocket propellants comprising a plurality of cylindrical propellant elements having hexagonal-like profiles and slots running longitudinally.

3,429,265
SOLID PROPELLANT SYSTEM FOR ROCKETS

John P. Longwell, Westfield, and Herman Bieber, Kenilworth, N.J., and John W. Begley, Bartlesville, Okla., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 30, 1960, Ser. No. 79,916
U.S. Cl. 102—101 **6 Claims**
Int. Cl. C06b *11/00, 15/00;* **F42b** *1/00*



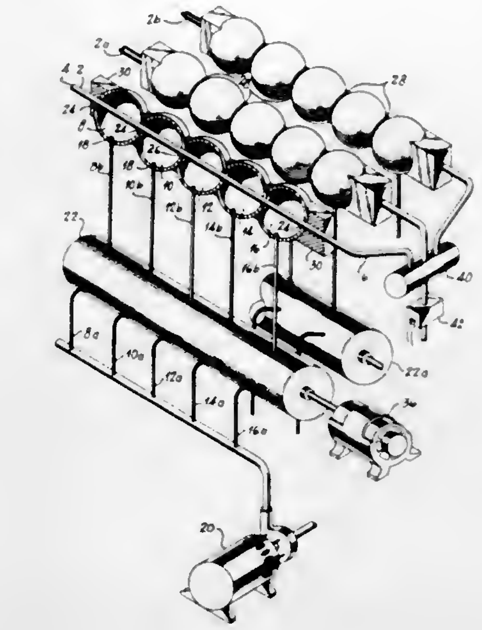
1. A stabilized solid propellant grain having a cylindrical form, an outer annulus part of said grain being a tube of hydrazine diborane surrounding a concentric cylindrical core of nitronium perchlorate, concentrically spaced rods of hydrazine diborane extending lengthwise through said core; and a thin metal wall about 0.0003 to 0.5 millimeter in thickness separating the nitronium perchlorate core from the hydrazine diborane rods and tube.

3,429,266
PERISTALTIC PUMPING SYSTEM

Charles B. Jones, Jr., Ireland Army Hospital, Fort Knox, Ky. 40121
Filed Apr. 27, 1967, Ser. No. 634,312
U.S. Cl. 103—44 **11 Claims**
Int. Cl. F04b *9/10, 43/00*

A peristaltic pump embodying one or more tubes formed of flexible material, each tube being provided with a plurality of fluid chambers to which fluid may be

supplied under pressure and in a sequential manner to compress successive portions of the tubes. Fluid may thus be advanced through the tubes in a predetermined or selective manner by the application of pressure to the successive fluid chambers surrounding the tubes.

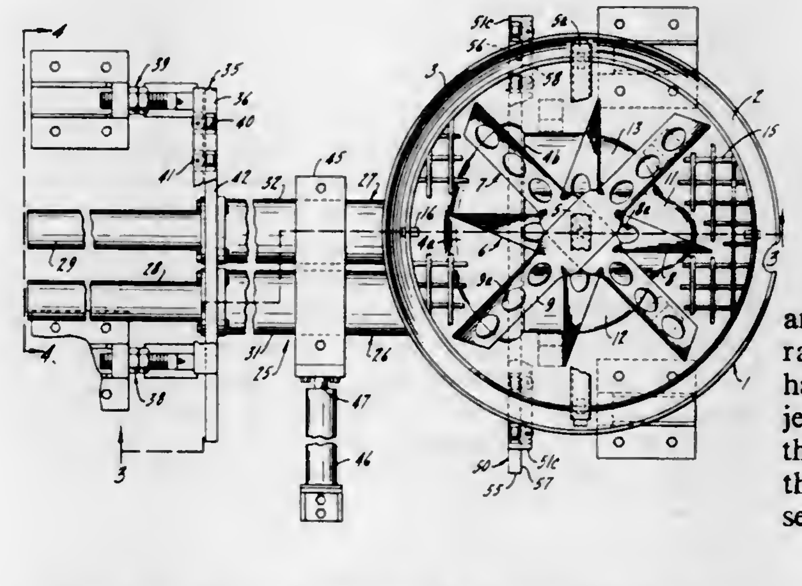


3,429,267
MATERIAL PUMPING ASSEMBLY

William L. Zinga, Mount Prospect, Ill., assignor to Dynatran Corporation of Illinois, Bensenville, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 556,657, June 10, 1966. This application Mar. 27, 1967, Ser. No. 626,234

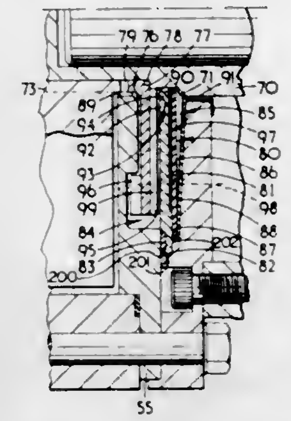
U.S. Cl. 103—49 **3 Claims**
Int. Cl. F04b *17/00, 19/02, 7/00*



A pump for flowable concrete and the like in which at least two cylinders are moved alternately into alignment with a hopper outlet and a distributor pipe inlet, pistons in the cylinders being alternately retracted and advanced to fill the cylinder in alignment with the hopper outlet and to expel concrete from the cylinder in alignment with the conduit inlet. A seal is provided between the movable cylinders and the hopper and conduit. Mixing-pressuring paddles and clean-out hatches are provided in the hopper.

3,429,268
PUMPS

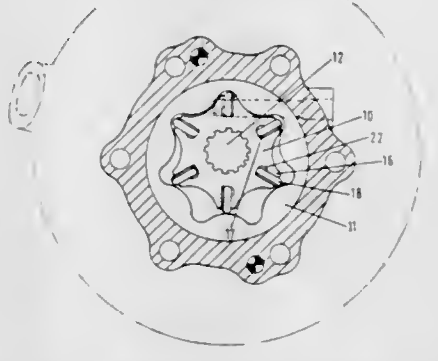
George Camac, Worlebury, Weston-super-Mare, and David J. Saunders, Banwell, England, assignors to Speedwell Research Limited, Birmingham, England, a British company
Filed May 4, 1967, Ser. No. 636,057
Claims priority, application Great Britain, May 5, 1966, 19,910/66
U.S. Cl. 103—111 **5 Claims**
Int. Cl. F04d *29/08, 29/40*



The invention discloses a centrifugal pump having a static seal for controlling leakage between the impeller shaft and the casing when the pump is stationary and a dynamic seal for controlling leakage when the pump is working, the static seal being held inoperative at all times except when the pump is stationary and full of liquid.

3,429,269
FLUID PUMPS AND MOTORS

Robert Dennis Walter, Coventry, England, assignor to Concentric (Engineering) Limited, Birmingham, England, a British company
Filed Aug. 19, 1966, Ser. No. 573,687
Claims priority, application Great Britain, Aug. 21, 1965, 35,984/65
U.S. Cl. 103—126 **1 Claim**
Int. Cl. F04c *1/08, 17/10;* **F02b** *55/02*

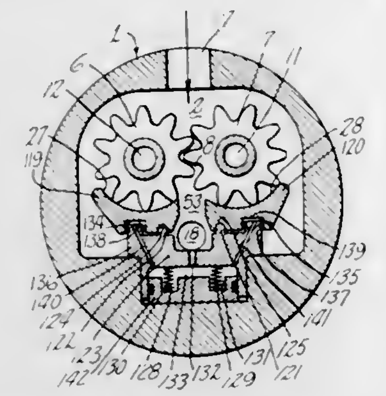


Two meshing gears, the teeth of at least one of which are each provided with a radial recess accommodating a radially slidable sealing vane. The inner end of the recess has a pocket at one side thereof to receive a lateral projection on the sealing vane, which limits outer sliding of the vane so that drive is transmitted by interaction of the gear teeth rather than by the vanes which function for sealing purposes only.

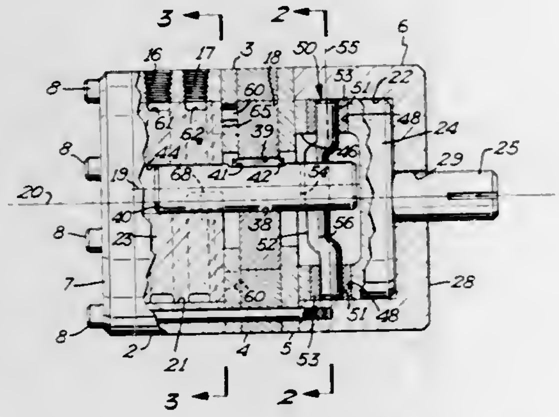
3,429,270
GEAR PUMP MOVABLE ELEMENTS HAVING A PLURALITY OF SEALING FORCES

Godwin L. Noell, Middletown, and Le Roy A. Difford, Simsbury, Conn., assignors to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Filed Aug. 9, 1967, Ser. No. 659,398
U.S. Cl. 103—126 **16 Claims**
Int. Cl. F04c *1/14*

A gear pump having a driver gear and a driven gear capable of pumping fluids containing highly abrasive contaminants, separate pivotally movable elements positioned adjacent the pump discharge with each element subject to a plurality of forces, one of said forces applied outboard the pivot point of each element such that each element engages the periphery of the driver gear and the driven gear in a one-to-one relationship to maintain continuous peripheral sealing engagement of the outboard extremity of each element under all pump operating conditions.



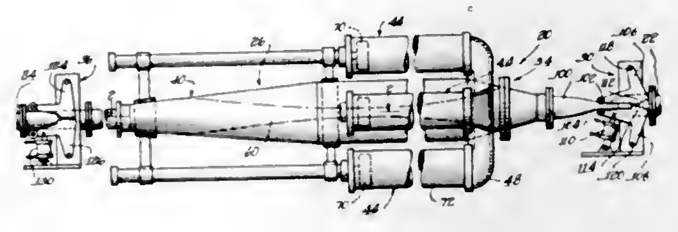
3,429,271
GEAR REDUCTION DRIVE MECHANISM FOR ROTARY FLUID PRESSURE DEVICES OR THE LIKE
Wayne B. Easton, Eden Prairie, Minn.
(400 Dain Tower, Minneapolis, Minn. 55402)
Filed July 31, 1967, Ser. No. 657,106
U.S. Cl. 103—130 **9 Claims**
Int. Cl. F04c *1/06*



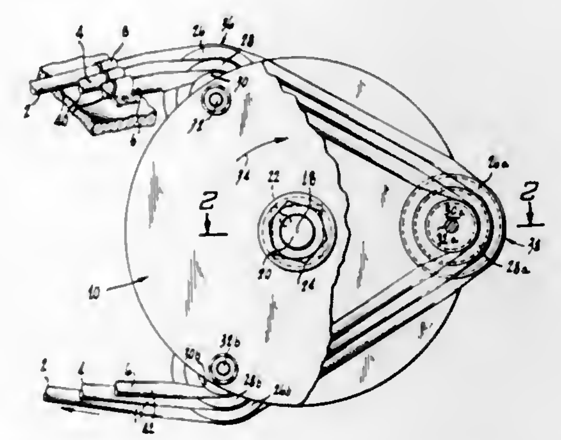
The invention relates to a drive mechanism for use with or incorporation into a gear reduction set known in the art as a gerotor. A gerotor in this invention comprises an internally toothed ring member and a cooperating externally toothed star member with one of said members having orbital and rotational movement relative to the other member. In some devices it is desired to transmit only the rotational movement of either the star member or the ring member to a rotatable member such as a drive shaft or a valve associated with the gerotor. The drive mechanism of this invention comprises novel male and female drive means between the gerotor member which orbits and rotates the rotatable valve or drive shaft member to effect synchronous rotatable movement of these two members.

3,429,272
PUMP ASSEMBLY
Verbon Henry Bryce Wilhite, 179 North 8th East, Brigham City, Utah 84302
Filed June 19, 1967, Ser. No. 647,020
U.S. Cl. 103—148 **19 Claims**
Int. Cl. F04b *43/06, 43/10*

This invention relates to a pump assembly including a bladder defining a central chamber for receiving material. The bladder has a side wall which is relatively flexible adjacent to a first end portion of the bladder and is relatively inflexible adjacent to a second end portion of the bladder. When hydraulic pressure is applied against the side wall of the bladder, the relatively flexible first end portion of the bladder collapses before the relatively inflexible second end portion of the bladder to force material in the central chamber of the bladder from the first end portion of the bladder and out an opening in the second end portion of the bladder.



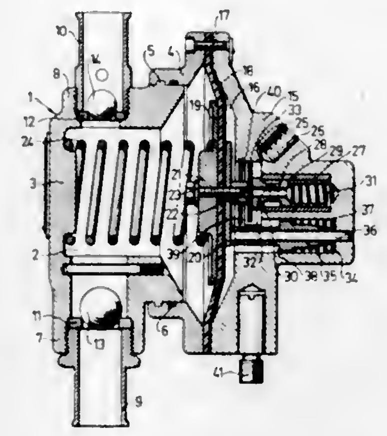
3,429,273
PERISTALTIC PUMP
Charles B. Jones, Jr., 1917 MacArthur Drive, McLean, Va. 22101
Continuation-in-part of application Ser. No. 603,935, Dec. 22, 1966. This application Dec. 5, 1967, Ser. No. 688,135
U.S. Cl. 103—149 **8 Claims**
Int. Cl. F04b *43/08*



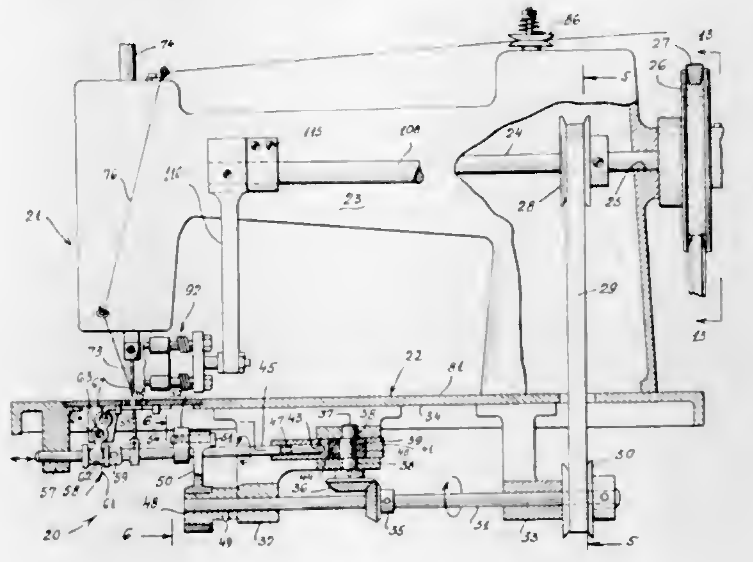
A peristaltic pump embodying a plurality of compressible tubes engagable by rollers movable longitudinally of the tubes to compress the tubes at spaced points thereof so as to confine and advance fluid through the tubes. The tubes are held against longitudinal displacement whereas the rollers are carried by a member rotatable about a fixed axis and into positions to deflect the tubes sufficiently to compress the tubes as the rollers move longitudinally thereof. The tube engaging portions of rollers engaging different tubes are spaced selected and predetermined distances from the fixed axis of the rotatable member whereby they are spaced selected arcuate distances apart and the amount of fluid advanced through the different tubes may be selectively varied even when the internal diameter of the various tubes is the same.

3,429,274
DIAPHRAGM PUMP, IN PARTICULAR FOR PUMPING VISCOUS LIQUIDS
Erling Ingvar Nilsson, Lund, Sweden, assignor to AB Akerlund & Rausing, Lund, Sweden, a company of Sweden
Filed June 8, 1967, Ser. No. 644,653
Claims priority, application Sweden, June 8, 1966, 7,822/66
U.S. Cl. 103—152 **4 Claims**
Int. Cl. F04b *43/06*

A fluid operated diaphragm pump has a valve means for controlling the motive fluid. The valve means is mechanically and pneumatically guided by the movements of the diaphragm. The valve means is movable in one direction by the direct action of the diaphragm and is movable in the other direction at a moment determined by a follower means under the influence of the diaphragm.



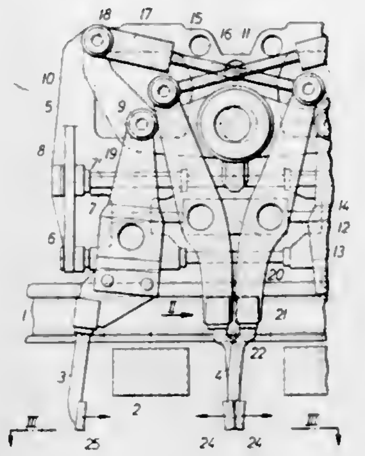
3,429,275
INTERLOCK SEWING MACHINES
Nathan Gorin, Long Beach, Raymond Gorin, Massapequa Park, and Saul Gorin, Flushing, N.Y., assignors to N. Gorin & Sons, Inc., New York, N.Y.
Filed Oct. 24, 1965, Ser. No. 504,584
U.S. Cl. 112—168 **4 Claims**
Int. Cl. D05b *1/14, 35/08, 1/06*



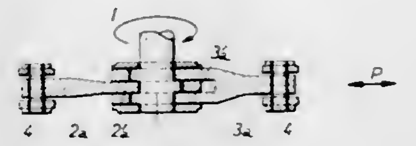
A conversion unit converting a lock stitch sewing machine to a bobbinless interlock stitch sewing machine by removing the bobbin with all the mechanism necessitating its operation from the lock stitch sewing machine and inserting a longitudinally reciprocating mechanism and a rotationally reciprocating mechanism engaged with said rotating shaft having a slidable spreader and looper mechanism to form a two-thread interlock stitch.

3,429,276
TRACK TAMPING MACHINE
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria
Continuation-in-part of applications Ser. No. 441,229, Mar. 19, 1965, and Ser. No. 528,277, Feb. 17, 1966. This application June 6, 1967, Ser. No. 643,972
Claims priority, application Austria, June 15, 1966, A 5,733/66
U.S. Cl. 104—12 **8 Claims**
Int. Cl. E01b *27/02*

In a tamping tool, which is reciprocated in the direction of track elongation about a fulcrum and has a lower part below the fulcrum for immersion in the ballast, the lower part being cranked in said direction to form two inter-connected portions offset from each other in this direction, the lower one of the offset portions, which is immersed in the ballast during tamping, being farther removed from an adjacent tie than the upper offset portion.

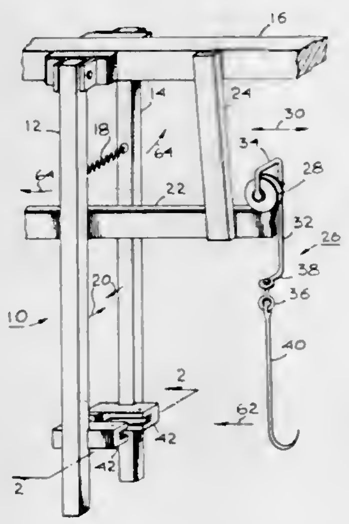


3,429,277
BALLAST TAMPING ASSEMBLY
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria
Filed Aug. 1, 1967, Ser. No. 657,616
Claims priority, application Austria, Aug. 5, 1966, A 7,543/66
U.S. Cl. 104—12 **7 Claims**
Int. Cl. E01b *27/20*



A ballast tamping assembly with pairs of reciprocating, vibratory tamping tools mounted on a common cam shaft by means of pairs of carrier arms. Each inner arm end has a plane of symmetry extending perpendicularly to the cam shaft, and the planes of symmetry extend in a common plane.

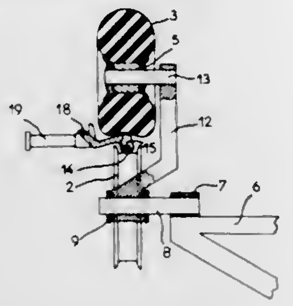
3,429,278
MEATHOOK HOLDER ARRANGEMENT
Salvador J. Gonzales, 4945 Eldred St., Los Angeles, Calif. 90042
Filed Mar. 20, 1967, Ser. No. 624,577
U.S. Cl. 104—89 **5 Claims**
Int. Cl. B61b *3/00;* **E01b** *25/24*



There is disclosed herein an improved meathook holder for temporarily restraining motion of a traveling meathook along a rail. A pair of arms are positioned on either side of the rail and are spring loaded to be biased towards each other and the restraint means coupled to the arms resist motion of the meathook while traveling along the rail in a first direction. A latch means which allows comparatively free movement of the meathook between the arms in the first direction, but prevents motion of the meathook in an opposite direction. The meathook is thus held between the latch means and the restraint means during the loading or unloading of meat from the hook and then may be pushed through the restraint means for further travel as desired, the spring biasing the arms yieldingly resisting but nevertheless allowing such motion through the restraint means.

3,429,279
DEVICE FOR SUPPORTING AND GUIDING THE CABLE OF AN AERIAL CABLEWAY

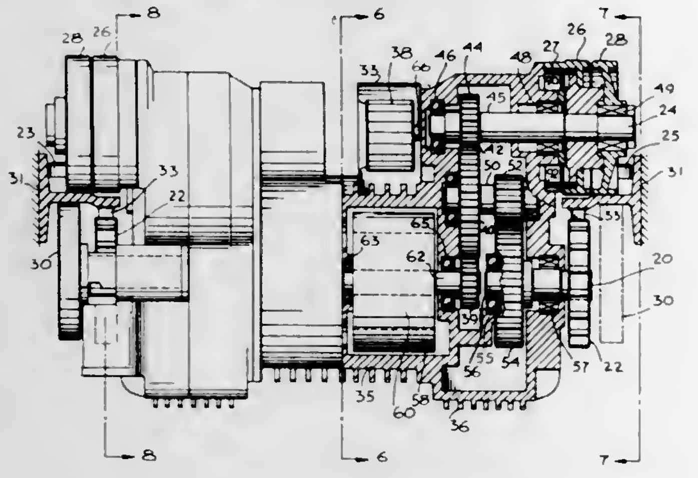
Jean Pomagalski, 114 Avenue de l'Eygala,
La Tronche, France
Filed Dec. 20, 1966, Ser. No. 603,342
U.S. Cl. 104—197 **8 Claims**
Int. Cl. B61b *7/04, 7/10, 11/00*



A device for supporting the movable cable of an aerial cableway comprising at least one wheel with a resilient elastic cushion and at least one supporting pulley with a groove, said cushion urging said cable into said groove.

3,429,280
RACK AND PINION VEHICLE PROPULSION SYSTEM

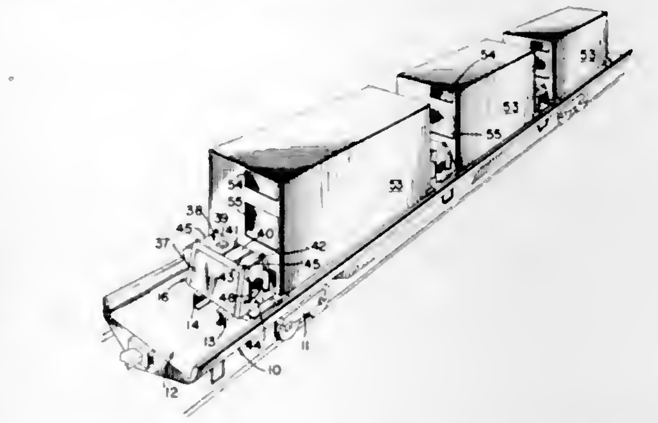
Stanley A. Dashew, Beverly Hills, John Tumpak, Woodland Hills, and Charles D. Sutton, Los Angeles, Calif., assignors to The Dashaveyor Company, Venice, Calif., a corporation of California
Filed Apr. 1, 1966, Ser. No. 539,421
U.S. Cl. 105—29 **16 Claims**
Int. Cl. B61b *5/00, 31/02;* **B61c** *11/04*



A rack rail and pinion vehicle propulsion system where two transmissions are driven by two electrical motors which are in side by side relationship. Each transmission has extending therefrom at least two drive shafts. One of these provides high speed and low torque, and the other provides low speed and high torque. The high speed low torque drive shaft has mounted thereon a drive wheel. Coaxially therewith is mounted an idler wheel. The low speed high torque shaft has mounted thereon a gear wheel. A track is inserted between the high speed and idler wheels and the gear wheel so that the high speed wheel engages a top surface thereof and the gear wheel engages a rack track which is positioned on the undersurface of said track. When the rack track is present the surface of the track underneath the high speed wheel is removed and the track surface is brought up to contact the idler wheel which takes over the function of supporting the vehicle load. A pinch wheel is positioned adjacent the gear wheel. It bears upwardly on the undersurface of the track to insure positive traction. Provision is made by means of a synchronizing track section for synchronizing the gear wheel with the rack track. Provision is made for a braking function for the vehicle and for cooling functions of the vehicle motors.

3,429,281
REFRIGERATED CONTAINER SUPPORT AND GENERATOR HOUSINGS FOR FLAT DECK RAILWAY CARS

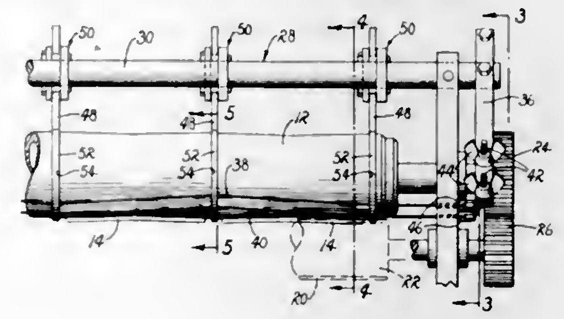
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,673
U.S. Cl. 105—366 **3 Claims**
Int. Cl. B60p *3/20;* **B65j** *1/00*



In a flat deck railway car, two or more housings are longitudinally spaced and supported on a longitudinally slidable rack carried by the deck of the car and having cushioning means disposed between the deck and the rack for cushioning lading carried in refrigerated containers supported on the rack between the housings, the housings each having contained therein an electrical generating unit for supplying current to the refrigeration systems of the containers and the housing being constructed to serve as guide elements adapted to position containers between the housings during crane loading.

3,429,282
APPARATUS FOR SEPARATING TORTILLAS AND THE LIKE FROM FORMING ROLL

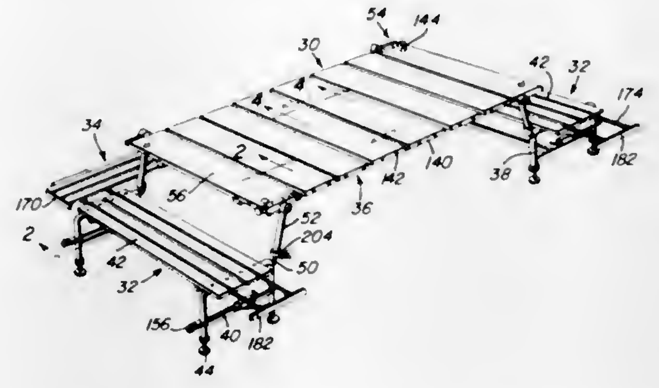
Oscar F. Ruiz, P.O. Box 1253,
Tulare, Calif. 93274
Filed Oct. 21, 1966, Ser. No. 588,495
U.S. Cl. 107—12 **10 Claims**
Int. Cl. A21c *3/00;* **A46b** *15/00;* **B21b** *45/02*



In dough forming apparatus, a device for stripping formed dough from a concave roll including a wire tensioned in oblique angular disposition to the length of the roll in such relation to the concavity thereof as substantially to conform to the periphery thereof so as to pass between the surface of the roll and dough adhered thereto.

3,429,283
CONVERTIBLE BENCH OR CHAIR AND PICNIC TABLE

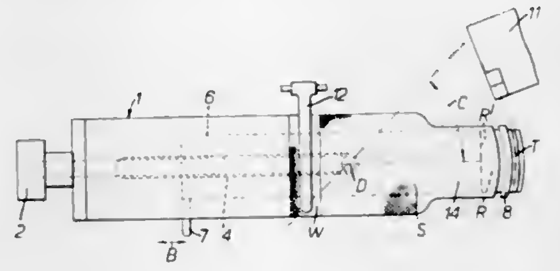
Emil Uhor, P.O. Box 414, Bowie, Md. 20715
Filed Dec. 14, 1966, Ser. No. 601,622
U.S. Cl. 108—11 **13 Claims**
Int. Cl. A47b *3/08, 35/00*



The invention disclosed herein involves convertible furniture including a structure which may be alternatively used as a bench or chair and which may be converted to a picnic table or a table of general utility having features which enable it to be used as a dressing table. Additionally, the disclosure includes a canopy assembly for a picnic table which may be removed and converted into use as a backyard wading or swimming pool.

3,429,284
AUTOMATIC TOE CLOSING OF STOCKINGS

Leonard T. F. Bryan, Amersham, England, assignor to Detexomat Limited, High Wycombe, England
Filed Apr. 28, 1964, Ser. No. 363,141
Claims priority, application Great Britain, Apr. 29, 1963, 16,833/63
U.S. Cl. 112—2 **11 Claims**
Int. Cl. D05b *23/00, 7/00, 1/00*



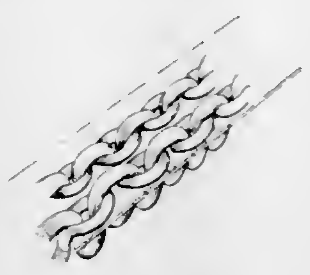
1. Method of closing the toe of a stocking during manufacture comprising
- drawing the stocking over an elongated carrier having a free end so that the toe portion of the stocking is in an extended position with respect to, and adjacent the free end of the carrier;
- moving said carrier with said stocking drawn thereover relatively toward a clamp means, when said clamp means is in open position to place the extended toe portion of the stocking between said clamp means;
- closing said clamp means over the extended toe portion of the stocking;
- moving said clamp means with said toe portion clamped therein relative to the toe closing means along a predetermined path;
- closing the fabric of the toe portion along a predetermined line; and
- removing the stocking from the carrier.

ERRATUM

For Class 112—168 see:
Patent No. 3,429,275

3,429,285
TUFTED FABRICS

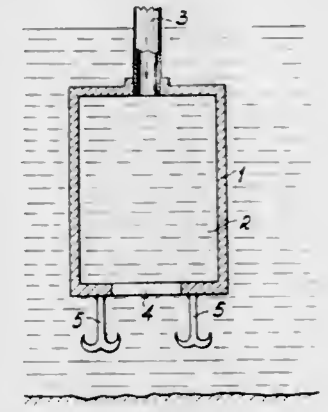
Ernest K. Lund, Accrington, England, assignor to Singer-Cobble Limited, Blackburn, England
Filed Mar. 17, 1966, Ser. No. 535,095
Claims priority, application Great Britain, Mar. 19, 1965, 11,649/65
U.S. Cl. 112—410 **1 Claim**
Int. Cl. D05b *35/00*



A tufted fabric is comprised by a backing sheet and yarns forming lines of tufts. In each line, the tufts of one yarn alternate with the tufts of another yarn and the tufts of the one yarn pass through and divide the other yarn at the reverse of the backing sheet.

3,429,286
LIFTING DEVICE

Aldo Alghisi, Barbariga, Brescia, Italy
Filed Mar. 23, 1967, Ser. No. 625,345
U.S. Cl. 114—52 **2 Claims**
Int. Cl. B63c *7/08, 7/10*

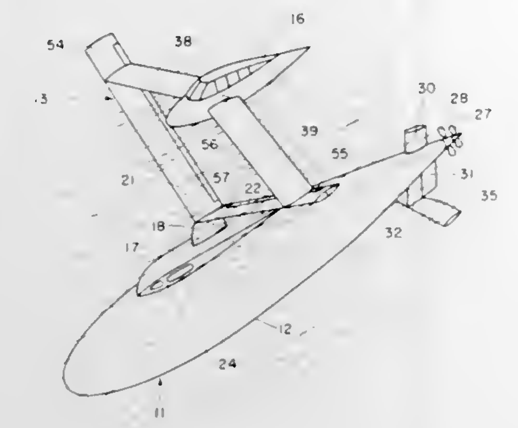


A container having an internal chamber and adapted to be ballasted so as to descend when placed into a body of liquid. External load-engaging means provided on the container and adapted to engage a load to be lifted. Means for buoying the container to an extent requisite for lifting a predetermined load engaged by the load-engaging means.

3,429,287
HYDROFOIL SEMISUBMARINE

Earl M. Uram, New London, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 16, 1967, Ser. No. 609,690
U.S. Cl. 114—66.5 **18 Claims**
Int. Cl. B63b *1/28;* **B63g** *8/04*

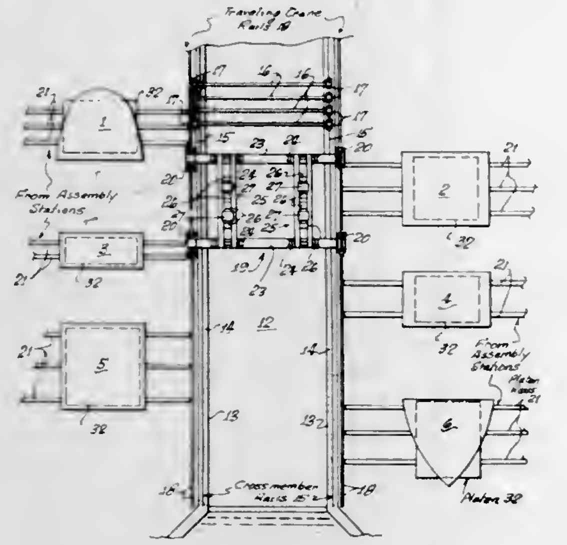
A shallow-running submersible is provided having an albacore-type main hull and incorporating a surface-piercing dihedral hydrofoil system. Primary control is located in a control body suspended above the surface of the water by the hydrofoils, the main hull being entirely immersed during normal operations. An air-breathing main propulsion plant may be used, air intake and exhaust being accomplished through passage in the hydrofoils.



Dihedral foil flaps and a horizontal stern plane are operated at minimum angles with the horizontal stern plane positioned outside the boundary layer of the ship. Control cables extend through the hydrofoil system to the interim of the main hull. Counter-rotating propellers provide propulsive force.

3,429,288
SHIP ASSEMBLY METHOD AND APPARATUS THEREFOR

Paul E. Suit, Ontario, Calif., assignor to General Dynamics Corporation, a corporation of Delaware
Filed May 31, 1967, Ser. No. 642,521
U.S. Cl. 114—77 **6 Claims**
Int. Cl. B63b *3/02*

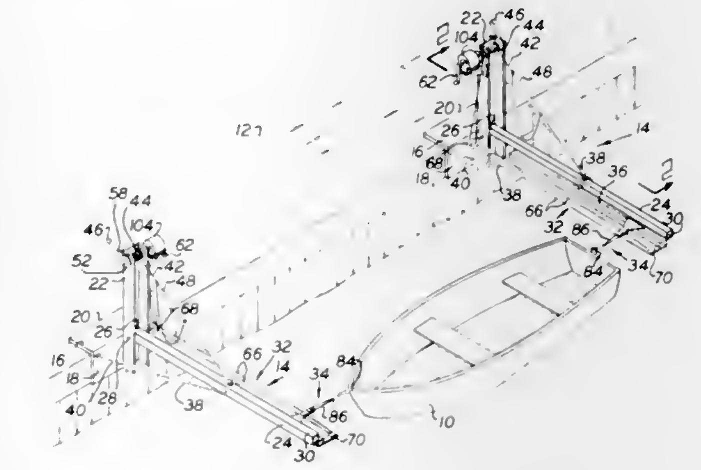


Broadly, the disclosure is directed to a method for assembling ships wherein ship sections fabricated on movable platens at working stations adjacent to a graving dock are lowered therein for welding and joining. A horizontal rail transport system is employed for transporting the movable platens from one working station to the next and to the graving dock, thereby fabricating ship sections by means of an assembly-line technique. Upon completion of the particular ship section, a crane straddling the graving dock and movable longitudinally therewith is employed to lift the completed section from the rail system and to a position for final assembly in the graving dock.

The graving dock uses stepped platforms and movable cross members which are on the same level as the horizontal rail, thus allowing ready movement of the ship section over the graving dock. The section is then lowered into the graving dock by the crane for welding and joining operations as necessary to complete fabrication of the ship. The platens provide a means for attaching cables for lift and lowering, as well as forming a foundation for leveling and jacking the sections into alignment while allowing access to the bottom of the sections to be joined for the welding operation.

3,429,289
MOORING DEVICE

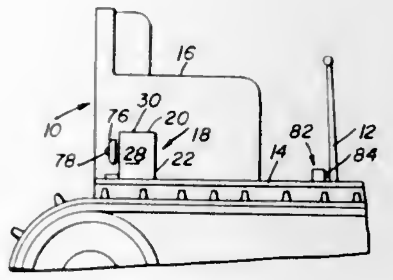
Edward Lezak, 50 E. Barclay St., Hicksville, N.Y. 11801
Filed Dec. 11, 1967, Ser. No. 689,513
U.S. Cl. 114—230 **8 Claims**
Int. Cl. B63b *21/00*



A mooring device for securing small boats to a dock including a boom extendible over the water by movement in a plane vertical to the dock, means for securing the boat and a line mechanism operable from the dock for moving the boat toward or away therefrom. The boat is moved toward and away from the dock along the extended boom by an operating structure.

3,429,290
WARNING BELL FOR VEHICLES MOVING IN REVERSE

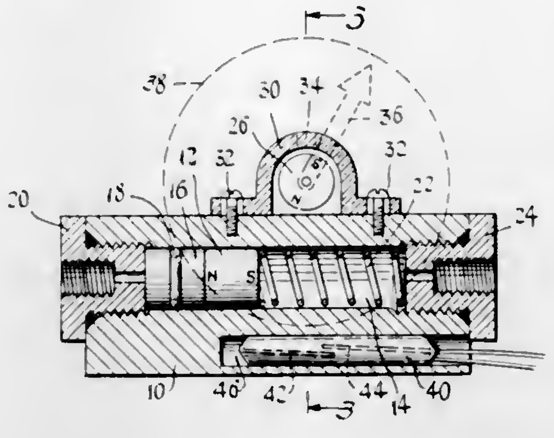
Earl R. Harris, 2302 Onalaska Ave., La Crosse, Wis. 54601
Filed July 26, 1966, Ser. No. 568,018
U.S. Cl. 116—60 **2 Claims**
Int. Cl. B60q *5/00, 1/26;* **H01h** *9/06*



A warning bell assembly for vehicles including a motorized actuator operable to intermittently produce bell sounds. The warning bell assembly includes a control for the motor thereof to be operatively associated with the gear shift of a vehicle upon which the warning bell assembly is mounted for actuation of the control in response to the gear shift lever of the vehicle being placed in the reverse gear position.

3,429,291
DIFFERENTIAL-PRESSURE RESPONSIVE INDICATOR

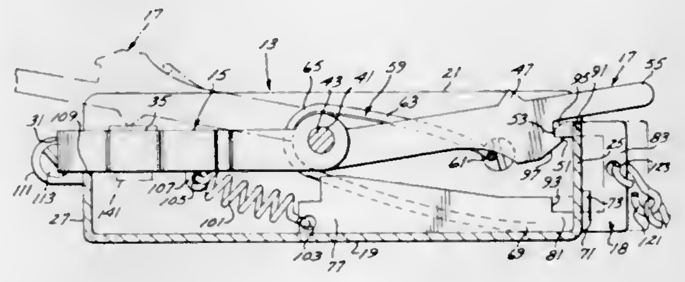
Leslie J. Hoffman, % Orange Research, 821 Derby-Milford Road, Orange, Conn. 06477
Filed Feb. 16, 1965, Ser. No. 433,103
U.S. Cl. 116—70 **2 Claims**
Int. Cl. G01l *19/12*



A hydraulic differential-pressure indicator for connection to different points of a high-pressure, continuous flow hydraulic line to give easily recognized and read indications of small changes in pressure as caused by changes in rate of flow. A piston is acted on by opposing pressures from said different points, and can change its position in a cylinder. The piston has a permanent magnet which actuates a cooperable movable-magnet type indicator which is external to the cylinder and hydraulic system.

3,429,292
BURGLAR ALARM

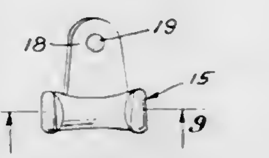
Frank W. Rowbottam, Palos Verdes Estates, Calif., assignor to TFR Corporation, Sepulveda, Calif., a corporation of California
Filed May 8, 1967, Ser. No. 636,785
U.S. Cl. 116—87 **9 Claims**
Int. Cl. G08b *13/08*



A burglar alarm comprising an elongated housing having a bottom wall, a pair of upturned side walls and an upturned end wall, such end wall including a slot therein. A pivotal cartridge holder is formed with an upwardly opening cartridge-receiving socket proximate the end of the housing opposite the end of wall and a transverse bore intermediate the ends of the housing. A mounting pivot extends through the bore and is supported from the side walls. A swingable hammer is former with a transverse bore for receiving the pivot, a firing pin spaced the same radial distance from the pivot as the socket and adapted to engage a cartridge held in the socket and further being formed with a latching lip disposed near its free end. A spring biases the hammer around the pivot to engage the firing pin with a cartridge held in the socket. A keeper holds the hammer in its cocked position and includes an elongated slide portion extending through the end wall slot, a bridging portion disposed outside of the end wall extending upwardly from the notch and a turned back lip for engaging the hammer lip. A spring element interconnects the keeper and cartridge holder to maintain the keeper biased into locking engagement with the lip of the hammer and the cartridge holder biased downwardly.

3,429,293
AUDIBLE FIRE ALARM

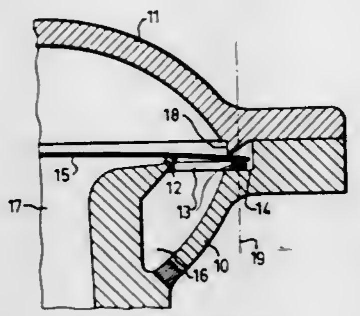
Arnold F. Willat, San Rafael, Calif.
(1077 Howard St., San Francisco, Calif. 94103)
Filed Oct. 31, 1966, Ser. No. 590,841
U.S. Cl. 116—105 **6 Claims**
Int. Cl. G08b *17/00, 17/08*



An audible fire alarm having explosive caps or powder arranged in the body thereof adapted to be fulminated by heat to emit an audible warning.

3,429,294
SOUND TRANSMITTER FOR GASEOUS OPERATING FLUID

Bengt Lennart Holm, Malmo, Sweden, assignor to Kockums Mekaniska Verkstads Aktiebolag, Malmo, Sweden
Filed Aug. 18, 1966, Ser. No. 573,422
Claims priority, application Sweden, Aug. 24, 1965, 11,025/65
U.S. Cl. 116—142 **1 Claim**
Int. Cl. G10k *9/22, 9/02, 5/00*

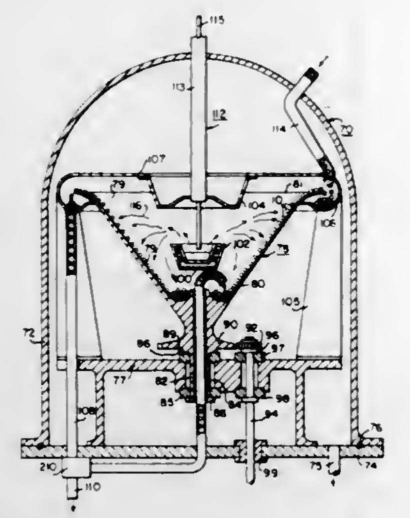


In a gas fluid operated diaphragm sound generator wherein the diaphragm is clamped against a resilient abutment and a seat. The abutment is deformable by the pressure of the operating fluid to assume a higher cross section transversely of the diaphragm at increasing fluid pressure and thereby to increase the pressure by which the diaphragm abuts the seat.

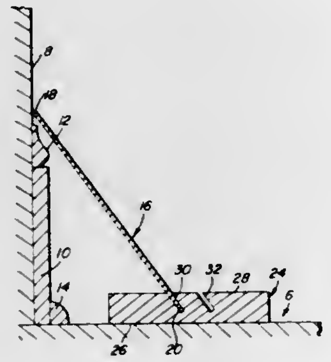
3,429,295
APPARATUS FOR PRODUCING VAPOR COATED PARTICLES

Zalman M. Shapiro, Pittsburgh, Pa., assignor to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania
Filed Sept. 17, 1963, Ser. No. 309,446
U.S. Cl. 118—49.1 **5 Claims**
Int. Cl. C23c *13/02*

Apparatus for coating particles **10** in which the particles are disposed in a rotating receptacle **80** and are moved up the walls **79** of the receptacle by centrifugal force. The walls of the receptacle **80** are bathed in vapor from coating material from a crucible **100** within the receptacle. The particles are circulated from the walls **79** through conduit **108**.



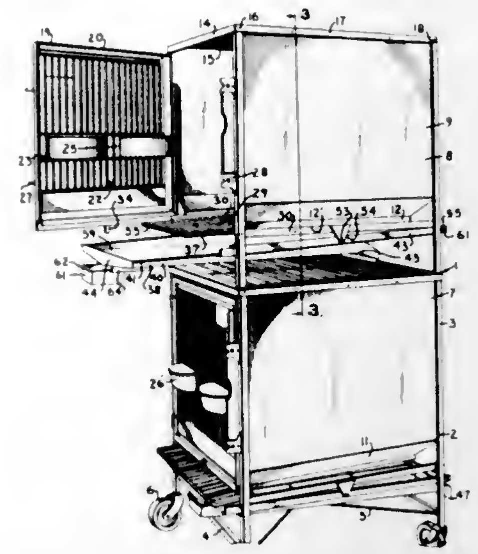
3,429,296
PAINTER'S GUIDE AND GUARD
Rene E. Legere, 3 Bernadette St.,
Fitchburg, Mass. 01420
Filed Oct. 16, 1967, Ser. No. 675,602
U.S. Cl. 118—504 **3 Claims**
Int. Cl. B05c *11/00*



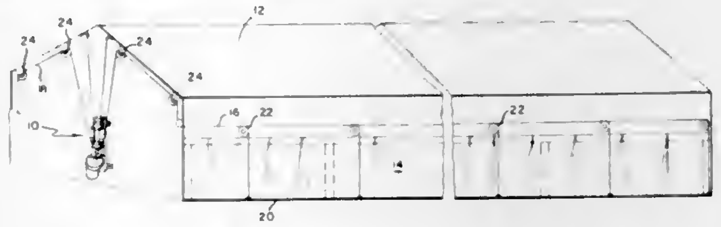
The device shown lends itself to practical and efficient indoor use when the user is painting a wall surface with a brush or roller-type paint applicator. It may be employed as a guide to designate the area which is to be painted and shifted step by step from place to place. Primarily, it constitutes a suitably sloping guard capable of minimizing splattering and drippage of paint on the baseboard, molding, or the floor.

3,429,297
CAGE FOR LABORATORY ANIMALS
Gary J. Schroer, Kansas City, Mo., assignor to Schroer Manufacturing Company, Inc., Kansas City, Mo., a corporation of Missouri
Filed Jan. 19, 1967, Ser. No. 610,446
U.S. Cl. 119—17 **4 Claims**
Int. Cl. A01k *1/10*

A cage for laboratory animals with a frame supporting top, side, front and rear walls with certain of the walls having spaced openings over substantially the whole area thereof and with at least one wall pivotally mounted to open the interior for access thereto, the lower portion of certain walls being inclined inwardly and downwardly with the bottom opening of lesser dimensions than the frame and a bottom wall slidably supported by the frame below said bottom opening, said cage having a tray removably supported under the bottom wall on pivotally mounted rails whereby the tray may be inclined selectively to the rear for flow of waste to a disposal exteriorly of the cage or to the front for flow of urine to a collection container, said rails being associated for simultaneous pivotal movement and having resilient means urging the rails to selected inclined position of the tray.

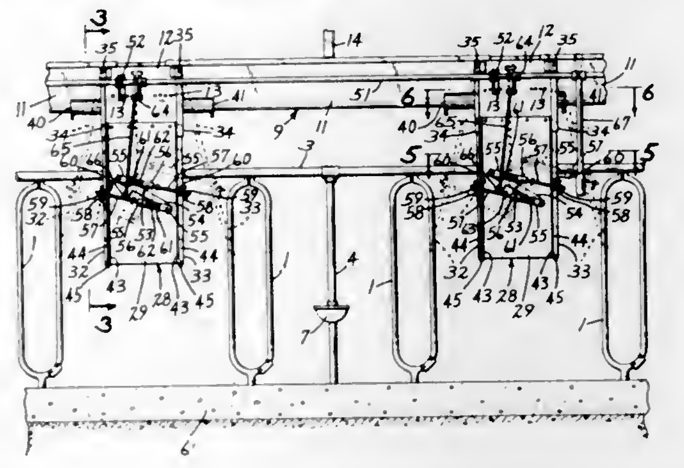


3,429,298
POULTRY HOUSE CURTAIN RAISER
James Philip Thomason, Rte. 3, Jasper, Ga. 30143
Filed June 23, 1966, Ser. No. 559,764
U.S. Cl. 119—21 **5 Claims**
Int. Cl. A01k *31/02;* **E04f** *10/02*



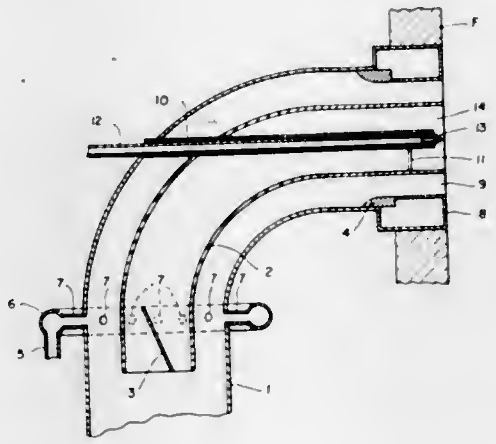
A poultry house curtain raising mechanism having a vertical shaft selectively rotatable in both directions and a collar riding on the vertical shaft for pulling the cables connected to curtains, the motor being driven through an electrical control mechanism including a relay, a thermostat, and a timer. There are also limit switches to prevent the over travel of the collar.

3,429,299
ANIMAL FEEDER
Walter W. Wolfe, Rte. 1, Box 504, and Haldor J. Hofteig, 2216 Noble Lane, both of Mound, Minn. 55364
Filed Mar. 15, 1967, Ser. No. 623,321
U.S. Cl. 119—56 **9 Claims**
Int. Cl. A01k *5/00;* **B65d** *47/08*



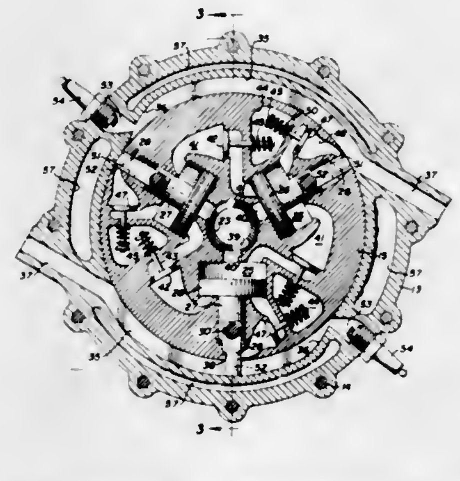
An animal feeder including at least one food collecting and dispensing hopper and a conveyor for delivery of food to the hopper, the hopper having a closure member and linkage including a pair of toggle members for imparting opening and closing movements to the closure member. The closure member and adjacent walls of the hopper are formed with cooperating edge portions which prevent opening of the closure member by an animal. The closure member is yieldingly held in its closed position by a spring operatively associated with the linkage.

3,429,300
INDUSTRIAL FURNACE BURNER
Carl H. Eisentrout, 1018 Sandhurst Drive,
Coraopolis, Pa. 15108
Filed Apr. 12, 1967, Ser. No. 630,240
U.S. Cl. 122—6.5 **3 Claims**
Int. Cl. F22b *37/00;* **F22d** *13/00, 21/00*



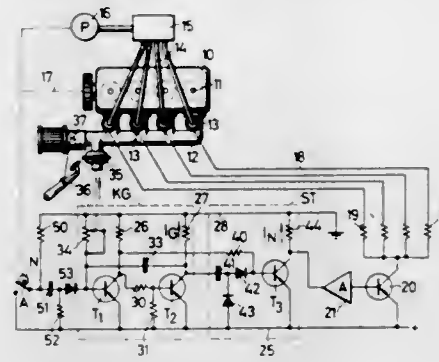
This invention relates to a furnace burner comprising a primary air duct fed by a combustible gas source, and whose outlet is surrounded by a water jacket, a secondary air duct extending through the center of the primary duct and fed by a crude oil source, and a damper in the secondary duct for controlling the gas/air and oil-air ratios.

3,429,301
ROTARY ENGINE
Othel W. Sandidge, 2100 Eden Ave.,
Fort Worth, Tex. 76117
Filed Apr. 28, 1967, Ser. No. 634,609
U.S. Cl. 123—16 **5 Claims**
Int. Cl. F02b *53/08, 53/06*



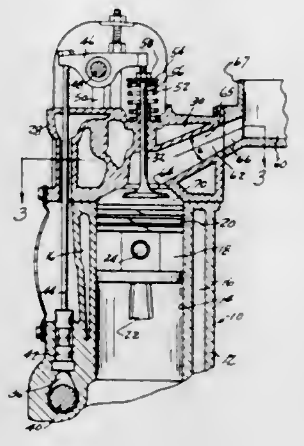
A rotary internal combustion engine of the vane type having a substantially circular rotating rotor coaxially mounted in a stationary arcuate-shaped casing and having supercharging pistons mounted for reciprocation in a radial direction coincident with the vanes. The fuel intake is provided through a hollow shaft which is connected to both sides of the piston; the arrangement being such that reciprocation of the pistons draws in the fuel charge, compresses it and directs it to the outer periphery of the rotor for the power stroke.

3,429,302
ARRANGEMENT FOR CONTROLLING THE INJECTION OF FUEL IN ENGINES
Hermann Scholl, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Aug. 21, 1967, Ser. No. 662,098
Claims priority, application Germany, Aug. 24, 1966,
B 88,606
U.S. Cl. 123—32 **11 Claims**
Int. Cl. F02b *3/00, 33/00;* **F02m** *7/00*



An arrangement for controlling the injection of fuel in internal combustion engines. Electrical pulses of variable duration are generated and transmitted to the electromagnetic valves regulating the amount of fuel injected. The variable duration of the pulses is provided by a monostable multivibrator circuit which is operated by a switch periodically actuated by the engine crankshaft. The output of the monostable multivibrator circuit is applied to a delay circuit. When the monostable multivibrator circuit is actuated by the switch driven by the crankshaft of the engine, the delay circuit is also actuated. As a result, the output of the delay circuit provides a pulse which begins a fixed interval after the beginning of the pulse from the monostable multivibrator circuit. The end of the pulse from the delay circuit, however, coincides with the end of the pulse from the monostable multivibrator circuit. The output of the delay circuit thus provides control pulses to the fuel injection valves so that these are retained open for a predetermined amount of time, depending upon the functional parameters of the engine.

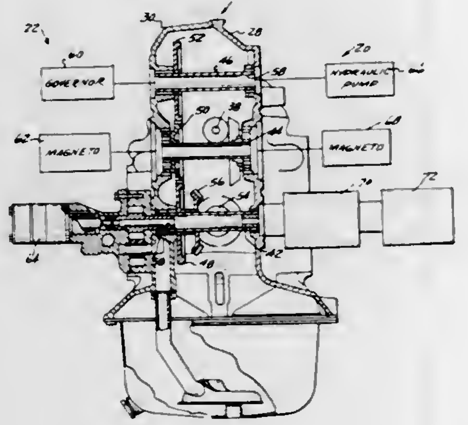
3,429,303
INTERNAL COMBUSTION ENGINE WITH IMPROVED INTAKE AND EXHAUST
Charles G. Roberts, 1015 N. Michigan,
Howell, Mich. 48843
Filed Feb. 23, 1967, Ser. No. 617,957
U.S. Cl. 123—59 **17 Claims**
Int. Cl. F02b *29/02, 75/20, 75/22*



A configuration for intake and outlet passageway, for internal combustion engines providing such passageway with a substantially frusto-conical shape having a conicity comprised between about 0 and 10° with the largest cross-area portion thereof disposed at the passageway outlet. Auxiliary air inlet means may be provided in the outlet passageway.

3,429,304
ENGINE ACCESSORY DRIVE CONSTRUCTION

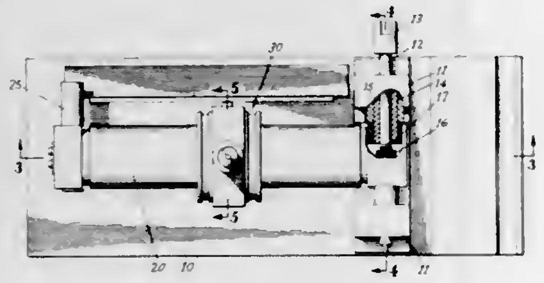
William A. Wiseman and Clifford Fordham, Muskegon, Mich., assignors to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia
Filed June 21, 1967, Ser. No. 647,847
U.S. Cl. 123—195 **5 Claims**
Int. Cl. F02f *7/00;* **F02b** *75/24;* **F01l** *1/04*



An internal combustion engine having accessories mounted in opposed pairs to the crankcase, each pair of accessories being driven by a common shaft having a single driven gear connected to another geared shaft. A pair of bevel gears connecting the rear end of the crankshaft to one of the accessory shafts drives the accessory train.

3,429,305
AUTOMATIC GRINDING WHEEL DRESSER

Steve Hall, Walton, Ky., assignor to The Ohio Knife Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 30, 1966, Ser. No. 584,073
U.S. Cl. 125—11 **5 Claims**
Int. Cl. B24b *53/08*

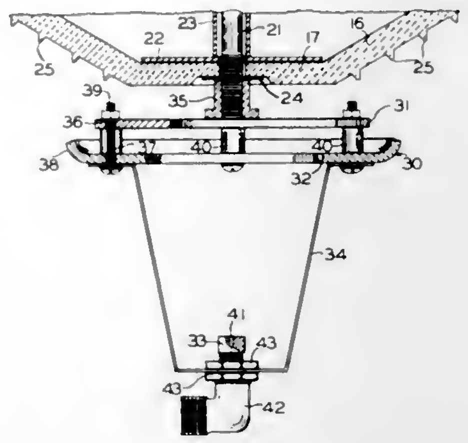


A device for the automatic dressing of grinding wheels and the like which includes a dressing tool concurrently movable along a line and in a plane so as to dress a grinding wheel to a preselected contour.

3,429,306
GAS HEATING UNIT FOR BROODER

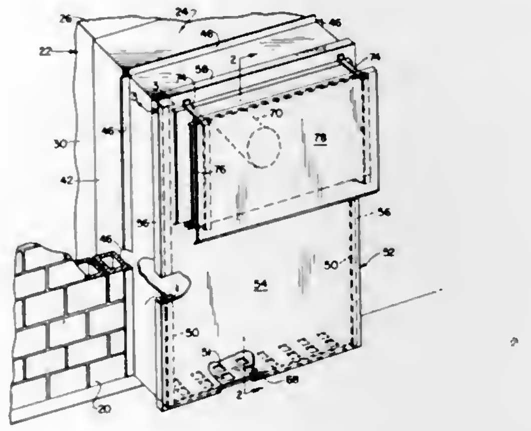
Truman F. Thompson, Quincy, Ill., assignor to Brower Manufacturing Co., a corporation of Illinois
Filed Feb. 23, 1966, Ser. No. 529,513
U.S. Cl. 126—92 **5 Claims**
Int. Cl. F24c *3/04;* **F23d** *13/12;* **A01k** *31/18*

A chicken brooder including a frusto-conical canopy adapted to be suspended in a brooder house. An inverted frusto-conical ceramic element is supported under the canopy to radiate heat downward toward the floor. A gas burner for heating the ceramic element consists of a horizontal deflector plate, an annular spreader plate disposed beneath the deflector plate, and a gas jet supported beneath the plates to direct a gas stream through the opening in the annular spreader plate to impinge on the deflector plate. The burner is supported adjacent the lower end of the ceramic element, and the two plates define a combustion chamber and an annular radially directed flue for directing the products of combustion outwardly over the ceramic heating element.



3,429,307
AIR SUPPLY AND VENT SYSTEM FOR FURNACE

Joseph H. Eubanks, Schuylkill Haven, Pa., assignor to Thermo-Dynamics Corporation, Schuylkill Haven, Pa.
Filed July 19, 1967, Ser. No. 654,555
U.S. Cl. 126—94 **5 Claims**
Int. Cl. F24c *5/00, 3/00*



An air supply and vent system for a furnace extending through the wall of the room in which the furnace is positioned. Fresh air is supplied through a peripheral opening formed by an access plate movably mounted on the outer end of a large air duct through which the flue for the combustion products extends.

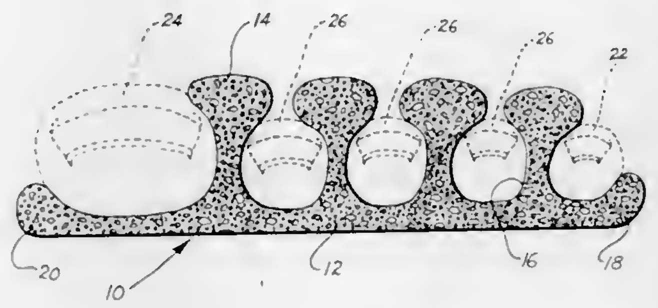
3,429,308
METHOD FOR ADMINISTERING DRUGS FROM A VEHICLE ADHERING BY SUCTION TO THE PARABUCCAL CAVITY MUCOUS MEMBRANE

Higham Stanley Russell, 14 Yorkshire St., Rochdale, Lancashire, England
Continuation-in-part of application Ser. No. 451,491, Apr. 28, 1965. This application Jan. 31, 1968, Ser. No. 703,235
Claims priority, application Great Britain, Apr. 30, 1964, 18,090/64
U.S. Cl. 128—1 **2 Claims**
Int. Cl. A61b *19/00;* **A61j** *3/07;* **A61k** *9/00*

A method of administering a drug through any species of buccal or sublingual lozenge or pastille or medicated troche, via a suction feature so as to cause the drug-carrying vehicle to adhere, by the suction effect, to the gum of the upper jaw vertically above the canine or incisor teeth.

3,429,309
TOE AERATION APPLIANCE

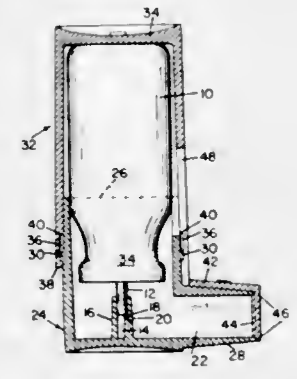
Raymond P. Kurth, 12419 Houston St., North Hollywood, Calif. 91601, and Levon Vartanian, 14744 Leadwell St., Van Nuys, Calif. 91405
Filed Aug. 30, 1965, Ser. No. 483,755
U.S. Cl. 128—81 **2 Claims**
Int. Cl. A61f *5/14, 13/06*



The specification discloses a toe aeration appliance adapted to be worn in a shoe with a laterally extended base portion underlying a person's toes and with four integral, laterally spaced, upstanding toe-separating and toe-spacing projection portions positioned between the five toes of a person's foot in a manner providing an optimum physical spacing, isolation, cushioning, moisture absorption, and aeration of the toes even though they are confined within a shoe. This is made possible by reason of the fact that the complete integral device is made of a readily compressible and collapsible, porous, foam, elastomeric material of a communicating cell type having a plurality of interconnecting air cells in air flow communication with exterior surfaces thereof and communicatingly dispersed and disseminated throughout the interior thereof whereby to provide a plurality of air flow and air circulation aeration tortuous passages extending completely therethrough.

3,429,310
AEROSOL INHALATING DEVICE

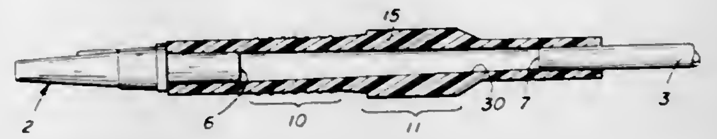
Martin A. Jaffe, Yonkers, N.Y., and Donald E. Lipfert, Woolwich, Maine, assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,839
U.S. Cl. 128—173 **4 Claims**
Int. Cl. A61m *11/00;* **B67d** *5/64;* **G01f** *11/06*



An aerosol inhalator including a base receiving the stem end of the aerosol, a swivelly mounted cap on the base receiving the base of the aerosol, a lateral open-ended inhalating tube on the base receiving the aerosol product and discharging it when the base and cap are moved slightly toward each other to relatively depress the aerosol stem, and a lateral projection on the cap to overlie or selectively be free of the inhalating tube when the cap is relatively swivelled to desired position relative to the base.

3,429,311
FLASHBACK INDICATOR FOR PARENTERAL LIQUID ADMINISTRATION SET

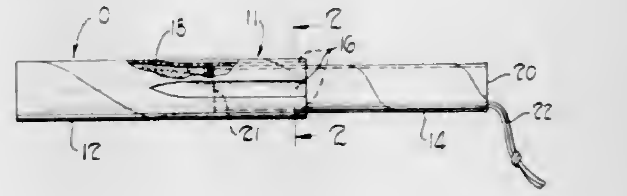
Byron H. Wickett, Glendale, Calif., assignor, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois
Filed May 23, 1966, Ser. No. 552,265
U.S. Cl. 128—214 **2 Claims**
Int. Cl. A61m *5/00*



A construction particularly adapted for connection between a rigid needle adapter and a flexible tube in a parenteral administration set or the like in which the construction includes a continuously smooth, tapered bore extending from the flexible tube to the needle adapter for minimizing liquid turbulence, and in which the construction includes a manually squeezable section longitudinally spaced from an externally faceted, relatively more rigid manipulating section in which the latter facilitates stable orientation of the construction when an auxliary administration needle is inserted therethrough, and subsequently removed, and in which the latter section wall reseals after needle removal.

3,429,312
TAMPON APPLICATOR

Paul W. Stump, North Olmsted, Ohio, assignor to Cleveland Container Corp., Cleveland, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 309,050, Sept. 16, 1963. This application Nov. 21, 1966, Ser. No. 602,442
U.S. Cl. 128—263 **12 Claims**
Int. Cl. A61f *13/20, 15/00*

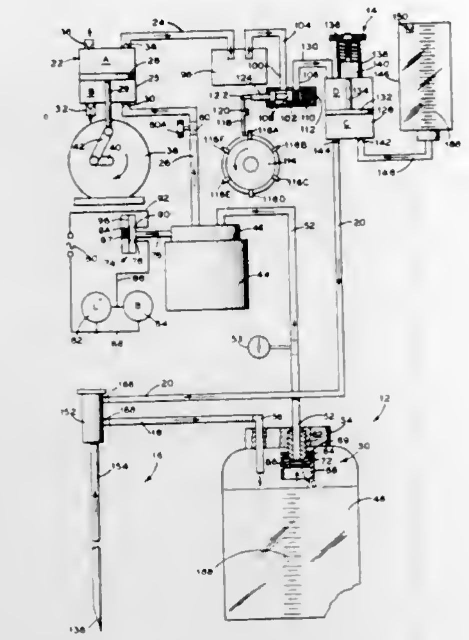


A catamenial tampon applicator that includes a pair of telescoping tubes, one of which has longitudinal undulations that establish elongated, longitudinally disposed areas of low frictional contact that maintain the tubes in concentric, otherwise spaced, relationship.

3,429,313
MEDICAL DRAINAGE PUMP

Pat Romanelli, Bronx, N.Y., assignor to Ram Domestic Products Company, Englewood, N.J., a partnership
Filed Feb. 1, 1966, Ser. No. 524,167
U.S. Cl. 128—276 **7 Claims**
Int. Cl. A61m *1/00, 5/00, 7/00*

A medical drainage system for draining body fluids through a catheter to a collection receptacle, wherein a vacuum pump is connected to the catheter through said receptacle and a separate irrigation system is provided for supplying irrigation fluid continuously or at designated intervals to the catheter to prevent clogging thereof. The irrigation system is operable by air under pressure supplied by the vacuum pump.



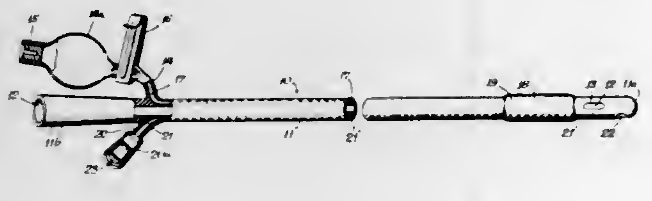
3,429,314
SELF-VENTING DRAINAGE SYSTEM FOR BODY FLUIDS

Richard E. Ericson, Barrington, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed July 26, 1965, Ser. No. 474,650

U.S. Cl. 128—349 **13 Claims**

Int. Cl. A61m *25/00;* **A61f** *5/44*



A body-fluid gravitational drainage system, such as a urinary catheter, for draining fluids from a body cavity by gravitational means, wherein the drainage channel is vented to the atmosphere during use so as to prevent development of a negative pressure within the body cavity and thus avoid damage to body tissue within the cavity. A bacterial filter unit which allows passage of air but not passage of body fluids, is positioned in the vent to filter the air entering the vent and to prevent leakage of body fluid through the vent, whether the filter be above or below the body cavity fluid level.

3,429,315
CHEMICAL REFRIGERANT BLANKET

Donald B. Robertson McDonald, Closter, N.J., assignor to Chemi-Temp Corp., Lodi, N.J., a corporation of New York

Filed Nov. 4, 1966, Ser. No. 592,208

U.S. Cl. 128—402 **13 Claims**

Int. Cl. A61f *7/10;* **F25d** *5/02*

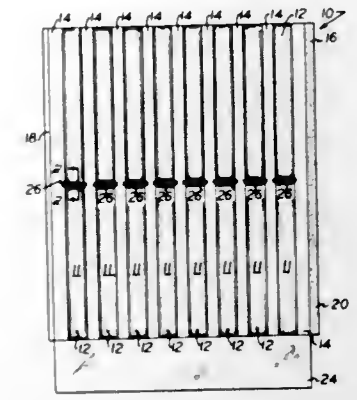
1. A chemical refrigerant blanket adapted to encompass at least a limb of a person comprising

a plurality of elongated chambers each of which has an upper and a lower wall,

each of said plurality of chambers being connected to the next adjacent chamber by an elongated strip of flexible material coextensive in length with said plurality of chambers,

releasable clamping means for clamping together the walls of the respective chambers at approximately their midpoint to divide each of said plurality of chambers into two compartments which are separated from each other by said releasable clamping means,

one of said compartments of each of said plurality of chambers having a granular material therein,



the other of said compartments of each of said plurality of chambers having a fluid therein,

and a flap connected to one end of each of said plurality of chambers and said interconnecting strips of material and being adapted to be folded over the end of a limb of a person in superposed relation to said plurality of chambers and said interconnecting strips of material so that said blanket completely encloses the limb when it is applied thereto,

whereby said releasable clamping means may be removed to allow said compartments in said chambers to communicate with each other.

3,429,316
TOBACCO COMPOSITIONS

Earl H. Hess, Lancaster, Pa., assignor to Backman Chocolate Manufacturing Company, Mount Joy, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 20, 1965, Ser. No. 449,638

U.S. Cl. 131—17 **9 Claims**

Int. Cl. A24b *3/12, 15/00*

Tobacco compositions incorporating by-products of a cocoa or chocolate manufacturing process, specifically, cocoa shells or cocoa-shell containing "expeller cake." These additives provide the tobacco composition, either natural or reconstituted tobacco, or mixtures of the same, with a highly desirable flavor, while reducing the cost of such compositions by utilizing a material which is normally a waste by-product of chocolate manufacturing. Although the chocolate by-products may be added to the aqueous slurry of comminuted tobacco material before pressure cooking or autoclaving the same to form reconstituted tobacco, it is preferably to afterload, or add the by-products to the dough which results from the autoclaving operation. Further improvement of the flavor of the tobacco composition may be effected by adding a minor amount of an oxidizing material such as hydrogen peroxide prior to steam drying of the reconstituted sheet. The coarse shell by-product which forms the largest percentage of the chocolate by-products and which includes the smallest proportion of nibs, is found to provide the most favored taste when incorporated into tobacco compositions.

3,429,317
METHOD OF CONDITIONING TOBACCO

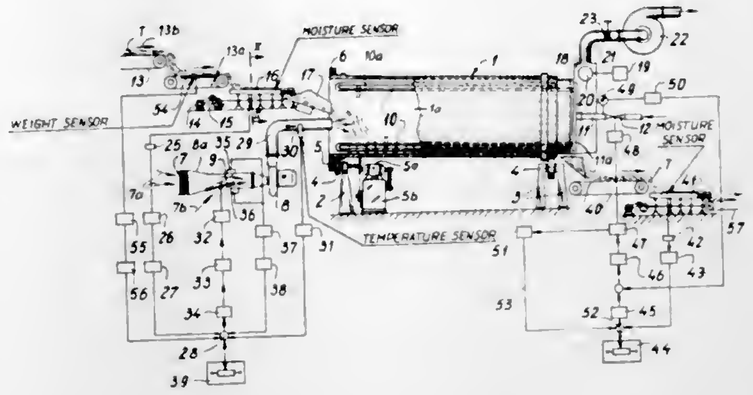
Hans Koch, Meiendorferweg 22, Hamburg-Rahlstedt, Germany, and Waldemar Wochnowski, Eulenkrugstrasse 143, Hamburg-Volksdorf, Germany

Original application Nov. 17, 1964, Ser. No. 411,788, now Patent No. 3,372,488, dated Mar. 12, 1968. Divided and this application Jan. 4, 1968, Ser. No. 695,672

Claims priority, application Great Britain, Nov. 18, 1963, 45,434/63

U.S. Cl. 131—140 **10 Claims**

Int. Cl. A24b *9/00;* **F26b** *3/04*



The moisture content of tobacco is controlled by conveying a stream of tobacco leaves or shreds through a drier wherein the stream exchanges heat directly with heated air and indirectly with steam. The exchange of heat between tobacco and air is regulated as a function of changes in the weight and moisture content of successive increments of the stream prior to entry into the drier. The exchange of heat between tobacco and steam is regulated in dependency on deviations of moisture content in conditioned tobacco from a desired moisture content.

3,429,318
SELECTIVE FILTER MEDIUM

Theodore R. Walker and Edward G. Miller, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 7, 1967, Ser. No. 668,287

U.S. Cl. 131—267 **9 Claims**

Int. Cl. A24f *7/04;* **B01d** *27/00*

Tobacco smoke filtering media containing at least one polyol-amine or polyol-amine salt additive for selectively reducing the noxious gases found in the tobacco smoke.

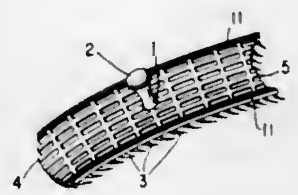
3,429,319
HAIR WAVER

Lucynda I. Fink, Garwin, Iowa 50632

Filed Aug. 4, 1966, Ser. No. 570,373

U.S. Cl. 132—38 **3 Claims**

Int. Cl. A45d *2/00*



A hair waver in the form of an elongated finger whose underside is concavely curved longitudinally to complement the curvature of a head and convexly curved transversely, a plurality of transverse parallel rows of teeth projecting from the undersurface of the finger and adapted to penetrate between strands of hair, said rows of teeth being spaced longitudinally and being curved transversely of the finger to impart a wave to the hair, a grip atop said finger adapted for hand manipulation to position said finger in the hair of a head, the two outermost teeth of each end of each transverse row and the undersurface of the finger forming a pair of longitudinally extending curved slideways, and a pair of separate, longitudinally curved hairpins adapted to be slid longitudinally into said slideways to secure the engaged finger and hair in place.

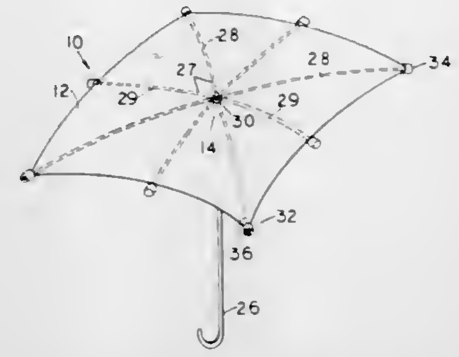
3,429,320
UMBRELLA COVERS

Dorothy Edelkind, 1221 Ave. I, Brooklyn, N.Y. 11230

Filed Sept. 15, 1966, Ser. No. 579,559

U.S. Cl. 135—34 **5 Claims**

Int. Cl. A45b *15/00, 25/18*



The essense of this invention resides in a square reversible umbrella cover. A plurality of connecting means are provided, generally, at the outer periphery of the umbrella cover which connecting means may be reversibly connected to the ribs of the umbrella structure. The connecting means are reversibly connected to the umbrella cover such that when the cover is reversed the connecting means may readily be made to support the cover on the ribs. A hole is provided at the approximate center of the cover and is provided with a ring there around so that the center of the cover may be fit over the umbrella ferrule whether in one position or in a reversed position.

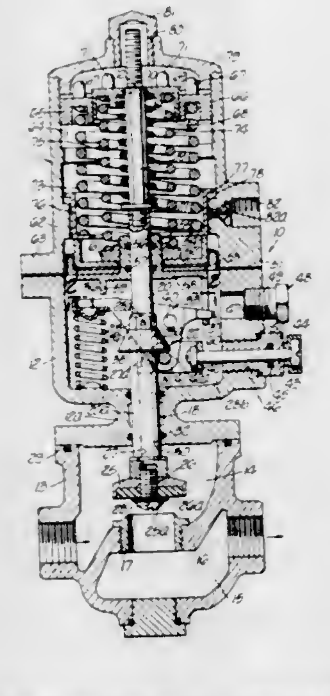
3,429,321
SAFETY VALVE ACTUATOR

Walter I. Thrall, South Pasadena, Calif., assignor to American Meter Company, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 695,053

U.S. Cl. 137—77 **17 Claims**

Int. Cl. F16k *17/18*



A valve actuator responds to overpressure or underpressure outside a preselected range to operate a movable valve part, both ends of the range being adjustable, and the force applied by the actuator is unaffected by the intensity of the pressure. The device also responds to manual operation, temperature or other condition.

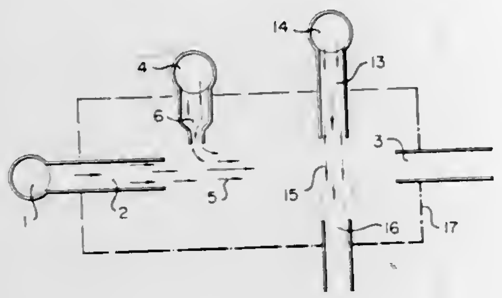
3,429,322
TURBULENCE AMPLIFIER SYSTEM

Eric E. Metzger, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Oct. 21, 1965, Ser. No. 499,829

U.S. Cl. 137—81.5 **13 Claims**

Int. Cl. F15c *1/18*



A turbulence amplifier system wherein a control stream is employed to produce turbulence in a power stream which, when rendered turbulent, produces turbulence in still a further power stream. The degree of turbulence produced in both power streams is a function of the single input control stream.

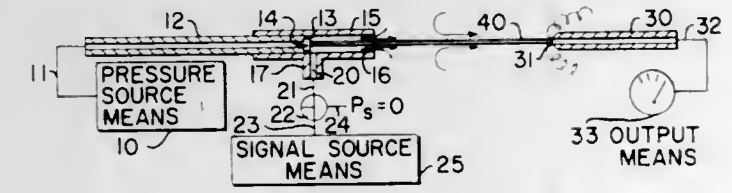
3,429,323
FLUID AMPLIFIER

Richard C. Mott, Harwood Heights, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 23, 1965, Ser. No. 516,050

U.S. Cl. 137—81.5 **7 Claims**

Int. Cl. F15c *13/00*



A turbulence type fluid amplifier including a shroud around the power input tube. In the presence of a control signal the laminar input stream becomes entrained to the shroud, increasing the stream diameter and causing the laminar stream to become turbulent. The amplifier is bistable in that both the laminar and turbulent states continue in the absence of a continuing control signal. The amplifier can also be modified to perform in a modulating manner.

3,429,324
FLUID OPERATED APPARATUS

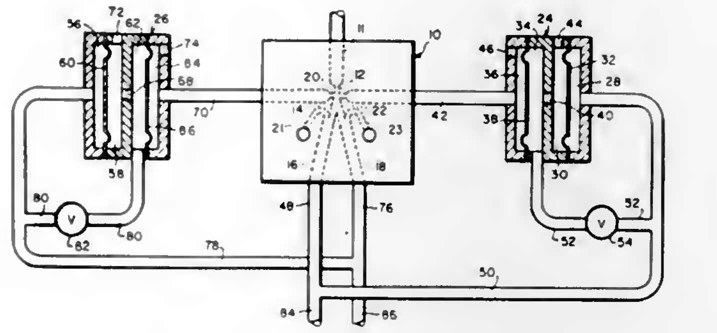
Wayne R. Brown, Bradford, Terence J. Cawley, Eldred, and Robert W. Van Tilburg, Bradford, Pa., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Feb. 16, 1965, Ser. No. 433,095

U.S. Cl. 137—81.5 **20 Claims**

Int. Cl. F15c *3/04*

A fluid operated apparatus for providing signals at predetermined time intervals is disclosed. The apparatus embodies a fluid amplifier that operates a means, such as a two-stage diaphragm valve, for measuring a predetermined volume of fluid which means control the output from the apparatus, the output being a portion of the amplifier fluid stream.



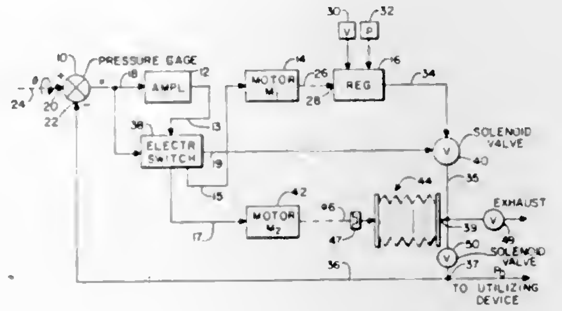
3,429,325
AUTOMATIC COARSE AND FINE PRESSURE CONTROL APPARATUS

Robert C. Raetz, Fridley, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 29, 1967, Ser. No. 626,748

U.S. Cl. 137—85 **3 Claims**

Int. Cl. F15b *5/00;* **G05d** *16/20*



Apparatus for producing an output pressure signal in response and proportional to an input signal, comprising a closed loop primary pressure source, which produces a relatively low resolution output, and a closed loop bellows unit connected to the low resolution output. After the low resolution output pressure signal reaches a predetermined level, the primary system is switched out, the bellows unit is switched in and a bellows in the unit is contracted (or expanded) until the pressure inside it reaches a second predetermined level which is of a relatively high resolution. The pressure within the bellows is the system output signal.

3,429,326
BREATHING APPARATUS FOR SUPPLYING A PAIR OF GASES IN ADJUSTABLE PROPORTION

Jon Arne Arnell and Dag Olof Alfred Johannisson, Lidingo, Sweden, assignors to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden

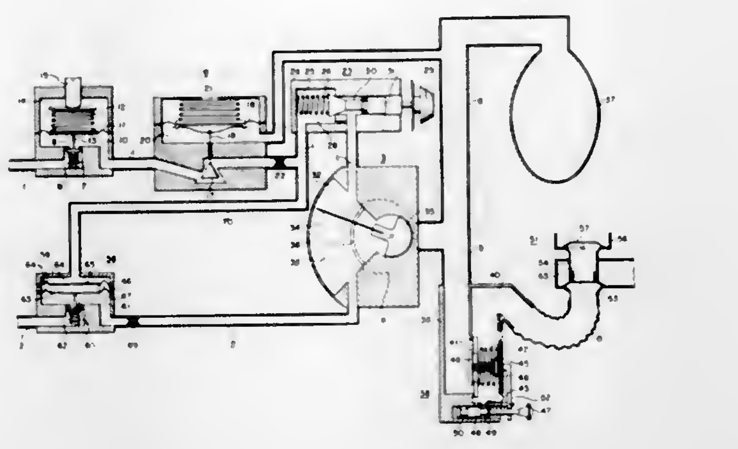
Filed Nov. 18, 1966, Ser. No. 595,507

Claims priority, application Sweden, Jan. 19, 1966, 662/66

U.S. Cl. 137—98 **8 Claims**

Int. Cl. G05d *11/03*

Breathing apparatus supplying two gases in adjustable proportion through a mixing chamber connected to first and second pressure regulators. The second regulator is controlled by pressure from the first regulator. An adjustable throttling device in the conduit of the first regulator controls the change of proportion of the two gases without change in the quantity of gas supplied to the patient.



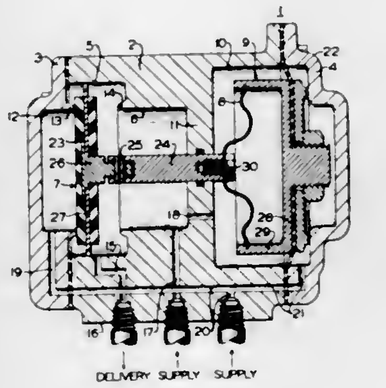
3,429,327
SNAP ACTING DOUBLE CHECK VALVE

Raymond C. Wright, Irwin, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Sept. 29, 1966, Ser. No. 582,812

U.S. Cl. 137—112 **5 Claims**

Int. Cl. G05d *11/02*



A fluid pressure responsive double check valve device for automatically establishing a fluid pressure communication selectively between one or the other of two fluid pressure supply passages and a common delivery passage in response to a predetermined low pressure differential across a diaphragm type control piston that is subject in opposing relation to the respective pressures in the two supply passages. A double acting valve member, attached to the piston through the intermediary of a toggle type spring, is seated against one and unseated from the other of a pair of oppositely disposed annular valve seats to establish the above-mentioned fluid pressure communication upon actuation of said control piston.

3,429,328
HYDRAULIC CONTROLS

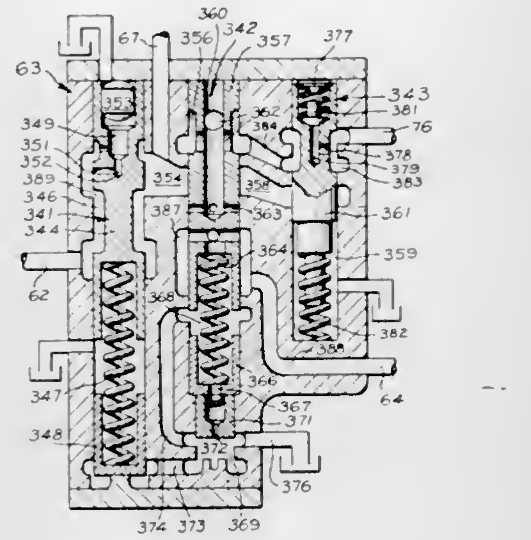
Hugh C. Morris, Peoria, Shairyl I. Pearce, East Peoria, and Charles A. Ramsel and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Original application Aug. 23, 1962, Ser. No. 219,049, now Patent No. 3,239,020, dated Mar. 8, 1966. Divided and this application Apr. 8, 1965, Ser. No. 455,358

U.S. Cl. 137—118 **11 Claims**

Int. Cl. G05d *11/03;* **F16k** *31/12*

Valve means for selectively controlling the pressure and direction of flow of fluid in the power train of a track type vehicle. The valves include a hydraulic steering pressure control valve, a hydraulic fluid selector valve, and a pressure control valve, each of which controls specific portions of the power train hydraulic system.



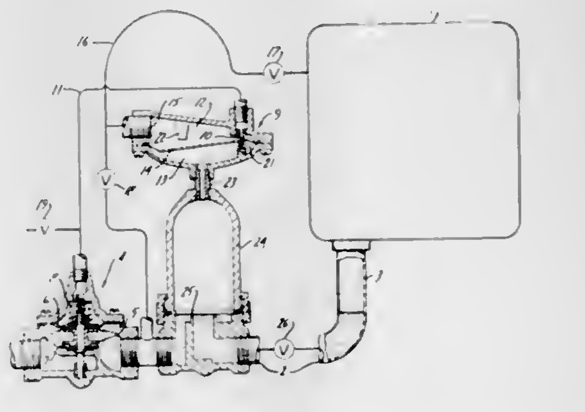
3,429,329
DRAIN APPARATUS FOR AUTOMATICALLY DRAINING CONDENSATE

George Merrill Berkley, Burbank, Calif., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Oct. 4, 1966, Ser. No. 584,222

U.S. Cl. 137—188 **2 Claims**

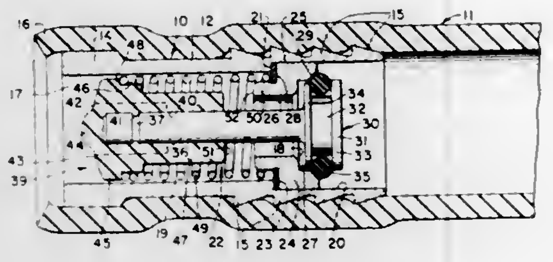
Int. Cl. F16t *1/14*



The invention relates to automatic drain apparatus to discharge condensate and the like which collects in the condensed water at the bottom of air receivers, after coolers, separators and line traps. An enclosed chamber is connected at one end to a leg of a drain pipe at the bottom of a tank to be drained of condensate and at the other end to one side of a weighted diaphragm in an air pilot valve. The other side of the diaphragm of the air pilot valve is connected on one side to the tank and on the other to the back of a diaphragm in a discharge valve also connected to the drain pipe. When condensate collects on the leg of the drain pipe, the differential head between the leg and chamber exerts pressure on the air trapped in the chamber. The weight of the diaphragm is thus overcome and the air pilot valve closes to shut off flow of compressed air to the discharge valve. The pressure in the discharge valve is reduced and the emulsion and fluid is discharged through the valve.

3,429,330
MOUTHPIECE FOR ORALLY OPERATED VALVE

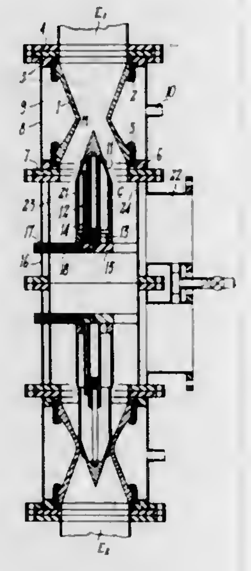
Armen Bogossian, Teaneck, N.J., and Henry H. Mackal, Fort Lauderdale, Fla., assignors to Halkey-Roberts Corporation, Paramus, N.J., a corporation of New Jersey
Original application Feb. 4, 1964, Ser. No. 342,425, now Patent No. 3,351,081, dated Nov. 7, 1967. Divided and this application Apr. 26, 1967, Ser. No. 633,784
U.S. Cl. 137—223 **5 Claims**
Int. Cl. F16k *15/20, 15/00;* **B60c**



A mouthpiece for an orally operated valve, such as an inflation valve, such mouthpiece being secure against dislodgement from the valve and insuring that there will be no exposed metal parts which might injure the mouth or teeth of the user. In a first disclosed embodiment, the mouthpiece is integral with an inflation tube in which the valve is mounted; in a second disclosed embodiment, the mouthpiece is made separate from the inflation tube proper, the end of the inflation tube cooperating with the mouthpiece to retain the mouthpiece securely on the valve.

3,429,331
NEEDLE VALVES, NOTABLY FOR DIRECT-FLOW LOCK-CHAMBERS

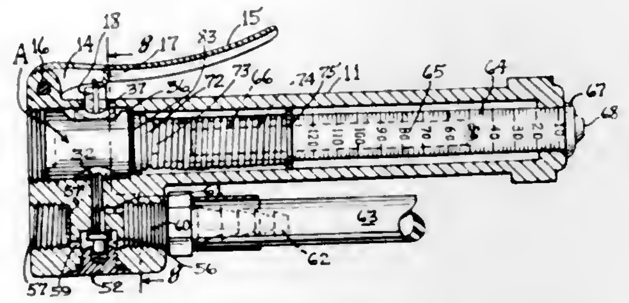
Robert Prevost, Le Vesinet, France, assignor to Societe Anonyme Heurtey, Paris, France
Filed Mar. 18, 1966, Ser. No. 535,413
Claims priority, application France, Mar. 24, 1965, 10,486; Nov. 22, 1965, 39,268; Feb. 8, 1966, 48,784
U.S. Cl. 137—219 **11 Claims**
Int. Cl. B65g *51/00;* **B67d** *5/54*



The invention concerns a screen equipped with two needle valves which are actuated in order to transfer pulverulent material from one atmosphere into another atmosphere. The needle valves have flexible seat members which are biased into tight engagement with the needle valve members. The valves are operated in sequence to convey a pulverulent material from one atmosphere or space into a lock chamber between the valves and then from the lock chamber to a second atmosphere or space. The structure satisfies the three conditions of perfect tightness, high viability and no stacking of the grains in any portion whatsoever of the apparatus which would result in denaturing the product.

3,429,332
REPLACEMENT CARTRIDGE INFLATOR GAUGE

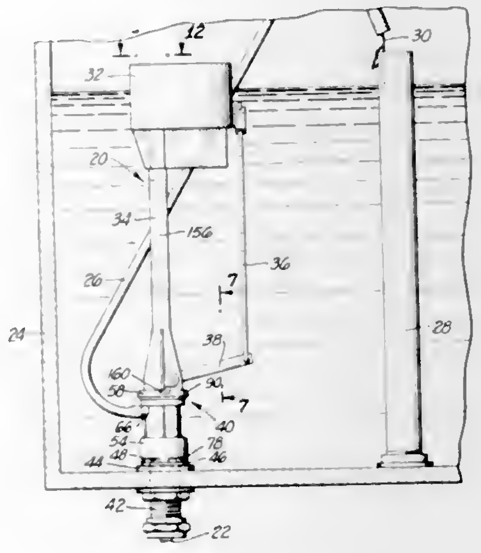
Albert Mazeika, Chicago, Ill., assignor to Milton Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 503,329
U.S. Cl. 137—227 **4 Claims**
Int. Cl. F16k *15/20, 37/00;* **B60c** *23/00*



A replaceable cartridge inflator gauge for use in garages, service stations, and the like, for inflating and deflating vehicle tires, air tanks, and other such pressure vessels and indicating the air pressure therein, in which the valve and its associated pressure indicator bar are assembled as a single unit which is removable for replacement or repair purposes as a unit from the valve housing and the barrel of the air extension tube.

3,429,333
BALL COCK

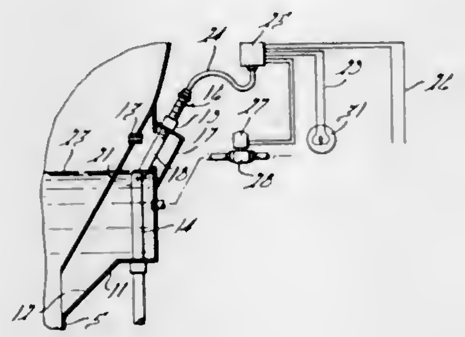
Adolf Schoepe, 1620 N. Raymond Ave., Fullerton, Calif. 92631, and Fredric E. Schmuck, 535 Century Drive, Anaheim, Calif. 92805
Filed June 23, 1966, Ser. No. 559,779
U.S. Cl. 137—315 **23 Claims**
Int. Cl. E03d *1/32, 1/33, 1/36*



An upright plastic beam of polygonal cross section is integral with a plastic upper portion of a valve housing and vertically slidably receives a plastic float by extension through a float slot, said beam and float slot cross sections conforming to prevent relative horizontal rotation therebetween. A lower portion of the valve housing vertically receives the upper portion therein enclosing a resilient valve seal peripherally and centrally engaged by the upper portion and movable toward and away from a lower portion angular valve seat controlling fluid flow through the valve as determined by connection to and vertical movement of the float. The housing upper and lower portions are engaged and disengaged merely through relative horizontal rotation by slidable interengageable means. The beam has latticed vertical grooves therein resisting vertical bending and horizontal twisting.

3,429,334
WATER LEVEL CONTROL DEVICE

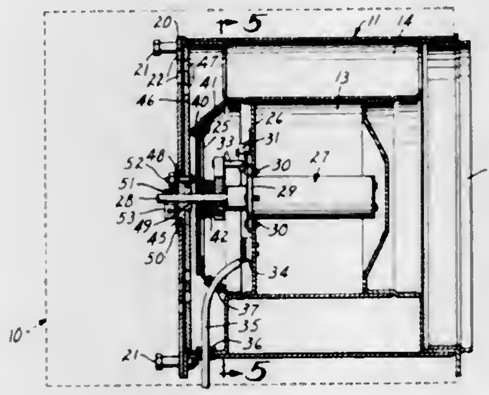
Giovanni C. Ziliotto, 120 S. Broadway, Lake Orion, Mich. 48035
Filed Dec. 6, 1966, Ser. No. 599,602
U.S. Cl. 137—386 **6 Claims**
Int. Cl. F16k *21/20*



A water level control device supplies makeup water when the level of the water has lowered beyond a predetermined point. The dropping of the water exposes the open end of a tube to sub-atmospheric pressure which actuates a pressure switch to produce a flow of water which is interrupted when the switch is open at the time the rising water covers the end of the tube.

3,429,335
FLUID FLOW CONTROL APPARATUS

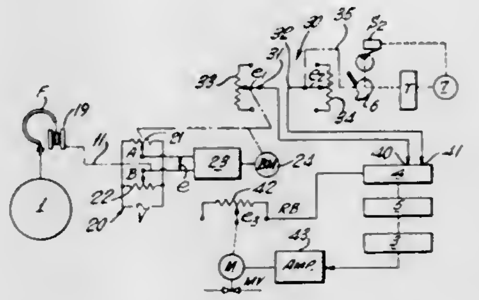
Eugene E. Grassel, Minneapolis, and Donald W. Schoen, St. Paul, Minn., assignors to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,959
U.S. Cl. 137—487.5 **2 Claims**
Int. Cl. G05d *7/06;* **F16k** *3/08, 31/04*



A motor operated valve operable to control the flow of fluid through a passageway by means of a pair of plates mounted parallel and in juxtaposition with each plate having a single start, double pitch spiral slot means therethrough beginning adjacent the outer edge of said plate and spiralling inwardly about the axis thereof so as to provide a maximum flow in the overlying position and substantially no flow in a rotated or unmatched position, said motor being controllable between the open and closed positions by pressure responsive means connected to maintain the pressure in the passageway between predetermined levels.

3,429,336
APPARATUS AUTOMATICALLY CONTROLLING THE CORRELATION BETWEEN TIME AND AIR PRESSURE

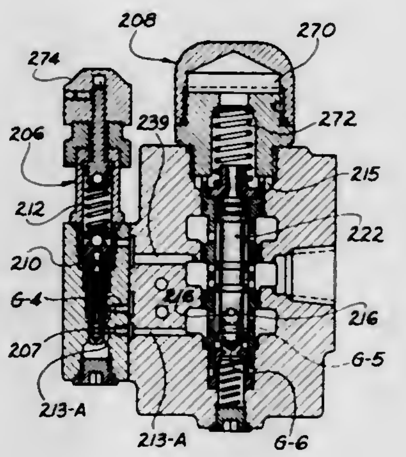
Kazuhiro Moriyama, Fukazawa-machi, Tokyo-to, and Toshimitsu Hori, Shiba-mita, Tokyo-to, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Continuation-in-part of application Ser. No. 325,823, Nov. 25, 1963. This application Dec. 7, 1966, Ser. No. 599,961
U.S. Cl. 137—487.5 **11 Claims**
Int. Cl. G05d *16/20;* **B22d** *35/04;* **B22c** *19/04*



The pressure in a vessel is transformed into an analogue signal which is applied to a comparison network to be compared with another signal varying according to a predetermined program. The resulting difference signal controls through electromechanical control means a valve at the inlet of the vessel. A correction circuit coupled with said valve produces a compensation signal which is fed back to said electromechanical means to insure correct controlling action of said valve.

3,429,337
PRESSURE CONTROL APPARATUS

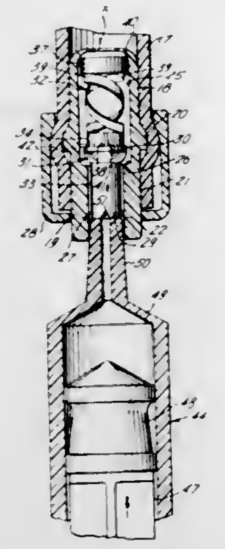
Robert E. Raymond, Zanesville, Ohio, assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,724
U.S. Cl. 137—488 **8 Claims**
Int. Cl. F16k *31/12, 31/36*



A pressure control apparatus that includes a power control valve element and associated detector valve means the latter serving to automatically control the sensitivity of the power valve means is non-sensitive to rates of change of pressure below a predetermined pressure value, and then highly sensitive to rates of change of pressure to be controlled as the pressure approaches the predetermined pressure value. The apparatus includes additional control elements that provide a high degree of control accuracy by eliminating overshoot and shock effects on the components of the apparatus.

3,429,338
INFLATION VALVE HAVING HELICALLY WOUND LEAF SPRING MEMBERS FOR PRODUCING ROTATION OF THE VALVE

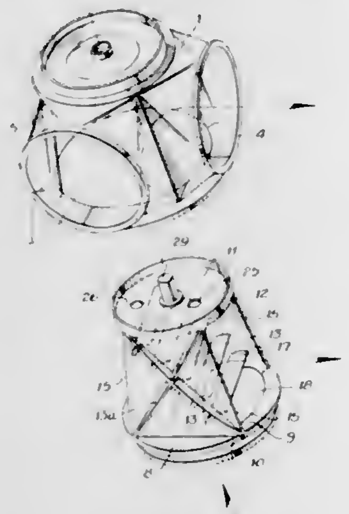
Henry H. Mackal, 1924 Sunrise Key Blvd., Fort Lauderdale, Fla. 33304, and Armen Bogossian, 584 Cumberland Ave., Teaneck, N.J. 07666
Filed Dec. 30, 1965, Ser. No. 517,685
U.S. Cl. 137—543.23 **8 Claims**
Int. Cl. F16l *37/28;* **F16k** *15/18*



A simplified check valve adapted for use as an inflation valve, such valve securely sealing the passage therethrough under conditions of moderate pressure. The valve has a body having a passage therethrough, there being a transverse annular, first valve seat in the body surrounding the passage. A relatively soft, resilient valve element having a second valve seat thereon cooperates with the first valve seat. The valve element is constantly urged toward its valve-closed position by a spring means having annular members at its opposite end connected by helical spring-forming struts. One end member of the spring means frictionally engages the valve element, whereby the valve element turns with such end member as the spring means is axially compressed and allowed to expand.

3,429,339
ROTARY SLIDE VALVE FOR BRANCHED PIPE LINES

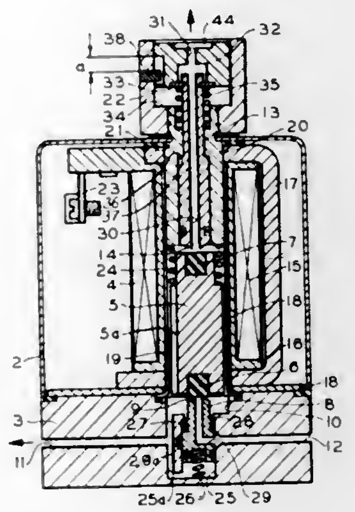
Heinrich Teichmann, Geiselbullach, Germany, assignor to M.A.N. Turbo GmbH, Munich-Allach, Germany
Filed June 20, 1966, Ser. No. 558,876
Claims priority, application Germany, June 24, 1965, B 82,542
U.S. Cl. 137—625.47 **8 Claims**
Int. Cl. F16k *11/02, 39/06*



An exhaust gas deflecting device for a gas turbine engine has a rotary slide valve rotatably mounted in a valve housing having branched outlet openings. Pressure equalizing chambers are between the slide valve and the housing for preventing the slide valve from tilting and jamming during the flow of hot turbine engine exhaust gases through the device.

3,429,340
SOLENOID OPERATED VALVE WITH MANUAL OVERRIDE

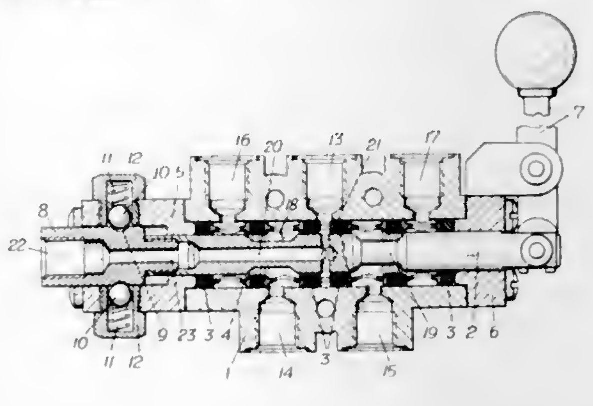
Detlef Opel, Gehrden, and Karl-Heinz Brinkmann and Hermann Kosmalski, Hannover, Germany, assignors to Westinghouse Bremsen- und Apparatebau G.m.b.H., Hannover, Germany
Filed Apr. 26, 1967, Ser. No. 633,791
Claims priority, application Germany, May 7, 1966, W 37,274
U.S. Cl. 137—625.65 **6 Claims**
Int. Cl. F16k *31/10*



A solenoid operated valve with manual override in which, a solenoid operated plunger operates from a normal position against a bias in one direction to unseat a main supply valve and close an exhaust valve, the exhaust valve being carried by an operator which when manually operated closes the exhaust valve and operates the plunger in the opposite direction from normal position to close the main supply valve and unseat an auxiliary supply valve member which carries the main supply valve thereon.

3,429,341
CONTROL SLIDE VALVE

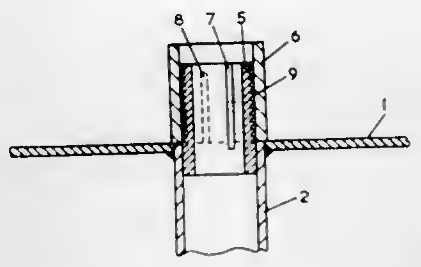
Herbert Sochting, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed May 3, 1966, Ser. No. 547,228
Claims priority, application Austria, May 7, 1965, A 4,173/65
U.S. Cl. 137—625.68 **4 Claims**
Int. Cl. F16k *11/07*



A control slide valve for pneumatic and hydraulic installations having a casing provided with a plurality of ports for a pressure transfer medium and a control piston sealed off by packing rings slidable in the casing between two end portions in order to connect and disconnect the ports.

3,429,342
FLOW-REGULATING DEVICE

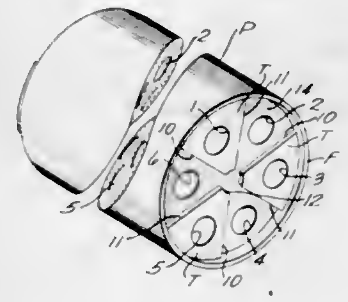
Michael E. Garrett, Addlestone, England, assignor to The British Oxygen Company Limited, a British company
Filed Feb. 28, 1966, Ser. No. 530,307
Claims priority, application Great Britain, Mar. 15, 1965, 10,863/65
U.S. Cl. 138—43 **1 Claim**
Int. Cl. F15d *1/02*



Flow regulating device for regulating the flow of liquid to a substantially vertical tube comprises an inner tubular member adapted to be fitted within an outer tubular member with means such as screw threads defining flow passages between the tubular members when fitted together, the side wall of each tubular member having one or more apertures communicating with the flow passages, the arrangement being such that the flow resistance of the passages may be adjusted by altering the relative positions of the apertures.

3,429,343
MULTIPLE DUCT CONCRETE PIPE

Harry Steiro, 3725 Lexington Ave., Madison, Wis. 53700
Filed Jan. 27, 1967, Ser. No. 612,262
U.S. Cl. 138—155 **6 Claims**
Int. Cl. F16l *9/20, 39/00, 25/00*

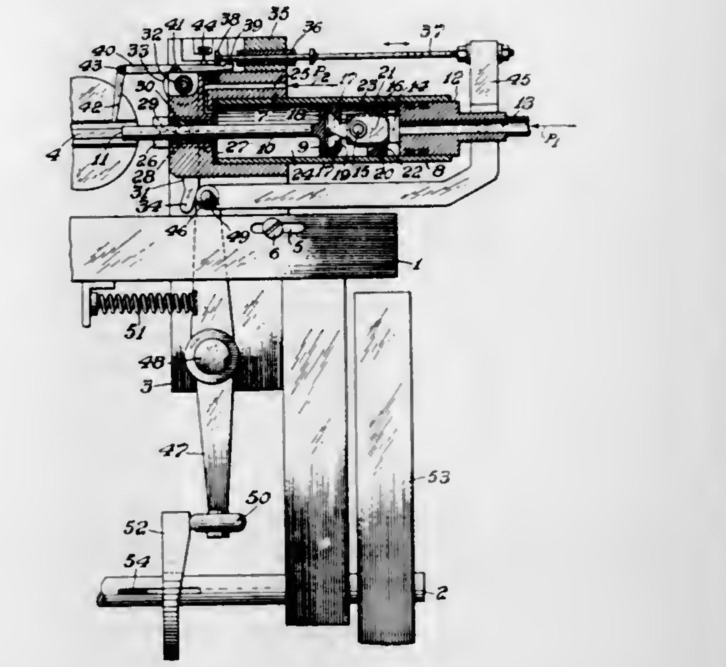


Concrete pipe having a plurality of separate ducts extending therethrough for underground electrical power lines or the like.

3,429,344
SHUTTLE-CONTROLLING APPARATUS FOR WEAVING LOOMS

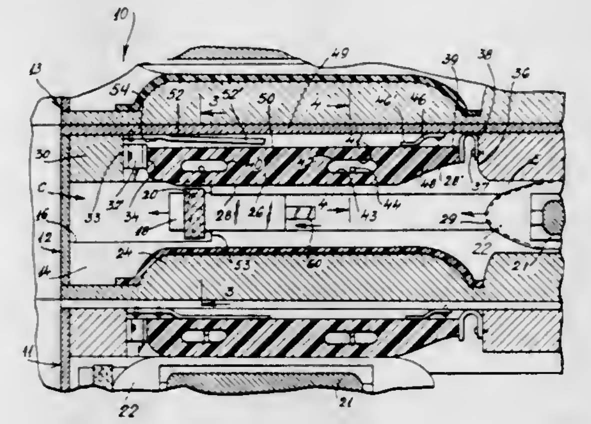
Vladimir Svaty, Jan Bilek, and Jiri Zlatohlavek, Liberec, Czechoslovakia, assignors to Elitex, Zavody textilniho Strojirenstvi, Liberec, Czechoslovakia
Filed Sept. 9, 1966, Ser. No. 578,317
Claims priority, application Czechoslovakia, Sept. 11, 1965, 5,612/65
U.S. Cl. 139—144 **2 Claims**
Int. Cl. D03d *49/24, 49/48, 51/40*

A loom in which a shuttle is braked to a stop at the end of its path at one end of the loom and returned to the other end by an arrangement including a drive and separate mechanisms for braking the shuttle movement, sensing the timely arrival of the shuttle, and for drive control, the mechanisms having respective members movably mounted on a common support and connected to the drive shaft of the loom by a single cam-actuated operating member movably mounted on the same support.



3,429,345
SHUTTLE CHECK FOR LOOM

Charles L. O'Donnell, Paterson, N.J., assignor of fifty percent to Carroll Steinhauser, Wayne, N.J.
Filed Mar. 27, 1967, Ser. No. 625,998
U.S. Cl. 139—186 **1 Claim**
Int. Cl. D03d *49/54, 49/56*

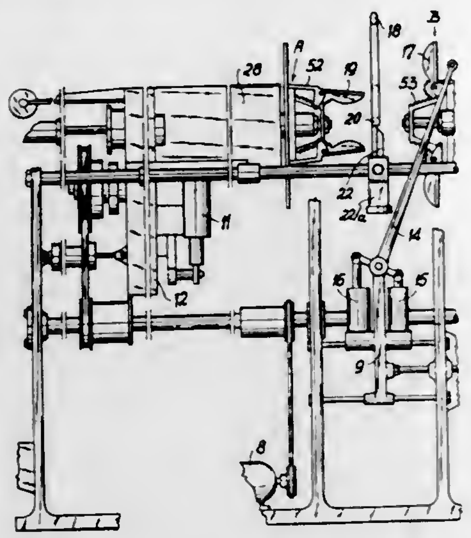


The disclosure describes a floating binder for a shuttle in a shuttle box. Springs mounted on walls of the box bear against the binder to prevent vibration, slippage and displacement of a shuttle while in the shuttle box, and to exert a braking effect on a shuttle entering the box.

3,429,346
AUTOMATIC MACHINE FOR CONTINUOUSLY WINDING UP AND LACING THREADLIKE PRODUCTS SUCH AS BARE OR COVERED WIRES AND CABLES TO COILS

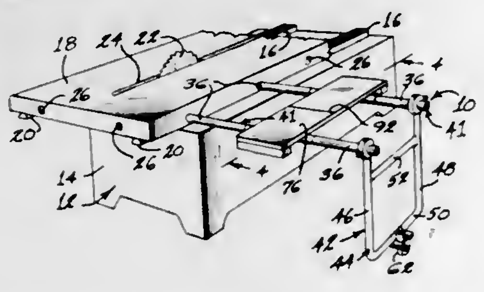
Alessandro Tosca, Salita Scaletta 2, Bergamo, Italy, and Giuseppe Pisani, Borgonuovo Val Tidone-Via Rome 49, Italy
Filed July 6, 1966, Ser. No. 563,250
Claims priority, application Italy, July 8, 1965, 6,673/65
U.S. Cl. 140—92.2 **6 Claims**
Int. Cl. B21f *3/04;* **B65h** *81/00;* **H01f** *41/06*

An automatic machine for winding up and lacing of wires, cables or the like in which a guide lever controlled by electrical contact means displaces the wire from a winder supporting a completed coil onto another coaxial winder which is still empty and in which a guide provided with a cutter blade then separates the finished coil from the one which is being wound up.



3,429,347
EXTENSION SUPPORT FOR SLIDING TABLE SAWS

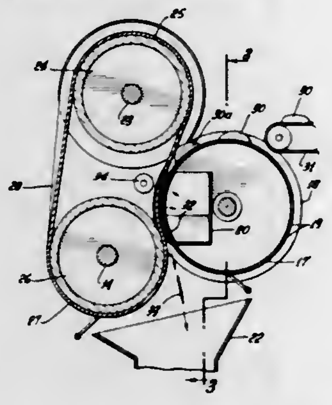
Louis Klein, Apt. 1202, 569 Sheppard Ave. W.,
Downsview, Ontario, Canada
Filed June 20, 1966, Ser. No. 558,983
U.S. Cl. 143—52 **6 Claims**
Int. Cl. B27b *5/22*



An extension for a movable worktable on a saw comprised of elongated extension arms coupleable to end or side edges of the table and provided with a ground-engaging frame supporting the free ends of the arms; the frame including a ground-contacting roller permitting free movement of said arms and support frame with the worktable.

3,429,348
APPARATUS FOR PULPING SEGMENTAL PRODUCE

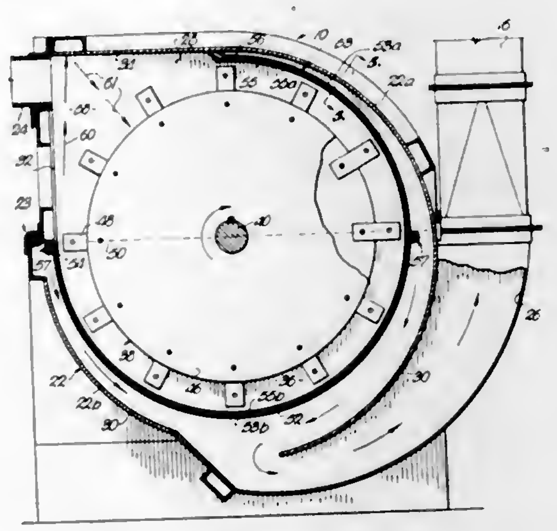
Walter Earl Hirtensteiner, 15051 Eastvale Road,
Poway, Calif. 92064
Filed Aug. 29, 1966, Ser. No. 575,756
U.S. Cl. 146—76 **4 Claims**
Int. Cl. A47j *19/02;* **B30b** *3/04, 9/20*



The invention is directed to apparatus for the pulping or ricing of the meats of segmented fruit or vegetable produce, by passing the segments between a moving pressurizing belt and a rotating perforated drum, a section of the belt being concavely deflected to receive the segments for progressive forcing of their meats through the drum perforations and the belt then being progressively flattened to complete the meats separation from the segment skins which are expelled from between the drum and belt.

3,429,349
PULL-THROUGH HAMMER MILL

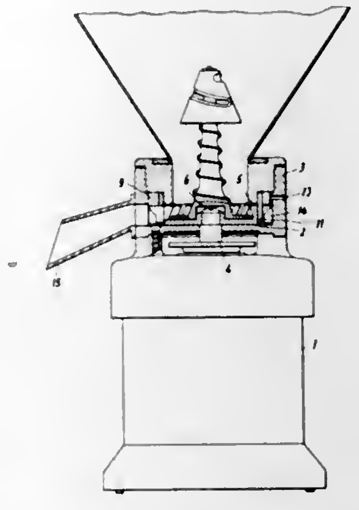
Richard L. Ronning, 8914 Eby Drive,
Overland Park, Kans. 66212
Filed Sept. 29, 1966, Ser. No. 582,915
U.S. Cl. 146—107 **4 Claims**
Int. Cl. B02c *13/13*



A pull-through hammer mill for comminuting agricultural products has a rotor rotatably mounted in a housing. An elongated, arcuate screen is carried by the housing in circumscribing relationship to the rotor. Agricultural products are forced into the housing through an elongated conduit to be ground between the rotor and the screen. A blower is connected to the outlet of the housing for reducing the pressure downstream of the latter thus causing the agricultural products to be pneumatically conveyed into and through the hammer mill.

3,429,350
COMMINUTING DEVICE

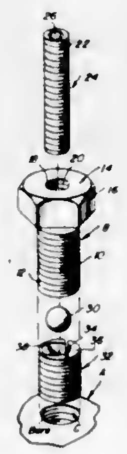
Fritz Otto, Hameln an der Weser, Germany, assignor, by mesne assignments, to Belder Trust, Vaduz, Liechtenstein
Filed June 14, 1966, Ser. No. 557,403
Claims priority, application Germany, June 16, 1965, St 18,788
U.S. Cl. 146—192 **9 Claims**
Int. Cl. B02c *18/18, 18/36*



A comminuting device includes a receptacle having a transverse wall and a peripheral wall which extends from one side of the transverse wall and is provided with an outlet in the region of the same. A drive shaft extends through the transverse wall. Cutter means is arranged within the receptacle adjacent to the transverse wall and includes a pair of cutter members having concentric annuli of teeth. At least the innermost cutter member is secured to the drive shaft for rotation therewith so that material entrained is given a rotary component of movement and passes between the teeth of the annuli in radial outward direction to the outlet. Cutter blade means is adhesively bonded to and supported against movement in the predetermined direction by the teeth of at least one annulus in such a manner that pressure of the material against the teeth of this annulus tends to press the cutter blade means into firmer engagement with the associated teeth.

3,429,351
LOCK SCREW CONSTRUCTION

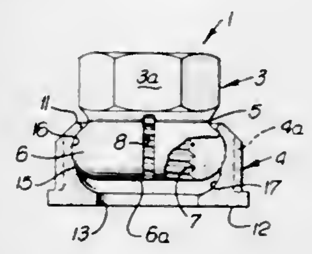
Emil Szalanczy, 137½ Eastern Heights Blvd.,
Elyria, Ohio 44035
Filed Oct. 14, 1966, Ser. No. 586,714
U.S. Cl. 151—14 **6 Claims**
Int. Cl. F16b *39/30, 39/00, 35/00*



A lockable screw, with or without a tool gripping head, which can be positively stabilized against retrograde rotation in any desired position in a threaded hole of any desired depth independent of the depth or bottom of said hole, A limit stop screw plug is adjustably screwed in the hole. An incompressible ball is confined between the inner end of the lockable screw and a recessed end thrust face of the plug. The lockable screw has an open-ended axial screw-threaded bore. An end thrust screw is complemental to the lockable screw, is screwed through said axial bore and has an inner recessed end to clampingly engage the ball.

3,429,352
LOCK COLLAR NUT

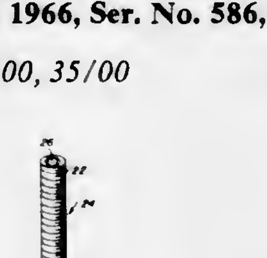
Robert Akashi, 2059 W. 161st St.,
Gardena, Calif. 90247
Filed Nov. 29, 1966, Ser. No. 597,710
U.S. Cl. 151—19 **5 Claims**
Int. Cl. F16b *39/36*



A locknut assembly for a threaded stem is provided comprising a threaded tubular fastener having an inwardly deflectable skirt and a retaining collar for the fastener which coact in one relation to retain the fastener at the work without locking and in a second relation to lock the fastener in engagement with a threaded stem. The retaining collar varies in radius along its axis to provide two chambers separated by an interference shoulder into the first of which the fastener skirt is receivable in an undeflected condition for retention and in the second of which the fastener skirt is receivable in an inwardly deflected condition for locking against the stem.

3,429,353
CHAIN LINK FOR ANTI-SKID AND TIRE-PROTECTIVE CHAINS

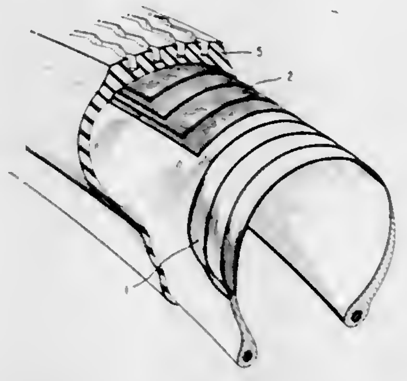
Werner Schürle, Aalen, Anton Müller, Unterkochen, and Günter Witzel, Aalen, Germany, assignors to Eisen- und Drahtwerk Erlau A.G., Aalen, Wurttemberg, Germany
Filed July 5, 1966, Ser. No. 562,783
Claims priority, application Germany, July 5, 1965, E 29,642; May 14, 1966, E 23,447
U.S. Cl. 152—243 **14 Claims**
Int. Cl. B60c *27/00;* **F16g** *15/12*



A chain link for anti-skid tire chains in the form of an elongated plate having aperture means therein which is of such a structural character that natural wear during the use of the chain link will only slightly affect the functionality of the link.

3,429,354
TIRE CORD CONSTRUCTIONS AND TIRES MADE THEREWITH

Malcolm R. H. Brooks, Waterloo, Belgium, assignor to Celanese Corporation, a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,425
U.S. Cl. 152—357 **9 Claims**
Int. Cl. B60c *9/02;* **D02g** *3/02, 3/36*

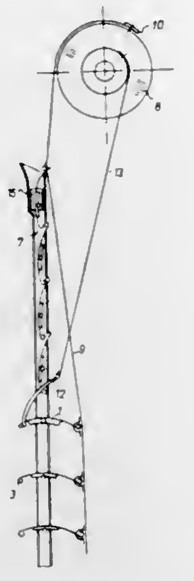


A composite cord and rubber tires prepared therefrom the composite cord comprising a load-carrying substantially untwisted polyester monofilament core having a plural end hydrophilic yarn helically wound thereon.

3,429,355
BLINDS

Friedrich Griesser, Aadorf, Thurgau, Switzerland, assignor to Griesser A.G., Aadorf, Thurgau, Switzerland
Filed Nov. 14, 1966, Ser. No. 594,232
Claims priority, application Switzerland, Dec. 3, 1965, 16,695/65
U.S. Cl. 160—133 **5 Claims**
Int. Cl. E06b *9/204*

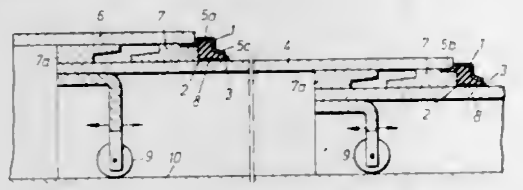
A Venetian blind having a plurality of pivotal slats having each a first and a second opposed longitudinal edge. A first tape at each end of said slats with means pivotally connecting each slat to said first tapes. A drum having a draw tape fixed thereto for being wound up thereon to raise said blind. Means pivotally connecting said first longitudinal edge of each slat to said draw tape so that upon a complete lowering of said blind further rotation of said drum in the same sense as during lowering causes said slats to pivot to their open position. A second tape pivotally connected to said second longitudinal edge of one of said plurality of slats and connected to said drum so that upon a complete lowering of said blind further rotation of said drum in the same sense as during lowering causes said second tape to be wound up on said drum to pivot said plurality of slats to open position.



3,429,356

COVERING MEANS FOR GUIDING PATHS ON MACHINE TOOLS

Kurt Loos, Dreis-Tiefenbach (Sieg), and Friedrich Haschek, Weidenau (Sieg), Germany, assignors to Kabelschlepp G.m.b.H., Siegen, Wastphalia, Germany
Filed Jan. 6, 1967, Ser. No. 607,807
Claims priority, application Germany, Jan. 11, 1966, K 58,115
U.S. Cl. 160—223 **5 Claims**
Int. Cl. E06b *9/00, 3/92;* **E05b** *15/06*



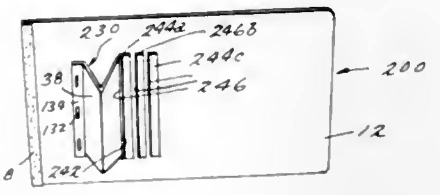
An elastic wiper strip connected to an upper cover strip for wiping cooperation with a lower cover strip for use in connection with the covering means of guiding tracks, in which said wiper strip has its bottom side provided with a shorter inner sealing lip and a longer outer sealing lip arranged in spaced relationship to said shorter sealing lip in the longitudinal direction of the cover strips, said outer sealing lip when in assembled condition extending in the form of a substantially straight arm in the longitudinal direction of said strips and confining a chamber with the lower cover strip.

3,429,357

WINDSHIELD RAINSHIELD

James M. Hood, P.O. Box 7243, Garden City, Ga. 31408
Filed Sept. 23, 1966, Ser. No. 581,557
U.S. Cl. 160—368 **3 Claims**
Int. Cl. E06b *3/30;* **B60j** *1/20*

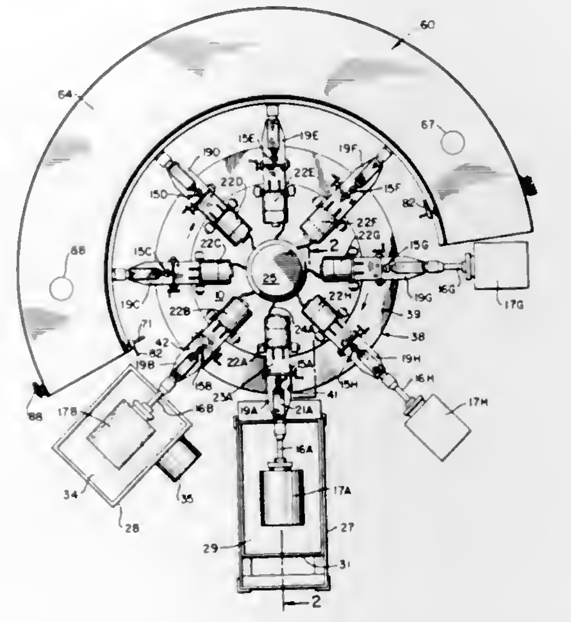
A flexible sheet of fiber board, chip board, cardboard, box board, double face corrugated board or the like, coated on at least the upper face thereof with a water barrier coating and having fastening means secured on the lower face thereof near the trailing edge thereof and cantilevering support means secured on the lower face thereof intermediate the leading and trailing edges thereof, but preferably at least slightly nearer the trailing edge thereof, said cantilevering support means being constructed and arranged to engage the vehicle windshield so as to support the forward part of the rain-shield therefrom in a cantilevering fashion.



3,429,358

METHOD FOR MANUFACTURE OF REFRACTORY SHELL MOLDS

Stanley C. Tingquist, Sparta, and William H. Trench, Chester, N.J., assignors to Howmet Corporation, New York, N.Y., a corporation of Delaware
Original application Sept. 21, 1964, Ser. No. 397,858, now Patent No. 3,278,998, dated Oct. 18, 1966. Divided and this application May 19, 1966, Ser. No. 565,367
U.S. Cl. 164—26 **3 Claims**
Int. Cl. B22c *3/00, 1/02;* **B05c** *3/103*



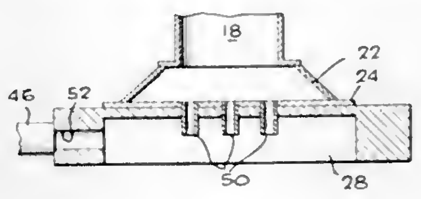
This disclosure relates to a method for developing a sanded and hardened refractory slurry coating on a pattern which method includes the steps of a continuously and slowly rotating spindle-mounted pattern at a substantially constant speed, swinging the pattern downwardly into a slurry at an angle below the horizontal to cover the pattern with an excess of slurry, raising the pattern above the horizontal as rotation continues to produce a more uniform coating, performing a similar coating step with sanding material and gelling the sanding slurry coating in a gaseous atmosphere.

3,429,359

METHOD AND APPARATUS FOR BLOWING CORES USING MICROWAVE ENERGY

Ashley James Hollingsworth, Atherton, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif.
Filed May 21, 1965, Ser. No. 457,747
U.S. Cl. 164—37 **16 Claims**
Int. Cl. B22c *23/00;* **B22d** *27/02*

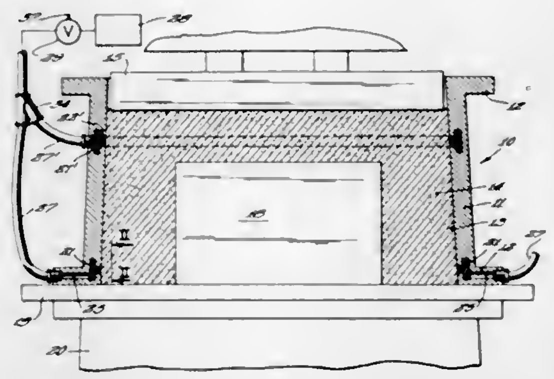
Apparatus and method for blowing cores in which a core is formed within a core box that is transparent to microwave energy. The core box is then supported in a microwave heating cavity and the core is cured by the application of microwave energy.



3,429,360

METHOD OF PREPARING SAND MOLDS

Richard L. Olson, Hickory Hills, Ill., assignor to Dike-O-Seal, Incorporated, Chicago, Ill., a corporation of Illinois
Filed June 8, 1966, Ser. No. 556,193
U.S. Cl. 164—37 **5 Claims**
Int. Cl. B22c *17/00, 21/08*

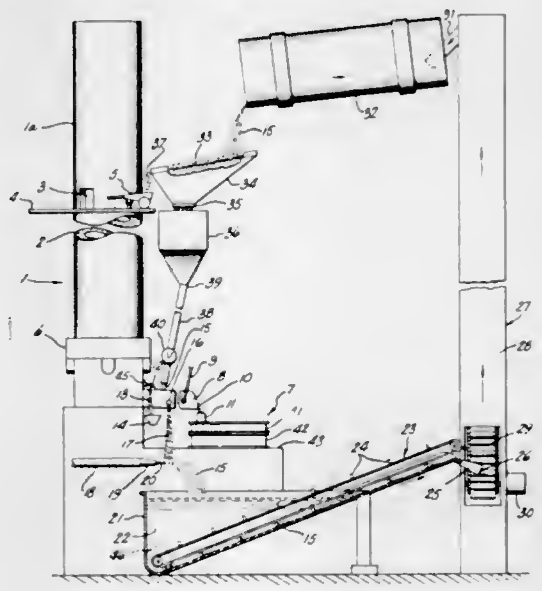


To hold a molded sand body against discharge from a slip flask while separating the mold body and a pattern, the mold body is engaged by a resiliently yieldable member associated with the flask's inner wall surface, and the mold body is dischargeable from the flask by releasing the body from the retainer.

3,429,361

METHOD AND APPARATUS FOR PRODUCING METAL CASTINGS USING MOLTEN METAL COOLED BEFORE TEEMING

Ralph E. Brooks, 1712 E. Michigan Ave., Albion, Mich. 49224
Filed Jan. 13, 1966, Ser. No. 520,389
U.S. Cl. 164—57 **14 Claims**
Int. Cl. B22d *27/04, 27/20, 23/08*

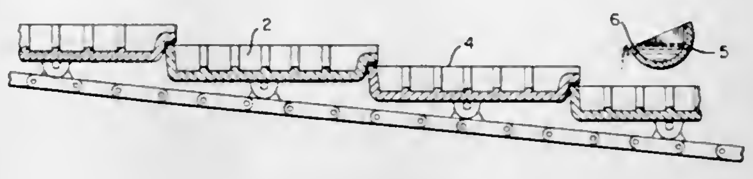


The present disclosure relates broadly to improved foundry practices, and in its more specific phases to the formation of metal shot and the use of same in the casting of metal.

3,429,362

PROCESS OF MANUFACTURING SMALL CASTINGS OF FERROALLOY

Kazuo Tachimoto, Tokyo-to, Tsugio Kamoshida, Yokohama-shi, and Tsugio Akagawa, Tokyo-to, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Filed Dec. 20, 1965, Ser. No. 514,942
Claims priority, application Japan, Dec. 26, 1964, 39/73,384
U.S. Cl. 164—70 **10 Claims**
Int. Cl. B22d *31/00, 27/04;* **B28b** *11/12*

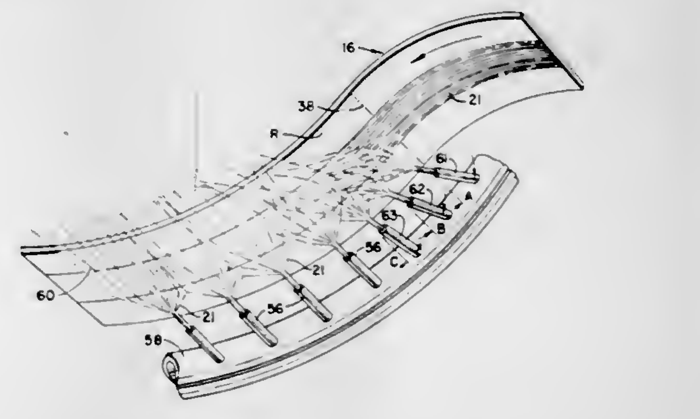


A method of casting large numbers of metal bodies which tend to crack during cooling, the bodies having a size of, for example, 20–50 mm. The molten metal from which the bodies are to be formed is poured into a mold wherein a row of the bodies are integrally cast with necks which extend between the bodies of the row with the ratio of the cross section of each neck to the cross section of each body being in the range of 0.25 to 0.90. The thus-cast metal is cooled in the ambient atmosphere and when the metal has solidified, but is still at a substantially high temperature, the casting is removed from the mold and cooled further. A row of such interconnected bodies is then broken at the necks of the row so as to achieve the separate bodies.

3,429,363

METHOD OF COOLING THE CASTING BELT IN A CONTINUOUS METAL CASTING MACHINE OF THE DRUM AND BELT TYPE

Robert William Hazelett, Winooski, Vt., and Richard Hazelett, Austin, Tex., assignors to Hazelett Strip-Casting Corporation, Winooski, Vt., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,566
U.S. Cl. 164—87 **4 Claims**
Int. Cl. B22d *11/06, 11/12*



Method of cooling the casting belt in a continuous metal casting machine of the drum and belt type in which the belt is bent into reverse curves so that it does not completely encircle the drum and thus the cast product can be led directly out of the machine. The coolant is flowed longitudinally at high speed along the concave portion of the rear face of the belt as the belt approaches the drum and is flowed transversely thereof at high speed along the convex portion where the belt curves around the drum. There is a transition provided between longitudinal and transverse flow.

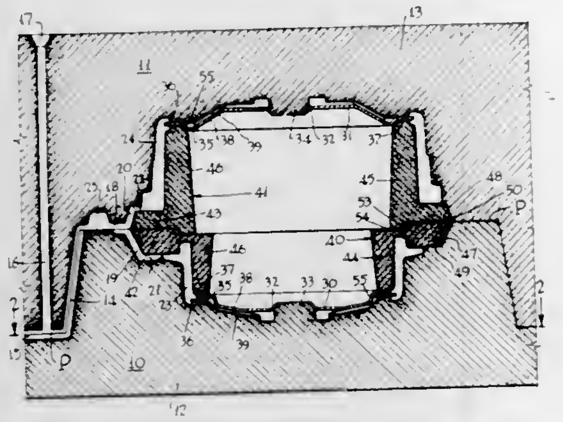
3,429,364

METHOD FOR CASTING SEPARATE ANNULAR CASTINGS

Dale Wilson Wonus, Grosse Pointe Woods, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1965, Ser. No. 503,597

U.S. Cl. 164—108 **6 Claims**
Int. Cl. B22d *19/00, 17/04;* **B28b** *7/28*



A method for simultaneously casting separate annular articles in a mold having one cavity in the cope and another in the drag. Positioning the drag core within the drag cavity and then positioning the cope core on the drag core by locating means and then accurately placing the cope over the cope core and in contact with the drag by utilizing locating and positioning means on the cope core and drag.

3,429,365

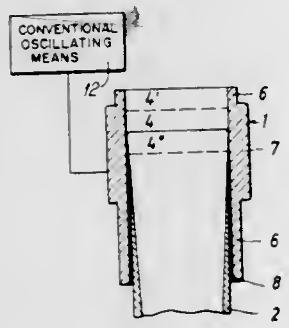
CONTINUOUS SLAB CASTING MOLD

Hans Schrewe, Duisburg-Ungelsheim, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany

Filed Dec. 28, 1965, Ser. No. 516,932

Claims priority, application Germany, Dec. 28, 1964, M 63,631

U.S. Cl. 164—273 **7 Claims**
Int. Cl. B22d *11/02, 11/12, 27/08*



An oscillating mold for continuous slab casting has throughout at least portions of the wide mold walls an increased heat resistance.

3,429,366

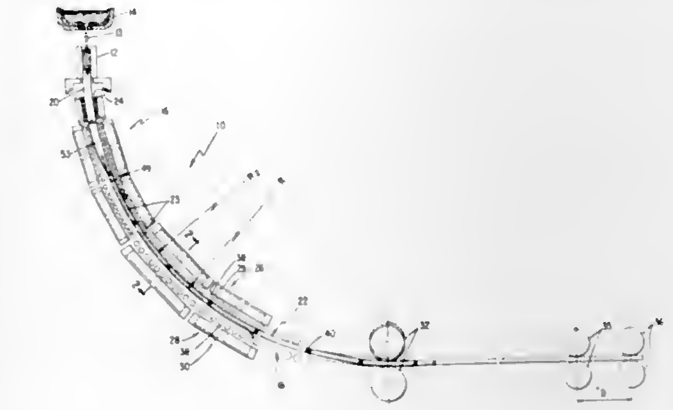
UNIVERSAL STARTING BAR

Robert W. Cruger, Springfield, and Anatol Michelson, Glenolden, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Nov. 22, 1966, Ser. No. 596,155

U.S. Cl. 164—274 **6 Claims**
Int. Cl. B22d *11/08, 11/06;* **B65g** *39/02*

The disclosure pertains to a roller apron and starting bar designed for use with a continuous casting mold. The roller apron may be either curved or straight and comprises inner and outer sections, at least one of which is movable relative to the other to accommodate different sizes of ingots to be cast. The starting bar comprises a head providing a temporary bottom for the mold to which the ingot is initially attached and a driver section detachably connected to the starting bar head for inserting and withdrawing it along the roller apron composed of a series of links having a thickness not greater than the minimum thickness of ingot, the driver section being guided entirely on one of the roller apron sections independently of the other section whereby only the starting bar head requires replacement when a different ingot size is cast.



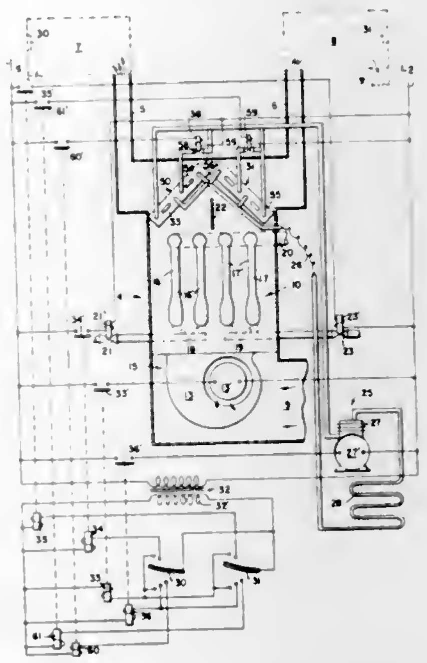
3,429,367

AIR CONDITIONING APPARATUS

William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 488,448

U.S. Cl. 165—26 **2 Claims**
Int. Cl. F25b *29/00;* **F24f** *3/00*



Air conditioning apparatus for a plurality of individual zones in which heating means heat one part of an air stream being supplied to one zone while tempering a second part of the air stream being supplied to a second zone. Cooling coils are provided which permit cooler air to be distributed to one zone than the air distributed to the second zone when the zones require cooling rather than heating.

3,429,368

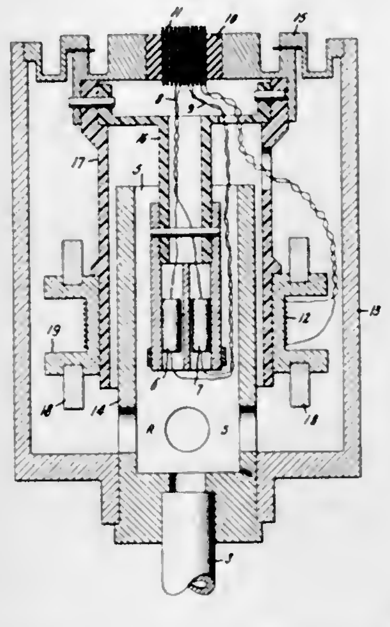
CRYOGENIC HEAT TRANSFER CONTROL SYSTEM

Theodor A. Buchhold, Schenectady, Loyd B. Nesbitt, Alplaus, and Karl F. Schoch, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 30, 1966, Ser. No. 606,330

U.S. Cl. 165—30 **8 Claims**
Int. Cl. F25b *37/00, 29/00*

The rate of heat transfer from a heat generating body to a cold body is controlled by varying the density of the gaseous medium through adsorption onto and evaporation from a material having a high surface area such as charcoal. Adsorption and evaporation of the gas is regulated by heating or allowing the adsorptive material to cool.



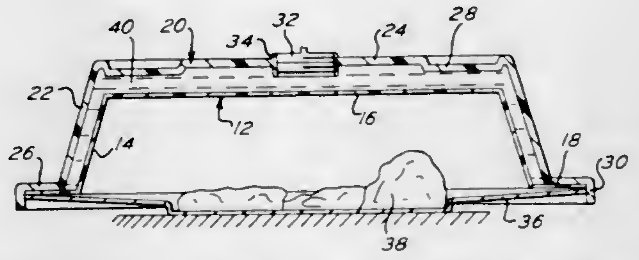
3,429,369

PLATTER COVER

Herbert A. Segal, Philadelphia, Pa., assignor to Samson Plastics, Inc., Cherry Hill, N.J., a corporation of New Jersey

Filed Mar. 14, 1967, Ser. No. 622,951

U.S. Cl. 165—47 **3 Claims**
Int. Cl. F24h *7/06*



A platter cover having spaced inner and outer walls defining a chamber for receiving heated liquids to maintain the temperature of food on a covered platter.

3,429,370

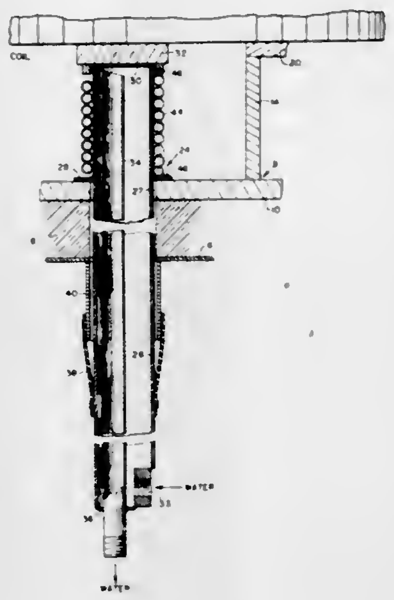
HEAT EXCHANGER

Calvin C. Blackman, 24272 W. Lake Road, Bay Village, Ohio 44140

Continuation-in-part of application Ser. No. 544,992, Apr. 25, 1966. This application Jan. 8, 1968, Ser. No. 696,255

U.S. Cl. 165—47 **13 Claims**
Int. Cl. F28d *7/02;* **F28f** *1/00;* **C21d** *1/06*

A heat exchange device particularly for use on the base of an annealing furnace. The heat exchanger incorporates telescoped fluid conducting tubes which are in conductive heat transfer relationship with either the coil or coil support plate of the furnace. The heat exchanger may be located in the gas passages of the base in which case heat dissipating means may be employed surrounding the outer tube which may take the form of a coiled spring held against the tube under tension.



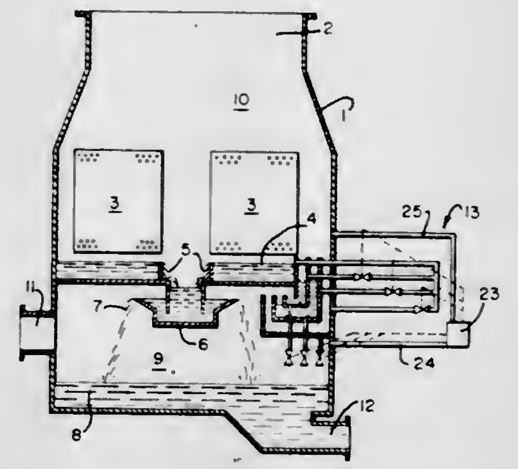
3,429,371

SURFACE CONDENSER

William E. Palmer and Leslie L. Forster, Easton, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 10, 1967, Ser. No. 674,221

U.S. Cl. 165—112 **9 Claims**
Int. Cl. F28b *9/10*



Condenser having means for an auxiliary steam input from a variable flow steam source for reheating of the condensate, and automatic means to accommodate for pressure fluctuations arising from the variances in the flow from the auxiliary input and variations in condensing pressure due to varying condenser loads and circulating water temperatures.

3,429,372

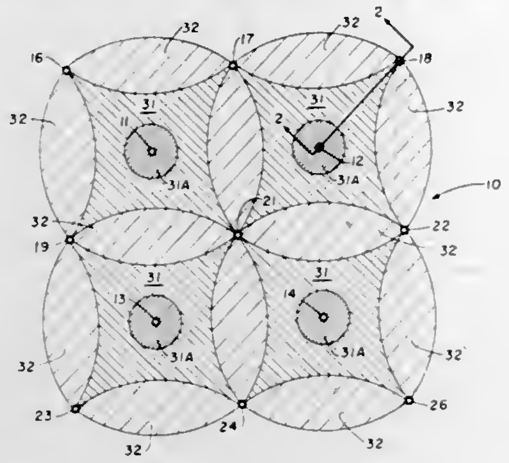
OIL RECOVERY METHOD EMPLOYING THICKENED WATER AND CROSSFLOODING

Carl Connally, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 15, 1967, Ser. No. 667,965

U.S. Cl. 166—245 **6 Claims**
Int. Cl. E21b *43/20*

This specification discloses: A waterflooding method for recovering oil from a subterranean formation which is practiced through a regular geometric well pattern. In the pattern, a plurality of peripheral wells are equidistantly spaced from one another with a central well located at their midpoint. In succession, amounts of flood water, thickened water, and additional flood water are injected into the formation, via the central well, until the first injected flood water, and then the thickened water, arrives at each of the peripheral wells. Any thickening agent can be used in the thickened water which provides it with a mobility no greater than the mobility of the oil in the



unflooded formation. Each injected water may be used in an amount about equal to 30 percent of the hydrocarbon pore volume of the water-swept formation. The water-displaced oil moves towards the peripheral wells from which the oil is produced. The central well may be closed in when undesired amounts of water are produced with oil from the peripheral wells. Food water is then injected, as a crossflooding, into the formation from alternate wells of the peripheral wells to displace oil towards the remaining peripheral wells from which the oil is produced.

3,429,373

METHOD AND COMPOSITION FOR STABILIZING INCOMPETENT OIL CONTAINING FORMATIONS

Bobby G. Harnsberger and Joy T. Payton, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 597,532, Nov. 29, 1966. This application Apr. 24, 1968, Ser. No. 723,935

U.S. Cl. 166—276 **12 Claims**

Int. Cl. E21b *43/02, 33/13;* **C04b** *7/00*

Method of treating an oil-containing incompetent formation to prevent the movement of unconsolidated sand particles in a well bore by forming a slurry of sand, cement and a sufficient amount of a petroleum oil fraction containing an oil wetting agent therein to oil wet the sand and cement particles, suspending the oil wet sand and cement particles in an aqueous carrier medium, injecting the aqueous suspension against the unconsolidated formation at a pressure effective to force the suspension into the unconsolidated formation, contacting the suspension with an aqueous surface active agent solution to water wet the cement particles, permitting the cement to set and form a permeable cement and recovering oil through the cement.

3,429,374

OIL WELL ELECTRICAL CABLE TENSIONING

Whetstine B. Pridy, Lakewood, Calif., assignor of one-third each to Harold Jordan, doing business as Jordan Rental & Service Company, and John M. Phillips, both of Long Beach, Calif.

Filed Aug. 21, 1967, Ser. No. 666,229

U.S. Cl. 166—65 **9 Claims**

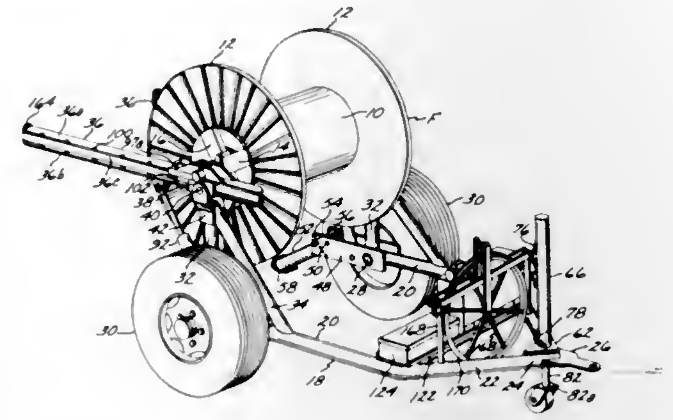
Int. Cl. E21b *41/00, 43/00;* **B66d** *1/50*

A portable device for:

(1) automatically winding electrical cable on a spool as sections of said cable are intermittently removed from banded positions on stands of tubing as the latter are pulled from a well;

(2) storing the cable after removal thereof from a well;

(3) maintaining a desired tension on the cable during the tubing pulling operation;



(4) maintaining a desired tension on the cable as it is unwound from the spool and rebanded to stands of tubing as the latter are lowered into the well; and

(5) braking the rotation of the spool as the cable is intermittently unwound therefrom.

3,429,375

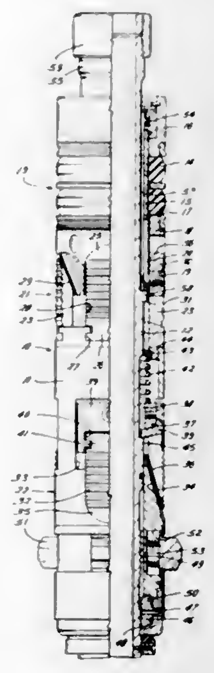
WELL TOOL WITH SELECTIVELY ENGAGED ANCHORING MEANS

Gene C. Craig, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Dec. 2, 1966, Ser. No. 598,846

U.S. Cl. 166—130 **13 Claims**

Int. Cl. E21b *23/04, 33/122, 33/129*



This application discloses a well tool adapted to be anchored in a well bore. More particularly, upper and lower slips and expanders are arranged on a movable body telescopically disposed in a housing in such a manner that longitudinal movement of the body relative to the housing will anchoringly engage one set of slips and position the other set of slips in readiness for anchoring engagement. This anchors the tool against movement in one longitudinal direction. Then, should the housing be moved in the opposite longitudinal direction, this other set of slips will immediately engage the casing to secure the tool against longitudinal movement in this opposite direction.

3,429,376

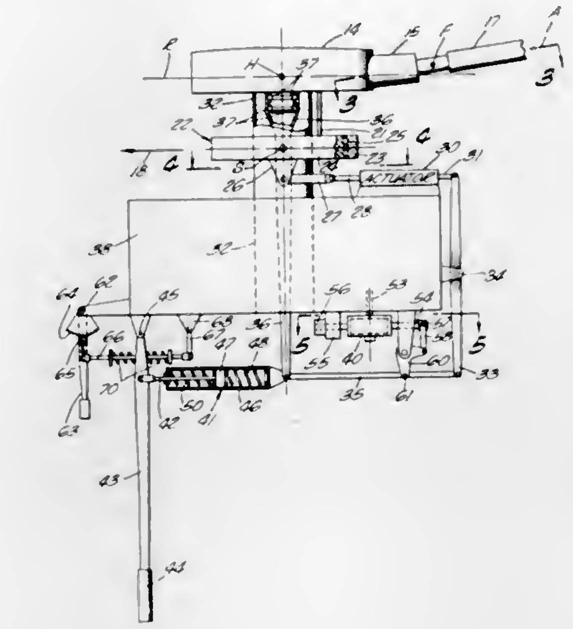
AUTOMATIC CONTROL SYSTEM FOR AIRCRAFT LIFTING ROTOR

Kurt H. Hohenemser, 2421 Remington Lane, St. Louis, Mo. 63144

Filed Oct. 18, 1966, Ser. No. 587,486

U.S. Cl. 170—160.25 **14 Claims**

Int. Cl. B64c *27/56, 27/66*



An automatic control system for aircraft, particularly helicopters and the like having rotary wings. The control system includes rotor tilting moment sensors which develop signals in proportion to the tilting moment on the rotor with respect to the airframe of the aircraft. Accordingly the effects of gusts or of maneuvers on the rotor tilting moments are automatically removed. The rotor tilting moment on the airframe is determined by the pilot's demand signal and not by extraneous causes. This automatic control system may be supplemented by conventional automatic controls using gyro sensors. Since the unstable characteristics of the lifting rotor are removed by the automatic control system of the invention, the remainder of the automatic control system may be made very simple.

3,429,377

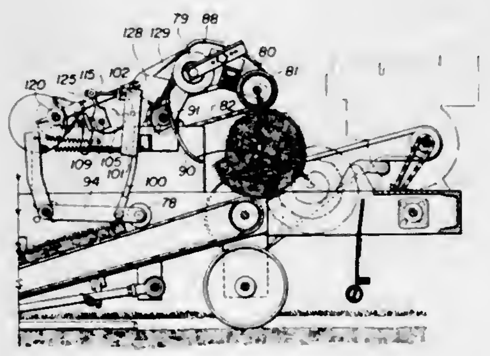
SOD HARVESTING APPARATUS

John F. Nunes, Jr., Rte. 1, Box 166, Patterson, Calif. 95363

Filed Mar. 5, 1965, Ser. No. 437,511

U.S. Cl. 172—19 **17 Claims**

Int. Cl. A01b *45/04*



A sod harvesting apparatus for mobilized pick-up of pre-cut sod lying in a field includes a ramp for engaging the underside of the sod and for moving the sod upwardly onto a conveyor. The conveyor draws the sod upwardly therealong to a roll forming station. The roll forming station tightly compacts the roll of sod and then detects the end of the roll whereupon the roll forming station ejects the roll rearwardly to the ground. The roll of sod is of opposite hand to the rotational movement of the wheels of the vehicle whereby the sod will not become unrolled on the ground. Additional means serve to preclude unrolling of the sod as it hits the ground. The pick-up ramp is guided by registering against the exposed edge of the next adjacent line of sod.

3,429,378

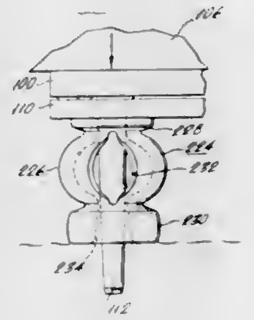
TURF-AERATING APPARATUS

Thomas C. Mascaro, West Point, Pa. 19486

Filed May 18, 1965, Ser. No. 456,691

U.S. Cl. 172—22 **2 Claims**

Int. Cl. A01b *45/02, 39/12*



A turf-aerating mechanism mounted on a wheeled carriage and including a pair of vertically spaced transverse crankshafts having a plurality of crank arms depending downwardly therefrom, a tine assembly on each crank arm including a plurality of hollow tines for punching and removing turf cores, a core chute on each tine assembly communicating with the hollow tines, and a removable collecting box adjacent the chutes for collecting turf cores punched by the tines. The invention further includes a coring tine assembly comprising upper and lower clamping plates between which the flanges of a plurality of coring tines are secured, the coring tines each having an overlying unitary cylindrical elastic turf detaining element which is vertically slotted to facilitate compression during the punching stroke of the tine.

3,429,379

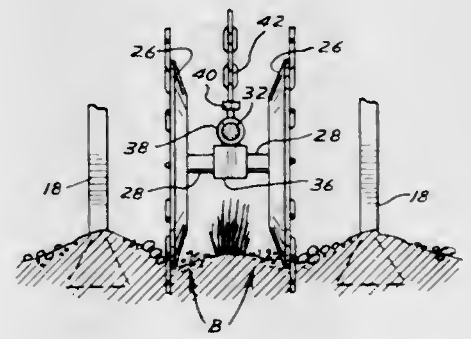
CULTIVATOR SHIELD

John A. Tebben, Clara City, Minn. 56222

Filed Oct. 20, 1965, Ser. No. 498,317

U.S. Cl. 172—510 **1 Claim**

Int. Cl. A01b *17/00*

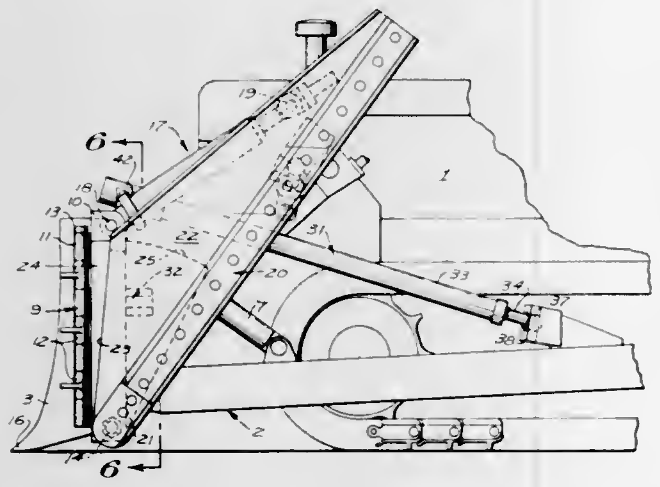


A pair of rotary dished discs are set to roll on each side of the row being cultivated. Angular tines are formed with one portion which is welded to the disc with which it is associated and has a second portion disposed radially.

The tines allow finer dirt to pass in front of the discs and then around the plants in the row during the cultivation.

3,429,380
FOLDING SLOPE GRADER FOR BULLDOZERS

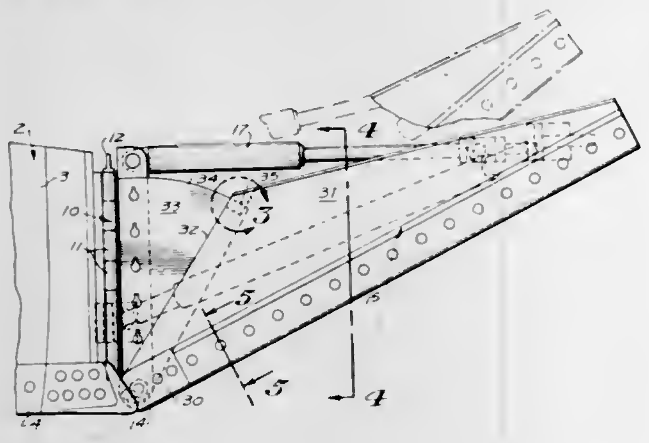
Richard L. Launder and Ernie L. Launder, Whittier, Calif. (both % H & L Tooth Company, P.O. Box 430, Montebello, Calif. 90640), and France D. Peveler, Downey, Calif.; said Peveler assignor to said Richard L. Launder and Ernie L. Launder
Filed Aug. 7, 1967, Ser. No. 658,878
U.S. Cl. 172—802 **3 Claims**
Int. Cl. E02f *3/76*



A slope grader arranged for attachment at one end of a bulldozer blade and moveable between a folded position along one side of a bulldozer, and a laterally directed extended position. The slope grader is also adjusted about a horizontal axis to change the angular position of the underside or scraping edge of the slope grader.

3,429,381
SLOPE GRADER FOR BULLDOZERS

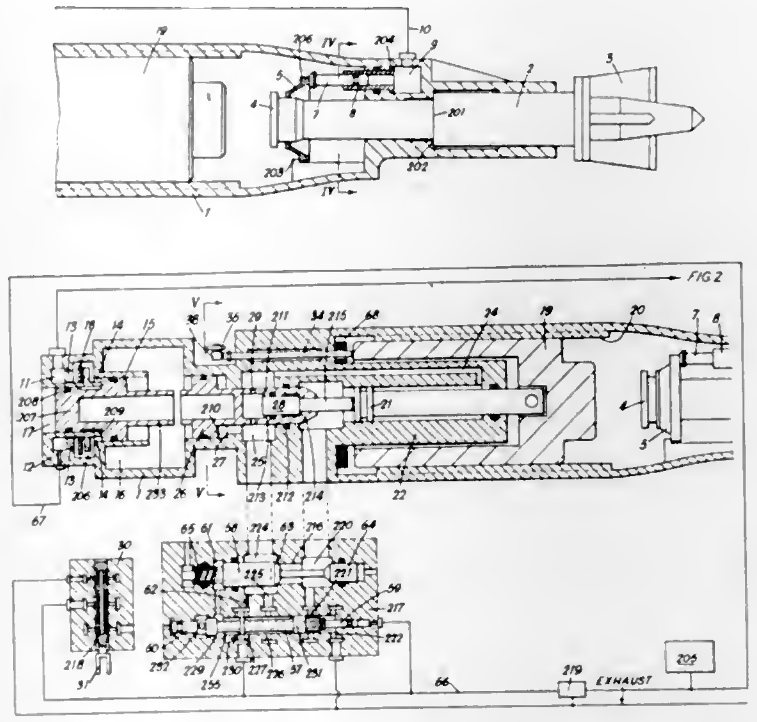
Richard L. Launder, Whittier, Calif. (% H. and L. Tooth Company, P.O. Box 338, Montebello, Calif. 90640), and France D. Peveler, Downey, Calif.; said Peveler assignor to said Launder
Filed Apr. 11, 1966, Ser. No. 541,829
U.S. Cl. 172—802 **4 Claims**
Int. Cl. E02f *3/80*



A slope grader which is provided with a triangular blade hinged about a vertical axis to one lateral end of a bulldozer blade and a slope grader blade is pivotally connected to the lower apex of the triangular blade, the slope grader blade being angularly adjustable and braced and the three blades presenting a continuous surface irrespective of the angular position of the slope grader blade.

3,429,382
DEVICES FOR APPLYING HAMMER BLOWS TO A BODY

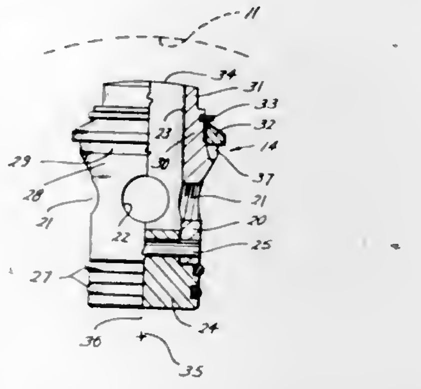
Horace Briden, 41 Aintree Road, Furnace Green, Crawley, Sussex, England
Filed July 31, 1967, Ser. No. 657,417
U.S. Cl. 173—119 **32 Claims**
Int. Cl. E21b *1/00;* **E21c** *3/22;* **B25d** *9/08*



A hydraulic breaker, including a hammer connected to a driving piston slidable in a cylinder and valve means which are changed over from a first state to a second state when the hammer has been retracted to a predetermined position and a predetermined quantity of energy has been stored by the compression of a quantity of gas in an accummulator cylinder, wherein when the valve means are in the first state they serve to admit hydraulic fluid to the cylinder containing the driving piston to act on one side of said piston and thus to retract the hammer, whereas when they are in the second state they serve to admit hydraulic fluid to the cylinder to act on the opposite side of the driving piston and thus to move the hammer in the direction necessary to apply impact forces to a tool.

3,429,383
CORE-SAMPLING APPARATUS

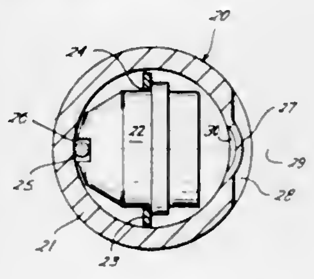
George H. Pardue, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Sept. 15, 1967, Ser. No. 667,918
U.S. Cl. 175—4 **7 Claims**
Int. Cl. E21b *49/06*



The particular embodiment described herein as illustrative of one form of the invention is a tubular core-taking bullet adapted to be propelled against the adjacent wall of a borehole from which a formation sample is desired. To enhance the penetration of the bullet as well as to minimize the effects of the impact upon the bullet, and forward cutting edge of the bullet is formed to be substantially complementary to the curvature of the borehole wall so all portions of the cutting edge of the bullet will strike the borehole wall simultaneously.

3,429,384
PERFORATING APPARATUS

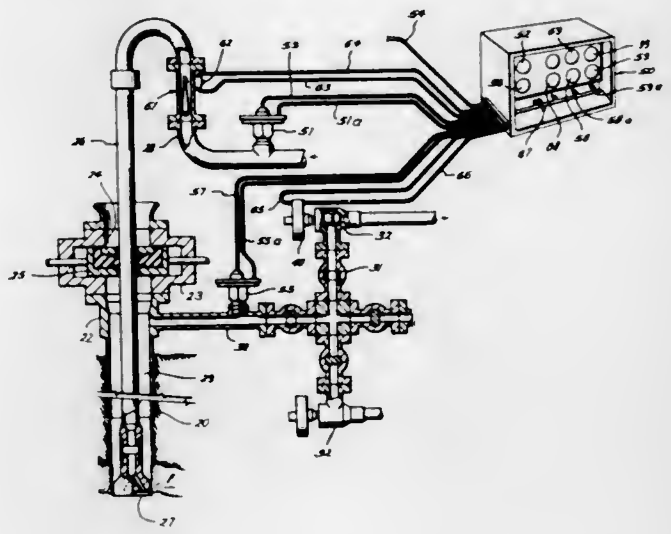
James B. Shore, Friendswood, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 9, 1967, Ser. No. 673,665
U.S. Cl. 175—4.6 **8 Claims**
Int. Cl. E21b *43/116;* **E21c** *19/00*



The particular embodiment described herein is illustrative of one form of the invention is an enclosed tubular carrier for shaped charges. By forming an outwardly projecting dimple that is within an inwardly directed recess in the outer surface of the carrier and circumscribes the perforating axis of a shaped charge facing the dimpled recess, a greater stand-off distance is obtained to improve the performance of the shaped charge without forming an outwardly projecting burr that might cause the carrier to become stuck in small-diameter tubing.

3,429,385
APPARATUS FOR CONTROLLING THE PRESSURE IN A WELL

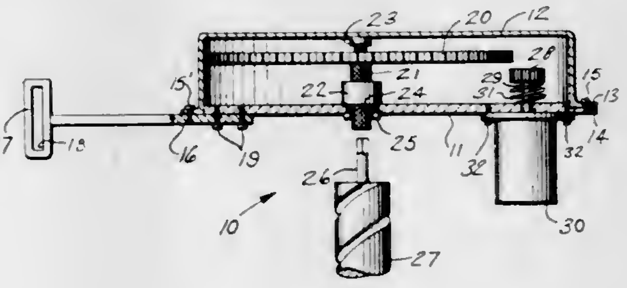
Marvin R. Jones and Benton F. Baugh, Houston, Tex., assignors to Cameron Iron Works, Inc., Houston, Tex.
Filed Dec. 30, 1966, Ser. No. 606,312
U.S. Cl. 175—25 **10 Claims**
Int. Cl. E21b *3/12, 21/00, 47/06*



A choke is connected to an outlet from the upper end of the annulus between a well bore penetrating an earth formation containing fluid under pressure and a drill string extending into the well bore. When a kick is encountered during drilling of the well, a blowout preventer at the wellhead about the outlet may be closed to divert drilling fluid circulating through the drill string and annulus through the choke. The choke is responsive to a bias and a control signal for regulating the pressure of the drilling fluid in order to maintain the differential between the bottom hole pressure of such drilling fluid and the pressure of the formation fluid at a predetermined value. Means are provided for producing a control signal and a bias which cooperate to cause the choke to respectively increase or decrease the formation fluid pressure within the outlet automatically in response to a deviation, negative or positive, from said predetermined pressure differential, whereby the outlet pressure approaches a value at which such deviation is zero. The bias is a signal representing the pressure of the drilling fluid within a standpipe connected to the upper end of the drill string, and the control signal represents the sum of the circulating pressure loss within the drill string, the static pressure of the drilling fluid in such standpipe, and the predetermined pressure differential. The signal producing means includes a means for sensing the product of the density and the square of the rate of circulation of drilling fluid within the upper end of the drill string, which is useful in computing the circulating pressure loss within such string.

3,429,386
ELECTRIC POST-HOLE DIGGER

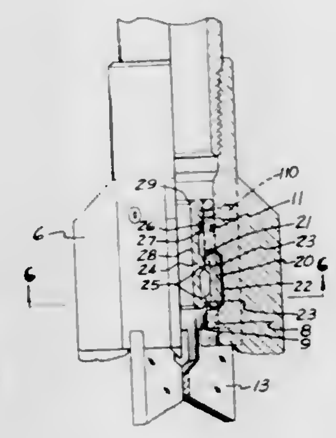
Harry E. Secrist, 1821 S. High St. 43207, and Joseph J. Snyder, 2994 Fremont St. 43204, both of Columbus, Ohio
Filed Feb. 27, 1967, Ser. No. 618,944
U.S. Cl. 175—170 **5 Claims**
Int. Cl. E21c *1/02, 1/14*



This invention relates to powered tools and more particularly to a portable hand-held electric post hole digger, which employs large and small gears, and an electric motor.

3,429,387
PUMP OUT DRILL BIT

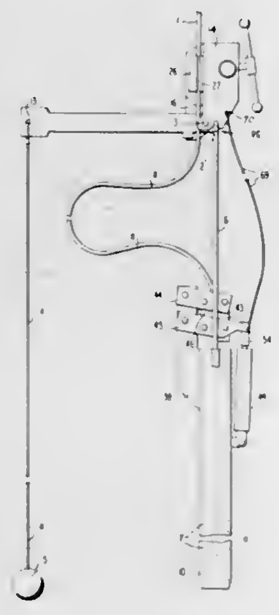
Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex. 77024
Filed Mar. 6, 1967, Ser. No. 620,807
U.S. Cl. 175—237 **9 Claims**
Int. Cl. E21b *9/22, 23/04*



A two-part well drilling bit comprising a main bit having a tubular body carrying cutters, and a pilot bit carrying cutters and having a tubular shank releasably secured in the bore of the main bit body and arranged for expulsion therefrom by fluid pressure exerted through the drill string, whereby to provide a full bore opening through the main bit to permit other well tools to be passed through the drill string and the bit for operation in the well below the bit.

3,429,388
SOLID MATERIAL SAMPLER PARTICULARLY FOR UNDERWATER SOIL SAMPLING

Wladimir Nesteroff, Yves Lancelot, and Bernard David, Paris, France, assignors to Etablissement Public: Centre National de la Recherche Scientifique, Paris, France, a corporation of France
Filed Jan. 26, 1967, Ser. No. 611,929
U.S. Cl. 175—245 **12 Claims**
Int. Cl. E21b *9/20, 7/12;* **G01n** *1/08*

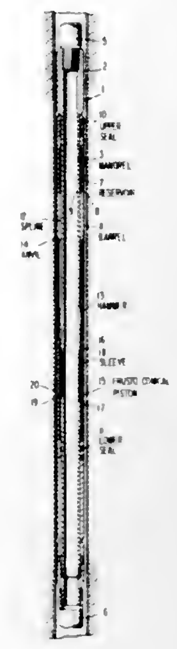


A device for sampling solid material includes a vertical core barrel having an open lower end adapted to penetrate material to be sampled, and a piston in the barrel. The barrel is suspended releasably by means including a lowering cable portion and a clamping device comprising two relatively movable jaws between which the cable portion extends. Clamping of the cable by the jaws is effected by a screw threadably mounted in a member in turn mounted for pivotal movement about an axis transverse to the cable portion extending between the jaws. The screw is positionable at an inclination to the jaws by pivoting of said member, and the weight of the barrel and the friction of the cable in contact with the jaws imposes an additional clamping force on the jaws. The barrel is released from its suspension and dropped to penetrate the solid material. A time-delay device operates a predetermined time after penetration to clamp the barrel to a lifting cable portion which is connected to the piston so that when the sampling device is lifted there will be no relative movement between the barrel and the piston therein.

3,429,389
PRESSURE MAINTENANCE MECHANISM FOR HYDRAULIC JAR TOOL AND MODE OF OPERATION THEREOF

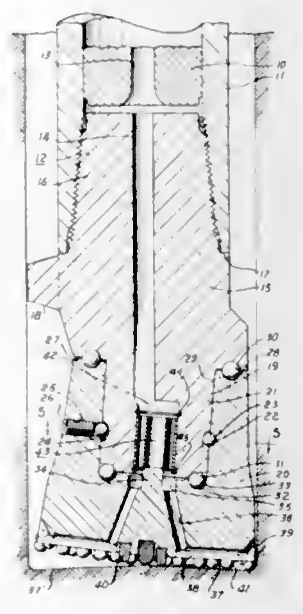
Burchus Q. Barrington, % Halliburton Company, P.O. Drawer 1431, Duncan, Okla. 73533
Filed Dec. 14, 1967, Ser. No. 690,673
U.S. Cl. 175—297 **8 Claims**
Int. Cl. E21b *1/10*

A jar tool including a mandrel telescopically mounted within a barrel and a fluid reservoir interposed between the mandrel and barrel. A sleeve, slidably mounted on the mandrel within the reservoir, serves to initially provide a seal between the mandrel and the barrel as a relatively low pressure is developed within the reservoir. As pressure within the reservoir is intensified to a high level, the sleeve separates from the mandrel to provide a restricted flow passage enabling movement of the mandrel to proceed on a highly impeded basis.



3,429,390
EARTH-DRILLING BITS

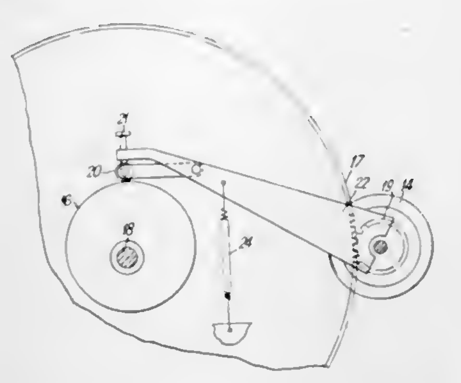
Fred L. Bennett, Clarksville, Ark., assignor to Supercussion Drills, Inc., San Antonio, Tex., a corporation of Texas
Filed May 19, 1967, Ser. No. 639,792
U.S. Cl. 175—343 **10 Claims**
Int. Cl. E21b *9/08;* **E21c** *13/02*



Earth-drilling bits having flat conical drilling faces inclined at an angle to the axis of the drill hole with nontracking drilling elements, means for holding only a portion of the periphery of the bit against the wall of the drill hole, having a unique gyratory movement and unique bearing and sealing means and being particularly adapted for use with percussion and turbine types of drilling rigs.

3,429,391
NONLINEAR COMPENSATING DEVICE FOR MAKING COMPATIBLE A TRANSDUCER AND ITS INTERPRETIVE INSTRUMENT

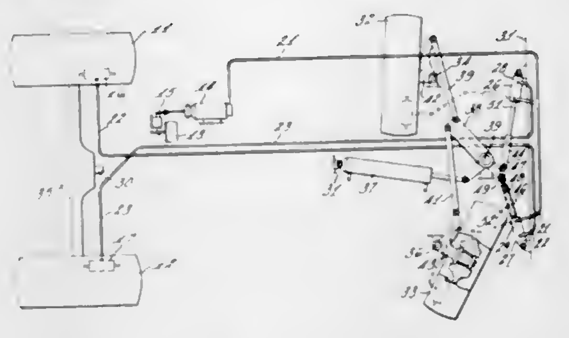
Campbell Dean Boadle, Pentwyn, Ponthir Road, Caerleon, Monmouthshire, Wales
Filed Dec. 1, 1966, Ser. No. 598,379
Claims priority, application Great Britain, Dec. 3, 1965, 514,540/65
U.S. Cl. 177—210 **9 Claims**
Int. Cl. G01g *3/14*



A weighing platform or vessel, a transducer or transducers, means for applying a load on the platform or vessel to the transducer or transducers so as to cause a signal dependent upon the load to be transmitted thereby, a measuring and/or indicating instrument for receiving the signal, and means for continuously varying the "characteristic" of the instrument so that it conforms to that of the transducer, which means comprise a potentiometer having means whereby the relative rotation of the potentiometer rotor and body may be varied.

3,429,392
AUTOMATIC BRAKE ARRANGEMENT FOR SHORT TURN RADIUS STEERING

Neil J. Ryskamp, Markham, Ill., assignor to Allis Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 5, 1967, Ser. No. 643,640
U.S. Cl. 180—6.3 **7 Claims**
Int. Cl. B62d *15/00*

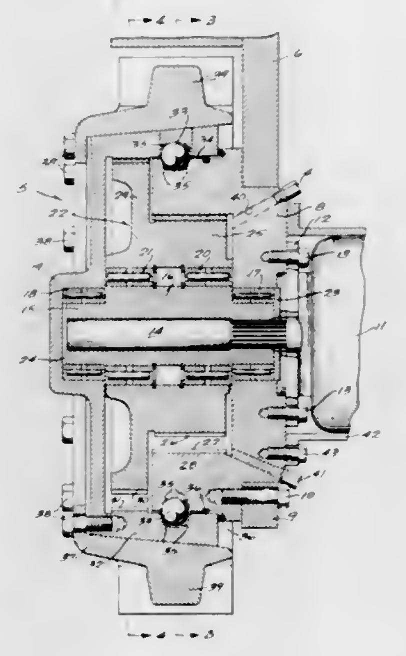


Herein illustrated and described is an automatic braking arrangement to assist in short turn radius steering of a vehicle. When the steerable wheels of the vehicle are steered to make a minimum radius turn, the brake on the nonsteered wheel on the inside of the turn is automatically applied. The automatic braking system operates as an integral part of the regular braking system without interference with the conventional braking of the vehicle.

3,429,393
DRIVE MECHANISM

Ervin H. Lorence, Milwaukee, Wis., assignor to Lorence Manufacturing Corp., a corporation of Wisconsin
Filed Dec. 8, 1966, Ser. No. 600,117
U.S. Cl. 180—9.62 **7 Claims**
Int. Cl. B62d *55/08;* **F16h** *1/28*

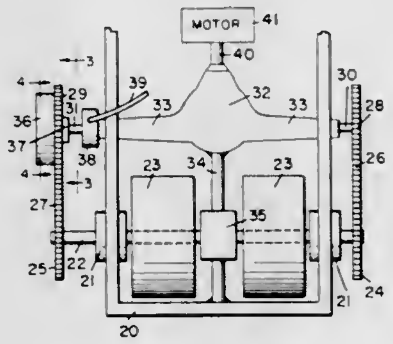
A drive mechanism particularly adapted for driving the endless treads of construction equipment. A hydraulic motor is carried by the tread frame and the drive shaft of the motor carries an eccentric journalled for rotation within the central opening in a floating gear unit. The gear unit is provided with an inner gear which meshes with a fixed gear ring connected to the tread frame and the inner gear has a lesser number of teeth than the fixed gear ring. The floating gear unit also includes an outer gear which meshes with the internal teeth of a second gear ring connected to the drive wheel for the endless tread. The second gear ring has a greater number of teeth than the mating outer gear and the difference in the number of teeth between the outer gear and the second gear ring is the same as the difference in the number of teeth between the inner gear and the fixed gear ring.



The inner and outer gears rotate together at the same speed and the outer gear ring, which is connected to the drive wheel for the tread, is moved by a wedging action in the opposite direction and at a slower rate of speed than the outer gear to provide a speed reduction.

3,429,394
VEHICULAR VARIABLE SPEED DRIVE SYSTEM

James F. Jacono, 4168 Oliver Lane, Boothwyn, Pa. 19061
Filed Mar. 9, 1966, Ser. No. 533,083
U.S. Cl. 180—70 **12 Claims**
Int. Cl. B60k *17/06, 23/04;* **F16h** *57/10*

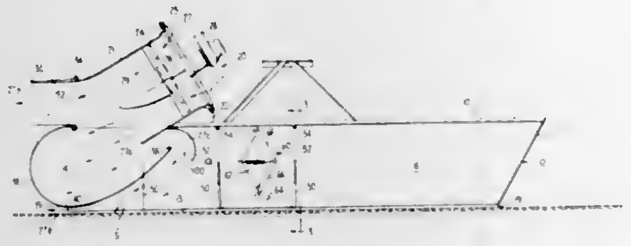


An automotive power drive device utilizing a differential gear train to achieve variable speed at one output shaft from a given input shaft speed through control of the rotational speed of the second output shaft by suitable means such as a shaft brake. In one form, the second output shaft is reduced in speed to a complete stop from the same speed as the first output shaft to thereby double the speed of the latter. In another form, the second output shaft is controllably reduced as desired from its freerunning unloaded speed to a limiting locked condition to provide a continuous speed increase at the first output shaft in inverse proportion to the speed decrease of the second shaft, this form also including a servo loop to prevent stalling of the input shaft drive system under load.

3,429,395

AIR-CUSHION VEHICLE WITH FLEXIBLE SKIRT

Melville W. Beardsley, 40 Windward Drive, Severna Park, Md. 21146
Filed Feb. 3, 1966, Ser. No. 524,764
U.S. Cl. 180—117 **12 Claims**
Int. Cl. B60v *1/00, 1/16*

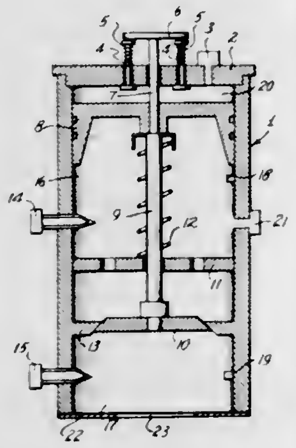


An air-cushion vehicle including a flexible skirt depending downwardly from the vehicle deck to define front and rear plenum chambers. For propelling the vehicle as well as supplying air to the plenum chambers, a fan and duct system is installed on the deck. The rear plenum is formed in part by a flexible rear skirt which extends downwardly at the rear of the vehicle then inwardly under the vehicle and finally upwardly towards the deck with the lowermost portion of the rear skirt being spaced slightly above the lower edges of the skirt portions on opposite sides of the vehicle. In use the skirt portions on opposite sides of the vehicle are held down in generally vertical disposition by a constraining mechanism including a biasing spring.

3,429,396

PROCESS FOR THE PRODUCTION OF MACHINE-MADE WAVES AND APPARATUS FOR PRACTICING THIS PROCESS

Pierre Jenner, Léon Sayous, and Rémi Larrieu, Pau, France, assignors to Societe Anonyme dite: Societe Nationale des Petroles D'Aquitaine, Courbevoie, France, a corporation of France
Filed Aug. 4, 1967, Ser. No. 658,569
Claims priority, application France, Aug. 4, 1966, 72,095
U.S. Cl. 181—.5 **9 Claims**
Int. Cl. G01v *1/00;* **G10k** *11/00, 9/00*

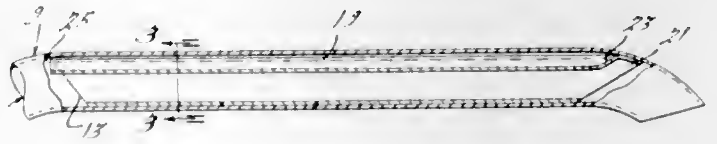


Seismic waves are produced in a chamber divided by a movable wall into a normally closed compartment and a compartment open to the exterior environment by injecting under pressure into both compartments a combustion supporting gas and a predetermined quantity of combustible fluid while the movable wall is closed, and then igniting the mixture in the compartment open to the exterior environment a fraction of a second before opening the movable wall for placing the two compartments in communication so that the combustible mixture in the normally closed compartment is ignited by the combustion taking place in the compartment open to the environment. The ignition of the two combustible mixtures in rapid succession produces the desired seismic wave. The movable wall is actuated by compressed air introduced into a chamber behind a piston operably connected with the movable wall, the compressed air being vented from the chamber through vent valves opened by a member carried by the piston.

3,429,397

LAMINATED CONDUIT AND ACOUSTIC SILENCER

David A. Case, Michigan Center, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,578
U.S. Cl. 181—48 **3 Claims**
Int. Cl. F01n *7/08*

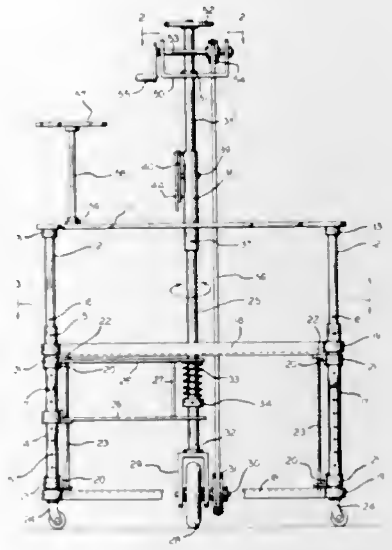


A tuning chamber is disposed inside of an exhaust pipe and/or tailpipe and may be in the form of a channel indented in the inner layer of a two layer pipe or a separate tube inserted in the pipe.

3,429,398

ADJUSTABLE MOVABLE SCAFFOLD

Kent R. Reynolds, 1922 W. State St. 53233, and Robert L. Payne, 6010 N. 113th St. 53225, both of Milwaukee, Wis.
Filed Sept. 20, 1967, Ser. No. 669,099
U.S. Cl. 182—13 **4 Claims**
Int. Cl. E04g *1/34, 1/18*

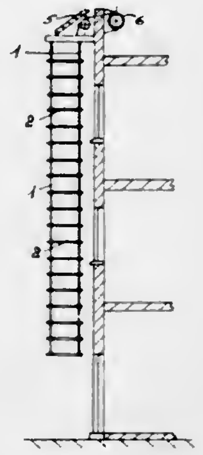


In a platform that is mounted for vertical adjustment with relation to roller casters that the device rests upon. The platform can be adjusted vertically as well as it can be moved. A vertical steering and driving assembly extends from the ground upward through an opening in the platform so that the scaffold can be driven and steered from the platform without the necessity of dismounting from said platform.

3,429,399

FLEXIBLE LADDER RENDERED RIGID BY USE

Andre E. Kruth, 18 Rue de Rome, Verviers, Belgium
Filed Feb. 6, 1967, Ser. No. 618,260
Claims priority, application Belgium, Feb. 9, 1966, 676,278
U.S. Cl. 182—196 **4 Claims**
Int. Cl. E06c *9/14, 7/08, 7/50*

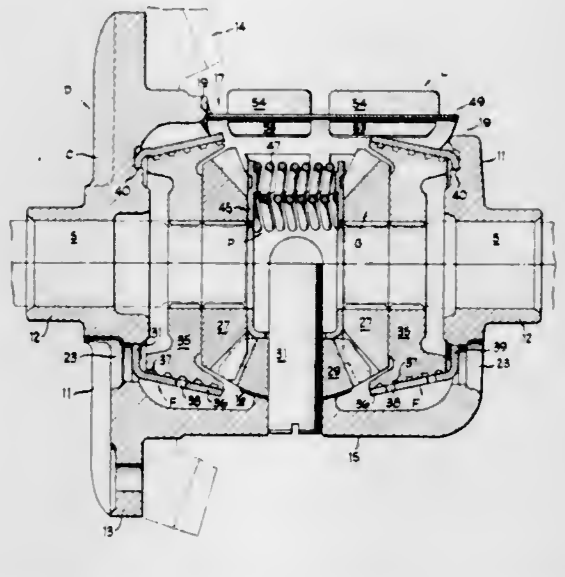


A flexible and foldable ladder rendered rigid by use, consisting subsantially of three or more cables joined together by ladder rungs in the form of a quadrilateral, one side of which is folded inwards, forming a loop which substitutes the rung proper. The crosspieces of cable are arranged outside the cable. Platforms are arranged alternately to the right and left and a detachable base plate and a device for folding and unfolding the ladder is also provided.

3,429,400

DIFFERENTIAL MECHANISM

Jack F. Engle and William G. Jeakle, Auburn, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 2, 1966, Ser. No. 598,825
U.S. Cl. 184—11 **11 Claims**
Int. Cl. F01m *9/06;* **F16n** *7/26;* **F16h** *1/44*

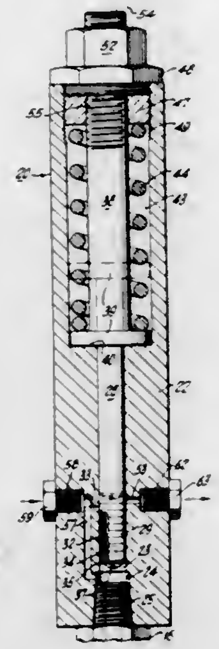


A limited slip differential mechanism including a lubrication delivery arrangement connected to the differential casing in overlying relation to a side port opening. The lubrication delivery arrangement includes at least one aperture formed therein and a lubricant scoop adjacent the aperture extending outwardly of the casing.

3,429,401

PENETRATING-FLUID INJECTOR

Charles D. Johnson, Port Arthur, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1966, Ser. No. 576,155
U.S. Cl. 184—45 **1 Claim**
Int. Cl. F16n *11/04, 17/00;* **F16j** *15/56*



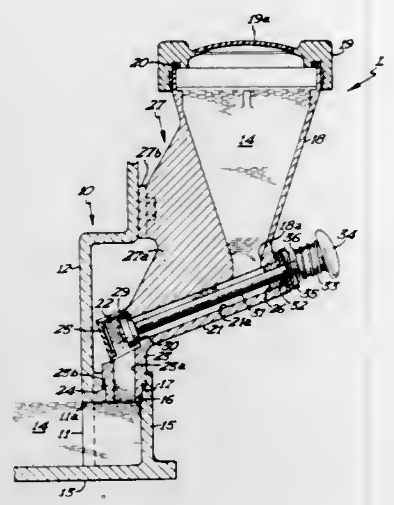
1. A self acting high pressure injector for use in freeing valves and the like having a lubrication fitting thereon, comprising
a high strength cylindrical body having a coaxial hollow cylindrical chamber therein for receiving penetrating fluid,
a pipe-threaded socket at one end of said body and coaxial with and openly connected to said chamber,
a piston with seal rings integrally supported on and located at one end of a cylindrical plunger,
said plunger being located coaxially within said body and extending out the other end thereof from said socket,
a stop collar integral with said plunger and limiting the travel of said piston within said chamber,
a high force coil spring surrounding said plunger and contacting said stop collar at one end of said spring,
the other end of said spring being held in compression by a bushing attached to the other end of said body and surrounding said plunger,
a nut threadedly engaging the end of said plunger that extends out said other end of said body,
said plunger being threaded a predetermined distance to permit retraction of said piston for filling said chamber,
a transverse groove in said plunger at the end cooperating with said nut in order to permit holding said plunger against rotation relative to said nut,
a passage connected with the socket end of said chamber for filling same,
a vent passage connected with the closed end of said chamber, and
plug means for closing both said last named passages after said chamber has been filled.

3,429,402

LUBRICATOR

Kenneth N. Hasenbank, Minneapolis, Minn., assignor to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 7, 1965, Ser. No. 493,812
U.S. Cl. 184—103 **3 Claims**
Int. Cl. F01m *11/12*

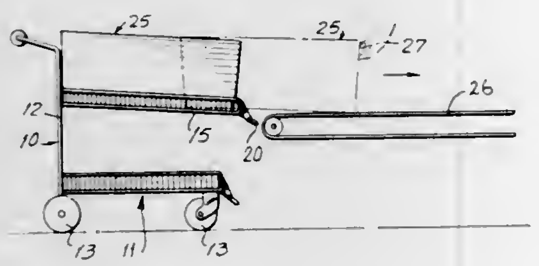
A reserve lubricating system for engine crankcases and the like involving an air tight lubricant reservoir, a passage between the reservoir and the crankcase for the passage of air from the crankcase to the reservoir and the passage of lubricant from the reservoir to the crankcase



when the lubricant in the crankcase is below a predetermined level, and a normally closed valve preventing unintentional passage of air and lubricant between the reservoir and crankcase.

3,429,403
ARTICLE-HANDLING APPARATUS

Leon D. Drechsler, Lawrence Lane, Snedens Landing, Palisades, N.Y. 10964, and Fred S. Zandell, 207 E. 74th St., New York, N.Y. 10021
Filed Aug. 10, 1966, Ser. No. 571,474
U.S. Cl. 186—1 **3 Claims**
Int. Cl. E04h *3/04;* **B60p** *1/52;* **B62b** *3/04*

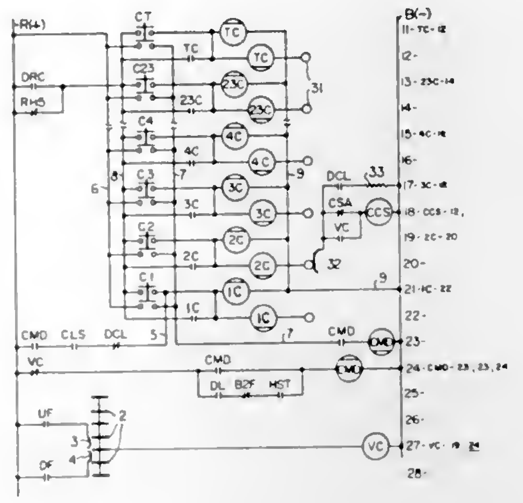


This invention concerns itself essentially with an article-handling apparatus comprising a wheeled cart having a support for a tote box, said support comprising spaced rollers, the cart further having a gate at its front end which may be opened to permit transfer of the tote box from the support onto a counter top or conveyor belt.

3,429,404
ELEVATOR CONTROL HAVING AUTOMATIC RESET OF CAR TRAVEL

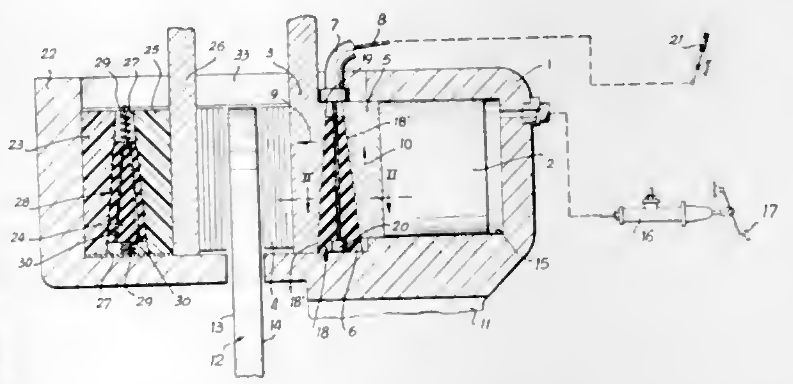
Paul F. De Lamater, Toledo, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed July 15, 1966, Ser. No. 565,553
U.S. Cl. 187—29 **11 Claims**
Int. Cl. B66b *1/00, 1/36*

1. An elevator control for a car serving a plurality of landings including a preference landing comprising, car call registering means for registering car calls from within said car for landings served by the car, hall call registering means for registering hall calls by prospective passengers from the landings served by the car, means responsive to said hall call means for making said car accessible to prospective passengers, means for setting said car to run to said preference landing in response to said means for making said car accessible to prospective passengers, and means responsive to the operation of a car call registration means subsequent to the operation of said means for making said car accessible to prospective passengers for inhibiting said means setting said car to run to said preference landing.



3,429,405
DISK-BRAKE AND ACTUATING MEANS THEREFOR

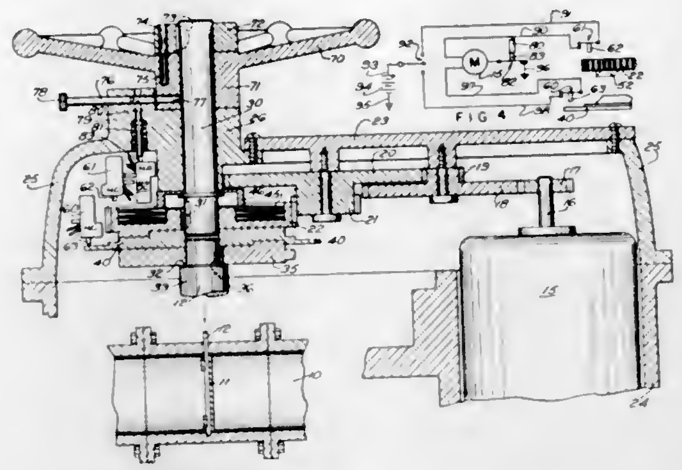
Heinz Frigger, Langen-Oberlinden, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik, KG, Frankfurt am Main, Germany, a corporation of Germany
Filed June 8, 1967, Ser. No. 644,589
Claims priority, application Germany, June 29, 1966, T 31,478
U.S. Cl. 188—73 **8 Claims**
Int. Cl. F16d *55/00, 65/14, 65/38*



A disk-brake assembly having a brake yoke, an actuating member such as a piston mounted in the yoke, and a brakeshoe urged by the actuating member against a brake disk which is rotatable relatively to the support, the assembly having between the actuating member and the backing plate of the brakeshoe a vibration damping, heat-insulating body which simultaneously serves as a member for urging the brakeshoe against the disk for emergency-brake, locking-brake and parking-brake purposes or as a self-adjusting means compensating for brake wear. The body, which may be a wedge shiftable by a spring or, preferably, a remotely controlled Bowden cable, is composed of a synthetic resin or elastomer of an elastically compressible character, preferably neoprene, polytetrafluoroethylene, polyurethane or superpolyamide, and is reinforced by a network of steel wires or cables while the parts co-operating therewith are provided with graphite-containing lubrication channels.

3,429,406
TORQUE DECLUTCHING AND SWITCH MECHANISM

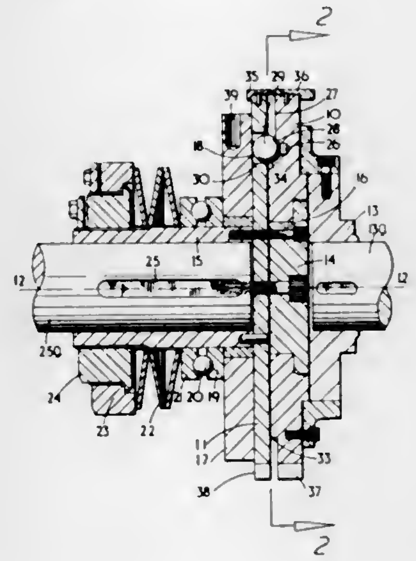
Francis H. Cary, North Scituate, R.I., assignor, by mesne assignments, to General Signal Corporation
Filed July 26, 1967, Ser. No. 656,144
U.S. Cl. 192—.034 **3 Claims**
Int. Cl. F16d *43/22, 47/00, 23/00*



A clutching mechanism having a plurality of plates mounted on a common axis and relatively movable axially of each other and held together by a spring means for clutch operation but movable axially when the torque exceeds the spring pressure holding the plates together for a declutching action. When declutching takes place, switches are provided actuated by the movement of the plates in their declutching action to stop the motor which drives the clutch. The arrangement is such that declutching will occur in either direction of rotation as well as selective switch actuation.

3,429,407
OVERLOAD CLUTCHES

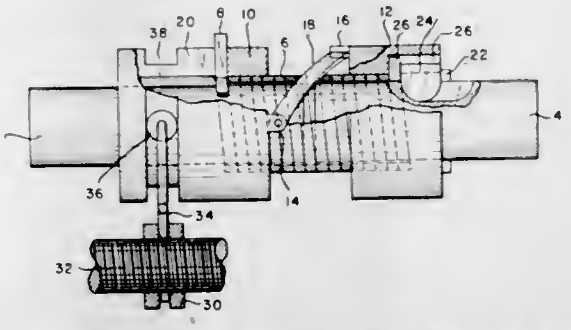
Olaf J. B. Orwin, Birmingham, and David J. Fortune, Bath, England, assignors to Fisholow Products, Limited, Tipton, England, a British company
Filed Dec. 29, 1966, Ser. No. 605,735
Claims priority, application Great Britain, Jan. 1, 1966, 3/66
U.S. Cl. 192—56 **2 Claims**
Int. Cl. F16d *23/00, 7/02, 43/20*



Driving and driven clutch members having a plurality of torque transmitting balls interposed therebetween. One member is provided with torque transmitting openings to receive the balls which are movably disposed in oblique slots formed in the other member. The member with the openings is also provided with cam lobes for moving the balls outwardly in the slots of the slotted member, the balls in the slots engaging a thrust plate which is juxtaposed to and resiliently biased against the slotted member.

3,429,408
ACTUATOR SLEEVES FOR SPRING CLUTCH

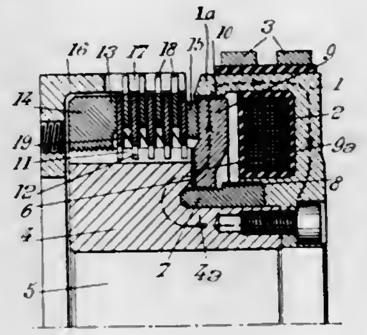
James H. Maker, Bristol, Conn., assignor to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware
Filed Apr. 25, 1967, Ser. No. 633,545
U.S. Cl. 192—81 **6 Claims**
Int. Cl. F16d *11/06, 13/04, 19/00*



Actuator for a clutch of the type in which the ends of a helical spring overlap the aligned ends of drive and driven shafts, the actuator comprising two sleeves which, respectively, overlap the two ends of the helical clutch spring, one actuator sleeve being fixed to the drive or driven shaft which it surrounds, and the other being mounted for axial or circumferential movement with respect to its shaft but being connected to the spring end which it surrounds. The adjacent, spaced ends of the actuator sleeves are connected by a strut, the ends of which are circumferentially displaced with respect to each other whereby axial movement of the movable actuator sleeve with respect to the fixed actuator sleeve produces circumferential movement of the movable actuator sleeve and its connected spring end, thereby connecting or disconnecting that spring from its shaft and drivingly connecting or disconnecting the shafts.

3,429,409
APPARATUS OF THE ELECTROMAGNETIC TYPE, INCLUDING FRICTION DISCS, SUCH AS CLUTCHES AND BRAKES

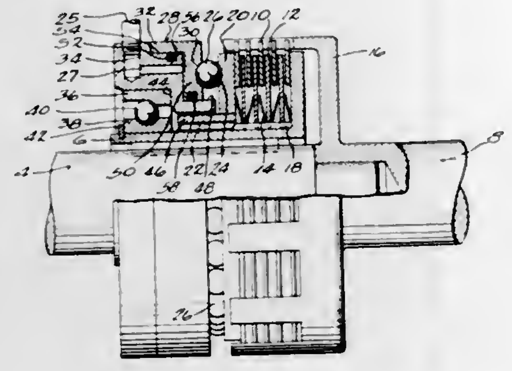
Jean Leblanc, Lyon, France, assignor to Societe Industrielle Generale de Mecanique Appliquee (S.I.G.M.A.), Paris, France
Filed Sept. 9, 1966, Ser. No. 578,237
Claims priority, application France, Sept. 10, 1965, 31,091
U.S. Cl. 192—84 **7 Claims**
Int. Cl. F16d *27/02*



The apparatus comprises an electromagnet having a yoke surrounding a winding. An axially movable armature, having a single transverse annular pole face located opposite to a corresponding pole face formed on a pole piece extending the yoke, moves axially away from the electromagnet when the electromagnet is energized, thus compressing two sets of friction discs against an annular abutment. In this manner a torque is transmitted between a shaft which is fixed with respect to one of these sets of discs, and a shaft which is fixed with respect to the other set of discs.

3,429,410
CLUTCH WITH NON-ROTATABLE FLUID MOTOR

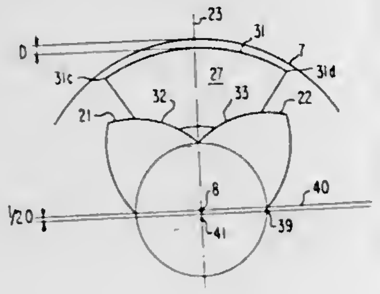
Quinten A. Hansen, 4338 Hy 38, Franksville, Wis. 53126
Filed Oct. 31, 1967, Ser. No. 679,465
U.S. Cl. 192—85 **5 Claims**
Int. Cl. F16d *25/00, 19/00, 13/60*



Clutch disks, whereof at least one is connected to a rotor, are normally spring disengaged and can be engaged by axial thrust of a cylinder which is telescopically extensible from a fixed piston. As shown, the fixed piston has a bearing on the said rotor and the axially extensible cylinder has a thrust bearing between it and a clutch pressure plate which is splined to the rotor.

3,429,411
CENTRIFUGAL CLUTCH

Harry I. Hazzard, Los Angeles, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed June 5, 1967, Ser. No. 643,671
U.S. Cl. 192—105 **4 Claims**
Int. Cl. F16d *23/10, 43/24, 11/06*

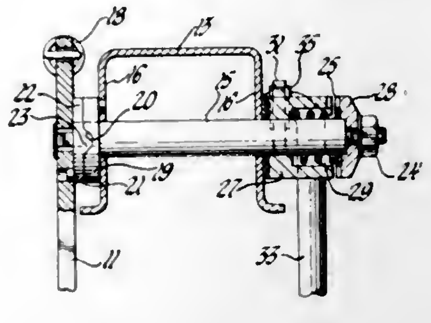


A centrifugal clutch having a one piece, molded driving assembly. This assembly includes an undulating web, spaced from the clutch drive shaft which serves to support clutch shoes in their retractive position. The web supports the retracted clutch shoes so as to prevent clutch shoe rocking. When the clutch shoes are centrifugally actuated so as to move outwardly into clutching engagement with a clutch drum the web is disposed in surface conforming engagement with portions of the clutch shoes. The clutch shoes supporting surfaces of the web have a particular radius of curvature which allows the web to be in surface conforming engagement with portions of the shoes when they are centrifugally actuated and also when they are retracted.

3,429,412
AUTOMATIC CLUTCH WEAR COMPENSATION

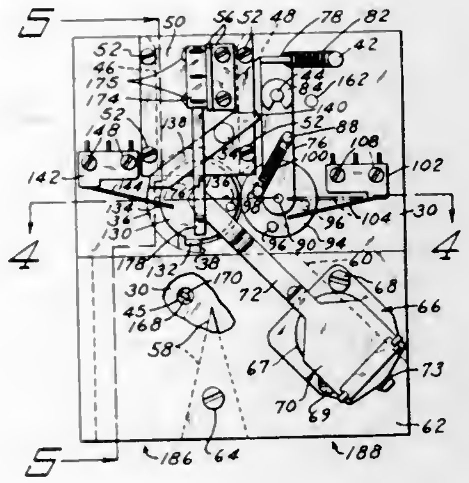
Marvin T. Wobrock, Fraser, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,277
U.S. Cl. 192—111 **5 Claims**
Int. Cl. F16d *11/00, 13/60, 19/00*

A control linkage for a friction clutch incorporating an operator mechanism, which effects engagement of an intermediate, constant-lash clutching mechanism in the linkage. After predetermined movement of the operator mechanism, the intermediate clutching means engages and a force is transmitted by the linkage to the friction clutch to effect the disengagement thereof. When the operator mechanism is released, biasing means disengages the intermediate clutching mechanism to permit the driven part of the intermediate clutch to rotate relative to the drive part in response to wear of the friction clutch.



3,429,413
MILLED EDGE COIN TESTER

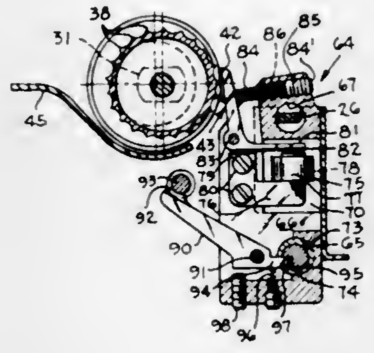
Gustav F. Erickson, St. Louis County, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed June 15, 1967, Ser. No. 646,227
U.S. Cl. 194—97 **36 Claims**
Int. Cl. G07f *3/02*



A coin-receiving member is rotatably mounted adjacent a coin passageway and has a coin-holding element thereon which can underlie and support a coin or slug moving through that coin passageway as long as that coin-receiving member is in its normal position but that can free that coin or slug after that coin-receiving member has rotated to its coin-releasing position, has a pressure-applying member which can urge that coin or slug into intimate engagement with one face of that coin-receiving member as that coin-receiving member rotates from its normal position toward its coin-releasing position, and has a sensing member which has milling at the periphery thereof and which normally is disposed so a coin or slug can freely move into engagement with the coin-holding element on the coin-receiving member but which is movable into intimate engagement with the periphery of that coin or slug after that coin or slug has been intercepted and held by that coin-holding element; and that sensing member responds to a coin which has milling at the periphery thereof and which rotates with the coin-receiving member to move an accept-reject mechanism to coin-accepting position but does not respond to a coin without milling at the periphery thereof to move that accept-reject mechanism to coin-accepting position, and that coin-receiving member and that pressure-applying member and that sensing member element free that coin or slug as that coin-receiving member approaches its coin-releasing position.

3,429,414
PRINTER WITH PRINT HAMMER MOUNTED ON MOVABLE CARRIAGE

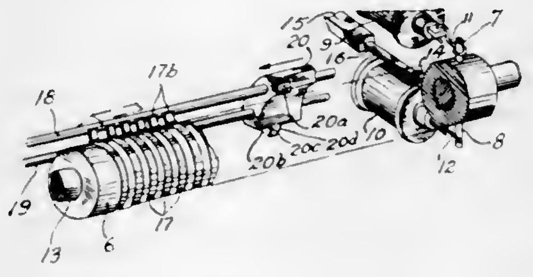
Wilburn F. Bradbury, Northbrook, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Apr. 24, 1967, Ser. No. 632,955
U.S. Cl. 197—82 **15 Claims**
Int. Cl. B41j *19/00, 1/32, 19/76*



There is disclosed a printer with a movable carriage having a print hammer cooperable with a rotatably mounted platen. A spring constitutes the sole means for driving the print hammer into printing cooperation with the platen and an electromagnet constitutes the sole means for driving the print hammer out of printing cooperation with the platen and for holding the print hammer out of printing cooperation. A record medium is fed between the print hammer and the platen by feed wheels mounted to provide contact between the record medium and the platen essentially only at a printing zone. The platen can have a plurality of platen elements with which the print hammer cooperates to print on the record medium. The carriage is selectively coupled and uncoupled with a feed screw which drives the carriage in forward direction from a start-of-line position. The feed screw is cyclically rotated a predetermined amount through a clutch. When the carriage is to be returned to start-of-line position, the carriage is uncoupled from the feed screw and latched in uncoupled position until the carriage is returned to start-of-line position, and simultaneously, a drive connection is established for the feed wheels so that upon rotation of the feed screw the record medium is fed.

3,429,415
TAB PROGRAMMING CONTROL SYSTEM BY MEANS OF CODES

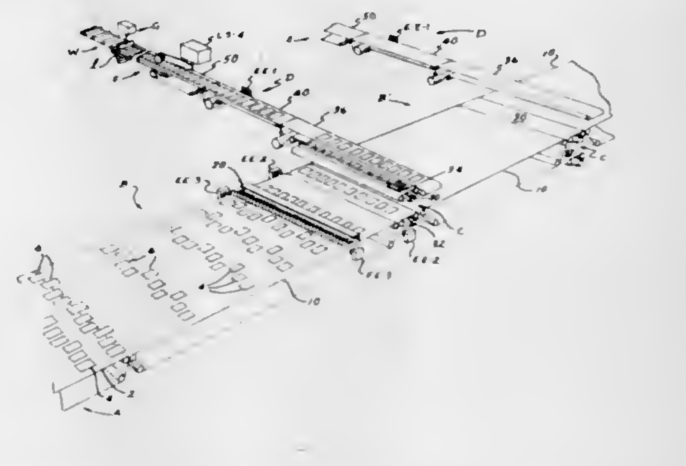
Shinichi Hirata, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 536,716, Mar. 23, 1966. This application Oct. 17, 1967, Ser. No. 690,038
U.S. Cl. 197—179 **1 Claim**
Int. Cl. H04m *1/02, 3/16, 3/18*



A tab programming control system for a typewriter, coded tape control therefor, an oscillatable tab supporting shaft rotatable to either side of neutral by means of electro-magnets and a longitudinal tab stop member for rotating tabs on the supporting shaft and for acting as a stop for certain tab positioning.

3,429,416
TRANSFER CONVEYOR APPARATUS FOR CANDY BARS AND THE LIKE

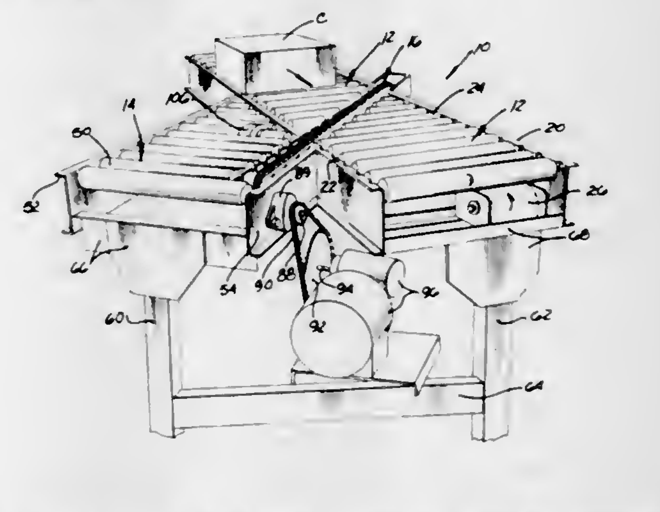
Richard H. Provost, Shrewsbury, and John S. Bartlo and William Hoppe, Longmeadow, Mass., assignors to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts
Filed July 18, 1967, Ser. No. 654,164
U.S. Cl. 198—20 **10 Claims**
Int. Cl. B65g *47/00, 47/26*



Apparatus for distributing candy bars received in rows cross-wise on a conveyor, to one or more in-line wrapper feeding stations, comprising longitudinally spaced horizontal receiver belts with candy row aligning means, a transfer and elevator pick-up mechanism at the downstream end of each receiver belt with elevated pusher mechanism for depositing candies on a cross belt for an in-line delivery to a discharge belt and an infeed adapter belt station. Elevator, discharge belt, and infeed belt scanning means with interlocking switch circuitry control the pick-up and step by step advance of candies to automatically maintain a supply thereof at each infeed station.

3,429,417
MOTORIZED FLOW DIVERTER

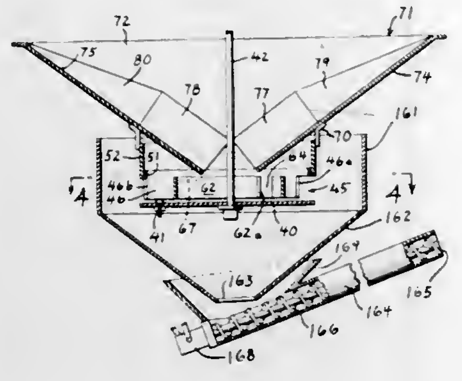
Maynard J. De Good and Clyde L. Bowman, Grand Rapids, Mich., assignors to Rapistan Incorporated, Grand Rapids, Mich., a corporation of Michigan
Filed Jan. 20, 1967, Ser. No. 610,631
U.S. Cl. 198—31 **3 Claims**
Int. Cl. B65g *47/52*



A positive acting, selective, powered, barrier-diverter for a conveyor, being selectively positioned as a barrier directly into and across the path of articles on the conveyor, and having dynamic motion diagonally across the conveyor path to turn and divert articles to an article receiving surface such as a branch conveyor.

3,429,418
MIXING AND SPREADING APPARATUS

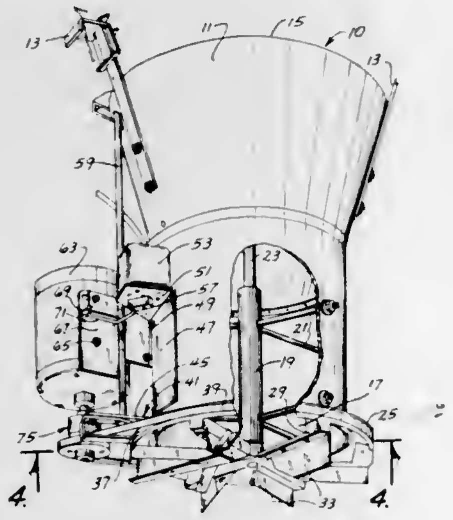
Clas O. F. Fyrk, Rockford, Ill., assignor to Swenson Spreader & Mfg. Co., Lindenwood, Ill., a corporation of Illinois
Continuation of application Ser. No. 564,976, July 13, 1966, which is a continuation-in-part of application Ser. No. 472,243, July 15, 1965. This application Dec. 13, 1967, Ser. No. 690,361
U.S. Cl. 198—98 **15 Claims**
Int. Cl. B65g *37/00, 67/24;* **B01f** *15/02*



A truck-mounted, two-compartment hopper having a conveyor in each compartment for feeding materials to a rotating disk. Inner and outer flow dividers above the disk to blend the materials thereon. Impellers removably mounted outwardly of the disk to spread the materials and a removably mounted housing operable when the impellers are removed to collect the blended materials. An auger-type conveyor to convey the materials from the housing to a discharge point.

3,429,419
VARIABLE SPEED MATERIAL SPREADER

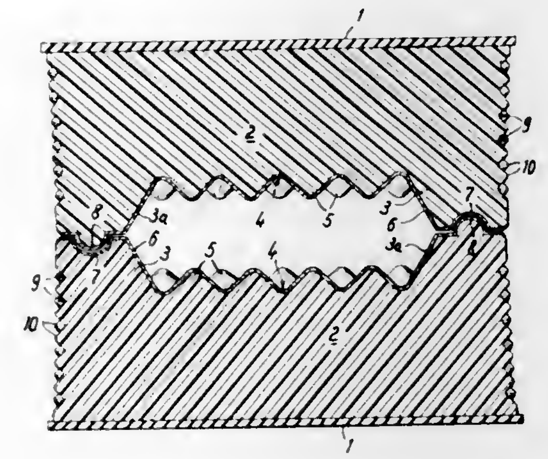
Harlan J. Donelson, Jr., W. Highway 330, Marshalltown, Iowa 50158
Filed June 21, 1965, Ser. No. 465,645
U.S. Cl. 198—128 **3 Claims**
Int. Cl. B65g *31/04, 65/32, 23/44*



1. In a material spreader,
a housing means having an inlet and an outlet opening,
a shaft means positioned in said housing means,
a rotatable spreading wheel means secured to said shaft means at the outlet opening of said housing means,
a power means pivotally secured to said housing means and movable towards and away from said spreading wheel means,
a variable speed pulley means secured to the power shaft of said power means,
a belt extending around and between said variable speed pulley means and said spreading wheel to cause rotation thereof,
said variable speed pulley means being adapted to increase the rate of rotation of said spreading wheel means when said power means is pivotally moved towards said spreading wheel means and adapted to decrease the rate of rotation of said spreading wheel means when said power means is pivotally moved away from said spreading wheel means,
and electric power means pivotally moving said power means with respect to said spreading wheel at times said electric power means including a power shaft, a linkage means operatively pivotally secured at one of its ends to said power means, said linkage means being operatively eccentrically secured at its other end to said power shaft of said electric power means.

3,429,420
CONVEYOR INSTALLATION AND CONVEYOR BELT SYSTEM THEREFOR

Gert Bechtloff, Wilhelmshaven, and Reinhold Szonn, Lemforde, Germany, assignors to Lemforder Kunststoff G.m.b.H., & Co. K.G., Lemforde, Germany, and Beteiligungs- und Patent-verwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Mar. 28, 1967, Ser. No. 626,542
Claims priority, application Germany, Mar. 31, 1966, B 86,452
U.S. Cl. 198—165 **6 Claims**
Int. Cl. B65g *15/14, 19/18*

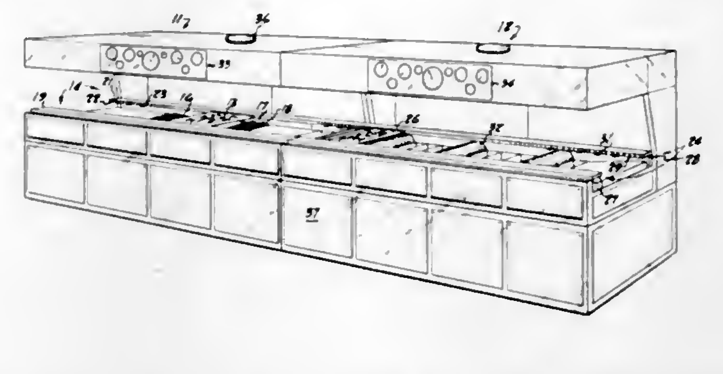


The present invention concerns a conveyor installation with a steep conveying path and two endless conveyor belts having a conveying section thereof arranged in face-to-face relationship over said steep conveying path. Each of said belts comprises a first layer of strong load-supporting flexible material, a second layer of soft elastic foam material connected to said first layer while that surface of said second layer which faces away from said first layer is provided with elevations and depressions arranged in a waffle-like pattern. Each of said belts also comprises a third layer formed by a thin wear-resistant coat covering said elevations and depressions and following the contour of said elevations and depressions. Said second layer has its longitudinal marginal portions protrude in a direction away from said first layer beyond said waffle patterned surface when the belt is under no load.

3,429,421
CONVEYOR SYSTEMS

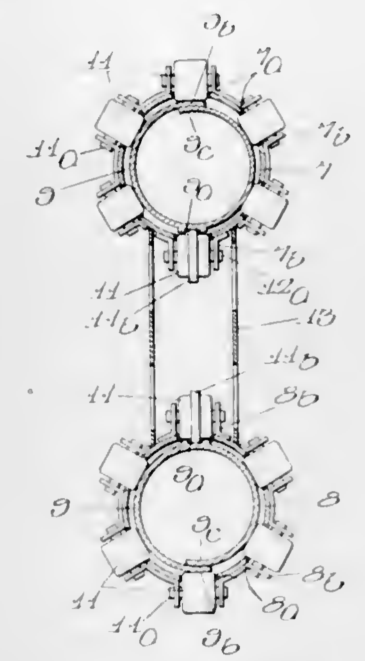
Eugene J. Wiecek, 409 W. Nawata Place, Prospect Heights, Ill. 60070
Filed Mar. 31, 1967, Ser. No. 627,510
U.S. Cl. 198—179 **7 Claims**
Int. Cl. B65g *15/14, 19/20*

Conveyor systems for use in processing printed circuit boards through automatic soldering operations. At least one side of a conveyor track is spring loaded applying a lateral force that positively grips the printed circuit boards on the conveyors.



3,429,422
BELT CONVEYOR

Toshio Yoshimura, Naokata, Japan, assignor to Fuji Conveyor Kabushiki Kaisha, Naokata, Japan
Filed Feb. 2, 1967, Ser. No. 613,602
Claims priority, application Japan, Oct. 13, 1966, 41/94,708, 41/94,709; Dec. 2, 1966, 41/78,616, 41/78,617, 41/78,618; Dec. 26, 1966, 41/84,694, 41/84,695
U.S. Cl. 198—184 **15 Claims**
Int. Cl. B65g *15/08*

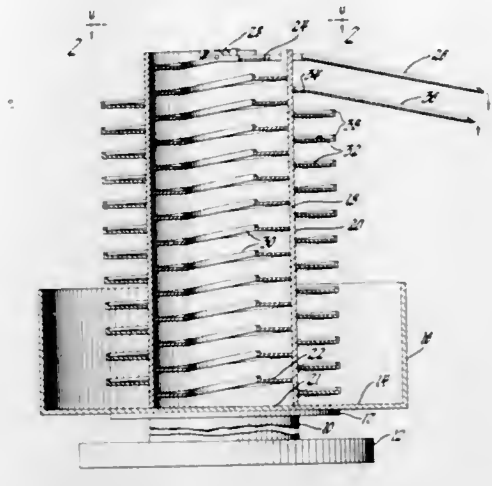


A belt conveyor system in which an endless belt travels over and is driven by a pair of spaced pulleys. As it passes over the pulleys, the belt is flat and between the pulleys it is converted into a tubular shape by rollers with one longitudinal edge of the belt arranged in overlapping contacting relationship with the other longitudinal edge. A feed chute charges material into the tubular-shaped belt at one end and as the belt is transformed from the tubular to the flat shape, the materials are discharged. For the extent of its tubular shape, the belt is supported by rollers within a tubular cover.

3,429,423
VIBRATORY BOWL

Antonio Pirrello, Lincoln Park, and John D. Sproles, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,333
U.S. Cl. 198—220 **7 Claims**
Int. Cl. B65g *27/02, 27/16*

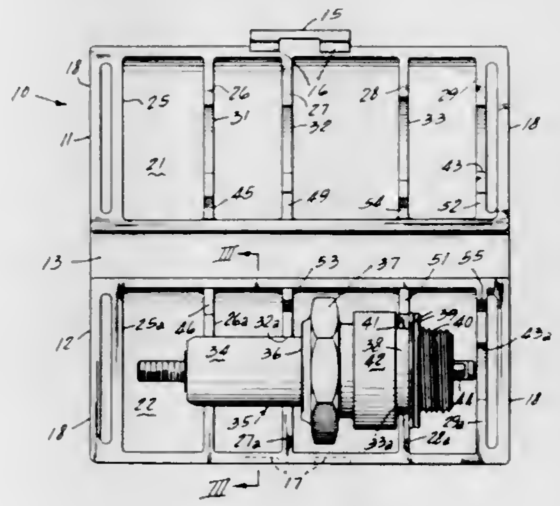
This invention relates to a vibratory feed bowl apparatus adapted to feed chopped glass fibers and a powdered material at a uniform rate to separate conveyor means. The vibratory feed bowl apparatus consists of an inner feed bowl wherein the powdered material is stored and a concentric outer feed bowl wherein the chopped glass fibers are stored. The upstanding cylindrical wall separating the inner and the outer bowl has a spiral helical



track on the inner surface thereof which feeds the powdered material at a uniform rate and a spiral helical track on the outer surface which feeds the chopped glass fibers at a uniform rate in a free-flowing manner.

3,429,424
SPARK PLUG CARRIER

Alan Dow, Sheridan, Wyo.
(Box 202, Big Horn, Wyo. 82833)
Filed Aug. 21, 1967, Ser. No. 661,949
U.S. Cl. 206—1 **6 Claims**
Int. Cl. A45c *11/00;* **B65d** *85/00*

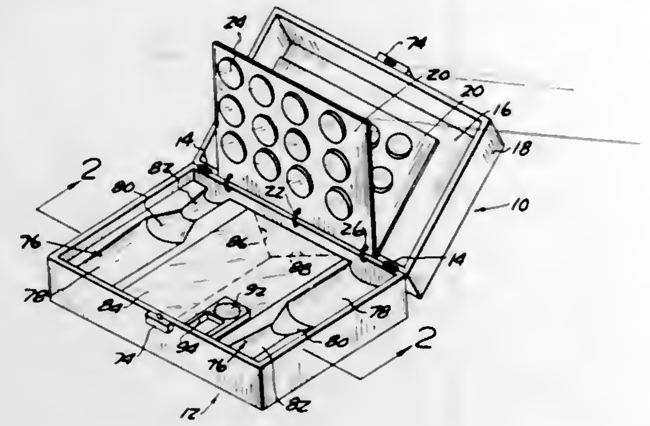


A spark plug carrier consisting of two hollowed out portions joined together along one edge by an integral hinge, and having a fastening means on an opposite edge to hold the two portions in a closed position. Each of the hollowed out portions having ribs which have a recess complementary in shape to exterior portions of the spark plug. The ribs of one portion coacting with the complementary ribs in the other portion to secure the product against a longitudinal movement in the carrier and to prevent the spark plug from being damaged from impact blows received by the carrier.

3,429,425
COIN EXAMINING AND STORAGE KIT

John M. Hebert, 3428 Pickwick Place, Wayne, Mich. 48184
Filed Apr. 28, 1967, Ser. No. 634,585
U.S. Cl. 206—.81 **10 Claims**
Int. Cl. A45c *11/00*

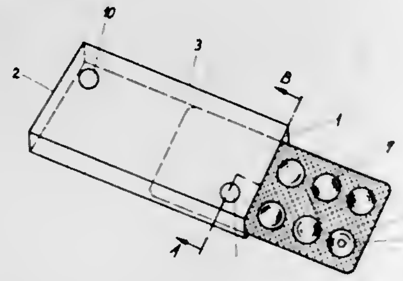
A hand-carried case having storage areas for unsorted coins, viewing apparatus for examining and sorting coins



and removable panels for permanently displaying and accumulating sorted coins in a classified arrangement.

3,429,426
PACKAGE

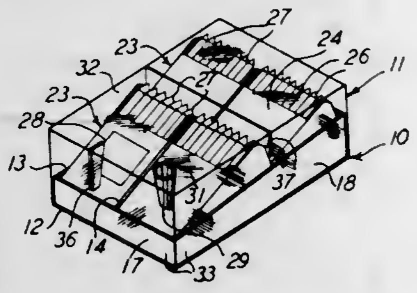
Otto Wolf, Kirchheim, Teck, and Otto Weller, Waiblingen, near Stuttgart, Germany, assignors to Hofliger & Karg, Waiblingen, near Stuttgart, Germany
Filed June 26, 1967, Ser. No. 648,729
Claims priority, application Germany, June 28, 1966, H 59,801
U.S. Cl. 206—42 **14 Claims**
Int. Cl. B65d *83/04*



A package for discrete articles. An outer sleeve of substantially rectangular cross-section has at least one open end. An inner receptacle is slidably received in the outer sleeve and comprises a first member which has a side provided with at least one open recess, and a second recess which overlies this side and is sealingly connected to the first member so as to define with this open recess a sealed chamber within which an article to be packaged is to be accommodated.

3,429,427
CRAYON MERCHANDISING DISPLAY BOX AND CONTAINER

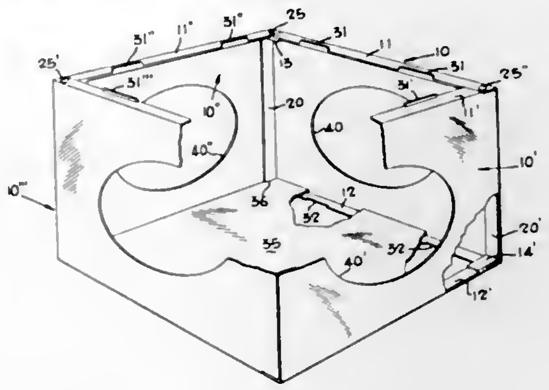
Tobin Wolf, Bloomfield, N.J., assignor, by mesne assignments, to Western Publishing, Inc., Racine, Wis., a corporation of Wisconsin
Filed Feb. 13, 1967, Ser. No. 615,645
U.S. Cl. 206—45 **4 Claims**
Int. Cl. B65d *5/50, 25/00, 85/28*



A combined crayon merchandising display box and container including a base for receiving and supporting packets of crayons in tilted positions, and a transparent cover for displaying and retaining the packets and the individual crayons within packet keepers. A crayon sharpener is affixed to the cover and extends to a position adjacent the packets for retaining at least one of the packets on the base. The cover extends to completely enclose the crayons within the base, and to enclose the sharpener so that the crayon shavings will be retained in the cover during the sharpening process.

3,429,428
MODULAR DISPLAY UNIT HAVING A PLURALITY OF WALL PANELS

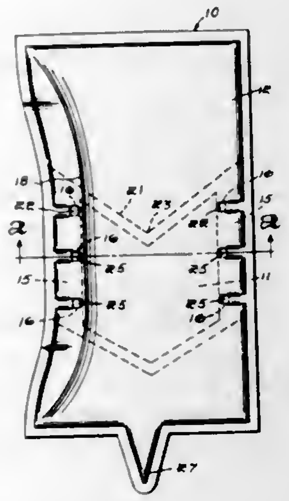
Dewalt W. Fowler, Creve Coeur, Mo., assignor to Paul Flum Merchandising Ideas, Inc., St. Louis, Mo., a corporation of Missouri
Filed Dec. 12, 1967, Ser. No. 689,856
U.S. Cl. 206—45.31 **9 Claims**
Int. Cl. B65d *7/22, 25/24*



A modular display unit, adapted for stacking, has a plurality of identical side wall panels, preferably made of translucent plastic with large window cut-outs, and a shelf resting on lower inwardly turned flanges. In a simple embodiment, four rectangular panels interlock at vertical corners with post and recess interconnections, utilizing the spring-like resiliency of horizontal upper and lower flanges unsupported at one side of each panel but made rigid at the opposite side by a vertical connecting flange. An inward joggle, at the side having a connecting flange, seats the unsupported ends of the upper and lower flanges of the adjacent panel, with rigidity that retains the panels perpendicular to each other.

3,429,429
COMPARTMENTED PACKAGE

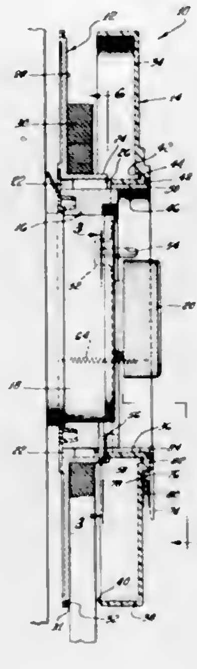
Edward J. Poitras, 198 Highland St., Holliston, Mass. 01746
Filed July 17, 1967, Ser. No. 653,798
U.S. Cl. 206—47 **11 Claims**
Int. Cl. B65d *79/00*



A compartmented package having a fluid filled storage container enclosed by and secured to gripping portions of a flexible walled receiving container. Because the receiving container wall portions connecting the gripping portions are of greater length than their separation, pulling apart of the gripping portions produces a rupturing force on the storage container walls while maintaining the receiving container walls intact.

3,429,430
TAPE REEL

Ronald E. Loosen, 6245 Oakdale Ave., Woodland Hills, Calif. 91364
Filed June 16, 1967, Ser. No. 646,593
U.S. Cl. 206—52 **12 Claims**
Int. Cl. B65h *55/00, 75/02*



A reel and cover combination for the storage and use of magnetic tape or film. The cover is mounted on hub structure of the reel for movement in a generally helical path between a closed, substantially dust-tight position and an open position wherein the tape or film may be used. The cover is biased toward the closed position, and is cammed outwardly by rotary movement thereof to the open position where it is locked during use of the tape or film, release of the lock permitting the biasing means to automatically return the cover to its closed position.

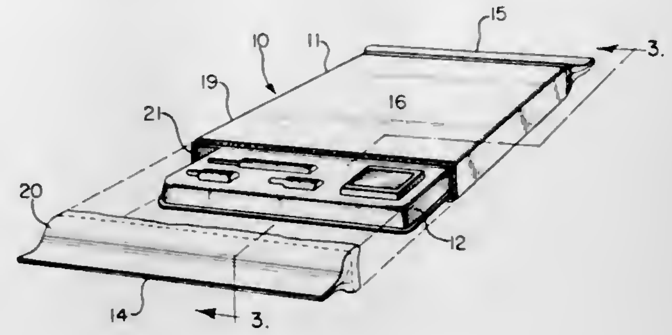
3,429,431
CHARGE OF PAPER CLIPS

Stewart A. Macondray, 2988 Pacific Ave., and Alyce C. Edwards, 3030 Jackson St., both of San Francisco, Calif. 94115
Continuation of application Ser. No. 357,924, Apr. 7, 1964, now Patent No. 3,254,398, dated June 7, 1966. This application Apr. 7, 1966, Ser. No. 540,954
U.S. Cl. 206—56 **5 Claims**
Int. Cl. B65d *83/00;* **B23q** *7/10;* **B23p** *17/00*

A paper clip dispensing machine and charge of clips for use therein. Each clip of the charge includes a pair of resilient spreadable leaves joined at one end and open at the other to receive a sheaf of sheet material therebetween. Entry of a sheaf of material between the leaves of a clip serves to rupture a bond holding the clip to the next adjacent clip of the charge. The movement of the movable leaf serves to break the bond when it is spread away from the remainder of the charge.

3,429,432
ASEPTIC PACKAGE

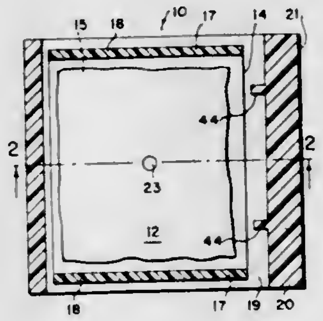
James L. Cabernoch, Chicago, and Kenneth H. Stevens, Elk Grove Village, Ill., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Oct. 3, 1967, Ser. No. 672,613
U.S. Cl. 206—63.2 **3 Claims**
Int. Cl. A61b *19/02*



A paperboard container which maintains a sterile condition about an article is weakened by a pair of container girding parallel lines of scoring which, respectively, penetrate the container wall from inside and outside surfaces. Thereby, the container can be pulled apart to enable article removal through a container opening defined by an inner surface which has been protected from contamination by an overlapped container portion.

3,429,433
STERILE PACKAGE ASSEMBLY AND PROCESS OF MAKING SAME

Herman Holt, Lawrence, Mass., assignor to Sterile Products Corporation, Boston, Mass., a corporation of Massachusetts
Filed Mar. 28, 1967, Ser. No. 626,625
U.S. Cl. 206—63.2 **8 Claims**
Int. Cl. A61b *19/02*



A sterile package assembly including a disposable paper surgical uniform hermetically sealed in an inner envelope, the inner envelope being hermetically sealed in a transparent film outer envelope, there being a radiation sensitive indicator visible through the material of the outer envelope and the uniform, and both envelopes, being sterilized by high voltage radiation. At least one wide margin is provided on the outer envelope to facilitate handling and the inner envelope may be heat shrunk around the uniform to avoid inadvertent cutting of the inner envelope.

3,429,434

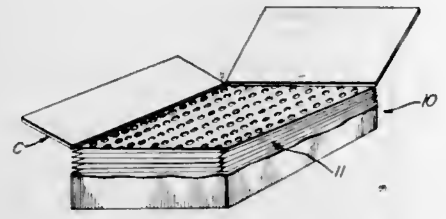
PACKAGE AND METHOD OF FORMING SAME

Robert J. Hickin, Seville, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,362

U.S. Cl. 206—65 **4 Claims**

Int. Cl. B65d *71/00;* **B65b** *63/02, 1/20*



A package for accommodating a plurality of compressible units when the latter are arranged in stacked registered relation. The stack is compressed and retained in said compressed state for either storage or shipment. Each unit comprises a frame having broad top and bottom panels and narrow side walls foldably interconnecting corresponding peripheral portions of the panels. End closure flaps are foldably connected to other peripheral portions of the top and bottom panels of the frame and substantially delimit open ends when the unit is in a compressed state. Snugly disposed within the frame of each unit is a pliable resilient compressible pad. When the compressible unit is ready for use, it is removed from the stack and the closure flaps folded so as to close the ends of the frame whereby the frame imparts substantial rigidity to the unit.

3,429,435

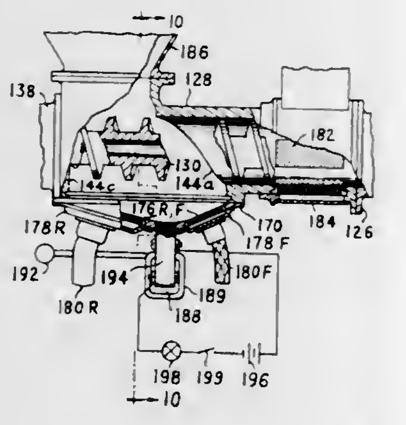
SCREW CONVEYOR

Hans A. Eckhardt, 55 Crescent Bend, Allendale, N.J. 07401

Filed June 26, 1967, Ser. No. 648,730

U.S. Cl. 209—39 **20 Claims**

Int. Cl. B03c *7/06;* **B65g** *33/14*



A screw conveyor for feeding bulk materials containing hard, tough particles, and for removing and monitoring foreign particles therein. The feed material enters the bore of the screw housing through a 3-sided opening therein defined by an edge along which that bore is enlarged in essentially radial direction. The hopper section of the screw housing is provided with means for introducing and withdrawing gases, to fluidize, dry and heat the feed material. The hopper section is equipped with magnetic means to separate and retain magnetic particles. The magnetic means signal the presence of magnetic particles as well as of non-magnetic particles. Furthermore, electrically conductive members extending across the bottom of the hopper section monitor the accumulation of conductive particles.

3,429,436

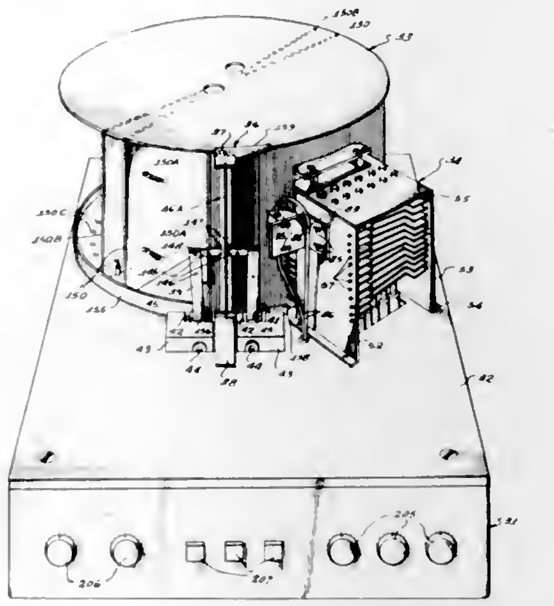
RANDOM ACCESS STORAGE AND RETRIEVAL DEVICE

Eugene H. Irasek, Inglewood, Calif., assignor, by mesne assignments, to Security First National Bank, Los Angeles, Calif., a national banking association

Filed Feb. 17, 1966, Ser. No. 528,231

U.S. Cl. 209—72 **18 Claims**

Int. Cl. B07c *5/344, 9/00;* **B42f** *21/12*



A random access storage and retrieval device in which a large number of items such as cards and the like are stored in a rotating drum in non-addressed random positions. The cards are individually identified by coding notches in their edges at the drum periphery and are selected and recalled individually, independently of other items and in any desired order, regardless of their location in the store, into a delivery position upon command. The items are addressed in a selector employing movable plates disposed in alternate positions corresponding to a binary zero and binary one code, with the address plates being received in the coding notches in an addressed item to permit partial withdrawal of the addressed item from the store. The items are provided with magnetic material at their coded edges and stationary magnets adjacent the address plates present pole faces to the card edges which are eccentric to the drum so that the addressed card follows the pole faces to effect an initial withdrawal of the card from the drum store. A sensor downstream of the selector senses a partially withdrawn card and de-energizes the rotating drum so that it stops with the partially-withdrawn, addressed card in the delivery station in engagement with manipulating means for withdrawing the card from the store and positioning it in X–Y directions. Mechanism is provided at the delivery station for operating on an item therein to finally index it in position and to separate adjacent items therefrom to facilitate the withdrawal and return of the item to the store by the X–Y manipulating mechanism. The operation of the device after the placing of an address in the selector proceeds automatically with rotation of the drum store, selection and partial withdrawal of an addressed item at the selector, stopping of the drum with the selected item at the delivery station, and indexing of the selected item in the station and separation of adjacent items from the selected item. Return of an item into the drum store by the X–Y manipulating mechanism effects automatic withdrawal of the item-separating mechanism and rotation of the drum to select a newly-addressed card to repeat the operation.

3,429,437

METHOD FOR SORTING BULK GOODS

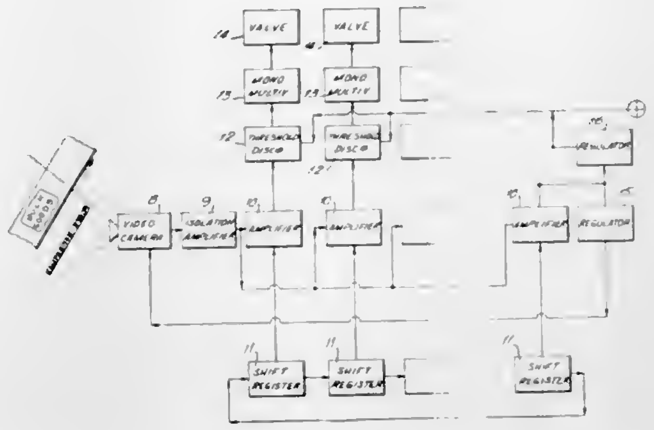
Adolf Terschanski, Neviges, and Wigand Lunau, Wulfrath, Germany, assignors to Rheinische Kalksteinwerke G.m.b.H., Wulfrath, Germany

Filed July 6, 1967, Ser. No. 651,581

Claims priority, application Germany, July 15, 1966, R 43,702

U.S. Cl. 209—111.5 **4 Claims**

Int. Cl. B07c *5/34*



A method for sorting of bulk goods for determining quality differences, deficiencies, etc. by utilizing reflected or penetrating radiant energy and detecting the energy with a television camera having picture lines which move substantially lateral with respect to the movement of the goods. Discriminator circuits which are connected to the output of the video amplifiers of the television set have their threshold value adjusted automatically to compensate for lighting and amplification fluctuations. The signals produced at the output of the discriminators control the mechanical marking or sorting devices which affect the continuous flow of the bulk goods.

3,429,438

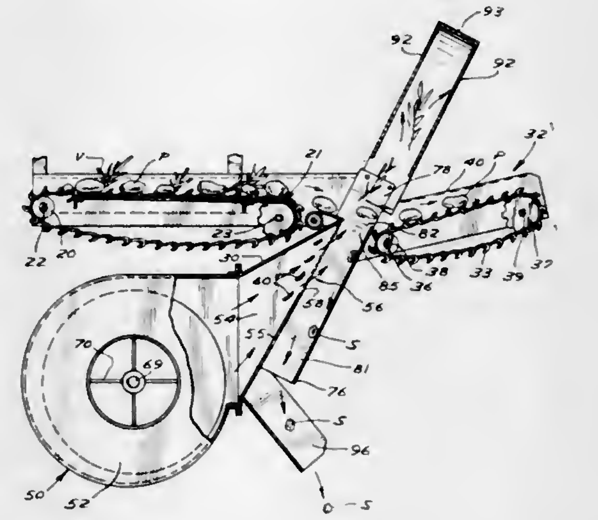
AIR SEPARATION MEANS FOR POTATOES

James J. Palmen and John D. Strandlund, Mora, Minn., assignors to Braco, Inc., Braham, Minn., a corporation of Minnesota

Filed Aug. 11, 1966, Ser. No. 571,932

U.S. Cl. 209—137 **1 Claim**

Int. Cl. B07b *9/00, 3/00;* **A01d** *17/00*



1. In connection with a potato harvesting machine, an apparatus for separating potatoes from stones and clods, having in combination:

an open ended duct comprising a passage, the upper end of said duct forming an air outlet, the lower end portion of said duct forming a discharge outlet for stones and clods,

said upper end of said duct being free of obstruction thereabove and having spaced sides and ends,

means with respect to said passage supplying air with a velocity to form a potato supporting air cushion across said air outlet,

a delivery conveyor having the end of its upper run extending to a point short of one side of said upper end of said duct,

a roller substantially coextensive with the width of said conveyor mounted adjacent said upper run of said conveyor,

means driving said roller on the order of twice the rate of speed of said conveyor to accelerate the discharge of potatoes therefrom with respect to the discharge of potatoes from said conveyor to add impetus to said potatoes across said air outlet,

transfer apron means substantially coextensive with said roller extending from close proximity to said roller to the adjacent side of said upper end of said duct for delivering the potatoes, stones and clods onto said air cushion from a position substantially coplanar therewith, and

a discharge conveyor running from adjacent the other side of said upper end of said duct.

3,429,439

SLOW MAGNETIC DRUM ORE SEPARATOR CONTROL DEVICE

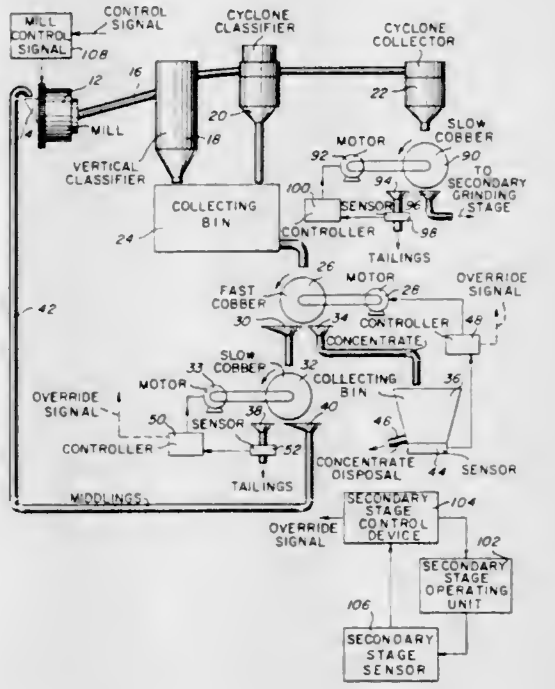
David Weston, Toronto, Ontario, Canada, assignor to Aerofall Mills Limited, Toronto, Ontario, Canada

Filed Nov. 20, 1967, Ser. No. 684,427

Claims priority, application Canada, Mar. 1, 1967, 984,101

U.S. Cl. 209—223 **6 Claims**

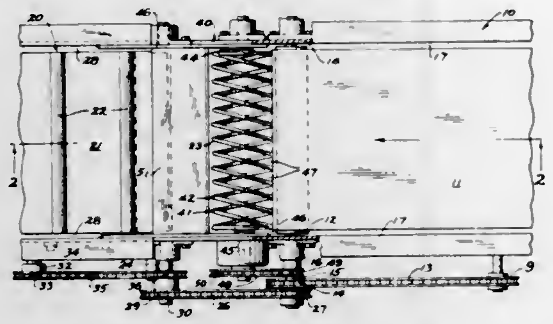
Int. Cl. B03c *1/30*



Control device for rotary magnetic ore separator, having a sensor for sensing magnetic material in the tailings separated out and a speed controller responsive to the sensor for regulating the speed of rotation of the separator to regulate the amount of magnetic material in the tailings, separated out.

3,429,440
CONVEYOR TRANSFER DEVICE

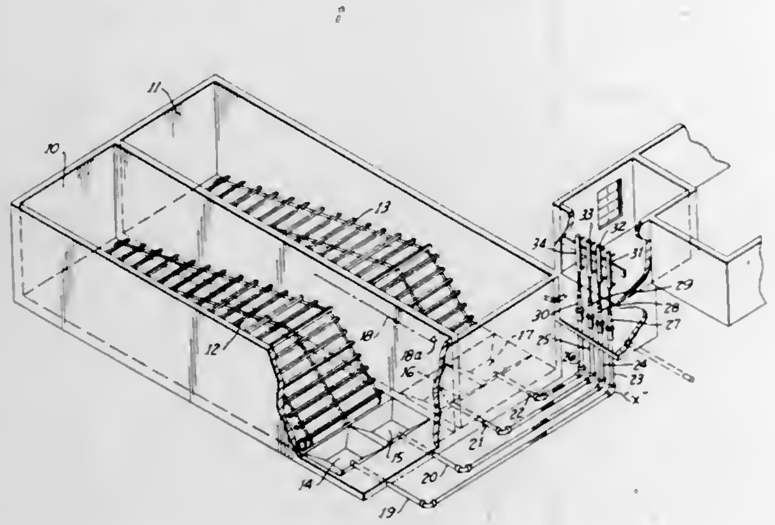
Fredrick L. Hill, Lauren W. Gates, and William C. Friedel, Jr., Rio Vista, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Continuation of application Ser. No. 492,978, Sept. 17, 1965, which is a continuation of application Ser. No. 279,927, May 13, 1963. This application July 27, 1966, Ser. No. 568,347
U.S. Cl. 209—241 **9 Claims**
Int. Cl. B07b *1/28*



A tomato cleaner for separating the earth from tomatoes during the harvesting of the crop. The tomatoes are rolled by a sudden lateral movement over a helicoid which operates as a sifter.

3,429,441
CONTROL MEANS FOR SLUDGE REMOVAL

Charles Herman Davis, 54 N. Prospect St., Lorain, Ohio 44052
Filed Aug. 9, 1966, Ser. No. 571,348
U.S. Cl. 210—109 **7 Claims**
Int. Cl. B01d *21/24*

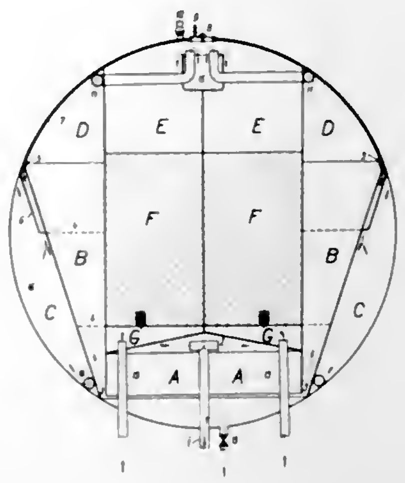


Apparatus for the removal of sludge from settling tanks in water and sewage treatment plants including remote controlled hydraulic operated slip tubes having means to sense the fluid flow and adjust the tubes in response to the sensed condition.

3,429,442
PRESSURIZED DEVICE FOR WATER TREATMENT

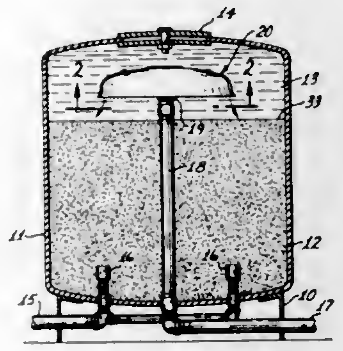
Svatopluk Mackrle, Brno, Vladimír Mackrle, Prague, and Oldřich Dračka, Brno, Czechoslovakia, assignors to Cheskolovenska akademie věd, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed Sept. 24, 1964, Ser. No. 399,013
Claims priority, application Czechoslovakia, Oct. 8, 1963, 5,525/63; Oct. 15, 1963, 5,645/63
U.S. Cl. 210—202 **2 Claims**
Int. Cl. B01d *21/10, 29/08;* **C02c** *1/26*

A pressurized device for treatment of liquids containing several interrelated zones within a vessel in which a sedimentation and de-watering zone surrounds a sludge blanket zone which, in turn, surrounds a granular filter bed zone. The principal separation stage occurs in the fully fluidized sludge blanket with a secondary stage effected by the excess flow from the sludge blanket to form a sediment in a separate closed zone and further through a third stage wherein the separation is accomplished through filtering in the granular filter bed.



3,429,443
FLUID VELOCITY DECELERATION DEVICE

Howard B. Stern, 207 W. Clarendon Ave., Phoenix, Ariz. 85013
Filed July 8, 1966, Ser. No. 563,841
U.S. Cl. 210—288 **3 Claims**
Int. Cl. B01d *35/00*

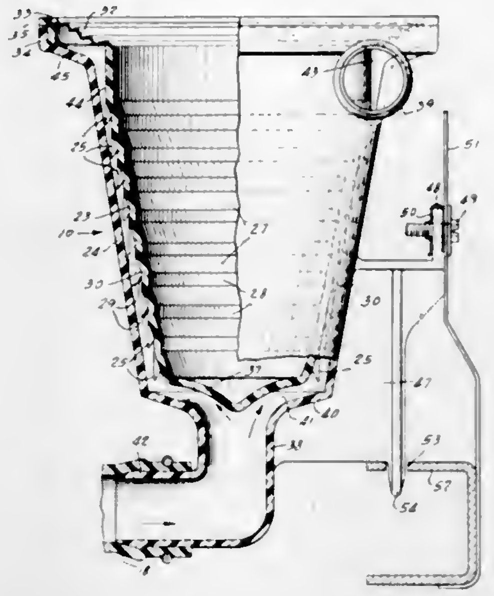


A water filter with a mushroom-shaped fluid flow control device on the upper end of the inlet conduit to smooth the flow at the inlet and thereby reduce agitation in the filter.

3,429,444
CONE FILTER FOR AN AUTOMATIC WASHER

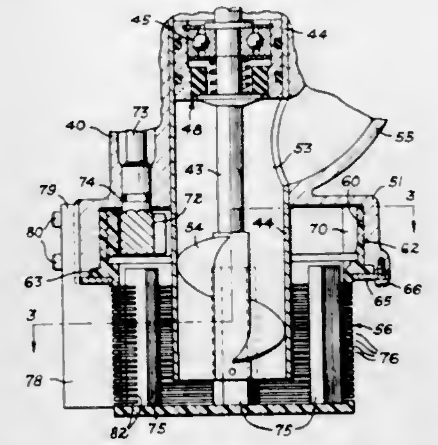
Raymond W. Spiegel, Ann Arbor, William F. Robandt, St. Joseph, and Clark I. Platt, Benton Harbor, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,961
U.S. Cl. 210—356 **19 Claims**
Int. Cl. B01d *35/02*

A filter or trap especially adapted for removing lint from wash water in automatic domestic washing machines having wash and drain cycles, comprises a self-contained unit with two internested parts interconnected by a diaphragm or flexible portion, with integral teeth on one of the parts providing filter means in a flow path between the parts. The unit is pressure responsive for effecting a close relationship of the parts and narrow flow path for filtering and efficient self-cleaning accompanied by expanding the parts and widening the path.



3,429,445
SELF-CLEANING FILTER

Robert G. Lee, Dayton, Ohio, assignor to Koehler-Dayton, Inc., Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 593,844, Nov. 14, 1966. This application Dec. 1, 1967, Ser. No. 687,907
U.S. Cl. 210—357 **3 Claims**
Int. Cl. B01d *33/00*

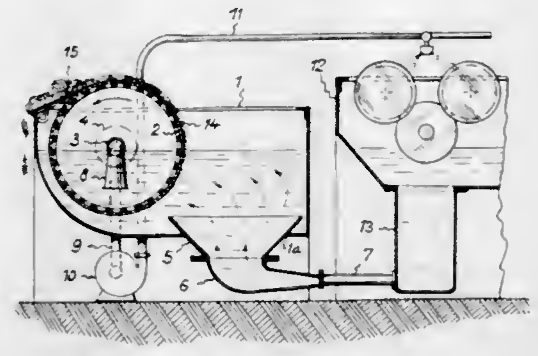


An improved filter for use in a self-contained sewerage system for separating the various solids from the flushing liquid. The filter is made of a cup-shaped plastic member having radial filtering slots cut in the side walls of the member except in the area of the axial ribs which hold the filter together. A cleaning comb having a plurality of parallel teeth is mounted adjacent the filter so that the teeth extend through said slots to maintain the slots open when the comb is moved relative to the slots. The comb may be mounted on the inside or outside of the walls, and either the comb or the side walls rotated.

3,429,446
APPARATUS FOR FILTERING TREATING LIQUOR IN WET PROCESSING MACHINES OF THE TEXTILE INDUSTRY

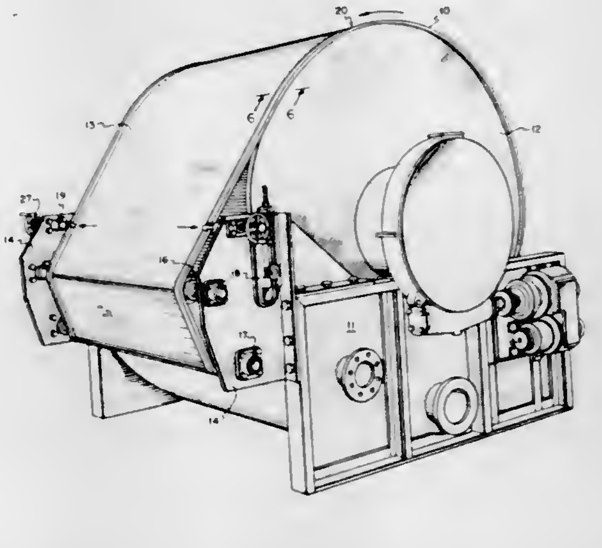
Hermann Vorderbrügge, Windelsbleiche, Germany, assignor to Joh. Kleinewefers Sohne, Krefeld, Germany
Filed May 4, 1966, Ser. No. 547,481
Claims priority, application Germany, May 19, 1965, K 56,155
U.S. Cl. 210—396 **3 Claims**
Int. Cl. B01d *33/06*

Apparatus for filtering out impurities from liquids including a filter box adapted to receive the liquid, a screening drum mounted near one end of the box and a funnel shaped feeding means extending sealingly through an opening in the bottom wall of said box.



3,429,447
ALIGNING MEANS FOR ENDLESS WEB FILTER

Steven S. Davis, 550 South 1st East, Bountiful, Utah 84010
Continuation of application Ser. No. 621,998, Mar. 9, 1967, which is a continuation of application Ser. No. 315,658, Oct. 11, 1963. This application Aug. 7, 1967, Ser. No. 658,947
U.S. Cl. 210—401 **7 Claims**
Int. Cl. B01d *33/04*

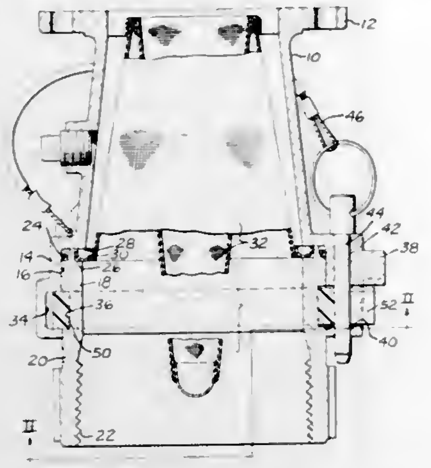


An apparatus for maintaining a filter web in alignment with a filter drum in which an outward aligning force is exerted on the beaded edge of the filter web at a span at which the filter web is out of engagement with the filter drum and guide rolls by a distance necessary to insure that neither the filter web nor guide rolls offer undue resistance to the aligning of the filter web and in which provision is made for release of the filter web in the event that the aligning force reaches a level which threatens damage to the filter web.

3,429,448
SEPARABLE COUPLING

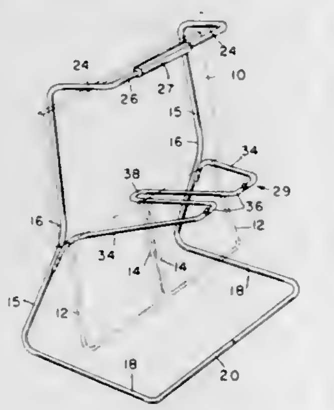
Lester P. Rosell, Dayton, Ohio, assignor to Emco Wheaton, Inc., Dayton, Ohio
Filed May 9, 1966, Ser. No. 548,632
U.S. Cl. 210—445 **6 Claims**
Int. Cl. B01d *35/02;* **F16l** *27/08*

Separable swivel coupling in which two parts of the coupling telescopically engage and have registering annular grooves with a spring ring of substantial cross section disposed in the outer groove and adapted for being compressed radially so that a radial portion of the ring is disposed in each groove to hold the parts together while permitting swivelling motion thereof.



3,429,449
TABLE RACK

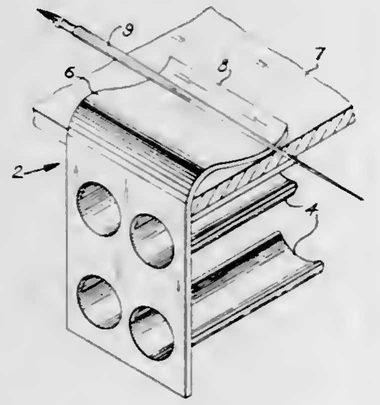
John J. Hamilton and Charles E. Schroer, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Mar. 13, 1967, Ser. No. 622,818
U.S. Cl. 211—27 **6 Claims**
Int. Cl. A47f *7/30;* **A47b** *7/02;* **B65d** *71/00*



A rack for the storage of collapsible tables, said rack having a pair of legs connected to a base structure and provided with an outwardly projecting support member for supporting the tops of a plurality of collapsible tables and for retaining the legs on said tables in fixed position on said rack.

3,429,450
STORAGE RACK

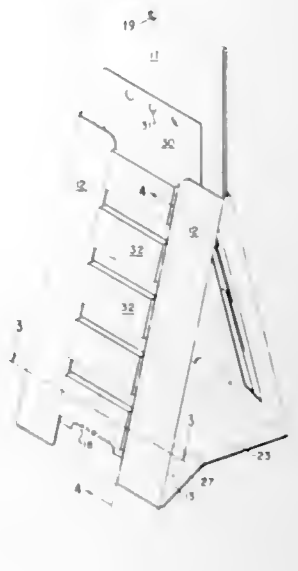
June J. Lambert, 9420 W. Foster Ave., Chicago, Ill. 60656
Filed Dec. 8, 1966, Ser. No. 603,703
U.S. Cl. 211—60 **2 Claims**
Int. Cl. A47f *7/00, 1/14, 7/17*



This invention is directed to storage racks and particularly a storage rack adapted for the orderly storage of elongated tubular articles such as lipstick cases wherein means is further provided for attachment thereof to a horizontally orientated shelf. The general structure of the present rack is that of a front vertically orientated wall member having a plurality of openings therein for receipt of such tubular articles or alternatively a plurality of such racks each having a single opening and adapted for interconnection.

3,429,451
DISPLAY DEVICE

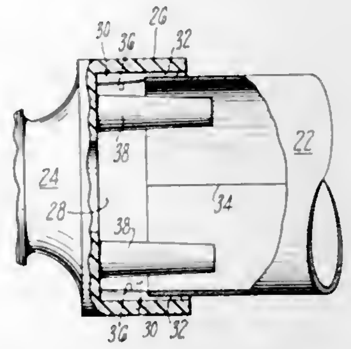
Rolf A. Samsing, Braintree, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed July 6, 1966, Ser. No. 563,274
U.S. Cl. 211—72 **5 Claims**
Int. Cl. A47f *5/11;* **B65d** *73/00*



A display device which can either be suspended by a hook or supported on a counter and which includes a panel provided with parallel opposed tracks for receiving therebetween a series of card-mounted packages.

3,429,452
TELESCOPING SUPPORT ROD HAVING UNIVERSAL END CAP

Kenneth M. Johnson, Kensington, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Apr. 13, 1967, Ser. No. 630,569
U.S. Cl. 211—105.3 **6 Claims**
Int. Cl. A47h *1/08;* **A47f** *5/08*

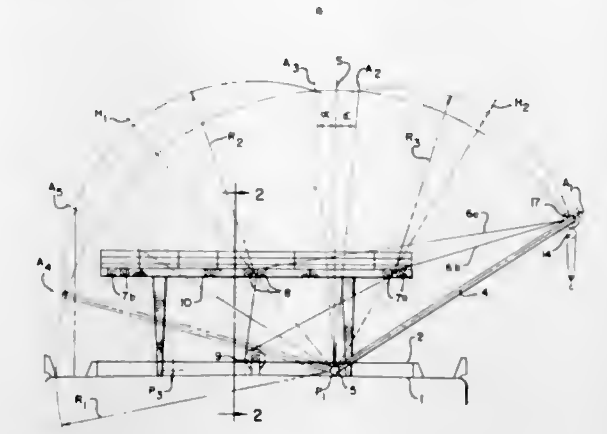


A telescoping support rod for draperies and the like having an identical end cap at each end, the end cap being provided with an unbroken peripheral wall having an entrance portion for frictionally engaging the outer surface of the outer telescoping rod member and a stepped inner wall portion for engaging the outer surface of the inner rod member with the stepped inner wall portion

being tapered to accommodate variations in the exterior dimensions of the inner rod member resulting from variations in the wall thickness of the outer rod member.

3,429,453
CRANE INSTALLATIONS PARTICULARLY FOR FREIGHTERS

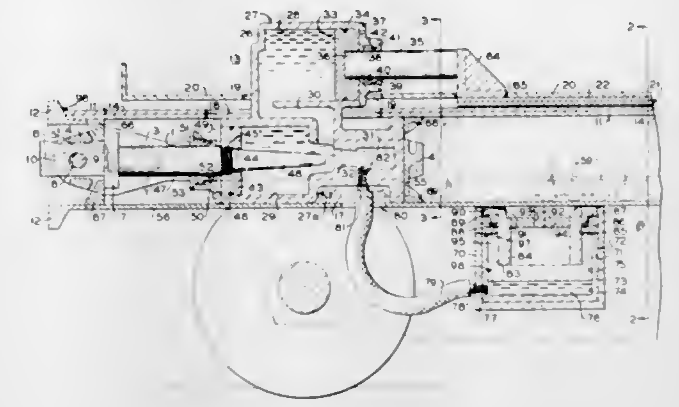
Otto Kahle, Rostock, and Ralf Bauer, Warnemunde, Germany, assignors to VEB Warnowwerft Warnemunde, Warnemunde, Germany
Filed Oct. 25, 1967, Ser. No. 677,995
U.S. Cl. 212—8 **12 Claims**
Int. Cl. B66c *23/00, 23/52, 5/02*



A crane installation in the form of a gantry crane particularly adapted for use on freighters provided with relatively wide and short hatches. The installation includes a column means having upper and lower ends and a transverse means extending laterally from and fixed to the upper end of the column means to form a gantry crane therewith. A pivot means is carried by the lower end of the column means and a pair of converting means are removably and selectively connectable with the lower end of the column means, at the pivot means, to provide a pair of parallel swing axes which extend parallel to the traverse means, and thus the gantry crane is swingable selectively about one or the other of the parallel swing axes, which are spaced from each other, so that in this way it is possible to change the location of the gantry crane. At either of these swing axes the gantry crane is swingable between a pair of end positions where the crane is respectively located in end planes which intersect each other and contain the particular swing axis, and these end planes respectively form predetermined angles with a vertical plane which contains the particular swing axis. A pull-cable means is connected to the gantry crane in the region of the upper end of the column means for swinging the latter about one or the other of the swing axes, and a pair of outer cable guide means respectively coact with the pull-cable means to provide a pair of turning points for the latter, one of these outer cable guide means coacting with the pull-cable when the crane is supported for swinging movement about that one of the swing axes which is nearer to this one cable guide means, while the other cable guide means coacts with the pull-cable means when the crane is swingable about the other swing axis which is nearer to this other cable guide means. Depending upon which connecting means is used, the pair of outer cable guide means are situated in planes which bisect the angle between one of the end planes and the vertical plane which contains the particular swing axis which is used. An intermediate cable guide means also is provided to coact with the cable means, irrespective of which the swing axis is used, and this intermediate cable guide means is situated in a plane which bisects the angle between the other of said end planes and the vertical plane which contains the particular swing axis which is used.

3,429,454
RAILWAY CAR DRAFT GEAR WITH AUTOMATIC CUSHIONING CONTROL

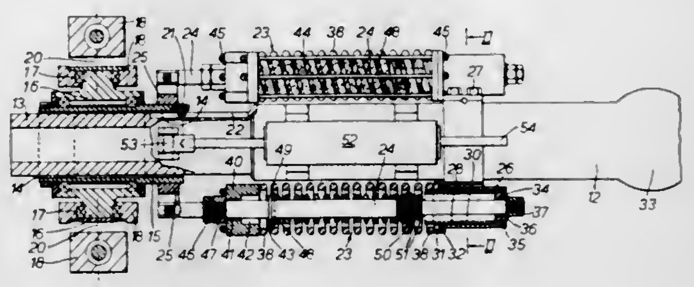
William H. Glass and Robert J. Bridigum, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 26, 1967, Ser. No. 656,187
U.S. Cl. 213—8 **14 Claims**
Int. Cl. B61g *9/12, 11/00, 9/02*



A doubled piston hydraulic draft gear device for a cushioned underframe type of railway car having a body supporting sliding or floating center still straddling a fixed center sill and movable relative thereto in response to inertia forces effective on the car body to cause one piston to act jointly with car coupler buffing forces effective on the other piston to provide for energy absorption proportional to the load on the car and effective to act in opposition to the downward pitching of the front end of the car resulting from the impacting of the car with another upon coupling of the couplers of the respective cars.

3,429,455
MANIPULATORS

Edward Machon, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield England
Filed Mar. 28, 1966, Ser. No. 538,079
Claims priority, application Great Britain, Apr. 1, 1965, 13,887/65
U.S. Cl. 214—1 **2 Claims**
Int. Cl. B25j *5/00;* **B66c** *17/18*

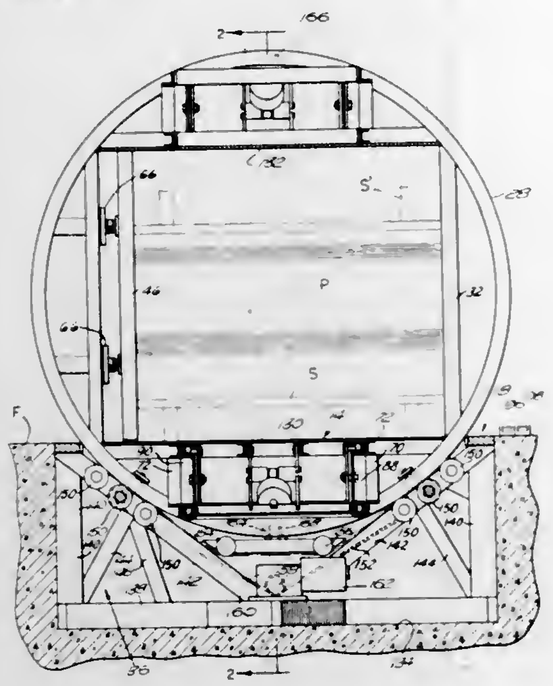


The invention is concerned with a manipulator assembly comprising a peel mounted on a manipulator carriage. A pair of spring assemblies is arranged between the peel and the carriage, each comprising a pair of coaxial springs. In either direction of forging the carriage can continue its movement toward or away from the press whilst the peel is held stationary on its workpiece being gripped by the tools of the press. On release of the workpiece the spring loading operates to return the peel to a datum position on the manipulator. One of the springs remains uncompressed for a predetermined distance when the peel moves away relative to the datum position.

3,429,456

SKID TURNER

Harvey W. Burgher, 204 Jacobs Hill Road,
Seekonk, Mass. 02771
Filed Oct. 20, 1966, Ser. No. 588,680
U.S. Cl. 214—1 **4 Claims**
Int. Cl. B65g *7/00*

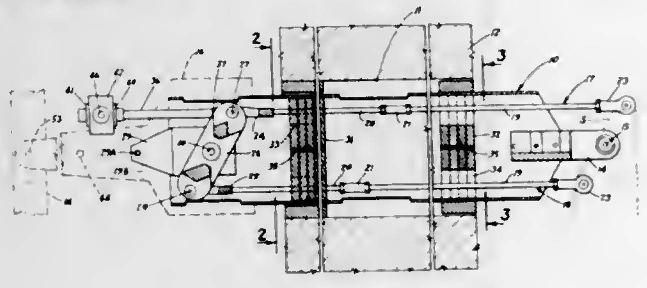


A device for inverting a skid having a load mounted thereon and that includes a frame defined by a pair of rings that are disposed in spaced coaxial relation, the rings being interconnected and having rectangular openings formed therein for receiving the skid with the load mounted thereon, the rings being rotated to an inverted position for inverting the load as mounted on the skids that are clamped within the rectangular openings in the rings.

3,429,457

MASTER PIVOT ROCKER ASSEMBLY

Carleton E. Jennrich, St. Paul, and Lester W. Haaker and Demetrius G. Jelatis, Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
Filed Apr. 8, 1966, Ser. No. 541,283
U.S. Cl. 214—1 **10 Claims**
Int. Cl. B25j *3/00*

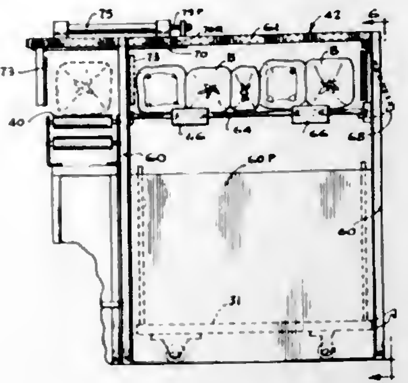


1. In a remote control master-slave manipulator comprising a horizontal tubular support, a master arm assembly and a slave arm assembly connected to the respective ends of said support for pivotal movement of the master and slave arms with respect to the support, link means interconnecting said arms for causing the arms to pivot conjointly with respect to the support, and means for causing relative lateral rotation of said slave arm outside of the plane defined by the longitudinal axes of said tubular support and said master arm, the improvement which consists in means for dividing the longitudinal motion of said interconnecting link means whereby, when said slave arm is rotated laterally relative to the master arm, a longitudinal twisting motion is imparted to one segment of said interconnecting link means which is connected to said master arm assembly and the remainder of said link means extending to said slave arm is maintained free from twisting.

3,429,458

SYSTEM FOR HANDLING BAGGED MAIL

Joseph E. McWilliams, 1345 Canterbury Lane,
Glenview, Ill. 60025
Application Dec. 30, 1964, Ser. No. 422,347, now Patent No. 3,221,912, dated Dec. 7, 1965, which is a division of application Ser. No. 139,526, Sept. 20, 1961, now Patent No. 3,164,271, dated Jan. 5, 1965. Divided and this application May 28, 1965, Ser. No. 459,723
U.S. Cl. 214—6 **3 Claims**
Int. Cl. B65g *57/14, 47/48, 57/20*



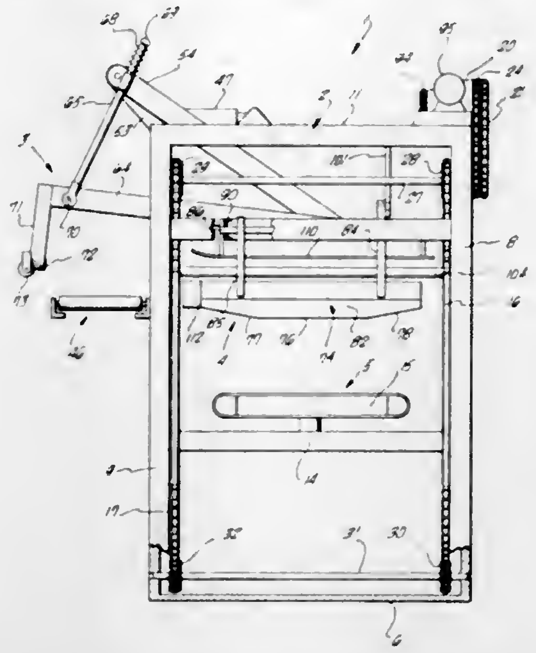
This invention relates to methods and apparatus for handling loaded mail bags that are labeled as to destination on a mass basis in which the bags are deposited at an initial gathering area where they are applied to a distributing conveyor in single file form and are oriented to extend longitudinally of the conveyor, which distributing conveyor conveys them past a plurality of collecting stations at which the bags allocated to common destinations are displaced from the conveyor while maintaining their said orientation and are loaded in balanced vertical stacks on sideless hand trucks while maintaining said orientation, which trucks when loaded are collected in a storage area and are arranged according to destination to await a transport vehicle such as a railroad car or highway vehicle. When the transport vehicle arrives, the hand trucks are moved to the location of the vehicle and the bags are loaded into the vehicle in units of one or more of the stacked tiers, all while maintaining the orientation of the bags that is achieved when they are loaded onto the respective hand trucks.

3,429,459

PALLETIZER

Lowell A. Paul and Loyd Adams, Pasadena, Calif., assignors to Dakon-Adams Co., Los Angeles, Calif., a partnership
Filed Oct. 21, 1966, Ser. No. 588,494
U.S. Cl. 214—6 **27 Claims**
Int. Cl. B65g *57/00*

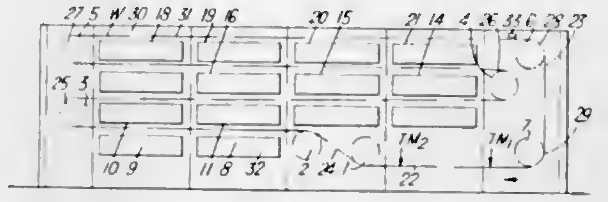
The palletizer has a rake operable in an arcuate path to sweep tandemly aligned pairs of cartons into two opposed racks. Each rack has a back and three carton carrying sections. Each of the carton carrying sections is at a slight angle to its adjoining section such that juxtaposed cartons have their upper lateral edges in contact and their lower proximate edges spaced apart. The backs of the racks maintain tandem pairs of cartons in abutting relationship. When a full load of three tandem pairs of cartons is in the racks, the racks open to release the cartons onto a pallet on a turntable. A space for refrigerant is developed between released juxtaposed cartons and tandem carton pairs because of the angle between carton carrying sections and the separation of the cartons of carton pairs caused by the retracting racks. The amount of separation between tandemly aligned cartons is controlled by carton positioning members. Alternate layers of cartons are rotated 90° with respect to each other to develop a locked stack. Means are provided to lower the turntable after each successive loading of cartons. Means are also provided to supply at predetermined times unloaded pallets to the turntable and to remove fully loaded pallets therefrom. Safety means prevent palletizer operation unless the proper sequence of operation is being followed.



3,429,460

CONTROL MEANS FOR A MULTITURN ENDLESS CONVEYING APPARATUS

Georges Xavier Lens, Evere, Jozef Maria van Brabant, Boechout-Antwerp, and Franciscus Joannes Julia Hendrickx, Berchem-Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,337
Claims priority, application Netherlands, Apr. 20, 1965, 6505022
U.S. Cl. 214—11 **16 Claims**
Int. Cl. B65g *47/34, 43/00*



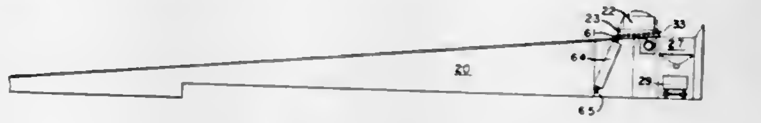
A letter sorting machine including an endless main conveyor and transfer means. Letter containers are coupled to the conveyor and moved thereby adjacent to plurality of letter destination bins. An auxiliary conveyor moves synchronously with the main conveyor and carries a plurality of magnetic bistable code recorders which register the letter destination bins. The code recorders are moved along a plurality of detection means which are actuated by corresponding codes in the recorders to operate the transfer means to transfer the letters to the proper destination bin.

3,429,461

UNLOADER FOR BARGES AND THE LIKE

Jack Le Roy Fenchel, R.D. 1, Beaver Falls, Pa. 15010
Filed July 19, 1966, Ser. No. 566,325
U.S. Cl. 214—12 **5 Claims**
Int. Cl. B63b *27/00;* **B65g** *67/46*

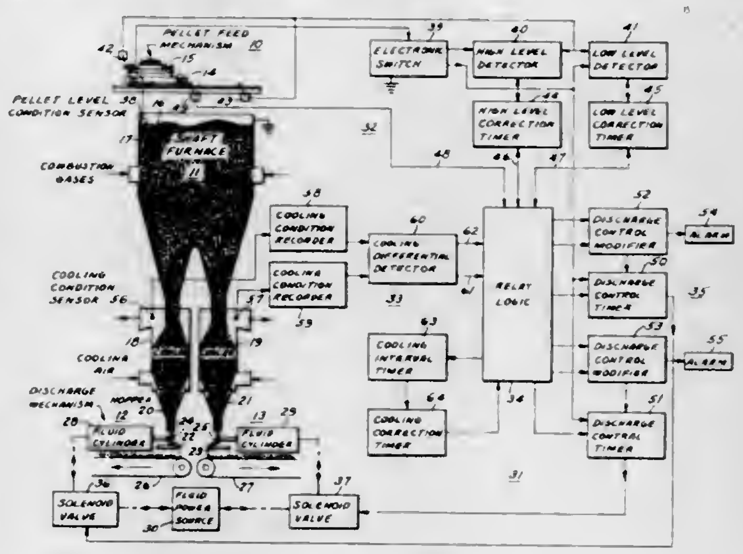
An apparatus for unloading barges by floating the barges upon an initially immersed traveling platform to which the barge is suitably secured, whereupon the platform, which is mobile, is moved up an inclined railway out of the water and to a discharge locus where mechanism is provided for establishing a pivotal axis about which the platform with entrained barge may be angularly moved to a tilting position suitable for unloading the barge.



3,429,462

SHAFT FURNACE DISCHARGE CONTROL

Thomas R. Frederiksen and Warren K. Radtke, Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 631,006
U.S. Cl. 214—18.2 **6 Claims**
Int. Cl. F23k *3/06;* **F27b** *1/20*

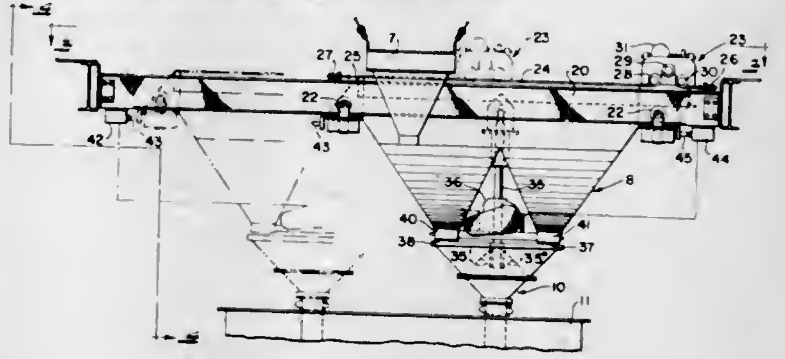


Automatic controls are applied to the discharge mechanisms of a divided-shaft type of pellet indurating furnace to establish a nominal rate of pellet throughput and to adjust this rate to meet changes in furnace operating conditions. The nominal discharge rate for each leg of the furnace is set by respective discharge control means, this being automatically modified periodically by respective discharge control modifying means. The latter means is principally responsive to raw pellet level condition signal means, but periodically is over-ridden to become responsive to the difference in respective pellet cooling condition signal means. Alarm means is provided to alert an operator when a predetermined amount of change in discharge rate occurs.

3,429,463

SHAFT FURNACE FEEDING DEVICE AND METHOD

Robert E. Blau, Winnetka, Ill., and George E. Stone, Boca Raton, Fla., assignors to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 28, 1966, Ser. No. 546,058
U.S. Cl. 214—35 **12 Claims**
Int. Cl. F23k *3/00;* **B65g** *65/30, 29/00*

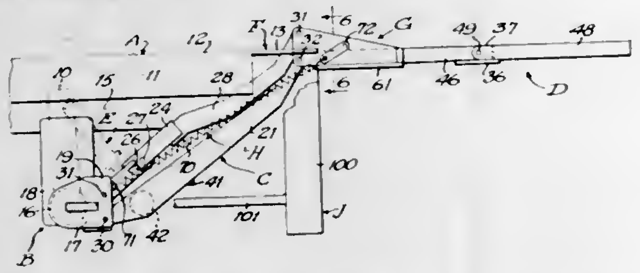


A feeding device for shaft furnaces and the like including a feed hopper and means for shuttling the hopper along a fixed path. Discharge means are associated with the hopper and adapted to discharge feed material from the hopper into the furnace. The discharge means is rotatable, and there are means associated with the feeding device to correlate the shuttling movement of the hopper and the rotation of the discharge means.

3,429,464

LOAD LIFT APPARATUS WITH LOW LOADING LEVEL

Morris D. Robinson, 23764 Liverwood Lane,
Harbor City, Calif. 90710
Continuation-in-part of applications Ser. No. 499,627,
Oct. 21, 1965, and Ser. No. 515,504, Nov. 19, 1965.
This application Oct. 3, 1967, Ser. No. 672,492
U.S. Cl. 214—77 **11 Claims**
Int. Cl. B60p *1/48*

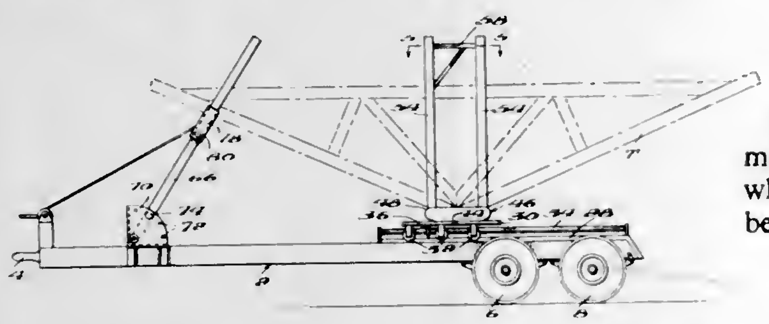


Disclosed herein is a hydraulic lift for vehicles such as trucks, wherein a lift platform or deck is carried by parallel arm linkage in a leveled position during elevation from ground level to truck bed level by a hydraulic cylinder exerting an upward pull against the lift arms at a point located outwardly of a transverse horizontal fulcrum axis on which they are pivotally attached to the vehicle for vertical swinging movements. The parallel arms of the linkage are sectional, articulated and fore-shortenable in a manner such as to provide for manually-operated folding of the deck over and into the linkage for stowing it in a non-use position. The platform is thin so as to provide low-level loading. When in the folded, stowed position, its heel is tucked beneath a plate which provides a rearward extension of the bed of the truck to which the lift is attached (where the lift is attached to the rear end of a truck). Outboard brackets, attached to the deck heel to transmit support to the deck from the parallel arm elevating linkage, project above the level of the deck so as to provide adequate cantilever support, and project upwardly through notches in the bed extension plate when the deck is leveled with the truck bed.

3,429,465

ROOF TRUSS TRAILER

Robert B. Gardner, P.O. Box 496,
Ashland, Va. 23005
Filed Oct. 25, 1966, Ser. No. 589,322
U.S. Cl. 214—83.24 **12 Claims**
Int. Cl. B60p *1/14, 1/48*

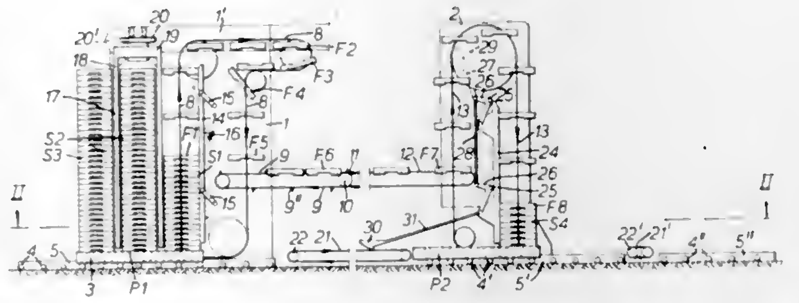


A vehicle of the trailer type adapted for hauling roof trusses. A track is mounted on the vehicle and receives thereon a carriage mounted for movement lengthwise of the track, with a rack supported on the carriage capable of movement on the track to an end of the vehicle so as to tilt lengthwise and facilitate discharge of the roof trusses.

3,429,466

MACHINE FOR CONFECTIONERY MANUFACTURE

Gerhard Puderbach, Neuwied, Germany, assignor to Richard Winkler and Dunnebier, doing business as Winkler & Dunnebier, Neuwied (Rhine), Germany, a partnership
Filed July 25, 1966, Ser. No. 567,486
Claims priority, application Germany, July 30, 1965,
W 39,643
U.S. Cl. 214—306 **6 Claims**
Int. Cl. B65b *21/02;* **B65g** *57/00, 59/00*

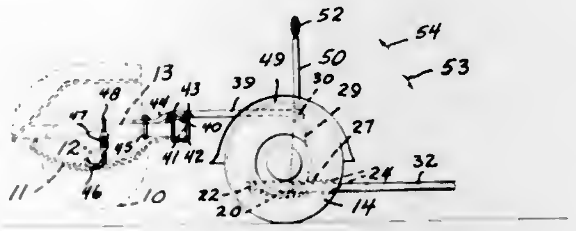


A machine for casting confectionery with a powder filling in forms or trays is provided with a roller track extending in the longitudinal direction of the machine at the inlet end thereof, a pallet easily movable upon the track, preferably three or more stacks of forms or trays mounted according to a specific stack pitch upon the pallet when the pallet is full, and an automatic periodically operable device engaging the next stack when the front one has been emptied and pushing the next stack with the pallet into the position previously occupied by the emptied stack. An automatic periodically operated drive is located under the machine for transporting emptied trays to the outlet end of the machine. Another pallet is easily movable upon another roller track extending in the longitudinal direction of the machine at the outlet end thereof. This pallet receives filled trays as stacks and cooperates with an automatic periodically operating device which engages behind the front filled stack and shifts it along with the pallet to the extent of a stack pitch. This device also removes the empty pallet from the drive.

3,429,467

AUTO TRANSPORT

Harlan E. Steffe, Boyden, Iowa 51234
Filed Mar. 13, 1967, Ser. No. 622,745
U.S. Cl. 214—384 **3 Claims**
Int. Cl. B62b *1/02, 7/02*



An auto transport attachable to one end of an automobile by which that end can be raised to remove the wheels from the ground, and having steerable wheels for better trailing of the transport.

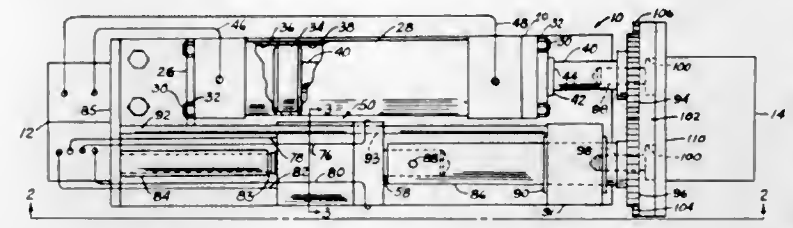
3,429,468

AUTOMATION DEVICE

Thomas Berilla, 2615 Higbee Road,
Adelphi, Md. 20783
Filed Oct. 22, 1965, Ser. No. 500,871
U.S. Cl. 214—670 **15 Claims**
Int. Cl. B66f *9/00;* **B25j** *11/00*

This disclosure covers an automation device which is capable of moving a tool, such as a handling mechanism,

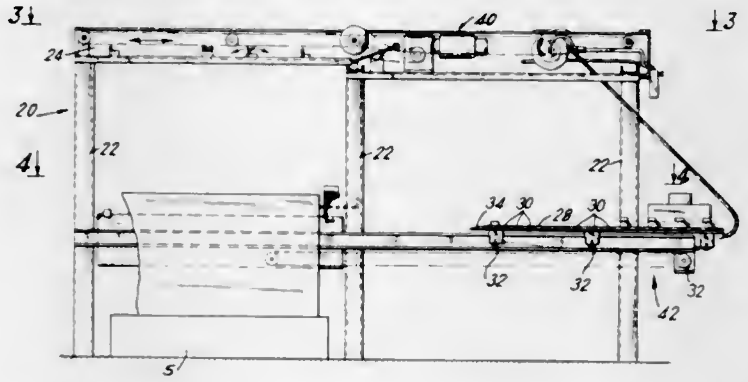
in any one of an infinite number of directions, as a result of a novel combination of a linear-type cylinder and piston, a rotary-type cylinder and shaft, control means therefor, and a dual gear and rack arrangement. The piston moves a tool mounting plate linearly, while the reciprocating shaft rotates one of the two gears housed in the tool mounting plate. Meshing of said one gear with the other gear and the meshing, in turn, of the two gears with the racks produces the simultaneous vertical motion.



3,429,469

PAPER STACKING APPARATUS

Eric Ronald Peterson, Staten Island, N.Y., assignor to Peterson Automated Paper Handling Systems, Inc., Long Island City, N.Y.
Filed Oct. 5, 1966, Ser. No. 584,589
U.S. Cl. 214—730 **3 Claims**
Int. Cl. B65g *57/02, 61/00;* **B66f** *9/14*

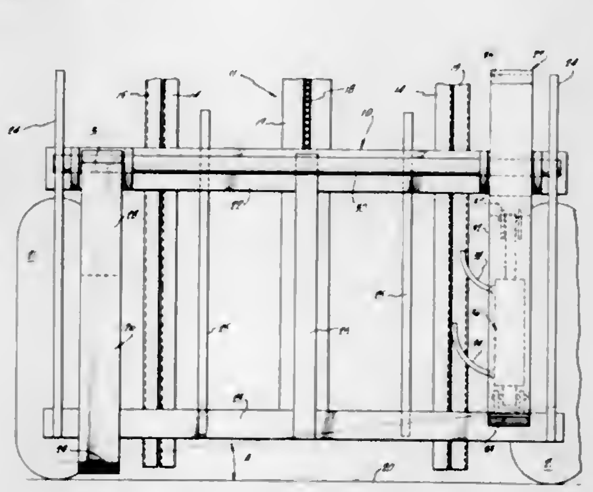


An apparatus for delivering bundles of paper from a cutting machine to a receiving platform for stacking. A horizontally movable table is supported at the level of the bed of a cutting device for loading.

3,429,470

LOAD HANDLING IN FORK-LIFT TRUCKS

Thomas N. Melin, 5538 The Toledo-Naples,
Long Beach, Calif.
Filed Mar. 15, 1965, Ser. No. 439,846
U.S. Cl. 214—750 **3 Claims**
Int. Cl. B66f *9/06, 9/16*



A slope piling arrangement for a fork-lift truck in which one of the lifting forks has its vertical leg movably engaged with a hanger bar secured to the fork apron so that the fork leg, during movement relative to the apron, is constrained to move vertically, and in which a power drive mechanism is connected between the apron and the fork for moving the fork relative to the apron.

3,429,471

BUCKET POSITIONING KICK-OUT CONTROLS FOR BUCKET LOADERS

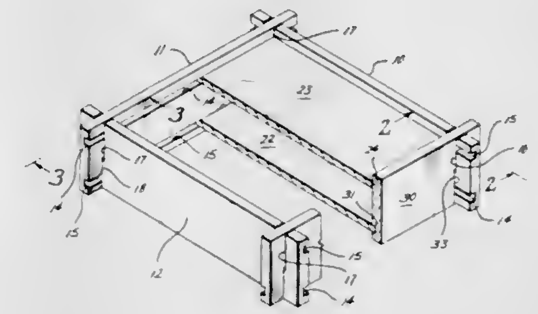
Howard B. Austin, East Peoria, and John D. Wait, Jr., Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 8, 1967, Ser. No. 666,292
U.S. Cl. 214—762 **10 Claims**
Int. Cl. E02f *3/86, 3/87*

Automatic stops associated with a bucket pivotally supported by the lift arms of a bucket loader for positioning the bucket at four predetermined positions including dump, load dump height and ground or load level. The bucket loader has hydraulic jacks for controlling bucket elevation and additional jacks for controlling bucket tilt which take precedence over the elevating jacks. Two kick-outs return the elevating jack to a hold position when the bucket is at dump height or ground level. Two additional kick-outs return the tilting jacks to hold when the bucket is suitably positoned for dumping or filling. One of the kick-outs associated with each of the elevating jacks and the tilt jacks is collapsible to prevent their functioning during certain portions of the bucket loading operation.

3,429,472

TAMPER-PROOF BOX CONSTRUCTIONS

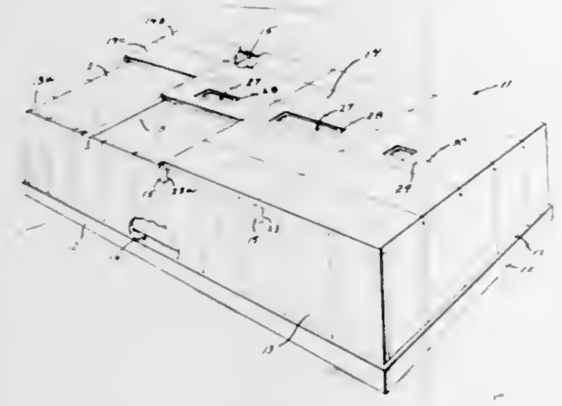
Lucious E. Rogers, Jr., Houston, Tex., assignor of fifty percent to Neil A. Morgan, Bellaire, Tex.
Filed Oct. 10, 1966, Ser. No. 585,418
U.S. Cl. 217—62 **3 Claims**
Int. Cl. B65d *43/12, 9/34*



The disclosure is of tamper-proof box constructions wherein the sides, bottom, and top panels are of interlocked form, and wherein the top, or last, panel is interlocked into place forceably, such that it cannot be removed from the box to open the box without breaking it or some adjacent part of the box. The box, therefore, may be assumed not to have been tampered with or its contents tampered with if it remains in unbroken condition.

3,429,473
PRECAST SEGMENT LIQUID STORAGE TANK

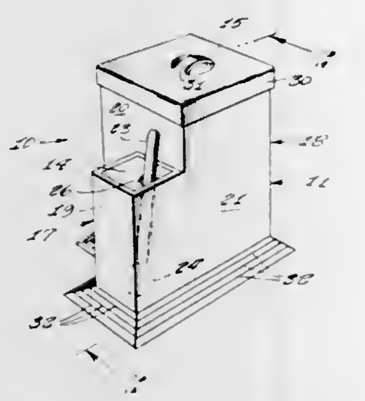
Albert L. Vroman, Portland, and Leo E. Boucher, Mulliken, Mich., assignors to A. D. L. Cement Products, Inc., Portland, Mich., a corporation of Michigan
Filed July 5, 1966, Ser. No. 562,886
U.S. Cl. 220—5 **8 Claims**
Int. Cl. B65d *11/10, 11/18, 13/02*



A liquid storage tank comprised of precast concrete segment wall and roof panel members and precast concrete beam elements which upon assembly uniquely interlock with each other and coact to form an inherently stable structure which does not require ancillary support, locking, or adhesive means in its assembled use position. The beam elements and wall and roof panel members are configured to be assembled in such a manner that any desired size of tank can be obtained without the use of other than the standard size precast concrete panel segments and beam members used in installations of any size.

3,429,474
TOILET TISSUE HOLDER AND BOWL BRUSH

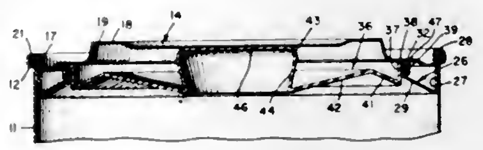
James Roosevelt Cann, 102—39 185th St., Hollis, N.Y. 11423
Filed Apr. 17, 1967, Ser. No. 631,239
U.S. Cl. 220—20 **1 Claim**
Int. Cl. B65d *1/24;* **A45d** *44/18;* **A47g** *17/00*



The invention relates to a container for holding toilet tissue and toilet bowl brushes. The container has two compartments, the first for a toilet bowl brush and the second for toilet tissue. The compartment for the toilet tissue is both higher and of a larger cross section than the compartment for the toilet bowl brush.

3,429,475
CAN

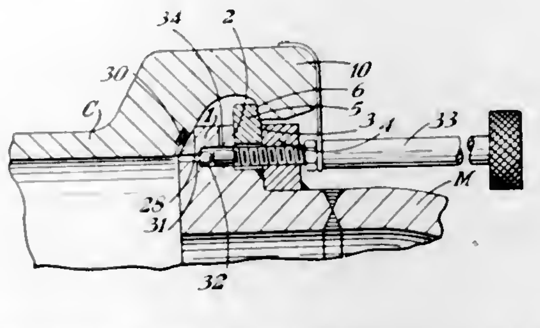
Arthur P. Scholtz, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill.
Filed July 18, 1960, Ser. No. 43,574
U.S. Cl. 220—29 **33 Claims**
Int. Cl. B65d *51/18, 11/06, 21/02*



1. In a container construction, a cylindrical body; an end, said end being attached to said body and removable from said body at the point of consumption of said container; a collar, said collar having a cylindrical wall fitting inside the top end of said body and having a depth such that a can opening instrument may traverse and cut said end without injury to said collar, means forming a peripheral seam between the end and said cylindrical body permanently securing said body and said end, a breast slanting upwardly-inwardly from the lower edge of said cylindrical wall, an annular, upwardly projecting neck on the upper end of said breast having an opening sufficient to provide access to the interior of said body, and an outwardly turned terminal bead on the upper end of said neck; and a unitary flexible reclosure cap fitting on said collar under said end, said cap having a peripheral short, cylindrical, downwardly-extending flange sealing against the outside of said bead, a narrow annular horizontal flange extending inward from the upper end of said downwardly-extending flange and sealing against the top of said bead, a cylindrical side wall extending downwardly from the inner edge of said horizontal flange and sealing against the inside of said neck, an upwardly-inwardly slanted surface extending from the lower edge of said side wall, an annular depression in said slanted surface and an upwardly projecting lift knob disposed centrally of said depression, the top of said knob being higher than the top edge of said body; said end being formed to bear against the top of said knob and against said horizontal flange of said cap.

3,429,476
PIPE OR VESSEL CLOSURE

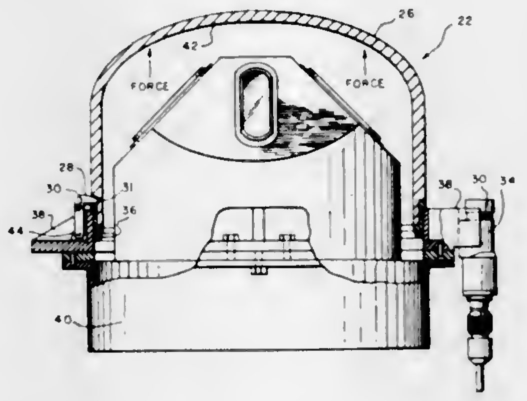
Keith Ellis Hunter, Worksop, England, assignor to General Descaling Company Limited, Worksop, England, a company of the United Kingdom
Filed Jan. 26, 1966, Ser. No. 523,194
U.S. Cl. 220—55 **10 Claims**
Int. Cl. B65d *45/32;* **A47j** *36/10, 27/08*



This disclosure relates to a releasable connection between a closure and a vessel, the closure and vessel having sealing surfaces in contacting engagement, the closure being provided with a recess carrying a locking ring having a peripheral surface for wedging engagement against a peripheral surface of the vessel upon the expansion of the ring in a radially outward direction whereupon the sealing surfaces are maintained in intimate contacting engagement, and toggle linkage means for expanding the locking ring.

3,429,477
APPARATUS FOR EJECTION OF AN INSTRUMENT COVER

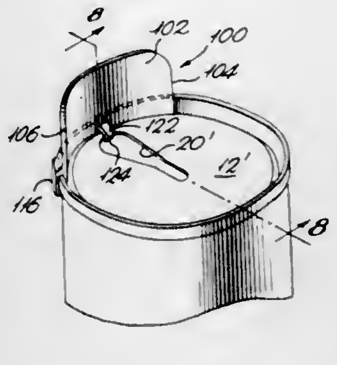
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention by Bernie R. Wells, Madison, Ala., and Charles W. Rowland, Merritt Island, Fla.
Filed May 17, 1967, Ser. No. 640,788
U.S. Cl. 220—55 **9 Claims**
Int. Cl. B65d *45/00;* **A47j** *27/08, 36/10*



An apparatus for ejecting a cover from an instrument case utilizing the force of differential pressure between the inside of the instrument case and the environment of the case. An air-tight seal, positioned between the cover and the case, allows the case to be pressurized, so that the cover ejects when it is released. The device has a plurality of cover latches rotatably mounted on the side of the case and latch retaining means to secure the latches against rotation. Releasing means consisting of cable cutters are provided to cut the cable and thereby release the latches.

3,429,478
DRINKING ATTACHMENT FOR CONTAINERS

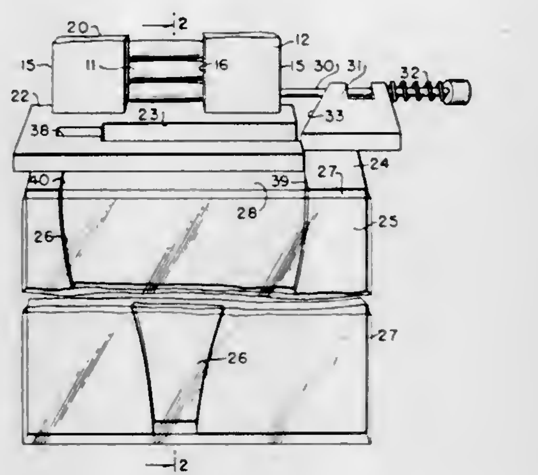
William W. Ward, 7520 Maple Ave., Apt. 712, Takoma Park, Md. 20012
Continuation-in-part of application Ser. No. 669,799, Sept. 27, 1967. This application Dec. 7, 1967, Ser. No. 693,043
U.S. Cl. 220—90.2 **1 Claim**
Int. Cl. A47g *19/22*



A drinking attachment is adapted to be mounted on the end of a beverage can having a lip therearound and a pour hole therethrough. The attachment includes a mouth engaging portion connected with a container engaging portion which is attached to the lip of the container, while an offset portion is at least partially received in the pour hole of the container to hold the attachment firmly in position.

3,429,479
HOPPERING AND ORIENTING DEVICE

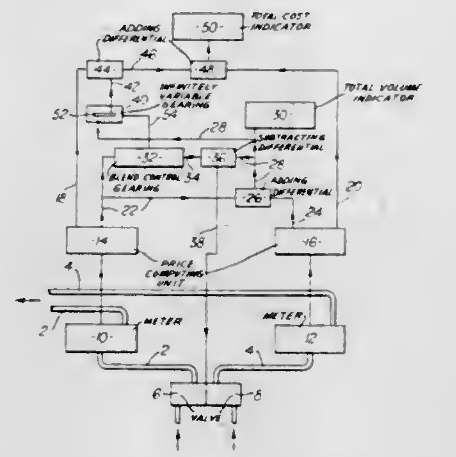
Earl Birkett, West Hempstead, N.Y. (392 W. Broadway, New York, N.Y. 10012)
Filed Dec. 5, 1967, Ser. No. 688,149
U.S. Cl. 221—172 **6 Claims**
Int. Cl. B23q *7/12*



Irregular elongated objects having a large end or an internal irregularity are delivered large end first or open end up by being moved laterally while in the cavity of a reciprocating slide over a delivery opening which is shorter than the length of the elongated objects. If the objects are disposed one way in the slide cavity, their large or closed ends prevent longitudinal motion and they fall into the delivery opening. If the objects are disposed the other way in the slide cavity, they are moved longitudinally in the slide cavity as they pass a spring mounted element so that their large or closed ends fall into the delivery opening.

3,429,480
DISPENSING APPARATUS FOR A BLEND OF TWO LIQUIDS WITH COST INCREMENT MEANS

Colin Roderick Petyt, Hillingdon, Middlesex, England, assignor to Avery-Hardoll Limited, Chessington, Surrey, and Beck & Co. (Meters) Limited, London, England, both British companies
Filed Mar. 27, 1967, Ser. No. 626,062
Claims priority, application Great Britain, Apr. 5, 1966, 15,164/66
U.S. Cl. 222—26 **7 Claims**
Int. Cl. B67d *5/56;* **G01f** *15/06*



The invention relates to an apparatus for dispensing blends of two different liquids. A pumping unit draws liquid from a source of supply and conveys it through a meter system to a common outlet. The apparatus includes controls for flow of the liquids to be blended, computation of the particular blends involved with an increment being added to or subtracted from the output from the price computing means prior to the display of the total cost.

3,429,481

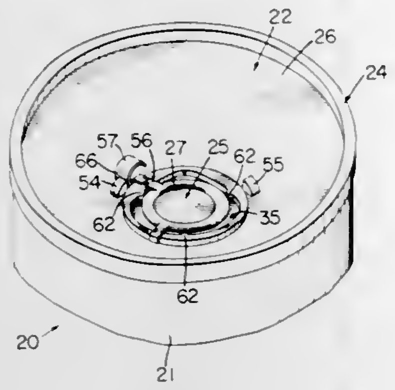
END CLOSURE OPENING AND POURING MEANS

Thomas Navia, New Brunswick, N.J., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Mar. 23, 1967, Ser. No. 625,506

U.S. Cl. 222—83 **6 Claims**

Int. Cl. B65d *17/24*



This disclosure relates to container means such as a beverage can, for example, having integral means for providing a dispensing opening in wall means thereof without completely tearing away a part of such wall means and which enables a person to drink directly from such can without engaging ones lips against sharp edges outlining such dispensing opening, further this disclosure relates to a method of making such container means, or the like.

3,429,482

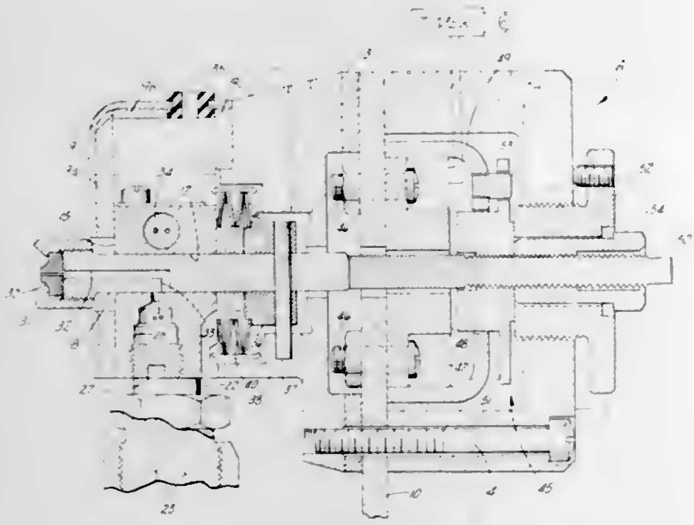
APPARATUS FOR DISPENSING BEADS OF VISCOUS LIQUIDS

Eric T. Nord, Oberlin, Samuel R. Rosen, Lorain, and Richard M. Liptak, Parma, Ohio, assignors to Nordson Corporation, Amherst, Ohio, a corporation of Ohio

Filed Sept. 15, 1967, Ser. No. 667,940

U.S. Cl. 222—146 **6 Claims**

Int. Cl. B67d *5/62, 47/18;* **B05b** *1/30*



Apparatus for dispensing viscous liquids such as molten adhesives, either in a continuous bead or as spaced unitary deposits. The outflow of the viscous liquid is controlled by a valving arrangement including a reciprocating plunger which opens and closes a port located in the barrel in which the plunger slides and through which the liquid may flow into a passage extending through the plunger to a nozzle. When the port is closed the fluid pressure is cut off. The movement of the plunger in closing the port also retracts the nozzle from its liquid dispensing position and thus abruptly breaks the outwardly extending column of viscous liquid at the nozzle orifice.

3,429,483

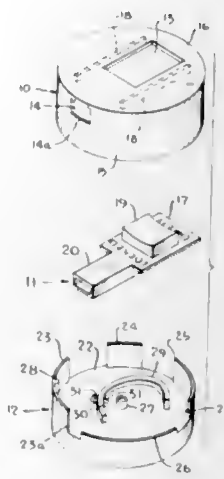
CAPTIVE ACTUATOR FOR PRESSURE OPERATED CONTAINER

Lewis A. Micallef, New York, N.Y., assignor, by mesne assignments, to Leeds & Micallef, New York, N.Y., a partnership of New York

Filed Feb. 24, 1967, Ser. No. 618,385

U.S. Cl. 222—153 **24 Claims**

Int. Cl. B67d *5/32;* **B65d** *83/14*



A rotatable captive actuator for a pressure operated container for pressurized flowing material. The actuator receives a portion of the pressure release stem, and has rotatable means to rotate the spout structure. The rotatable means upon opposite rotation rotate the spout structure between two positions. In one of these positions the stem can be operated to permit discharge of the material through the spout structure, and in the other of these positions the stem cannot be operated and the spout structure is in a protected position within the cover.

3,429,484

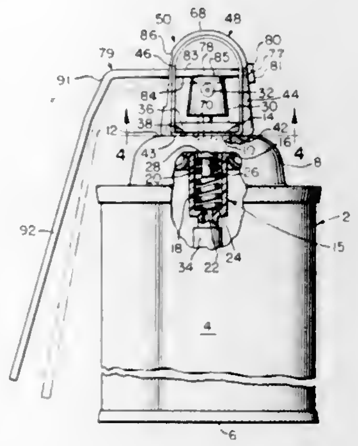
AEROSOL SPRAY HEAD ACTUATOR

Eugene R. Baldwin, Arlington Heights, Ill. (Rte. 1, Box 69A, Grayslake, Ill. 60030)

Filed Sept. 7, 1967, Ser. No. 666,187

U.S. Cl. 222—402.13 **1 Claim**

Int. Cl. B65d *83/14*



An attachment for an aerosol container of the type having an annular shoulder encompassing a spray head, an inverted U-shaped jaw clamp having side legs with inturned flanges at their lower ends underposed with respect to the shoulder and having an actuator including a portion extending transversely of the legs through apertures therein and pivoted at one end to one leg and superposed with respect to the spray head and having a hand operated handle extending from said portion downwardly alongside the container.

3,429,485

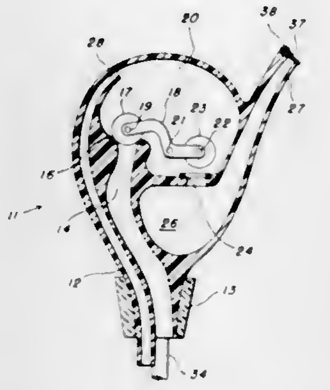
LIQUID MEASURING DISPENSER

Gabriel J. Harkay, San Diego, Calif., assignor to Cubic Corporation, San Diego, Calif., a corporation of California

Filed Sept. 26, 1967, Ser. No. 670,643

U.S. Cl. 222—442 **5 Claims**

Int. Cl. G01f *11/28*



A liquid measuring dispenser having first and second compartments therein, the first compartment being in communication through a check valve to a container and the second compartment being in direct communication with a pouring spout, the check valve being carried by one end of a rocker arm, the other end of which carries a check valve between the first and second compartments, the first compartment being filled during the pouring of liquid from the second compartment, and the second compartment being filled from the first compartment when the container is upright, and suitable air vent passages in communication with the first and second compartments.

3,429,486

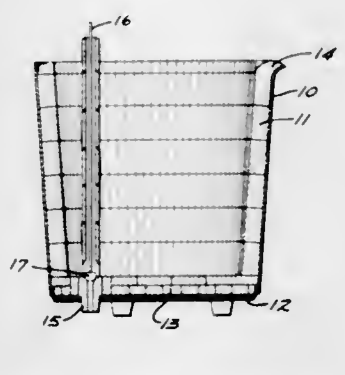
TAR IMPREGNATED FUSED SILICA STOPPER HEAD

Gerald R. Cope, Johnstown, Thomas W. Smoot, Bethel Park, and Albert L. Renkey, Pittsburgh, Pa., assignors to Dresser Industries, Inc., a corporation of Delaware

Filed Jan. 10, 1966, Ser. No. 519,558

U.S. Cl. 222—559 **3 Claims**

Int. Cl. B67d *3/00;* **B65d** *51/14;* **C04b** *35/14*



Stopper-heads used for the handling of molten metal comprising ceramically bonded, tar-impregnated fused silica.

3,429,487

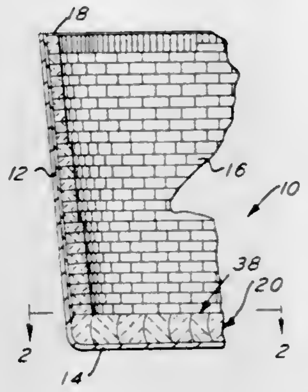
REFRACTORY FLOOR CONSTRUCTION

William T. Tredennick, Byrn Mawr, and James Richard Miller, Clearfield, Pa., assignors to Resco Products, Inc., Norristown, Pa., a corporation of Pennsylvania

Filed July 13, 1967, Ser. No. 653,196

U.S. Cl. 222—566 **6 Claims**

Int. Cl. B65d *25/14*



A floor construction of special refractory brick is provided having concave and convex surfaces on major faces and on end faces so that the bricks interlock into a rigid floor without mortar.

3,429,488

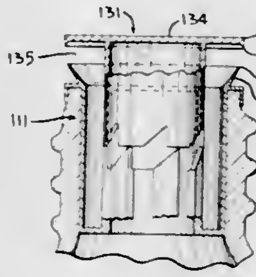
SURGE-PROOF POURING DEVICE

Lewis A. Micallef, New York, N.Y., assignor to Leeds & Micallef, New York, N.Y., a partnership of New York

Filed Apr. 12, 1967, Ser. No. 630,792

U.S. Cl. 222—570 **14 Claims**

Int. Cl. B65d *25/52*



A surge proof pouring device, for use in lieu of the conventional closure of tubular pouring outlets of containers, for example bottles. The pouring device comprises a shock absorbing chamber which receives liquid rushing from the container into the chamber when the container and pouring device are tilted for pouring liquid from the container. A closure member is provided for closing the annular passage; the pouring device and the closure member have mating cams which guide the closure member for axial movement relative to the pouring device.

3,429,489

FORM FINISHER AND BAG FOR USE THEREWITH

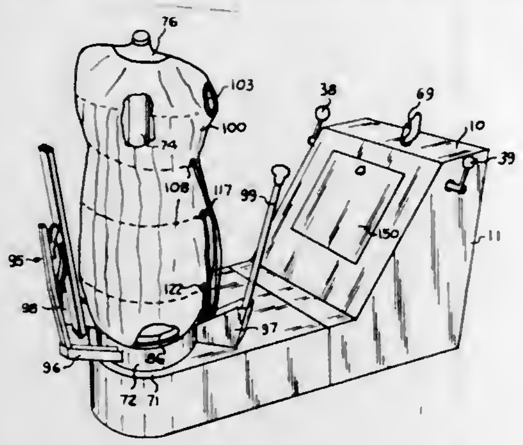
Bertram G. Blevens, Louisville, Ky., assignor to W. M. Cissell Manufacturing Company, Louisville, Ky., a corporation of Kentucky

Filed July 5, 1967, Ser. No. 651,307

U.S. Cl. 223—67 **13 Claims**

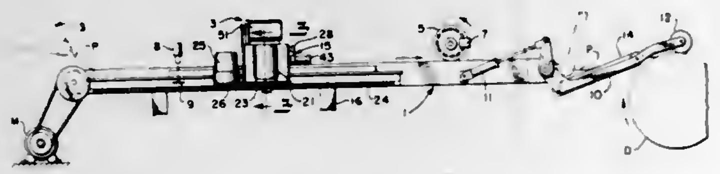
Int. Cl. A41h *5/02*

A form finisher employing a gas-pervious, flexible inflatable bag to which processing gases, including filtered air, under pressure are selectively supplied to finish garments of various sizes and materials disposed in enveloping relation upon the bag. The inflation of the bag portion which is not enveloped by the garment is controlled by the balance established between the gas pressure within the bag and the weight of a pair of masses supported by the bag and disposed exteriorly thereof.



3,429,490
APPARATUS FOR SEVERING TIRE PLY STOCK AND THE LIKE

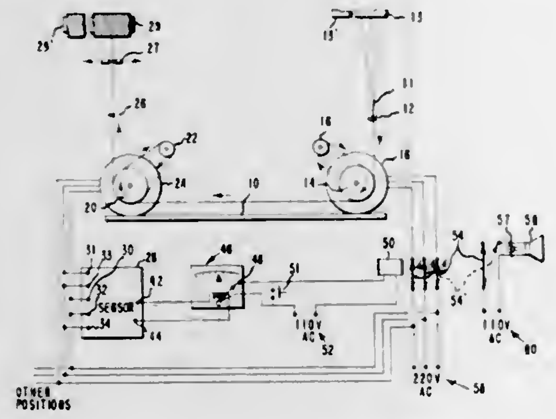
Armindo Cantarutti, Akron, Ohio, assignor to NRM Corporation, Akron, Ohio, a corporation of Ohio
Filed Oct. 21, 1966, Ser. No. 588,507
U.S. Cl. 225—94 **14 Claims**
Int. Cl. B26f *3/02;* **B65h** *35/10;* **B26d** *5/08*



Apparatus includes severing means for shearing a portion of the width of tire ply stock between adjacent cords thereof by relative lateral displacement of the cords thus to provide an opening therebetween defined by the adjacent relatively laterally displaced cords, and a tearing element movable between the laterally displaced cords and movable lengthwise of the cords thus to tear the remaining portion of the width of the stock.

3,429,491
BREAK DETECTOR AND SHUT DOWN MEANS

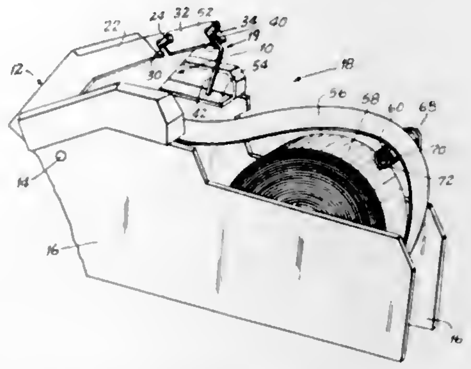
William Thomas Windley, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 8, 1967, Ser. No. 636,982
U.S. Cl. 226—11 **4 Claims**
Int. Cl. B65h *25/22*



In a multi-position strand handling machine, an apparatus for detecting a break in the advancing strand material, shutting down the strand advancing means and selectively indicating the location of the break. The apparatus employs at each position a power sensor connected to an advancing roll motor and to a switching arrangement for shutting down the strand advancing means and activating an alarm system upon sensing reduced power requirements for the advancing roll motor due to a strand break.

3,429,492
DISPENSER CONTROL SUPPORT

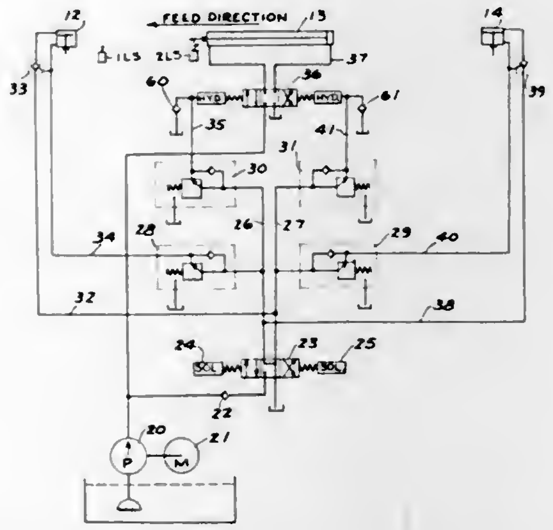
Herbert W. Hempel, Belleville, and Forest G. Hill, East St. Louis, Ill., assignors to Marsh Stencil Machine Company, Belleville, Ill., a corporation of Illinois
Filed July 13, 1966, Ser. No. 564,793
U.S. Cl. 226—89 **2 Claims**
Int. Cl. B65h *19/08;* **G03b** *1/56*



A support for maintaining the control assembly of a tape dispenser in raised position for tape reloading, inspection and other purposes including a shaft pivotally mounted in the cover of the control assembly, a radial leg secured to the shaft, a spring biasing the leg into supporting positions, spaced knobs secured to the shaft and engaging the cover in one position to limit shaft and leg rotation and to serve as handles to move the shaft and leg against the spring to lower the assembly, and a shelf engageable by the free end of the leg. A roller is provided to prevent tape overrun.

3,429,493
APPARATUS FOR FEEDING STRIP METAL

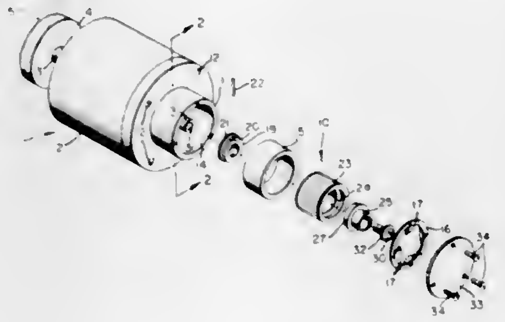
Albert F. Lehmann, Dearborn, Mich.
(7800 Dix Ave., Detroit, Mich. 48209)
Filed July 19, 1967, Ser. No. 654,575
U.S. Cl. 226—150 **9 Claims**
Int. Cl. B65h *17/44, 17/36*



The apparatus disclosed herein comprises one or more fluid operated gripping cylinders which are movable by a feed cylinder to feed the strip toward the work device such as a press. The apparatus further includes one or more retaining cylinders which grip the strip when the gripping cylinders are retracted to hold the strip in position until the gripping cylinders can be reciprocated to their original position for the beginning of another cycle. The control of the various cylinders is achieved by a hydraulic and an electrical circuit wherein the operation of the feed cylinder is not initiated until the gripping cylinders or retaining cylinders have been actuated to grip the strip. Further, the circuit includes an arrangement whereby in an emergency, the various cylinder movements can be interrupted and locked in position so that the cycle can be re-initiated from the point of stoppage without loss of registry.

3,429,494
ELECTRICAL MOTOR-TACHOMETER MOUNTING

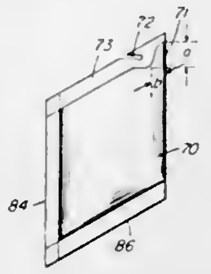
David Teh-Liang Chang, Altadena, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 22, 1967, Ser. No. 640,320
U.S. Cl. 226—188 **8 Claims**
Int. Cl. F16c *3/00*



An electrical motor-tachometer mounting assembly of which the tachometer is directly coupled to the shaft of a driving electrical motor, the rotational velocity of which is to be measured. The assembly includes a tachometer housing secured to the motor housing, a tachometer stator positioned within the tachometer housing and substantially concentric with the motor shaft, a first hub securely fastened to the shaft, a tachometer rotor assembly engaging the first hub in substantial concentric alignment, a second hub concentric with the shaft and urging the rotor towards the first hub, the second hub having a tapered outer peripheral surface engaging the rotor and concentrically aligning the rotor with the shaft, and fastening means securing the second hub to the shaft.

3,429,495
SEALED PACKAGES

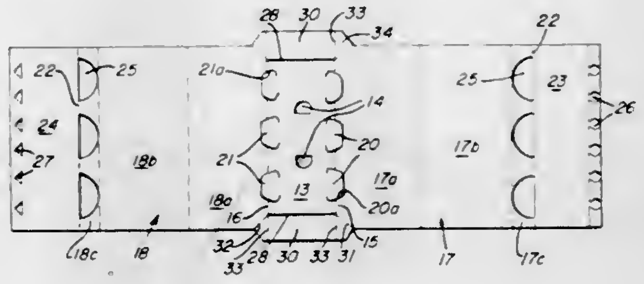
Robert B. McClosky, 113 Lawn St.
Park Ridge, N.J. 07656
Original application May 20, 1966, Ser. No. 551,603, now Patent No. 3,378,988. Divided and this application Feb. 8, 1968, Ser. No. 703,943
U.S. Cl. 229—7 **2 Claims**
Int. Cl. B65d *5/00, 1/08, 3/00*



The invention relates to sealed packages having a shape substantially in the form of a parallelogram and made of a single piece of flexible sheet material having a longitudinally folded edge and three heat sealed marginal edges. One of the heat sealed edges is substantially parallel to the longitudinally folded edge and the second heat sealed edge extends from the first heat sealed edge to the longitudinally folded edge and forms an acute angle with the first heat sealed edge and an obtuse angle with the longitudinally folded edge. The third heat sealed edge extends from the first heat sealed edge to the longitudinally folded edge and is substantially parallel to the second heat sealed edge. A pouring spout is between the longitudinally folded edge and the third heat sealed edge.

3,429,496
WRAP-AROUND TYPE CARRIER AND BLANK THEREFOR

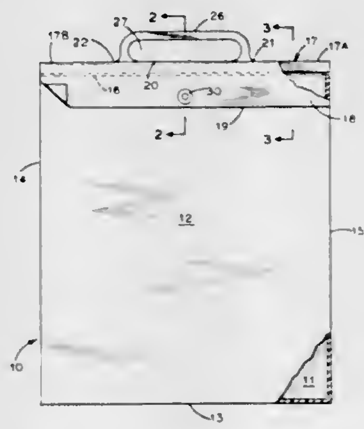
Robert J. Hickin, Seville, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 679,139
U.S. Cl. 229—40 **8 Claims**
Int. Cl. B65d *75/00, 85/62*



A wrap-around type carrier formed from a single blank of foldable sheet material for accommodating a plurality of articles of like configuration arranged in upright side-by-side relation and forming at least one row of articles. The carrier includes an elongated top panel, depending sidewall panels and an elongated bottom panel; all of said panels cooperating to form a tubular member encompassing the row of articles. Disposed at least at one end of the carrier is an elongated end panel which is adjacent to, but separate from an adjacent end edge of the top panel. The end limits of the end panel are foldably connected to adjacent edges of the sidewall panels whereby said end panel assumes a substantially concave disposition with respect to the end of the carton and a transverse disposition with respect to the top panel.

3,429,497
PLASTIC FILM BAGS AND CARRYING HANDLE

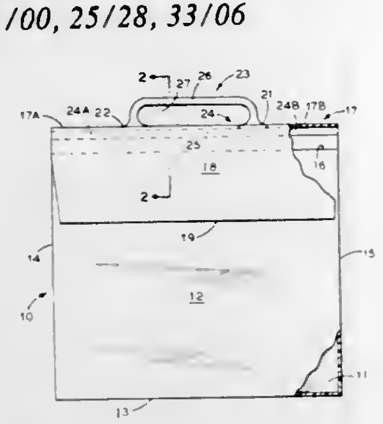
Jerome J. Dorfman, 601 39th St.,
Brooklyn, N.Y. 11232
Filed May 16, 1967, Ser. No. 638,991
U.S. Cl. 229—54 **4 Claims**
Int. Cl. B65d *31/00, 33/00, 33/06;* **A45c** *13/26*



A plastic film bag having a plastic handle; the bag being suspended from the handle and including a flap closure.

3,429,498
PLASTIC FILM BAGS AND CARRYING HANDLE

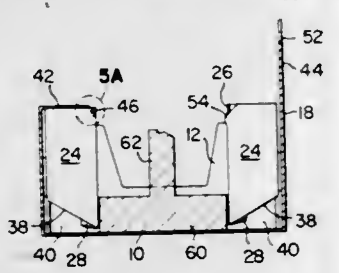
Jerome J. Dorfman, 601 39th St.,
Brooklyn, N.Y. 11232
Filed Sept. 15, 1967, Ser. No. 668,124
U.S. Cl. 229—54 **2 Claims**
Int. Cl. B65d *31/00, 25/28, 33/06*



Plastic film bags having a plastic carrying handle sealed thereto.

3,429,499
COMPARTMENT BOX

Peter R. Olsen, Suffern, N.Y., assignor, by mesne assignments, to Stecher-Traung-Schmidt Corporation, Rochester, N.Y., a corporation of New York
Filed May, 1, 1967, Ser. No. 635,066
U.S. Cl. 229—28 **15 Claims**
Int. Cl. B65d *5/48, 5/56, 5/40, 5/62, 1/36*



A carton shell having vertical upstanding compartments **20** formed from end extensions of the shell sidewalls **12** and **14**. The compartments being hinged to adjacent shell endwalls **16** and **18** by hinge panels **32** partially formed from external compartment back walls **22**, thereby to maintain the shell sidewalls, shell endwalls and compartments in proper alignment when tuck flaps **46** or **48** of shell endwalls **16** and **18** are interlocked with abutting compartments.

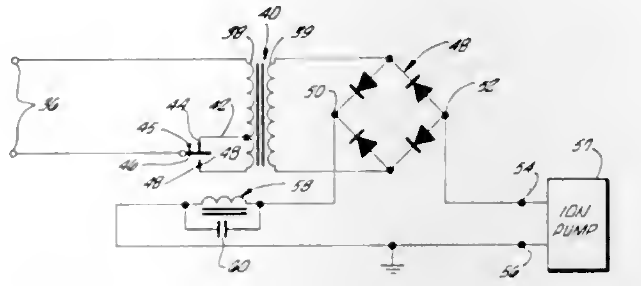
3,429,500
SELF-LOCKING TUBULAR CONTAINERS

Stanley J. Mansfield, 47 W. 57th St.,
New York, N.Y. 10019
Filed Oct. 10, 1967, Ser. No. 674,173
U.S. Cl. 229—62 **4 Claims**
Int. Cl. B65d *33/24, 85/20, 77/14*

Self-locking tubular containers formed from segments of synthetic resinous tubing, having first ends which are permanently closed, as by heat sealing or the like, and second ends which are longitudinally slit to form resilient locking members, the slit portion being foldable upon an adjoining solid portion of the tube to effect a sealed closure at the second end of the tube.

3,429,501
ION PUMP

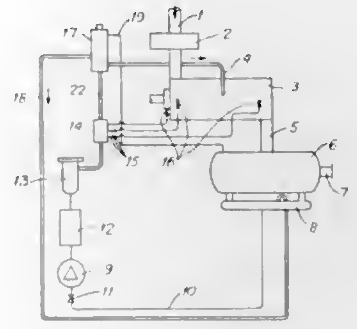
Allen R. Hamilton and Thadeus S. Graczyk, Rochester, N.Y., assignors, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,401
U.S. Cl. 230—1 **5 Claims**
Int. Cl. F04b *37/14, 49/00;* **H01j** *9/38*



A high efficiency ion pump and method of operating same. Efficiency of the operation of an ion pump is improved by providing power sensing and power regulating means in the circuit between the pump power supply and the pump. A feedback loop from the sensing means to the regulating means is provided and the combination is arranged such that power is supplied to the pump at approximately the optimum power level over an extended range of pump pressures.

3,429,502
OIL REGULATING MEANS FOR COMPRESSORS

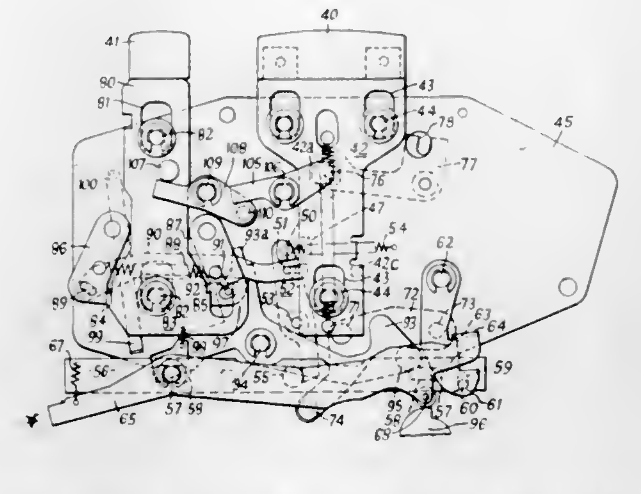
Karl Vilhelm Bertil Lundvik, Norrkoping, Sweden, assignor to Stal Refrigeration Aktiebolag, Norrkoping, Sweden, a corporation of Sweden
Filed Sept. 29, 1967, Ser. No. 671,759
Claims priority, application Sweden, Oct. 12, 1966, 13,780/66
U.S. Cl. 230—206 **1 Claim**
Int. Cl. F04b *39/02;* **F01m** *1/10*



A liquid regulating means such as can be used for regulating oil from an oil container that contains oil separated from compressed gas. The arrangement comprises oil-distributing means leading from the oil container to lubricating points in a compressor and it also includes a slide movable in a valve casing and acted upon by the total oil pressure and also acted upon by the pressure of a spring and pressure equal to the pressure in the oil container. The valve casing has outlets through which oil can be injected to the compressor and by which oil can be returned to the container, and said openings will be closed by the slide when the pressure of the oil is low so that a flow of oil to the lubricating points will be insured. When a rise in the pressure occurs, the openings will be opened to allow oil to be injected to the compressor and to allow the oil to return to the container.

3,429,503
CASH REGISTERS AND LIKE ADDING MACHINES

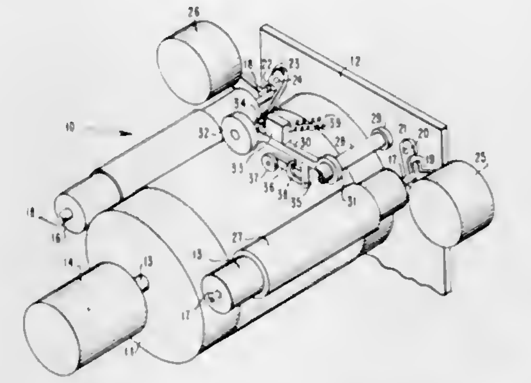
Henry Gross, Braewood, Winnington Road, and Samuel Gross, 22 Winnington Road, both of London N.2, England
Filed Feb. 17, 1967, Ser. No. 616,950
Claims priority, application Great Britain, Mar. 2, 1966, 9,134/66
U.S. Cl. 235—14 **3 Claims**
Int. Cl. G07g *1/00*



A cash register having amount keys and only two motor operating buttons, operation of the first button effecting itemising of an amount set up on the keyboard or sub-totaling of amounts previously itemised and operation of the second effecting totalising of previously entered items or itemising followed automatically by totalising during two continuous cycles of the cash register.

3,429,504
APPARATUS FOR MEASURING FILM

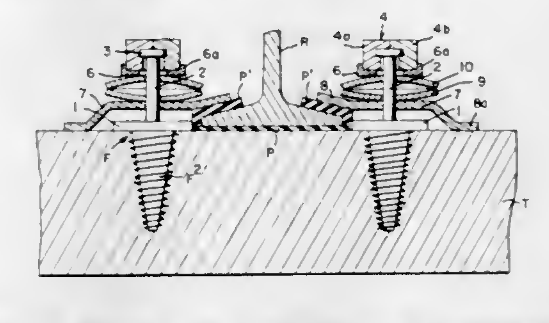
Jerold Julius Golner, Lowell, Mass., assignor to Borden, Inc., New York, N.Y., a corporation of New Jersey
Filed Feb. 21, 1968, Ser. No. 707,039
U.S. Cl. 235—91 **4 Claims**
Int. Cl. G06m *1/00*



This invention relates to an apparatus for measuring film or the like, which comprises a rotating drum, a pair of cylindrical tubes in peripheral engagement with said drum whereby rotation is imparted to both of said tubes, said film being wrapped about one of said tubes and entrained over the drum to engage the second tube whereby the film is transferred from said one tube to the other tube without the application of tensile forces. Means are provided for measuring the film as it is transferred from one tube to the other, as well as means for de-energizing the rotating drum and measuring means when the film has been transferred.

3,429,505
RAIL TO TIE FASTENER

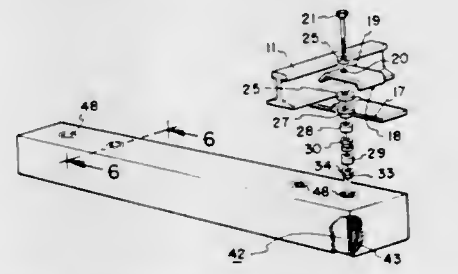
John S. Newton, Glen Ellyn, Ill., assignor to Portec, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,487
U.S. Cl. 238—349 **3 Claims**
Int. Cl. E01b *9/00, 13/00, 21/04*



A rail to tie fastener for permitting a controlled degree of the rail movement relative to the tie to minimize the effect of wave motion relative to the tie to reduce pumping of the tie in the ballast.

3,429,506
STRUCTURAL ADHERING CONSTRUCTION

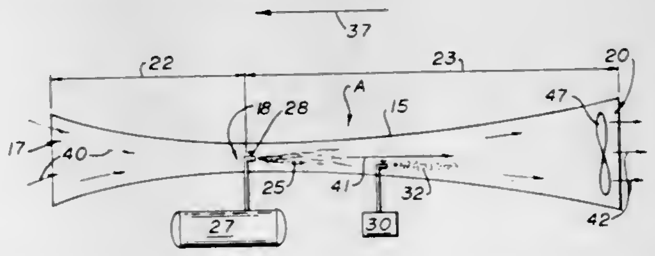
Lee Triplett, 2878 South 8600 West,
Magna, Utah 84044
Continuation-in-part of application Ser. No. 517,524, Dec. 27, 1965, now Patent No. 3,333,873. This application July 24, 1967, Ser. No. 655,613
U.S. Cl. 238—371 **8 Claims**
Int. Cl. E01b *9/00, 13/00, 21/04*



The present invention comprises an attachment construction and also an attachment and railroad tie combination wherein rails can be easily and releasably secured to their railroad tie bed. In particular, a bridge plate is used with a resilient sleeve means of the bolt construction being inserted into an appropriate, predrilled aperture in the tie. Tightening down of the bolt not only clamps the rail, by virtue of the bridge construction, but also compresses outwardly a resilient sleeve of the bolt construction within the tie so as to accomplish a friction securement thereto.

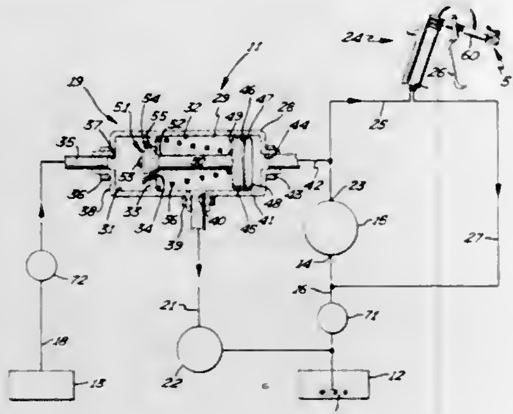
3,429,507
RAINMAKER

Robert K. Jones, 1710 Lilac Drive,
Walnut Creek, Calif. 94529
Filed July 25, 1966, Ser. No. 567,510
U.S. Cl. 239—2 **8 Claims**
Int. Cl. A01g *15/50;* **B64d** *1/18*



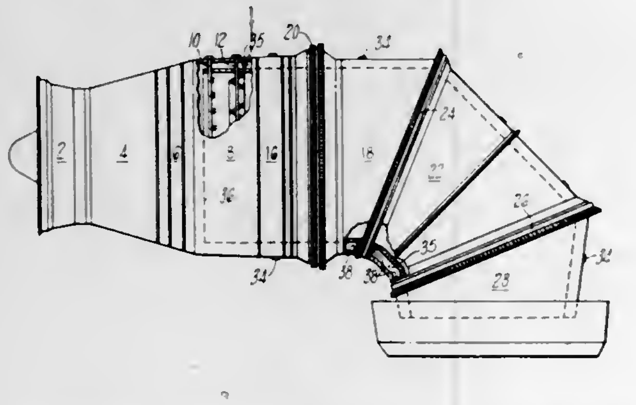
Apparatus including a large venturi passage carried by an airborne device for impelling moisture laden atmosphere at high velocity therethrough to produce a large volume seeding area for inducing atmospheric precipitation. Supporting mechanisms for the artificial cooling of the impelled atmosphere and for the injection therein of catalytic condensation inducing particles is provided.

3,429,508
FLUID SELECTION SYSTEM
Michael R. Russinik, Minneapolis, Minn., assignor to Gray Company, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 25, 1966, Ser. No. 575,026
U.S. Cl. 239—126 **10 Claims**
Int. Cl. B05b *7/04, 7/26*



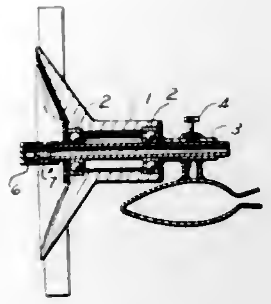
A fluid selection system for selectively spraying at least two fluids, such as water and a soap or detergent and water solution. The system includes a constant flow rate fluid pump, and the outlet of the pump is connected with a spray gun having two different sized spray orifices so that the outlet pressure of the pump depends on which of the two orifices is being used for spraying. The inlet of the pump is connected with containers for the fluids to be sprayed, and a valve is positioned in a conduit interconnecting one of the containers and the inlet of the pump for controlling the flow through the conduit. The valve is actuated by a spring biased piston, one face of which is directly exposed to the outlet pressure of the pump so that the piston moves, and thus the valve is opened or closed, in response to the variation in the outlet pressure of the pump caused by selectively using one or the other of the orifices on the spray gun for spraying.

3,429,509
COOLING SCHEME FOR A THREE BEARING SWIVEL NOZZLE
Stanley J. Markowski, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 31, 1967, Ser. No. 642,597
U.S. Cl. 239—127.3 **8 Claims**
Int. Cl. B64d *33/04;* **B64c** *15/08*



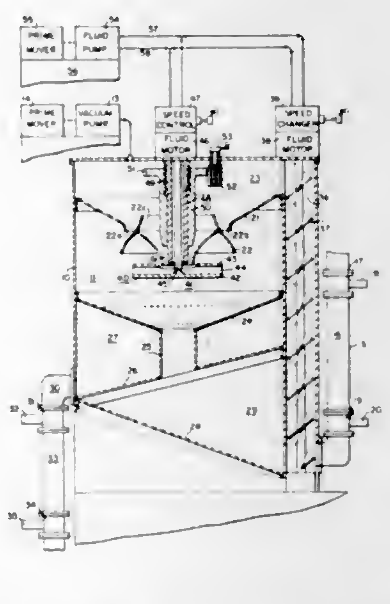
A swivelable exhaust deflection apparatus for use in conjunction with an afterburning gas turbine engine. The device is capable of providing either an axial exhaust or a deflected exhaust depending on the engine requirements, the different configurations being obtained by rotating segments which comprise the deflection apparatus.

3,429,510
AGRICULTURE SPRAY UNIT
Henry Bernard Taylor, Beaumont, Tex. (Rte. 10, Allen Road, Macon, Ga. 31206)
Filed June 24, 1966, Ser. No. 560,393
U.S. Cl. 239—171 **1 Claim**
Int. Cl. B64d *1/18, 1/00;* **A01n** *17/08*



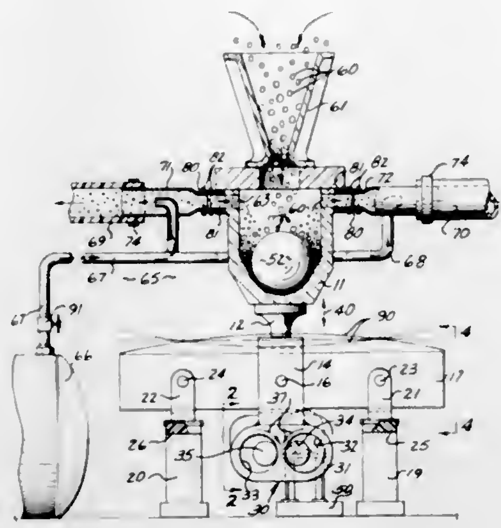
An agricultural spraying device for aircraft for the purpose of spraying chemicals, the device comprising a hollow shaft having a sideward jet at one end for discharge of chemicals which are directed into the path of a concentric spinning cone for dispersing the discharged chemical into the air stream.

3,429,511
MATERIAL PULVERIZATION
Tadeusz Budzich, 80 Murwood Drive, Moreland Hills, Ohio
Filed Oct. 21, 1965, Ser. No. 500,049
U.S. Cl. 241—5 **20 Claims**
Int. Cl. B02c *19/06, 17/02;* **B07b** *13/00*



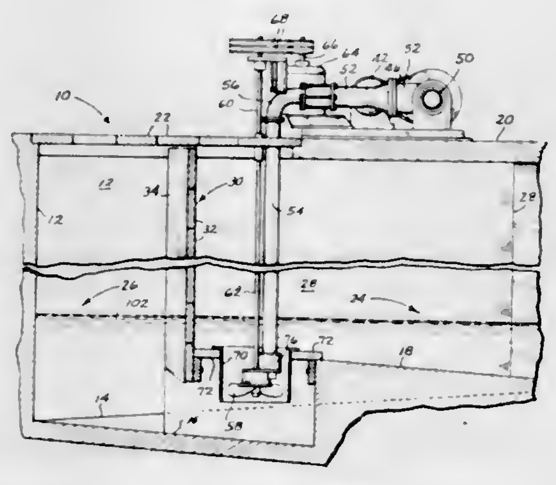
A material pulverizing device and method for pulverizing material to an extremely small size wherein a vessel is provided which is maintained at a high vacuum. The vessel has a material feeding device which establishes an annular flowing screen of material. A rotary impeller is provided within the flowing screen of material which is adapted to radially discharge particles of material against the flowing screen of materials, thereby causing pulverization by the coaction of the material with itself to reduce lining wear. The high vacuum allows the extremely fine particles of material to obtain the sufficiently high velocity to cause pulverizing action.

3,429,512
SONIC METHOD AND APPARATUS FOR GRINDING ROCK MATERIAL AND THE LIKE TO POWDER
Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406
Filed Oct. 20, 1966, Ser. No. 588,030
U.S. Cl. 241—24 **12 Claims**
Int. Cl. B02c *17/04, 17/14;* **B07b** *3/10*



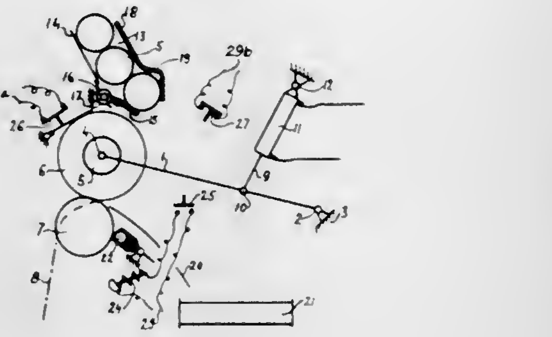
Rock material to be crushed is fed into a container member while the container member is simultaneously sonically excited as part of a resonant vibration system. An inertial grinder member having a substantial mass is biased against the material to be ground, the cyclic energy generated in the resonant vibration system causing heavy impact at the interfaces between the material to be ground and the container and grinder members. Means are provided to selectively remove the ground particles when they are ground to a desired size, leaving only particles requiring additional grinding in the container.

3,429,513
COMBINATION AGITATOR AND CHOPPER FOR INTAKE OF SLURRY PUMP
Donald J. Gribble, Windsor, Calif., assignor to Agpro, Inc., Santa Rosa, Calif., a corporation of California
Filed Nov. 14, 1966, Ser. No. 594,207
U.S. Cl. 241—46 **6 Claims**
Int. Cl. B02c *18/10, 18/40*



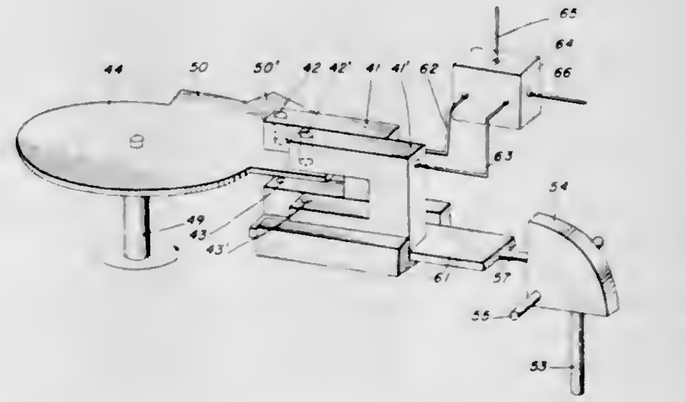
Slurry processing apparatus including a duct through which slurry is circulated. A shaft extends into the duct and has a propeller on it producing slurry flow. A portion of such flow is directed into casing structure encircling said shaft and from said casing structure into a conduit leading to the intake of a pump. Cutter means interposed between the propeller and casing structure is operated with rotation of the shaft to divide solid materials in the slurry flowing into the casing structure and pump intake.

3,429,514
BOBBIN CHANGING DEVICE
František Pospíšil, Usti nad Orlici, and Jiří Eliáš, Brandys nad Orlici, Czechoslovakia, assignors to Vyzkumny Ustav Bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Dec. 1, 1966, Ser. No. 598,259
Claims priority, application Czechoslovakia, Dec. 1, 1965, 7,190/65
U.S. Cl. 242—18 **10 Claims**
Int. Cl. B65h *54/74*



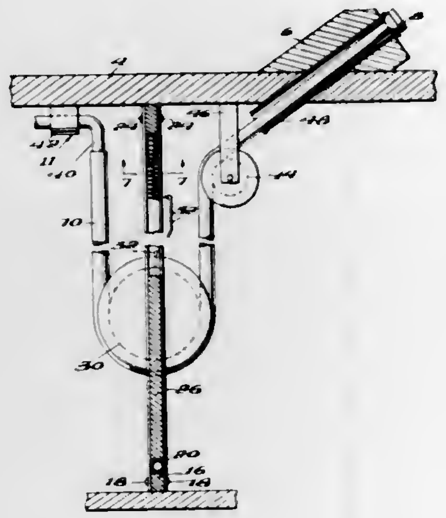
An automatic bobbin changing device which comprises a movable carrier including means for releasably holding a bobbin tube thereon on which a yarn is to be wound to form a bobbin. Actuating means is provided for moving the carrier to a first position in which the yarn is wound onto the bobbin tube, from there to intermediate position in which the fully wound bobbin is disengaged from the carrier, to a third position in which the carrier receives a first bobbin tube, and back to the first position. Winding means is provided for winding the yarn onto the bobbin tube when the carrier is in the first position, and operative means is provided for severing the yarn intermediate the winding means and the ejected bobbin in response to return movement of the carrier to the first position, and for attaching the leading end of the severed yarn to the empty bobbin tube held by the carrier.

3,429,515
CONTROL AND SWITCHING DEVICE IN MECHANICALLY OR HYDRAULICALLY OPERATED TRAVERSE-MOTION SYSTEMS IN SPINNING, SPOOLING AND ESPECIALLY RING TWIST MACHINES
Carsten Ramcke, Wuppertal-Ronsdorf, Germany, assignor to Barmer Maschinenfabrik A.G., Wuppertal-Oberbarmen, Germany
Filed Mar. 16, 1965, Ser. No. 440,269
Claims priority, application Germany, Mar. 18, 1964, B 75,948
U.S. Cl. 242—26.3 **7 Claims**
Int. Cl. B65h *54/00, 81/00*



A device for controlling the movement of limit switches on traverse mechanisms that are used in producing windings in the textile industry. The drive of the threaded spindles is controlled through the use of two or more impulse-producing means. A switching disc or discs having tongues or the like for interrupting a light beam striking a photoelectric cell is employed to control the movement of the limit switches. The use of two or more impulse-producing means makes it possible to carry out a variety of speed changes of the limit switch movements and a wide variety of distribution possibilities in the winding buildup.

3,429,516
DENTAL EQUIPMENT
Tilmon L. Sharp and Kenneth C. Sharp, both of Box 144, Knoxville, Tenn. 37901
Filed Mar. 21, 1966, Ser. No. 535,926
U.S. Cl. 242—47.5 **5 Claims**
Int. Cl. B65h *51/20;* **A61c** *19/00*

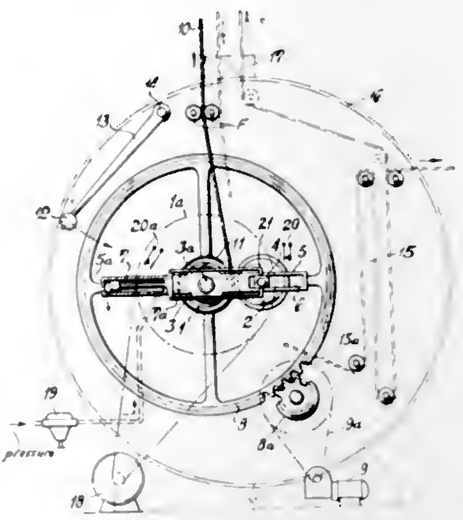


A support for dental equipment of the type that has a flexible hose connected at end with a dental-drill or other hand instrument and at the opposite end with a source of fluid, such as air, water or vacuum source. The hose is suspended in a loop between a pair of upright guides. A weighted pulley rides in the loop of the hose and is supported by the upright guides. The pulley assembly applies tension to the hose to draw the instrument end of the hose into the cabinet where the support is mounted. The instrument end of the hose passes through a tube at the top of the cabinet and the outer end of the tube supports the instrument in position for being grasped by the dentist. A catch mechanism on the pulley assembly latches the pulley assembly temporarily at the top of the guides to relieve the tension in the hose. The catch may be readily unlatched by pulling on the instrument end of the hose. The weight of the pulley assembly then draws the instrument end of the hose into the cabinet.

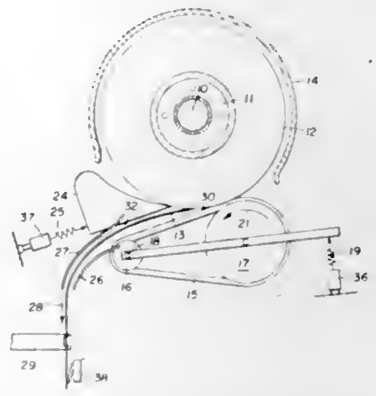
3,429,517
DOUBLE WINDER FOR THE CONTINUOUS PASSAGE OF TEXTILE GOODS
Alfred Korsch, Krefeld, Germany, assignor to Joh. Kleinwefers Sohne, Krefeld, Germany
Filed Oct. 8, 1965, Ser. No. 494,106
Claims priority, application Germany, Oct. 12, 1964, K 54,229
U.S. Cl. 242—55 **7 Claims**
Int. Cl. B65h *75/02*

The present invention concerns a double-layer winding device, especially for textile webs, which operates in conformity with the duplex winding with two hank rollers of changing direction of rotation for storing the goods which are withdrawn in a continuous uninterrupted process.

The invention is characterized in that one of the two hank rollers is rotatably journalled in a stationary bearing whereas the second hank roller is tiltable about the first hank roller in steps of 180° while being tilted in this way in an intermittent manner. The tiltable or second hank roller is frictionally driven by the first hank roller and the goods are wound onto the respective empty hank roller while forming a fold at the start of the last-mentioned winding-up operation.



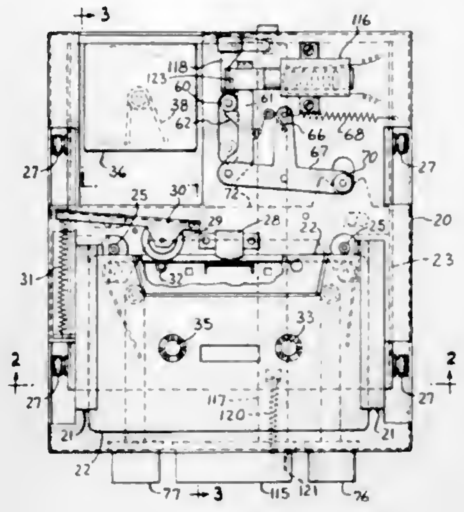
3,429,518
DEVICE FOR STRIPPING AND FEEDING STRIP MATERIAL FROM A ROLL
Edward S. McKee, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 470,499, July 8, 1965. This application Feb. 19, 1968, Ser. No. 706,703
U.S. Cl. 242—55.11 **19 Claims**
Int. Cl. G11b *15/32;* **G03b** *1/56, 1/58*



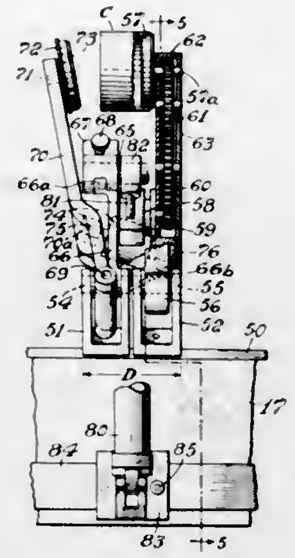
A roll of strip material is mounted in a housing with a surface of the roll exposed for application of a driving means in direct contact with the surface of the roll. A film stripper device adapted to engage the film roll and strip the film from the roll during rotation of the roll is disposed in such a manner with respect to the roll driving means as to form a guide channel for the leading end of the strip material from the roll.

3,429,519
TAPE CARTRIDGE POSITIONING AND DRIVING APPARATUS
Theophiel Clement Jozef Lodewijk Staar, Kraainem, Belgium, assignor to Staar, S.A., Brussels, Belgium, a corporation of Belgium
Filed Oct. 12, 1966, Ser. No. 586,099
Claims priority, application Belgium, June 24, 1966, 683,077; July 6, 1966, 683,708
U.S. Cl. 242—55.13 **23 Claims**
Int. Cl. G11b *5/78;* **G03b** *23/02*

For use in a cartridge-loading tape transport mechanism, a cartridge positioning and driving apparatus is described in which the tape cartridge is momentarily displaced from its normal position during recording and playback for the purpose of selectively actuating fast forward and rewind functions within the drive mechanism.



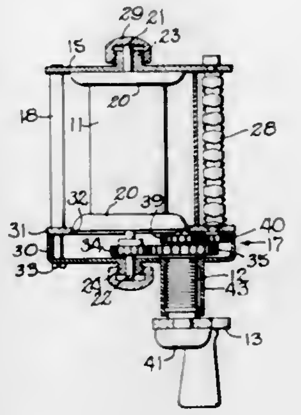
3,429,520
SLITTER REWINDER
Edward F. Egan, Bridgewater Township, Somerset County, N.J., assignor to Frank W. Egan & Company, Somerville, N.J., a corporation of New Jersey
Filed Aug. 7, 1967, Ser. No. 658,923
U.S. Cl. 242—68.4 **5 Claims**
Int. Cl. B65h *17/02, 17/08*



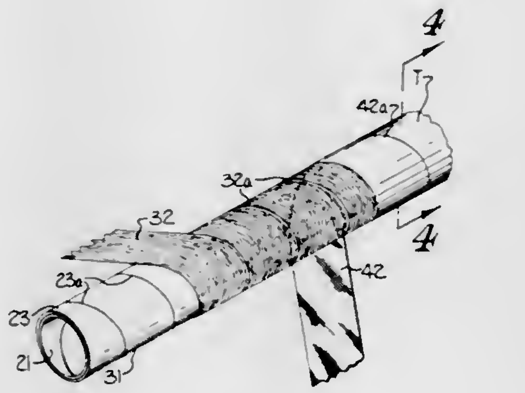
A machine having one or more web winding core holding assemblies each including two core holder arms each of which carries a core chuck cooperative with the core chuck on the other arm for holding a core and the arms being mounted for individual movement relatively to a machine frame to accommodate cores of different lengths, one arm including a main portion and a loading portion which is movable relatively to the other arm for loading and removing cores, and there being means connected to said main portion of one arm and to the other arm for simultaneously actuating the arms to move the cores into and out of contact with a driven winding drum.

3,429,521
FISHING REEL WITH SPRING CLUTCH
Richard P. Jones, 625 N. Winnebago, Rockford, Ill. 61103
Filed Dec. 27, 1965, Ser. No. 516,308
U.S. Cl. 242—84.54 **5 Claims**
Int. Cl. A01k *89/00;* **F16d** *41/00*

A casting reel having a spool rotatably mounted on a reel frame with the usual level-wind mechanism on the frame and gearing acting between a hand crank and both the spool and the level-wind mechanism to operate the reel. The crankshaft carries a coiled spring which is telescoped loosely over a drive shaft carrying the input gear of the gearing so that the drive shaft, and thus the spool, normally are rotatable substantially freely relative to the spring and the crank. Disposed around the end portion of the spring encircling the drive shaft is an internal bearing surface formed by a fixed portion of the frame which is in frictional engagement with the outside of the spring, thereby causing the spring to contract into gripping engagement with the shaft only when the crank and the adjacent end of the spring are turned relative to the frame.



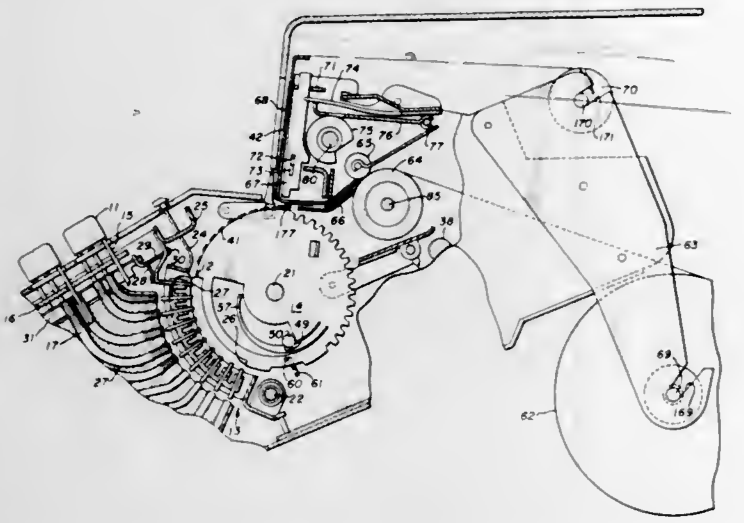
3,429,522
FORMING TUBE FOR GLASS FIBERS
McCleery B. Cunningham and Charles K. Dunlap, Jr., Hartsville, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed Aug. 13, 1965, Ser. No. 479,449
U.S. Cl. 242—118.32 **1 Claim**
Int. Cl. B65h *81/08;* **B31c** *3/00*



A flexible spirally wound tube for winding glass fibers having at least one spirally wound paper inner ply and a spirally wound outer ply of resin impregnated, nonwoven textile material having a hard, uniformly smooth, slick outer surface.

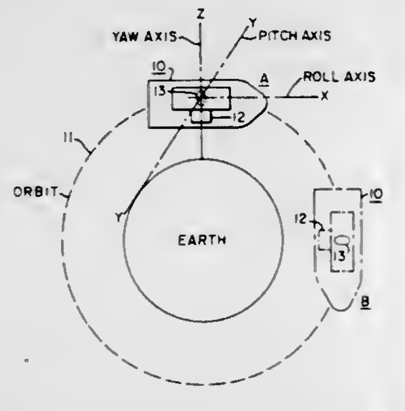
3,429,523
PAPER FEED MECHANISM FOR LISTING-CALCULATING MACHINES
Richard E. Busch, La Puente, Calif., assignor to Admaster Corporation, San Gabriel, Calif., a corporation of California
Filed Oct. 17, 1966, Ser. No. 587,196
U.S. Cl. 242—67.3 **4 Claims**
Int. Cl. B65h *17/02*

A yieldable gear train drive for the paper takeup roll of a cash register or the like wherein a driving gear has a special tooth thereon engageable with a tooth on a driven gear to hold the paper taut in full cycle position. Prior to the printing operation, the special tooth disengages, permitting the tape to slacken so as to permit printing. After the printing operation, the driving gear advances the driven gear to again render the tape taut.



3,429,524
ATTITUDE CONTROL SYSTEM

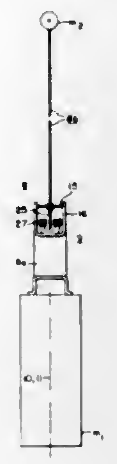
Arthur G. Buckingham, Baltimore, and Thomas P. Haney, Sykesville, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 19, 1965, Ser. No. 472,952
U.S. Cl. 244—1 **3 Claims**
Int. Cl. B64c *19/00*



A satellite attitude control is described in which a single inertia wheel is mounted for rotation about a fixed spin axis coinciding with the pitch axis of the satellite. The inertia wheel is part of a motor-inertia-wheel-tachometer generator unit fixedly mounted on the satellite. As the satellite vehicle orbits the earth, the vehicle will be stabilized about the roll and yaw (X and Z axes, respectively) axes by the inertia wheel. Variation of the speed of rotation of the inertia wheel about the pitch axis stabilizes the vehicle about the latter axis. For the usual satellite application the satellite is stabilized with the yaw axis along the geocentric axis of the earth by the spinning inertia wheel. Disturbance torques about both the yaw and the roll axes of the vehicle will tend to precess the spin axis, that is, the pitch axis. Disturbance torque about the pitch axis will tend to increase or decrease the inertia wheel speed. An electromagnetic actuation system generates reaction torques with the earth's magnetic field which tends to keep the wheel speed constant and remove the precession of the inertia wheel axis. It is obvious that if a net disturbance torque exists around the pitch axis the wheel will continually change speed to overcome the disturbance torque. Eventually, therefore, the wheel will reach its maximum possible speed and will not be able any longer to counter the disturbance. The tachometer attached to the wheel senses when this condition is taking place and supplies appropriate signals to the coil current computers to inject the appropriate currents into the appropriate coils to remove the excess momentum in the pitch axis. In order to remove this momentum, the vehicle must be able to determine the strength and direction of the earth's magnetic field. This is done by a three axis magnetometer which measures the components of the earth's field in the principal axis of the vehicle.

3,429,525
SATELLITE ORIENTATION APPARATUS

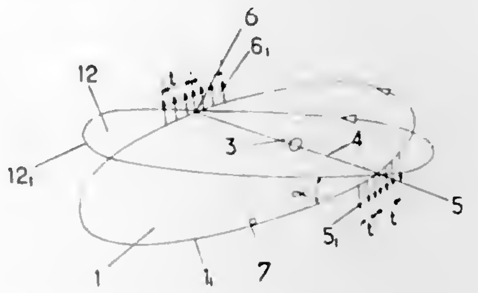
Frank C. Rushing, Ellicott City, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1965, Ser. No. 490,017
U.S. Cl. 244—1 **2 Claims**
Int. Cl. B64c *39/02*



Gravity gradient orientation apparatus for an orbiting satellite, employing an elongated erecting means, in form of a rod or cable, fastened to the satellite for alignment with the local vertical by way of a single-axis hinge with its axis angulated between the pitch and roll planes of the satellite, and damping means operated by relative angular motion at the hinge to remove librational energy from angular motion of the satellite in the pitch, roll and yaw planes.

3,429,526
APPARATUS FOR TILTING THE ORBITAL PLANE OF A SPACE VEHICLE

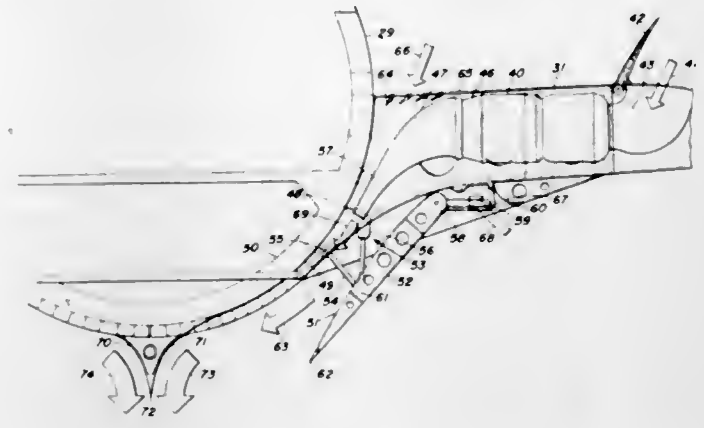
Robert Genty, 6 Rue Jules Simon, Paris, France
Filed Nov. 3, 1965, Ser. No. 506,228
Claims priority, application France, Nov. 7, 1964, 994,276; Ad. 18,176
U.S. Cl. 244—1 **10 Claims**
Int. Cl. B64g *1/20*



The present invention provides an arrangement for selectively tilting the orbital plane of a space vehicle in gravitation about an astral body. The principal thruster on the vehicle produces a thrust along an axis tangent to the vehicle's orbit. The vehicle carries a gravity gradient means which is oriented radially of the vehicle orbit. Tilt thrusters on the vehicle produce respective tilt thrusts which are directed perpendicular to the tangent axis and perpendicular to the orbit radius at the center of gravity of the vehicle symmetrically before and after the turning point about which the orbital plane is tilted. Correcting thrusters produce a correcting thrust parallel to the tilting thrust and offset from the latter along the tangent axis.

3,429,527
VERTICAL TAKE-OFF WINGED AIRCRAFT STRUCTURE AND METHOD

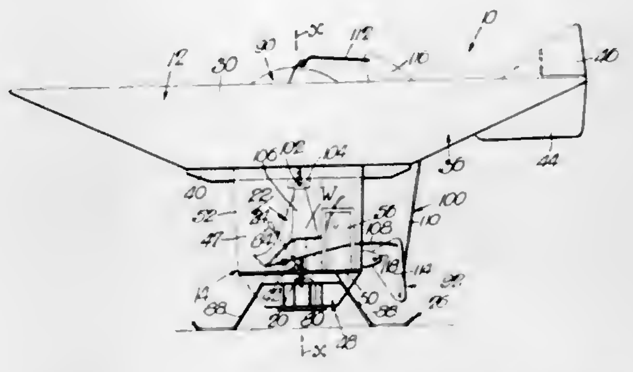
Donald Charles Whittley, Islington, Ontario, Canada, assignor to The de Havilland Aircraft of Canada Limited
Continuation-in-part of application Ser. No. 426,602, Jan. 19, 1965. This application Jan. 19, 1966, Ser. No. 521,576
U.S. Cl. 244—12 **5 Claims**
Int. Cl. B64c *15/00, 29/00, 3/38*



A winged aircraft embodies vertical lift augmenting devices in the form of plural jet engines having nozzles spaced from the fuselage in such manner as to project a free jet stream through an air inducting gap toward undersurfaces to which jet gases and entrain air attach and flow to join in a downwardly directed thrust steam below the fuselage. The spacing of the nozzle, from the attaching surface for inducting large quantities of air, is termed a jump Coanda system.

3,429,528
FLIGHT CONTROL FOR VERTICAL TAKE-OFF AIRCRAFT

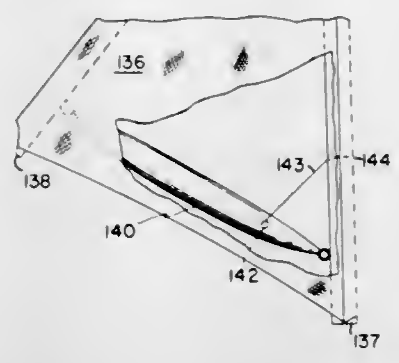
Cadwallader W. Kelsey, Guilford, Conn., assignor to Skycar, Inc., New Haven, Conn., a corporation of Connecticut
Filed May 25, 1967, Ser. No. 641,229
U.S. Cl. 244—12 **8 Claims**
Int. Cl. B64c *29/00, 17/02*



The disclosure deals with an aircraft having a disc-like top wing and therefrom suspended central fuselage about a vertical axis, air impellers power-driven about this axis, and a flap-type control for vertical take-off of the craft and for tilting it for forward flight. Featured in the craft is a pivoted hood on the wing which in vertical disposition of the craft is in substantial form-fit with part of the upper wing surface, but on tilting the craft for forward flight is swung away from the wing surface to act as an air brake in preventing dangerous tilting of the craft, with the hood being thus swung by an operating connection with a pendulum-like weight in the also featured form of the top-pivoted pilot's seat in the fuselage.

3,429,529
CONTROL DEVICES FOR FLEXIBLE WING AIRCRAFT

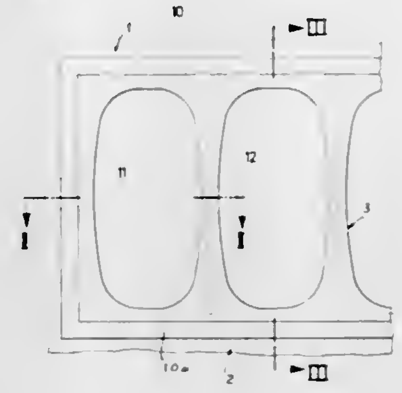
Francis M. Rogallo, 17 Milford Road, Newport News, Va. 23601
Original application Jan. 17, 1964, Ser. No. 338,537, now Patent No. 3,396,921. Divided and this application Sept. 1, 1967, Ser. No. 670,005
U.S. Cl. 244—35 **5 Claims**
Int. Cl. B64c *3/02, 5/10;* **B64d** *19/00*



This invention is a control for a flexible wing aircraft. The flexible wing aircraft has a generally triangular-shaped superstructure including a centrally disposed keel and angularly disposed leading edge members connected to the apex of the keel. A flexible membrane-like material is fixed to the keel and leading edge members to form wing panels and a lift surface. Spreader bars are positioned between the keel and leading edge members in the vicinity of the trailing edge of the vehicle. The spreader bars have an airfoil shaped design and are rotatable with respect to the keel and leading edge members. Mechanism is attached to the airfoil-like spreader bars to rotate them and provide control for the vehicle.

3,429,530
WINDOW CONSTRUCTION FOR FUSELAGES OF AIRCRAFT

Heinrich Hertel, Tannenbergallee 361, Berlin 19, Germany
Filed Nov. 8, 1966, Ser. No. 592,769
Claims priority, application Germany, Nov. 10, 1965, H 57,642
U.S. Cl. 244—129 **10 Claims**
Int. Cl. B64c *1/14*



The fuselage of an aircraft is provided with an opening. An apertured grid is received in the opening and secured to the fuselage. At least one continuous window pane overlies all apertures of the grid.

3,429,531

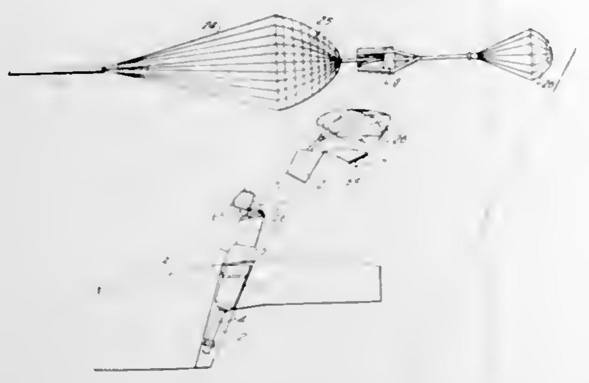
DEPLOYMENT BAG AND METHOD OF PACKING

Oscar W. Sepp, Merrick, N.Y., assignor to M. Steinthal & Co. Inc., New York, N.Y., a corporation of New York

Filed June 3, 1966, Ser. No. 555,184

U.S. Cl. 244—147 **16 Claims**

Int. Cl. B64d *17/62, 17/46*



A deployment bag with a velocity discriminating flap comprised of two overlying sheets of material which are spread apart at the opening edge of the flap by spring biased stiffening means to present a projected area to the on-rushing air in the direction opposite to vehicle movement. The top sheet is maintained spread out over the flap by the stiffening means to present a projected area to the on-rushing air in the direction opposite to bag ejection. A separate sheet of material is positioned within the bag between the parachute and closure flaps to serve as a packing aid to hold down the parachute while the flaps are being closed. Separable lines pass adjacent this sheet and out of the bag through holes in the bag. When the flap is closed, the lines are removed and the sheet is withdrawn without opening the flaps.

3,429,532

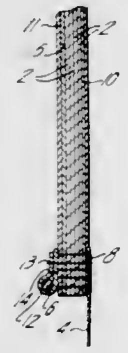
PARACHUTE SKIRT EXPANDER

Oscar W. Sepp, Merrick, N.Y., assignor to M. Steinthal & Co., Inc., New York, N.Y., a corporation of New York

Filed Apr. 3, 1967, Ser. No. 628,089

U.S. Cl. 244—149 **10 Claims**

Int. Cl. B64d *17/52, 17/14*



A flexible and resilient rod affixed around the skirt portion of a parachute. The rod material is such as will provide a definite leading edge to form a positive orifice to air flow at low speeds and will bend in the direction of air flow at medium and high speeds.

3,429,533

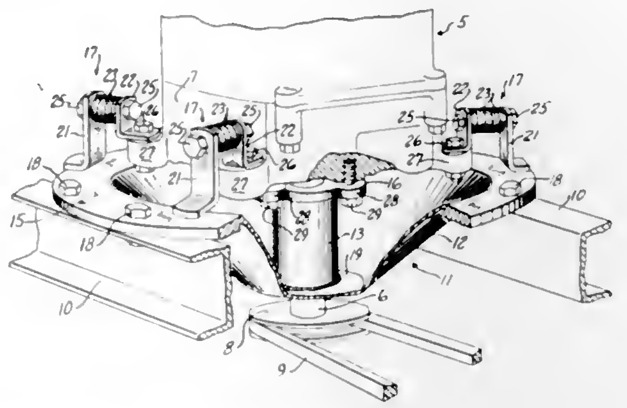
VIBRATION ABSORBING MOUNTING FOR SINGLE-CYLINDER VERTICAL SHAFT ENGINE

Joseph R. Harkness, Germantown, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware

Filed Oct. 23, 1967, Ser. No. 677,463

U.S. Cl. 248—9 **7 Claims**

Int. Cl. E02d *27/44;* **F16m** *1/04;* **F16f** *15/04*



The engine mounting is annular and comprises a frustoconical outer wall, the rim portion of which is rigidly secured to engine carrying structure, and a concentric inner tube, to the top of which the engine is secured. The crankshaft extends through the tube and carries a rotation transmitting member downwardly adjacent to the bottom of the mounting member. The mounting confines vibratory engine motion to swinging about the point where the plane of its bottom intersects the crankshaft axis so that the rotation transmitting member remains practically stationary. Resilient snubbers prevent excessive engine motion.

3,429,534

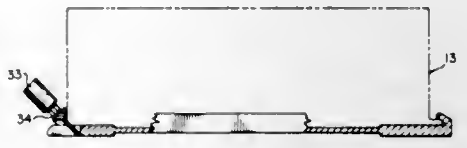
MOUNTING DEVICE FOR ELECTRONIC EQUIPMENT

Edward C. Bean, 6406 White Oak Ave., Camp Springs, Md. 20031, and Laddie T. Rhodes, 4622 Cedar Ridge Drive, Oxon Hill, Md. 20021

Filed Dec. 1, 1967, Ser. No. 687,335

U.S. Cl. 248—25 **7 Claims**

Int. Cl. A47j *45/02;* **H01b** *17/16*



A device for mounting radio gear or other electronic components either rigidly upon an instrument shelf or in a manner to be isolated from shelf vibrations. The device includes a rectangular mounting plate having a rear lip which extends upwardly and forward to engage a flange on the instrument case. The case is held downwardly and rearwardly against the lip by an adjustable clamp bar which is secured to the plate by hinged T-bolts to permit easy mounting or removal of the case.

3,429,535

CONDUIT HOLDING DEVICE

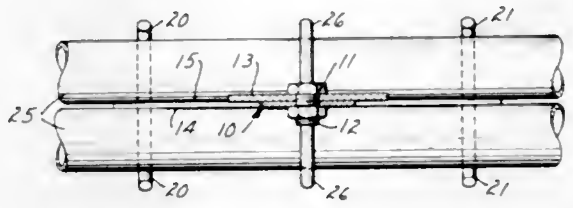
Daniel E. Herzig, Burlington, N. Dak. 58722

Filed Mar. 29, 1967, Ser. No. 626,768

U.S. Cl. 248—58 **1 Claim**

Int. Cl. F16l *3/00;* **E21f** *17/02;* **B05b** *15/06*

A conduit holding device including a frame having a plurality of outwardly extending hook-shaped members fixedly attached thereto for receiving the conduit fixedly therebetween. The frame is adapted to be mounted to an external member so that at least two surfaces of the frame are exposed, and one or more conduits can be held simultaneously.



3,429,536

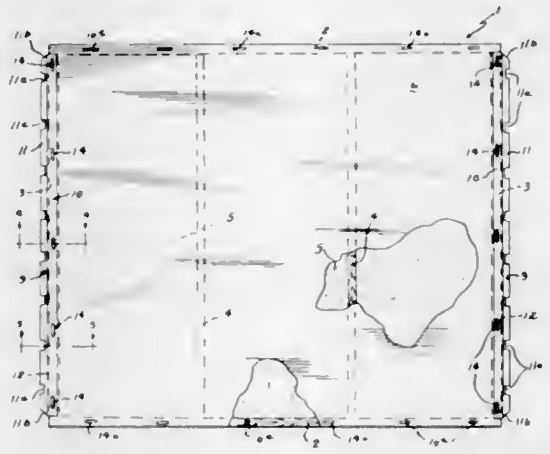
EXPENDABLE AIR CARGO PALLET

Gene A. Petry, New Carlisle, and Joseph L. Weingarten, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 24, 1967, Ser. No. 663,173

U.S. Cl. 248—119 **5 Claims**

Int. Cl. B60p *7/14;* **A47b** *91/08;* **B65j** *1/22*



A cargo pallet having a rectangular frame with intermediate spaced cross members. Top and bottom panels of plywood are secured to the frame, with the interior spaces being filled with polystyrene core blocks. Hold-down hardware is secured on the exterior of the pallet.

3,429,537

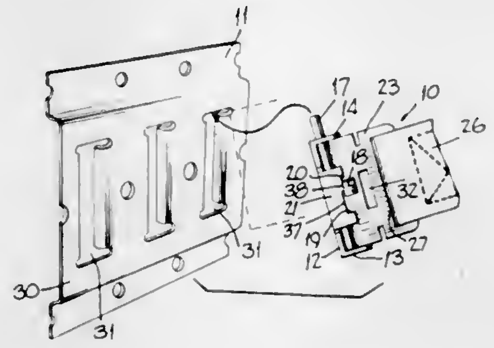
STRAP CONNECTOR

George H. Jantzen, New York, N.Y., assignor to M. Steinthal & Co., Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 16, 1967, Ser. No. 675,389

U.S. Cl. 248—223 **12 Claims**

Int. Cl. B60p *7/08;* **B61d** *45/00*



A pivotable connector for releasably securing a nylon cargo tie down strap to a slotted anchoring track in a vehicle. The connector frame has a slideable pin which is insertable in the slot and moveable to a position in which it extends at both ends beyond the slot to be retained against the inner surface of the track. A resilient arm, moveable with the pin, presses against a stepped wall to lock the pin in this position.

3,429,538

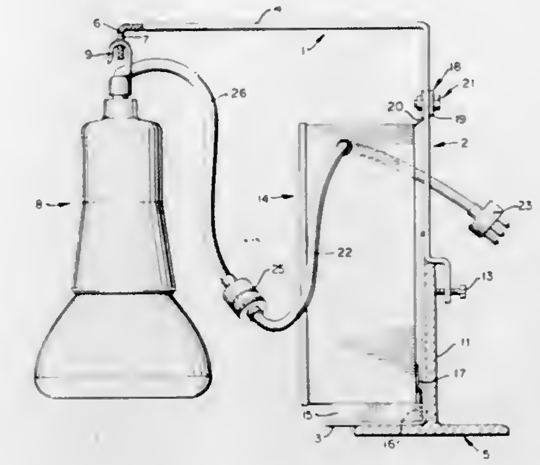
LAMP BRACKET ASSEMBLY

Dominick Natale, Wood Ridge, N.J. (% Natale Machine and Tool Co., P.O. Box 95, Carlstadt, N.J. 07072)

Filed Apr. 11, 1967, Ser. No. 630,002

U.S. Cl. 248—228 **5 Claims**

Int. Cl. F16b *12/00, 13/02, 13/12*



A lamp bracket assembly for supporting a lamp on a structural member, the bracket being C-shaped with the lower leg thereof resting on the structural member and the upper leg extending beyond the lower leg for hanging a lamp unit thereon at its outer end. The assembly includes a ballast weight positioned on the lower leg for stabilizing the assembly, and is provided with a releasable clamp for removably connecting the assembly to the structural member.

3,429,539

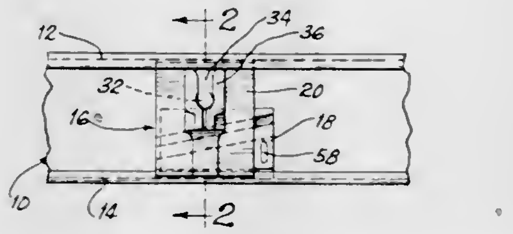
ARTICLE SUPPORTING BRACKET FOR ATTACHMENT TO CHANNELS

Lambert A. Lucietto, 2341 N. Melvina Ave., Chicago, Ill. 60639, and Ledo B. Lucietto, 3721 N. Scott St., Schiller Park, Ill. 60176

Filed Aug. 14, 1967, Ser. No. 660,272

U.S. Cl. 248—228 **14 Claims**

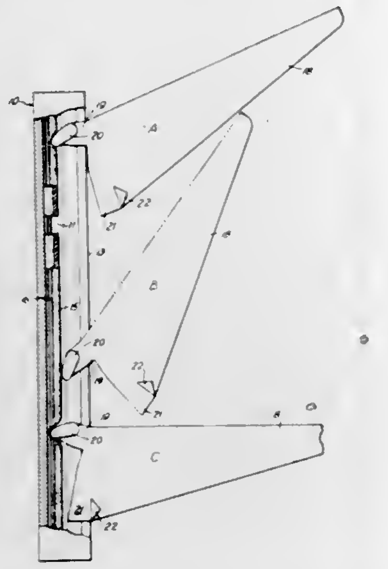
Int. Cl. G09f *7/18;* **A47f** *9/00;* **E04g** *3/14*



A bracket for attaching to a pricing channel or the like comprising a main body portion having a lip along one edge for engagement with one flange defined by the channel. A wedge portion is associated with the body portion, and the wedge portion defines a lip which is positioned at the opposite side of the bracket for engagement with the other flange of the channel. Track means interconnect the wedge portion and body portion, and these track means define an inclined path so that movement of the respective bracket portions will move the lips toward and away from each other whereby the lips will move into and out of engagement with the channel flanges. Ratchet teeth are defined by the main body portion, and a pawl is defined by the wedge portion for purposes of locking the bracket portions in position.

3,429,540
SELF-LOCKING BRACKET AND THE LIKE

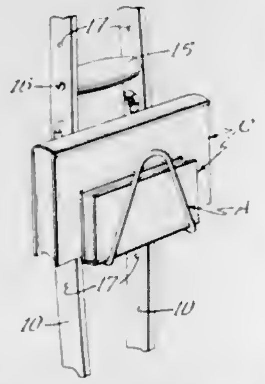
Anthony Charles Worrallo, 15 Sprott Road, Kohimarama, Auckland 5, North Island, New Zealand
Filed May 1, 1967, Ser. No. 635,242
Claims priority, application New Zealand, May 30, 1966, 145,247
U.S. Cl. 248—246 **4 Claims**
Int. Cl. A47g *29/02*



An adjustable, self-locking support, which can take the form of a shelf bracket or the like, of the type comprising a channel member and a bracket to be locked thereto, characterized by having an elongated deformable plastic insert extending within the channel member in such fashion as to serve both to cover the fasteners by which the channel member is mounted and to retain the bracket in its locked position.

3,429,541
CRUTCH ATTACHMENT

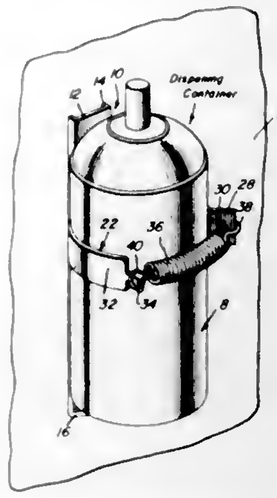
Roumaine J. Herman, 1002 Glenhill Road, St. Paul, Minn. 55112
Filed Nov. 30, 1966, Ser. No. 597,989
U.S. Cl. 248—302 **5 Claims**
Int. Cl. A61h *3/02;* **A47b** *65/00*



The invention discloses a crutch attachment which is designed to assist persons using crutches to carry objects such as books. It is particularly useful for, but not limited to use by, students and the like who must carry books from one class to another. The attachment includes opposed aligned pivots which extend through the bowed sides of the crutch, arms extending downwardly from the pivots on opposite sides of the bowed sides, laterally extending parallel supporting portions of the lower ends of said arms and an inverted U-shaped connecting member extending upwardly from the outer ends of said supporting portions and based toward said arms to retain objects against said crutch.

3,429,542
QUICK RELEASE CONTAINER HOLDER

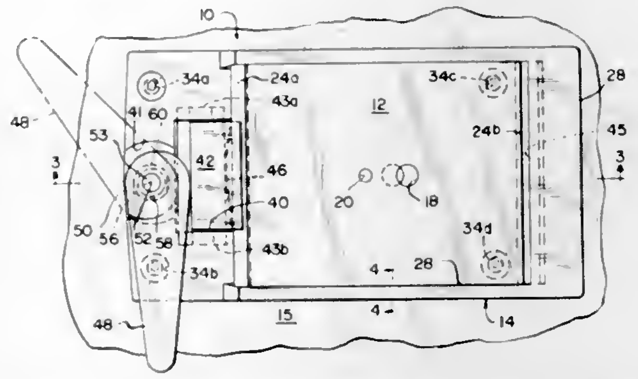
Raymond G. Fagan, Rte. 1, Box 627, Quincy, Calif. 95971
Filed Mar. 8, 1967, Ser. No. 621,513
U.S. Cl. 248—313 **3 Claims**
Int. Cl. A47l *1/08;* **A47b** *73/00*



A holder for a fire extinguisher or the like comprising a bracket having clamp means to hold the supported object securely in place. The clamp means is constructed so as to be releasable by catching hold of and exerting a mere forward pull on the supported object.

3,429,543
INSTRUMENT MOUNT

Paul C. Mooney, Northbrook, Ill., assignor to Quick-Set, Incorporated, a corporation of Illinois
Filed Mar. 23, 1967, Ser. No. 625,342
U.S. Cl. 248—346 **4 Claims**
Int. Cl. A47g *29/00;* **F16m** *1/00*

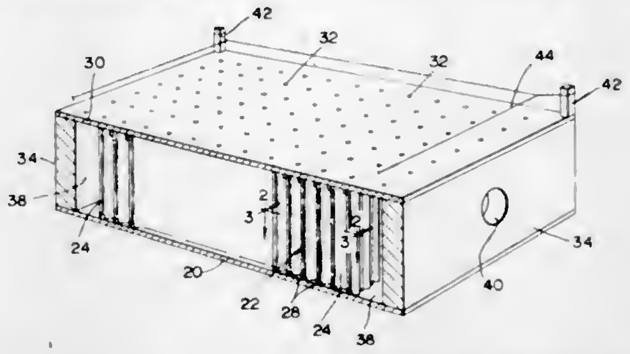


An improved instrument mounting assembly having a first part constructed and arranged for semi-permanent installation on a mounting surface and a second part constructed for securement to a sighting or photographic instrument, the first and second parts further having mutually engageable portions for rapidly and accurately releasably fixing the second part and its associated photographic or sighting instrument to the first part to provide a stable mounting surface for the sighting or photographic instrument.

3,429,544
AIR TABLE

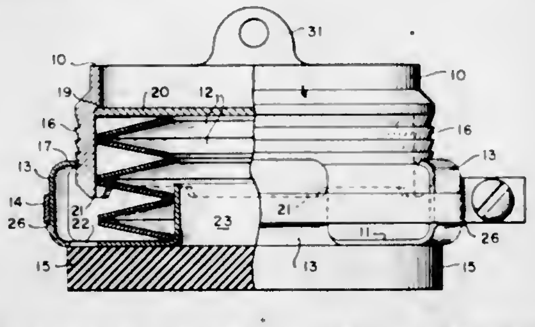
Thomas Walley Williams III, Belmont, Mass., assignor to The Ealing Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,223
U.S. Cl. 248—346 **7 Claims**
Int. Cl. A47g *29/00;* **A45d** *42/14*

A laminated air table having a top surface and a bottom surface of thin board, and a honeycomb layer between them. The top surface has a number of small holes distributed therein, each hole communicating with at least one cell of the honeycomb located below the top surface. The cells of the honeycomb are arranged with periodicity and channels are provided so that all of the cells of each period communicate with one another. A large air chamber is included for coupling a supply of air to the plurality of channels simultaneously. The method of making the table involves forming it upside down on a preformed surface of a block, forcing at least the top surface of the table to conform to the preformed surface, permitting bonding agent between layers to set while the table is under pressure, and drilling the holes in the top surface into the honeycomb, each hole being sufficiently larger in diameter than the honeycomb walls so that no hole is blind.



3,429,545
SHOCK ABSORBER FOR PERSONS

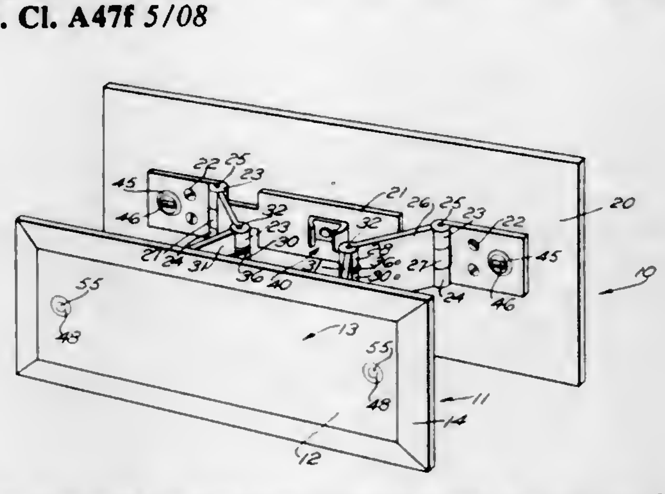
Rudolph Michel, 6518 40th Ave., Hyattsville, Md. 20782
Filed Oct. 26, 1966, Ser. No. 590,138
U.S. Cl. 248—358 **10 Claims**
Int. Cl. A43b *21/32*



A shock absorber device mounted on the bottom of a shoe, at the heel, and having relatively movable upper and lower members with a ratchet like locking means therebetween. A spring means is between the upper and lower members and the ratchet locking means prevents rebounding of the members after they have moved to absorb a predetermined shock.

3,429,546
ERECTABLE DISPLAY SIGN

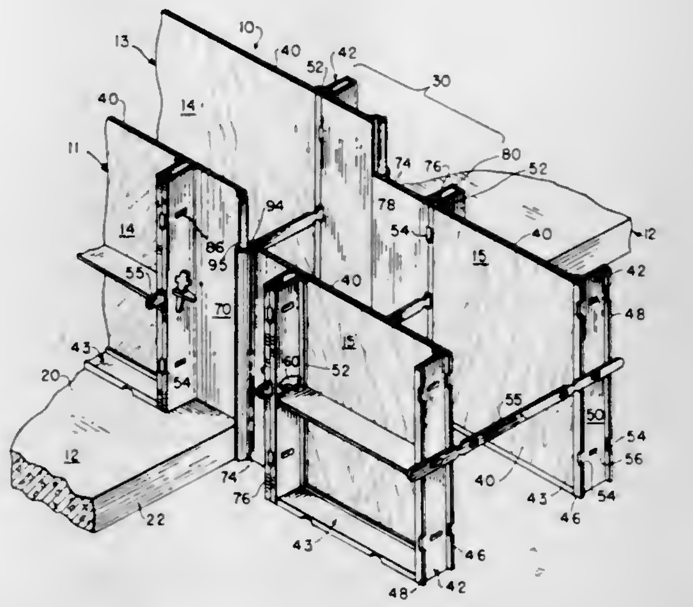
Neil C. Porter, 45 Dresser St., Newport, R.I. 02840
Filed Jan. 9, 1967, Ser. No. 608,108
U.S. Cl. 248—486 **4 Claims**
Int. Cl. A47f *5/08*



A display sign mounted upon a panel so that the display sign may be moved forwardly away from the panel for polishing and then move backwardly against the panel for its normal display position.

3,429,547
ADJUSTABLE EDGE CONNECTION FOR CONCRETE WALL FORM PANELS

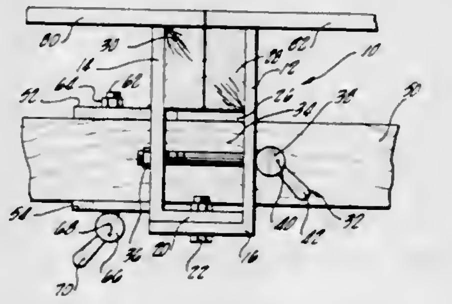
Vernon R. Schimmel, Pasadena, Calif., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,121
U.S. Cl. 249—192 **4 Claims**
Int. Cl. E04g *11/08;* **E04c** *1/30*



An adjustable edge connector for adjacent concrete wall form panels and consisting of two similar anglepieces, corresponding flanges of which are adapted to be bolted to opposed panel edges, and the other corresponding flanges having mating tongue and groove connections which enable one panel to be slid out of horizontal alignment with the other panel to accommodate abrupt angular steps on a foundation surface.

3,429,548
FORM CLAMP

Thelmer D. Taylor, 1382 N. Sierra Bonita, Pasadena, Calif. 91104
Filed Feb. 13, 1967, Ser. No. 615,406
U.S. Cl. 249—192 **9 Claims**
Int. Cl. E04g *17/02, 11/12*



A concrete form clamp for use in clamping together two adjacent form panels and for holding a waler in place. Two parallel plates are held in clamping relation with adjacent studs of two panels by a fast acting clamp. The waler is held in place by a pair of waler holding members disposed at right angles to and slightly above the plates with the waler between the two members. A fast acting clamp extends through the waler holding members to provide a clamping action on the waler.

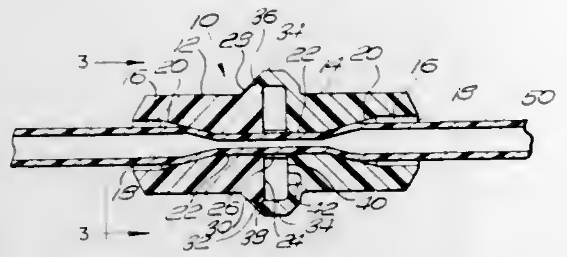
3,429,549
METERING DEVICE FOR FLEXIBLE TUBES

Reinold E. Swanson, Rehoboth, Mass., assignor to Davol Rubber Company, Providence, R.I., a corporation of Rhode Island

Filed Nov. 22, 1966, Ser. No. 596,194

U.S. Cl. 251—4 **8 Claims**

Int. Cl. F16l *55/14;* **F16g** *11/02*



The present invention relates generally to a metering device and more particularly to a device adapted to be used for controlling the rate of flow through a flexible tubing. This invention is of particular value for surgical uses, such as flow controlling the rate of intravenous feeding and the like.

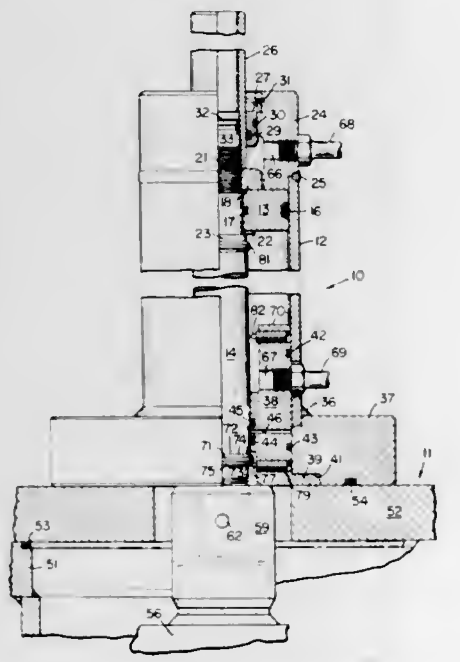
3,429,550
VALVE EQUIPMENT WITH HYDRAULIC OPERATOR

Marvin H. Grove, Piedmont, Calif., assignor to M & J Valve Company, Houston, Tex., a corporation of Delaware

Filed May 3, 1967, Ser. No. 635,834

U.S. Cl. 251—31 **3 Claims**

Int. Cl. F16k *31/143, 35/04*



Gate valve equipment including a double-acting hydraulic operator of the piston-cylinder type. The operator assembly has mechanical detent means which when the operator is assembled with a gate valve serves to lock or retain the gate in at least one operating position.

3,429,551
OPERATING MEANS FOR FLUID VALVES

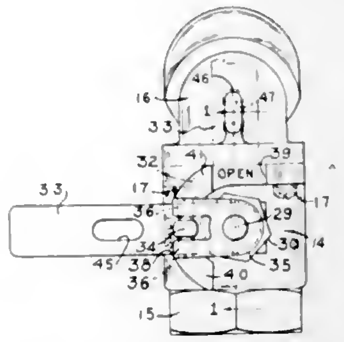
Gustave J. Koehler, 769 NE. 77th Terrace, Miami, Fla. 33138, and Gordon T. Koehler, 421 Acorn Drive, Dayton, Ohio 45419

Filed Oct. 24, 1965, Ser. No. 504,648

U.S. Cl. 251—99 **1 Claim**

Int. Cl. F16k *35/00, 31/60*

An operating handle for turning a shaft which in turn opens and closes a poppet type valve member of a fluid control valve, said handle being rockably mounted on the shaft to engage slots in the valve corresponding to the open and closed positions of said valve member, said handle being adjustable in relation to the shaft and the slots to insure exact location of the valve member in open and closed position when the handle is engaged with the respective slots.



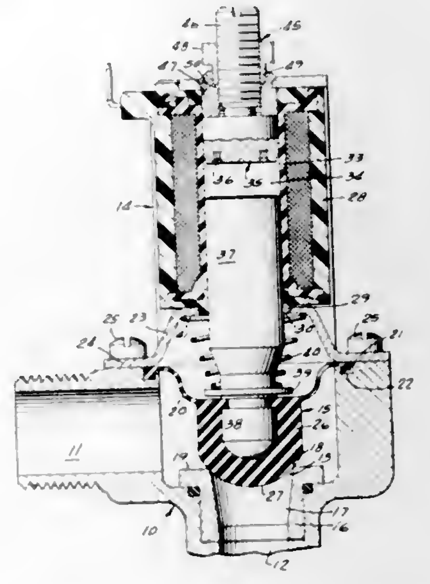
3,429,552
ADJUSTABLE RATE VALVE ASSEMBLY

William G. Huley, Palatine, Howard L. Erickson, Bensenville, and John W. Hanna, Wheaton, Ill., assignors to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed July 8, 1965, Ser. No. 470,447

U.S. Cl. 251—129 **2 Claims**

Int. Cl. F16k *31/02, 31/44, 1/00*



A fluid control valve having an electromagnetically actuable valve operator connected to the valve head and reciprocable in the valve body with adjustable means limiting the extent of movement of the valve operator whereby to limit the extent of movement permitted of the valve head relative to its respective valve seat.

3,429,553
ADJUSTABLE BALL VALVE APPARATUS

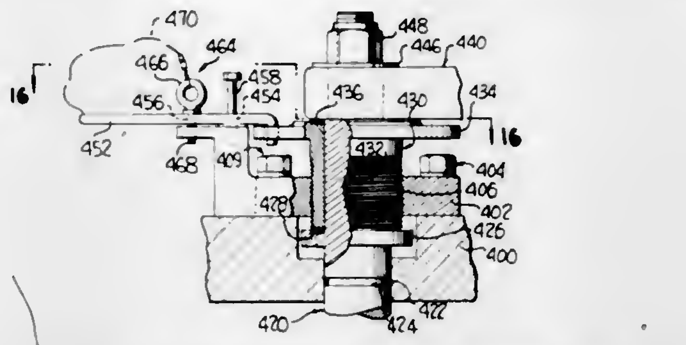
Benjamin T. Smith and Julian P. Ross, Jr., Newport News, and Joseph E. Trexler, Jr., Hampton, Va., assignors to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia

Original application Apr. 8, 1964, Ser. No. 358,358, now Patent No. 3,339,884, dated Sept. 5, 1967. Divided and this application Jan. 13, 1967, Ser. No. 643,745

U.S. Cl. 251—161 **1 Claim**

Int. Cl. F16k *5/06, 25/00*

A valve body includes inlet and outlet openings spaced from one another and aligned with one another. An access opening is closed by a bonnet, this bonnet having a counterbored hole formed therethrough. The valve body includes sloping land portions surrounding said inlet and outlet openings. An annular seat slidably disposed on each land portion in surrounding relationship to the associated opening and a ball valve is received within and engages said seats. One end of a valve stem is connected with the ball valve, the valve stem extending through said hole in the bonnet and outwardly thereof. A radially extending thrust collar is formed on the valve stem and an operating handle is connected with the outer end of the valve stem. A thrust plate is mounted in the bonnet and has a threaded hole formed therethrough. An adjusting nut is threadably mounted within said threaded opening in the thrust plate, the valve stem extending through a bore formed in the adjusting nut. A first bearing means is provided between the lower end of the adjusting nut and the thrust collar on the valve stem, and a second bearing means is provided between the upper end of the adjusting nut and the operating handle. A latch member is pivotally mounted on a portion of the thrust plate and includes a depending rod-like portion which is adapted to fit within one of a plurality of holes in an enlarged flange portion formed on the upper end of the adjusting nut. An eye bolt is provided for locking the latch member in adjusting position.



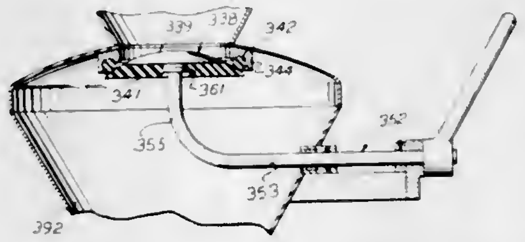
3,429,554
SHUTOFF VALVE FOR CEMENTITIOUS PRESSURE VESSELS

George M. Pro, Leawood, Kans., assignor to Clipper Manufacturing Company, Inc., Grandview, Mo., a corporation of Massachusetts

Original application Apr. 16, 1963, Ser. No. 273,386, now Patent No. 3,272,474, dated Sept. 13, 1966. Divided and this application Sept. 12, 1966, Ser. No. 594,302

U.S. Cl. 251—175 **2 Claims**

Int. Cl. F16k *25/02, 5/06, 3/04*



1. In a machine for handling particulate material, the combination of a pressure hopper for said material having a material inlet port and a circular seat in the hopper adjacent the port; a valve in the hopper having a convex outer face shaped substantially in conformity with a sector of a sphere, said outer face normally bearing against the seat in closing relationship to the port; and a shaft rotatably carried by the hopper and supporting the valve for movement to and from a position opening the port as the shaft is rotated, said valve having a portion thereof composed of resilient material, said portion being separate from the shaft, rendering said valve portion movable toward the seat when the valve is closed, whereby pressure in the hopper holds the valve tightly against the seat, said seat being resilient whereby material becoming lodged between the seat and the valve when the latter is closed is pressed into the seat by said pressure in the hopper acting on the valve, thereby maintaining a seal around the seat.

3,429,555
VALVE SUBJECTED TO EXTERIOR MOISTURE, AS AN UNDERGROUND GAS DISTRIBUTION VALVE

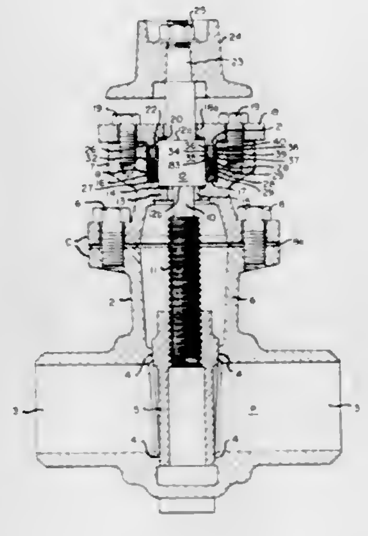
Edward N. Wrenshall, Ross Township, Allegheny County, Pa., assignor, by mesne assignments, to Kerotest Manufacturing Corp., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 2, 1964, Ser. No. 348,450

The portion of the term of the patent subsequent to Nov. 8, 1983, has been disclaimed

U.S. Cl. 251—214 **2 Claims**

Int. Cl. F16k *31/50, 41/04;* **F16l** *21/02*



1. A valve subjected to exterior moisture, as an underground gas distribution valve, comprising a casing having inlet and outlet connections, a turnable valve stem projecting from the casing, a valve element in the casing, connections between the stem and the valve element moving the valve element between open and closed positions upon turning of the stem, the casing and stem being shaped to provide an annular packing receiving chamber about the stem inwardly of the portion of the casing where the stem projects from the casing, packing in the chamber a thrust collar confining said packing between the casing and the stem, an adapter ring in the chamber outwardly of the packing, two parallel spaced annular inner grooves in the adapter ring in communication with the stem, O rings positioned in the respective spaced annular inner grooves of the adapter ring and engaging the valve stem, two parallel spaced annular outer grooves in the adapter ring in communication with the casing and O rings positioned in the respective spaced annular outer grooves of the adapter ring and engaging the casing, the O rings positioned in the inner and outer grooves remote from the packing and adjacent said thrust collar serving to collect solid particles entering the receiving chamber between said thrust collar, said stem and said casing, which solid particles pack around said last named O rings, preventing passage of solid particles to the O rings in the inner and outer grooves adjacent to the packing and enabling said last mentioned O rings to be fully effective in inhibiting leakage of fluid therepast.

3,429,556
COUPLING STOP ADJUSTMENT FOR ROTARY VALVES

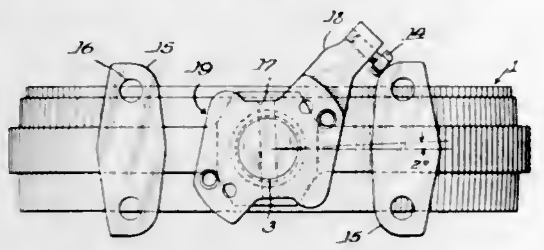
Leo Frank Kustwin, Chicago, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois

Filed Mar. 29, 1966, Ser. No. 538,290

U.S. Cl. 251—285 **1 Claim**

Int. Cl. F16k *1/22, 25/00, 7/16*

A novel adjustable stop means is provided for adjusting the rotative position of the closure member of a butterfly valve, of the type having a soft resilient seat having an interference fit between the inner surface of the annular seat and the outer peripheral portion of the closure member, so as to control the extent of interference fit at substantially the final rotative movement of the closure member in the closed position. The adjustable means is mounted on the valve shaft coupling for cooperation with mounting pads of the valve body to effect substantially 90° movement of the closure member. Control of the interference fit makes it possible to obtain fluid seat tightness for any desired pressure with the optimum or minimum torque to operate the valve.



3,429,557

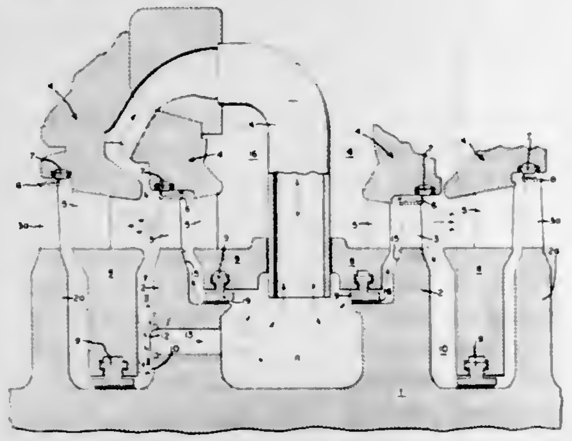
STEAM TURBINE ROTOR COOLING ARRANGEMENT

Ronald E. Brandon and Russell J. Holman, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 30, 1966, Ser. No. 561,982

U.S. Cl. 253—39.15 **3 Claims**

Int. Cl. F01d *5/08*



A steam turbine in which the rotor parts which are subjected to the hottest steam are cooled by relatively cool steam. A flow path arrangement to recirculate partially expanded steam from a lower stage is provided for this purpose.

3,429,558

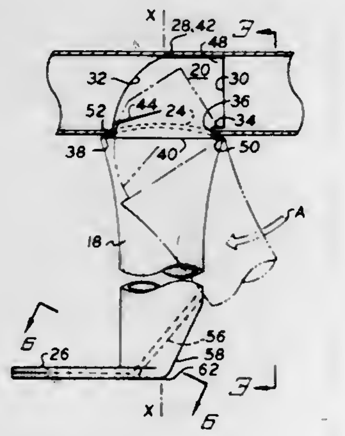
RAIL CONSTRUCTION

Fred Burmann and John Edie, Hicksville, N.Y. (both % Kaydot Enterprises, Inc., 40 Newtown Plaza, Plainview, N.Y. 11803)

Filed Aug 16, 1967, Ser. No. 661,018

U.S. Cl. 256—65 **8 Claims**

Int. Cl. E04h *17/14;* **F12b** *7/00;* **E04g** *7/00*



Constructions such as for heavy-duty railings in which intersecting members are provided with connecting means for assembling the same without the use of additional fittings or joints.

3,429,559

TUMBLING APPARATUS

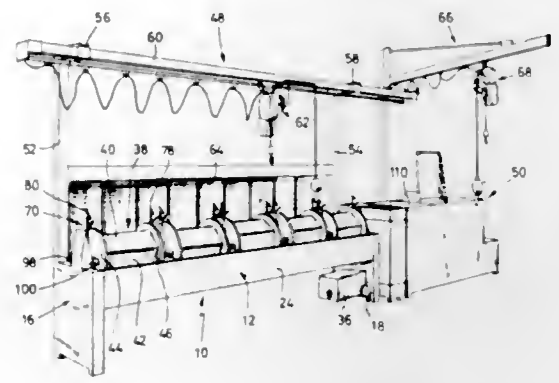
Dieter Dreher, Pforzheim, and Manfrid Dreher, Engelsbrand, near Pforzhelm, Germany, assignors to Dr. Ing. Manfrid Dreher KG., Engelsbrand, near Pforzheim, Germany

Filed Oct. 30, 1967, Ser. No. 678,855

Claims priority, application Germany, Oct. 28, 1966, D 51,425

U.S. Cl. 259—3 **11 Claims**

Int. Cl. B01f *15/00, 9/02;* **B08b** *3/06*



A tumbling apparatus with a plurality of tumbling barrels arranged end-to-end on spaced substantially parallel elongated drive rollers to be rotated thereby about the barrel axes, and transporting means arranged above the barrels for lifting the same from the drive rollers and for transporting the barrels substantially in direction of elongation of the latter to a filling and discharge station arranged at one end of a frame which rotatably carries the rollers.

3,429,560

DEVICE FOR MIXING OR SURFACE-TREATING FLOWABLE GOODS

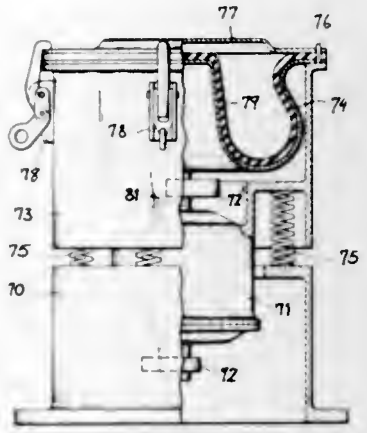
Ernst Huber, 30 Lagernstrasse, 8037 Zurich, Switzerland

Filed Nov. 28, 1967, Ser. No. 686,078

Claims priority, application Switzerland, Dec. 30, 1966, 18,880/66

U.S. Cl. 259—72 **10 Clalms**

Int. Ci. B01f *9/10;* **B02c** *17/08;* **B24b** *31/06*



A treatment vessel in the form of a generally annular horizontal trough with overhanging outer peripheral wall, having one or more deflection points where the trough bends sharply at an angle of 90° or less, is oscillated with a progressive wave motion by being coupled with a vibrator having a continuously rotating, eccentrically loaded vertical shaft aligned with the geometrical center of the trough.

3,429,561

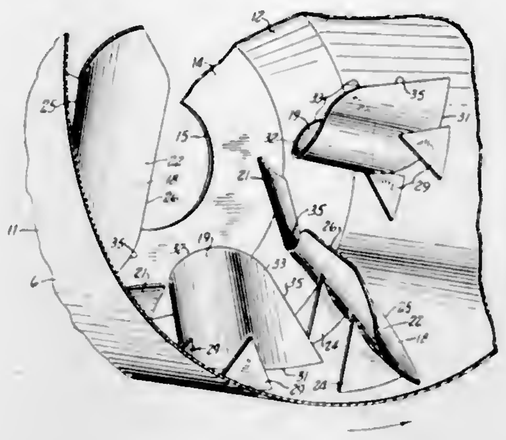
DRUM FOR MIXING CONCRETE AND THE LIKE

Glenway Maxon, Jr., 1744 N. Farwell Ave., Milwaukee, Wis. 53202

Filed Nov. 17, 1967, Ser. No. 683,874

U.S. Cl. 259—175 **7 Claims**

Int. Cl. B28c *5/18*



The drum has an unusually long cylindrical medial portion, but rapid and thorough mixing is effected by scooplike rear lifting elements, near the rear of the medial portion, and front lifting elements, in the frustoconical discharging portion, which cooperate with elongated blades that extend lengthwise substantially from end to end of the drum and are skewed in the direction to urge contents forwardly as the drum rotates. Each lifting element is mounted circumferentially intermediate a pair of blades and is shaped to pick up material as it moves through the bottom of its orbit, then spoutingly discharge such material over its circumferentially trailing blade and obliquely rearwardly.

3,429,562

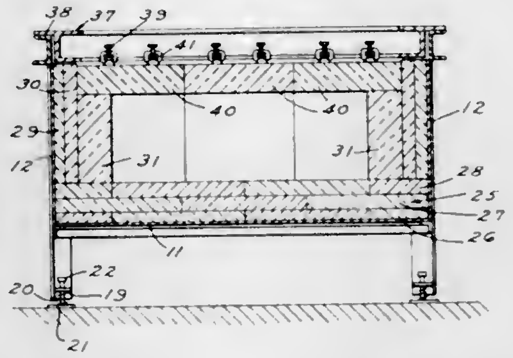
FORGING FURNACE

Timothy Y. Hewlett, Jr., 1205 Champlain St., Toledo, Ohio 43604

Filed Mar. 9, 1967, Ser. No. 621,803

U.S. Cl. 263—40 **8 Claims**

Int. Cl. C21d *9/00;* **F27b** *17/00;* **F27d** *1/14*



The forging furnace described herein comprises a metal shell which has a bottom wall, side walls and a back wall. A hearth of firebrick is formed on the bottom wall. The side end walls are provided with a first layer of insulating material, a second layer of insulating brick and a third inner layer of sections of cast refractory material which have interengaging edges. Roof sections of cast refractory material are suspended from a roof frame. In one form of the invention, front sections of cast refractory material are suspended from a frame member. In another form of the invention, front sections of cast refractory material are fixed on the front of the furnace with their lower edges in vertically spaced relation to the hearth.

3,429,563

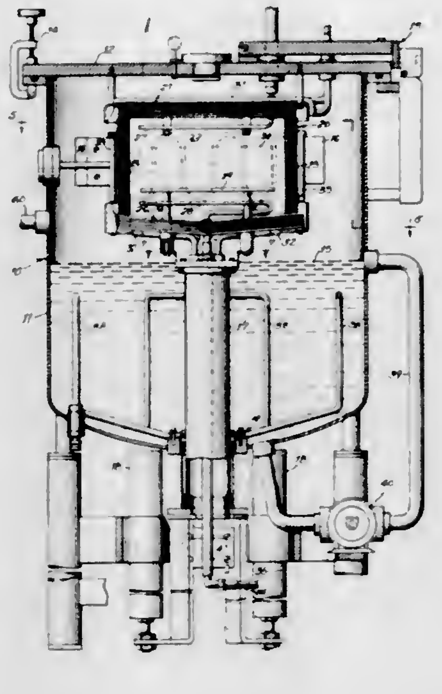
HEAT-TREATING QUENCH FURNACE

Ingar F. Andersen and Richard D. Brew, Concord, and John J. Duggan, Penacook, N.H., assignors to Richard D. Brew and Company, Incorporated, Concord, N.H., a corporation of New Hampshire

Filed Oct. 12, 1967, Ser. No. 674,977

U.S. Cl. 266—4 **6 Claims**

Int. Cl. C21d *1/66*



This disclosure relates to vacuum heat treating furnaces wherein the heating and quenching are done within a single, unpartitioned sealed chamber partially filled with quenching fluid. The heating of the metal specimen is done in the vacuum region above the liquid level, and at some predetermined time is immersed with its support into the quenching liquid.

3,429,564

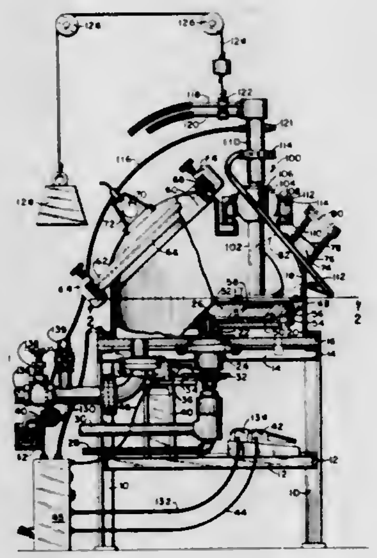
MELTING FURNACE

Karl S. Snow, Boulder City, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

Filed Aug. 2, 1965, Ser. No. 476,474

U.S. Cl. 266—33 **5 Claims**

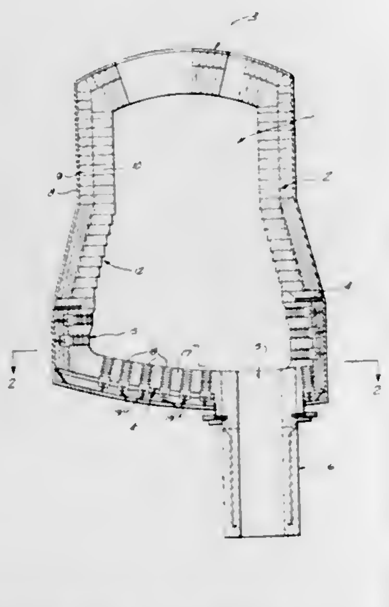
Int. Cl. C21b *11/10;* **H05b** *7/18;* **B22d** *5/02*



A furnace having a sealed shell and means for evacuating said shell. A rotatable hearth having at least one mold cavity within said shell and an adjustable plasma torch having a discharge nozzle located within said shell to direct the effluent onto said hearth.

3,429,565
METALLURGICAL DEGASSER VESSELS

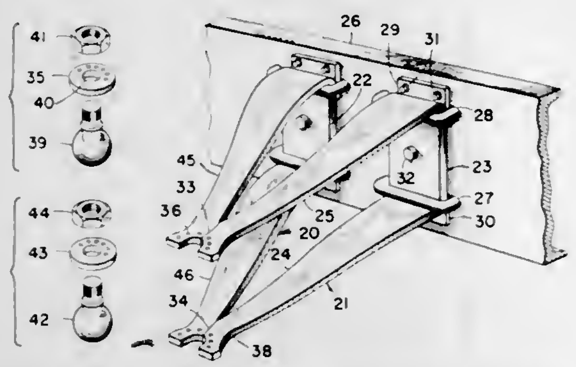
Nicholas Napora, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1966, Ser. No. 604,224
U.S. Cl. 266—43 5 Claims
Int. Cl. C21b *7/06;* **C21c** *7/00;* **C04b** *43/00*



This invention relates to monolithic linings for degasser vessels which are anchored in place by hanger brick. The monolithic lining and anchor brick are both manufactured from fused magnesite-chrome ore grain.

3,429,566
VEHICLE SUSPENSION

John W. Rosendale, Mount Clemens, Mich., assignor to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware
Filed Jan. 16, 1967, Ser. No. 609,646
U.S. Cl. 267—36 10 Claims
Int. Cl. B60g *11/02;* **F16f** *1/18*

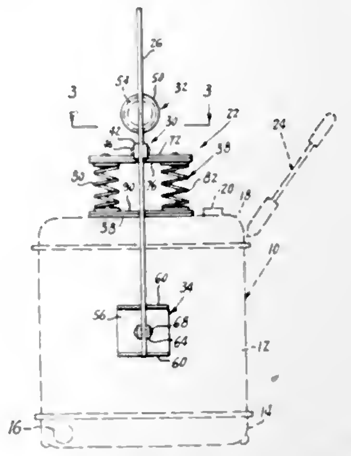


A suspension system for a wheeled vehicle wherein the suspension system is of a rugged, simple construction which absorbs blows to the wheels from multiple directions and which has a variable spring rate.

3,429,567
CLAMP FOR ASSEMBLING RADIATORS

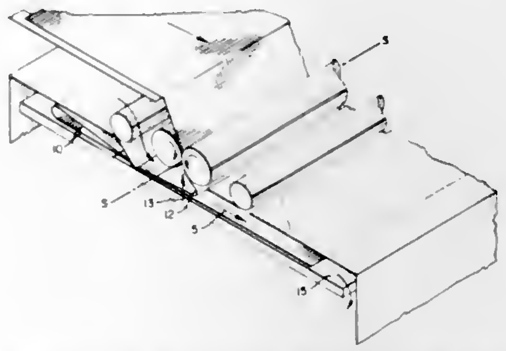
Curtis L. Swan, 1501 Highway 44,
Redding, Calif. 96001
Filed May 23, 1966, Ser. No. 552,141
U.S. Cl. 269—156 3 Claims
Int. Cl. B25b *1/06, 5/06;* **B23k** *37/04*

An assembly jig for clamping a tank to one end of a radiator core while the soldering operation seals the tank and core together. The clamp includes relatively wide jaw faces to distribute the clamping pressure over a large area of the core faces.



3,429,568
METHOD AND APPARATUS FOR FOLDING SHEETS

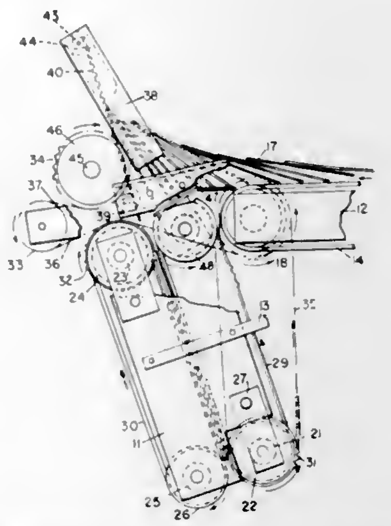
Lynn O. Alford, Jr., Norwalk, Conn., assignor, by mesne assignments, to Wagner Research Corporation, a corporation of New York, % Prentice-Hall Corporation System, Inc., New York
Filed Apr. 11, 1966, Ser. No. 547,063
U.S. Cl. 270—69 7 Claims
Int. Cl. B65h *45/20*



A sheet is fed to a switching station intermediate two suction boxes. Air flow in alternate directions causes the sheet to be drawn into alternate suction boxes in an accordian pleated state. The accordian pleated sheet may be withdrawn between a lower pair of rolls to make a final fold.

3,429,569
SIGNATURE REVERSING APPARATUS

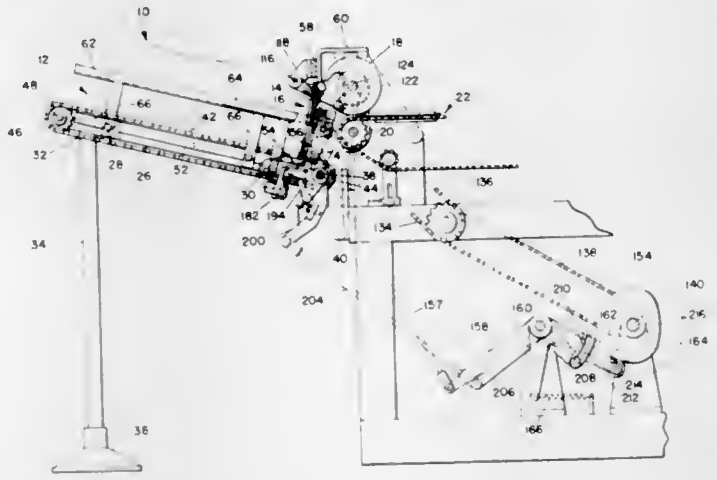
Carl Vella, Floral Park, N.Y., assignor to R. Hoe & Co. Inc., New York, N.Y., a corporation of New York
Filed Aug. 23, 1967, Ser. No. 662,837
U.S. Cl. 271—3 5 Claims
Int. Cl. B65h *3/06, 9/00*



A signature reversing apparatus having a sliding stop pan mounted adjacent to the exit end of a delivery table of a folder for newspapers, magazines or the like, for being slid into a vertical position so that the signatures are piled up vertically as they stream from the delivery table with the folded end first. A friction roller and a vertically disposed pair of belts for grabbing the piled up papers one by one open end first and to deliver the signatures from the apparatus open end first rather than folded end first as was the case when they came off the delivery table.

3,429,570
CARTON BLANK FEEDING

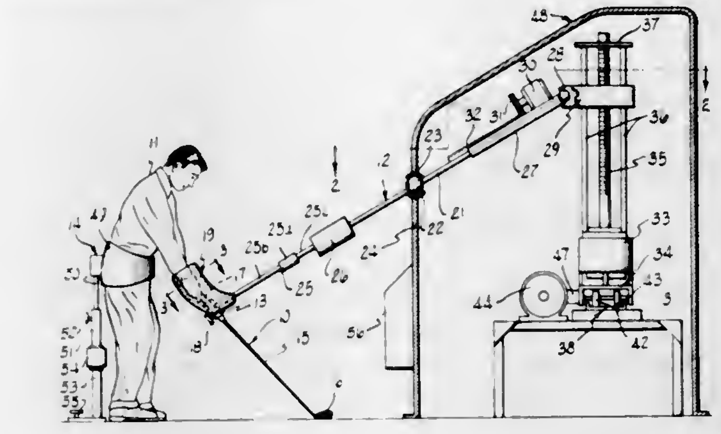
John W. Scully, Raynham, Mass., assignor to Pneumatic Scale Corporation, Quincy, Mass., a corporation of Massachusetts
Filed Feb. 23, 1966, Ser. No. 529,352
U.S. Cl. 271—12 16 Claims
Int. Cl. B65h *3/08, 5/06*



A stack of carton blanks are advanced on edge to blank withdrawing and transferring means. The upright blanks at the forward end of the stack are pressed down at a forwardly and downwardly inclined angle to cause the upper portions of the blanks to fan out and slidingly separate and to cause the foremost blank to bow out forwardly into operative position to be engaged and withdrawn in a manner such as to assure withdrawal of but one blank at a time from the stack.

3,429,571
PROGRAMMED SWING TRAINING DEVICE

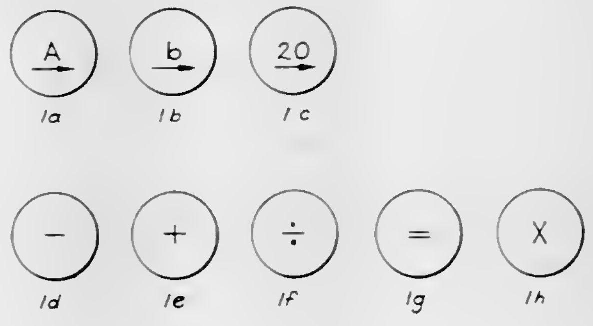
Roy Abel, Jr., 1 W. Orchard Place,
Mount Prospect, Ill. 60056
Filed Dec. 8, 1966, Ser. No. 600,072
U.S. Cl. 273—26 10 Claims
Int. Cl. A63b *69/36*



A ball joint reciprocably mounts the central part of a rockable shaft having upper and lower ends. The lower end of the shaft mounts a hand receiving mitt and a holder for gripping a club such as a baseball bat or golf club. Motors are provided to move the upper end of the shaft both vertically and horizontally. Other motors cause the shaft to reciprocably move through the ball joint and the lower end of the shaft to rotate about its longitudinal axis. Another motor causes movement of a hip engaging member. Programming means are provided to coordinate the driving action of all motors and impart predetermined movement to the lower end of the shaft and the hips of the user.

3,429,572
EDUCATIONAL GAME

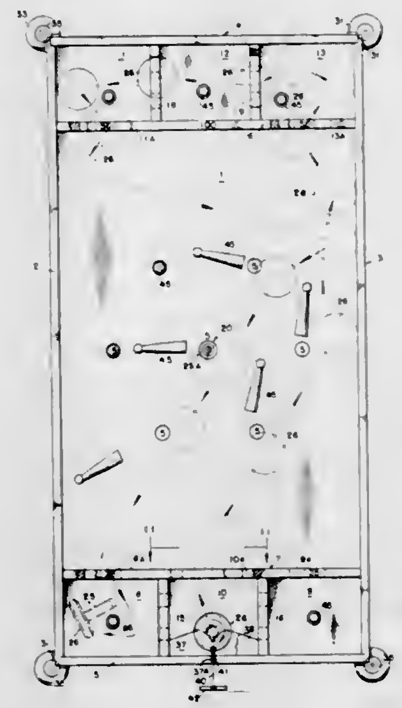
Robert B. Mars, 21035 Costanso,
Woodland Hills, Calif. 91364
Filed Oct. 11, 1965, Ser. No. 494,480
U.S. Cl. 273—95 5 Claims
Int. Cl. A63f *9/02;* **A63h** *33/00*



An educational game comprising a plurality of flat discs which have indicia on one side thereof, such as letters of the alphabet, or numbers or words or mathematical symbols. The discs are in sets according to the type of indicia thereon. The discs are capable of being flipped over to expose the indicia by a provided additional flipper disc.

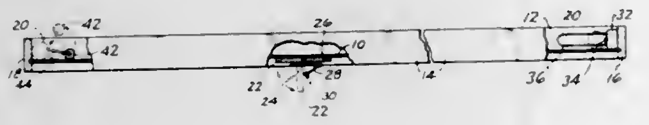
3,429,573
GAME BOARD WITH LEVELING MEANS AND SPINNING TOP

Kermit G. Cederberg, 3316 NE. 18th Ave.,
Portland, Oreg. 97212
Filed June 8, 1965, Ser. No. 462,221
U.S. Cl. 273—108 1 Claim
Int. Cl. A63b *67/14;* **A63h** *1/00*



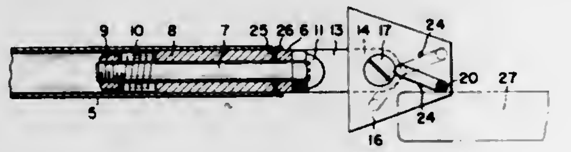
A game including a rectangular playing surface, compartmented at its ends and having interconnecting passageways through which a spinning top may travel to upset target pins in its path. The playing surface is leveled by actuation of corner mounted threaded shafts with a level condition being indicated by a centrally located surface level. The spinning top is of concave formation at its lower end to provide a reduced area for spinning contact with the playing surface.

3,429,574
GAME WITH BALL-RECEIVING SPACED DIVIDER MEMBERS
Charles L. Williams, 4160 Center St. NE., Salem, Oreg. 97301
Filed Aug. 12, 1965, Ser. No. 479,133
U.S. Cl. 273—123 **4 Claims**
Int. Cl. A63f *7/00, 3/00*



A plurality of laterally spaced and laterally resilient, elongated U-shaped wire dividers are mounted above the base member of a game board, at the front end thereof, with the closed ends of the wires extending toward the rear end of the board freely above the base member, the dividers defining ball-receiving compartments between them. A retractable fulcrum on the underside of the base member is positioned rearward of the longitudinal center of the latter for pivoting the board between forward and rearward inclined positions, and a pivoted ball retainer is mounted adjacent the rear end of the board for retractably retaining playing balls.

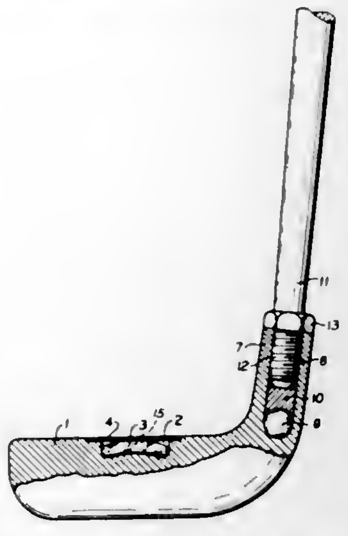
3,429,575
SHUFFLEBOARD CUE STICK
Edgar L. Stevens, 836 17th Ave., Vero Beach, Fla. 32960
Filed June 22, 1967, Ser. No. 648,099
U.S. Cl. 273—129 **4 Claims**
Int. Cl. A63b *67/14, 71/02, 59/00*



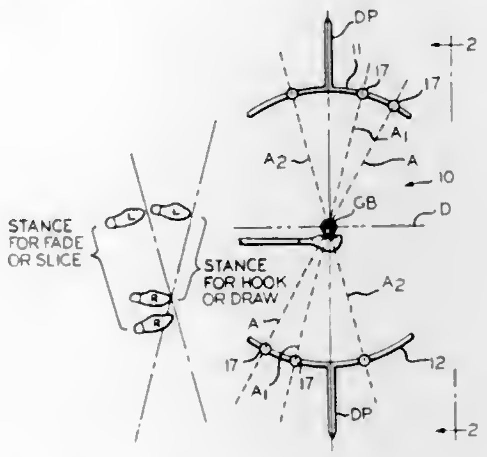
A cue for playing shuffleboard whose aluminum head is swiveled to the handle and has divergent arms connected by a pivotally mounted cross bar which bar engages the disk to be propelled. The cross bar rises and falls between stop pins which pins are joined to non-metallic blocks connected to the divergent arms of the head. Biassing springs are in both the bolt joining the handle and head and also in one end of the cross bar where it joins the block.

3,429,576
GOLF CLUB HAVING LEVEL INDICATING MEANS AND WEIGHT MEANS
Yoshiaki Ikeda, 30, 4-bancho, Kozu-cho, Minami-ku, Osaka, Japan
Filed Nov. 19, 1965, Ser. No. 508,705
Claims priority, application Japan, Aug. 28, 1965, 40/70,890; Sept. 16, 1965, 40/76,049
U.S. Cl. 273—162 **7 Claims**
Int. Cl. A63b *53/10, 53/02*

A practicing golf club for putting comprising a head having a coupling part adapted to receive therein a shaft, the lower end part of the shaft being adapted to be screwed into a threaded hole formed in the coupling part of the head, so that the most suitable head chosen from many heads may be selectively fixed to the shaft, and simultaneously the center of gravity of the club is lowered by a dead weight disposed in the threaded hole at the lowermost portion thereof aligned with the upper surface of the head, and the inclination of the head is easily ascertained by means of a level fixed to the club head.



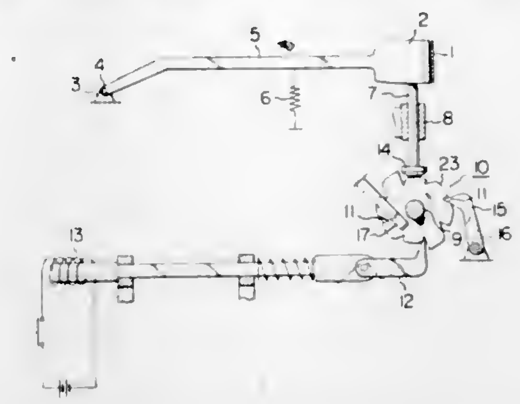
3,429,577
GOLF PRACTICE DEVICE
Kenneth B. Godden, Box 95, Cornell, Ill. 61319
Filed Aug. 18, 1966, Ser. No. 573,228
U.S. Cl. 273—186 **2 Claims**
Int. Cl. A63b *69/36*



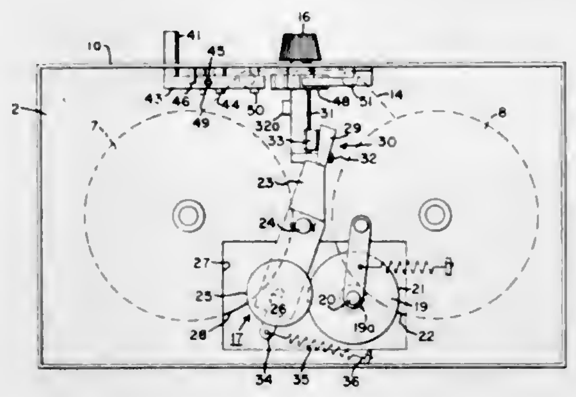
A golf practice device characterized by a pair of arcuate shaped members adapted to be placed on the ground to the front and rear of a golf ball resting on the ground substantially at the center of the arcs of said arcuate shaped members, each of said members having an indicator extending therefrom in directions corresponding to the normal direction of flight of the golf ball, and structure adjustably positioned on the arcuate members adapted to be struck by the club head when the path of movement of the club head is such as to give a line of flight to the golf ball other than the normal one.

3,429,578
HEAD SWITCHING APPARATUS OF A TAPE RECORDER
Masayoshi Furuichi, Tokyo-to, Japan, assignor to Kabushiki Kaisha Sankei Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Apr. 26, 1967, Ser. No. 633,768
Claims priority, application Japan, May 6, 1966 (utility model), 41/41,960
U.S. Cl. 274—4 **5 Claims**
Int. Cl. G11b *5/52*

A single combined cam and ratchet adapted to switch the position of a sound recording and/or reproducing head from one track to the other on a sound recording tape is provided with a plurality of cam surfaces of different radial height and a plurality of notches each provided between a pair of adjacent cam surfaces. A pawl cooperates with the notches to rotate stepwise the wheel while a cam follower cooperates with the cam surfaces to switch the position of the head.

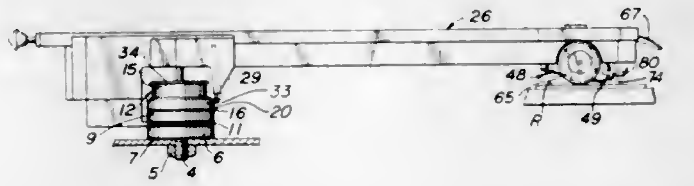


3,429,579
DRIVE MECHANISM FOR TAPE RECORDER
Yates M. Hoag, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 14, 1967, Ser. No. 630,981
U.S. Cl. 274—4 **5 Claims**
Int. Cl. G11b *5/00*



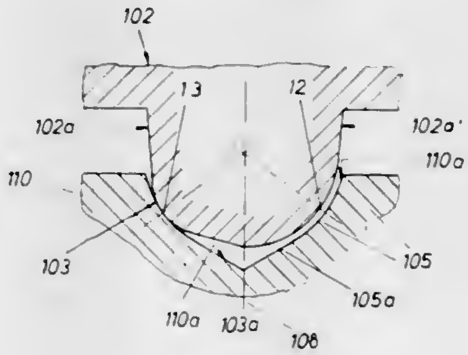
A tape recorder wherein a unidirectionally rotating drive motor for a turntable is powered at full voltage during record, play and rewind to reduce excessive wow and flutter. The motor is mounted on a movable arm which is operatively engaged by a function switch. The movable arm may be manipulated by operation of the function switch to cause the motor to be moved alternately to drive a first turntable in one direction or to drive a second tunntable, through a speed reduction arrangement, in an opposite direction and at a slower speed.

3,429,580
RECORD PLAYING MECHANISM
Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Feb. 28, 1966, Ser. No. 530,454
U.S. Cl. 274—23 **29 Claims**
Int. Cl. G11b *17/06*



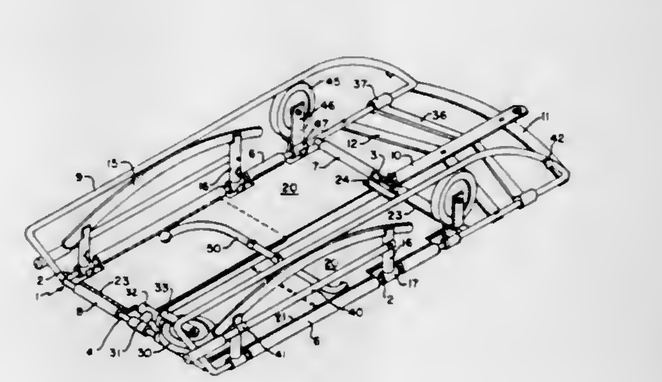
A record changer phonograph having means disposed above the deck, and to a substantial degree carried by the tone arm itself, for effecting tone arm operation during record playing, lifting and removing the tone arm from a played record, returning the tone arm inwardly and downwardly to the record, and for sizing the succeeding record.

3,429,581
SEALING CONNECTION
Franz Himmel, Schliersee, Germany, assignor to Fritz Drexler, Babenhausen, Germany
Filed May 12, 1965, Ser. No. 455,160
Claims priority, application Germany, May 15, 1964, H 52,703
U.S. Cl. 277—180 **17 Claims**
Int. Cl. F16j *15/00;* **B65d** *53/00;* **F16l** *25/00*



A sealing connection includes a female sealing member having a groove bounded by a first surface, and a male sealing member comprising a projection extending into the groove. The projection has a second surface a sealing portion of which abuts against and forms a seal with a sealing portion of the first surface. At least one of the sealing portions consists of deformable material abutting the corresponding sealing portion of the other surface whereby the area of contact between the sealing portions increases in response to stresses forcing the projection deeper into the groove. The surfaces further have cooperating stop portions abutting against each other at least at such times when the area of contact between the sealing portions increases to a predetermined value.

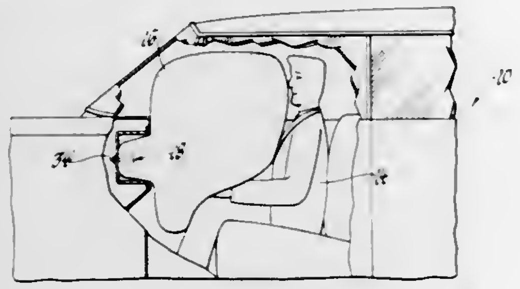
3,429,582
SLED CONVERTIBLE INTO WAGON AND OTHER DEVICES
Louise Embry, 4799 Westside Drive, Louisville, Ky. 40219
Filed Sept. 11, 1967, Ser. No. 666,669
U.S. Cl. 280—7.12 **4 Claims**
Int. Cl. B62k *13/00*



A device which is invertible from one (rightside-up) sled forming position, to another (upside-down) multi-use position in which it can be converted to form any of a number of other articles such as a rocker, wagon or wheelbarrow. This device is provided with wheel means which occupy an inoperative above-ground position when the device is used rightside-up as a sled or upside-down as a rocker. The wheel means are mounted for angular movement into an operative ground engaging position when the device is to be used upside-down as a wagon or wheelbarrow.

3,429,583
VEHICLE SAFETY SYSTEM

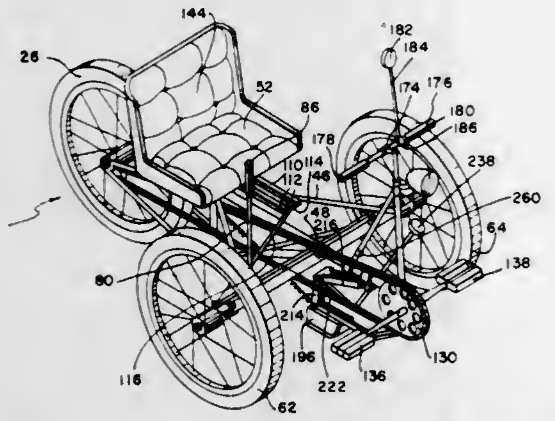
Robert L. Martin, Detroit, and Richard Chute, Huntington Woods, Mich., assignors to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 10, 1967, Ser. No. 622,245
U.S. Cl. 280—150 **2 Claims**
Int. Cl. B60r *21/04*



A safety assembly adapted to be attached to a vehicle for protecting an occupant thereof and including an inflatable bag, a container in communication with the bag to store fluid for inflating the bag, and a linear and shaped explosive charge for concentrating the energy resulting from the activation thereof for opening the container.

3,429,584
THREE-WHEELED VELOCIPEDE

William E. Hendricks, 614 S. Minnesota, Wichita, Kans. 67211
Filed July 17, 1967, Ser. No. 653,698
U.S. Cl. 280—261 **27 Claims**
Int. Cl. B62k *9/02;* **B62l** *1/00, 3/02*



A tricycle vehicle having a rear driving wheel and forward dirigible wheels, a form fitting bucket type seat with relatively high sides and back rest mounted so that a rider's weight is approximately equally distributed on the wheels, a plurality of means being provided for steering including an upstanding lever movable to the right and left to effect endwise movement of a tie rod connected to knuckles on the stub axles of the front wheels and the seat being oscillatably mounted on a vertical axis and operatively coupled to the tie rod and the steering lever to effect steering action on oscillation thereof. One of the steering arrangements couples a pivoted handle bar to the tie rod by structure including a rock shaft and a link.

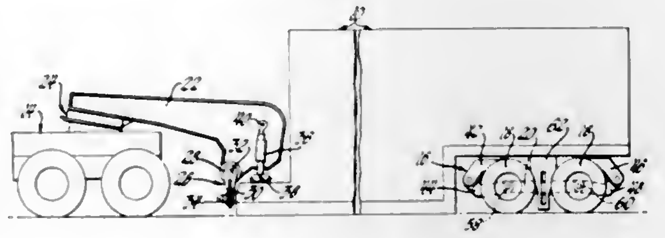
The vehicle includes a driving, foot pedal driven, sprocket at the forward end of the vehicle and ahead of the dirigible front wheels in an arrangement such that the rider is seated at a relatively low position relative to his feet. A chain drive is provided from the driving sprocket to a driven sprocket at the rear wheel, the extent of the vehicle frame between the seat and the driving sprocket being adjustable to suit the rider's leg length.

The driven sprocket is operatively connected to the rear wheel as is conventional in bicycles whereby the vehicle can be driven forwardly, allowed to coast and to be braked.

A brake shoe or drag brake is provided forwardly of the centers of the front wheels and is movable downwardly by toggle link means into ground contact whereby nearly the entire weight of the vehicle is borne by the shoe and the rear wheel. The opposite upward force of the drag brake augments the braking force of the rear wheel, as the ground contact positions of the front wheels act as a fulcrum. The brake shoe is lever actuated, and such lever can be locked in such a position that the shoe is engageable with the ground so as to curtail unauthorized use or theft of the vehicle.

3,429,585
VARIABLE HEIGHT TRAILER UNIT

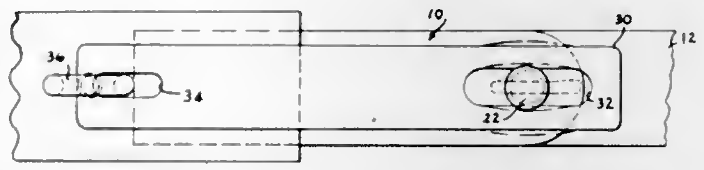
John D. Ross, Nottingham, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 626,991
U.S. Cl. 280—423 **9 Claims**
Int. Cl. B62d *53/06;* **B60p** *1/34*



A suspension unit that includes a foldable scissor-type mechanism supporting a walking beam and having an extensible actuator which has a portion thereof restrained from all movement other than along a vertical axis so that the suspension unit is prevented from folding in any manner other than a vertical direction and permits a rocking action of the walking beam for purposes of traversing irregular terrain.

3,429,586
HITCH PIN CONSTRUCTION

Raymond G. Force, R.R. 2, Greenville, Ohio 45331
Filed Mar. 6, 1967, Ser. No. 620,847
U.S. Cl. 280—515 **4 Claims**
Int. Cl. B60d *1/02*



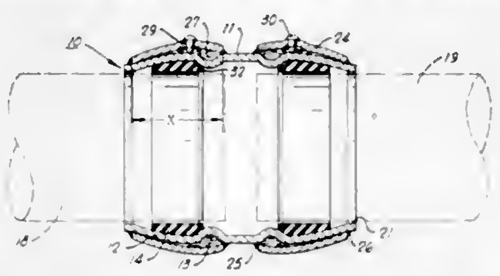
Hitch pin rotatably and slidably supported on a bar which is swingably supported on one element of a hitch structure.

3,429,587
PIPE COUPLINGS

George D. Kish, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,309
U.S. Cl. 285—18 **12 Claims**
Int. Cl. F16l *17/02, 21/02*

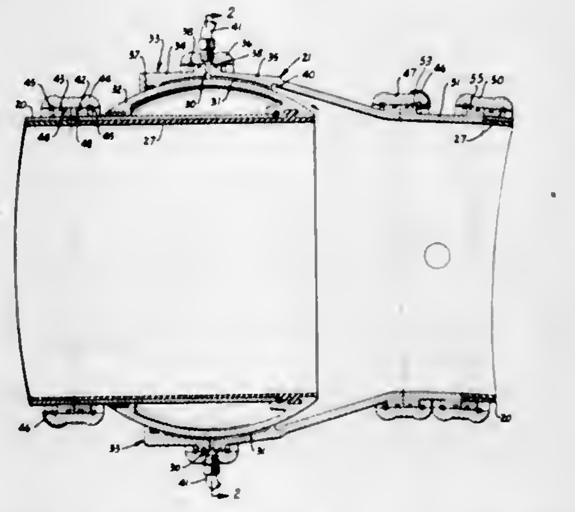
A pipe coupling device formed of a tubular shell having an annular outer ring secured, arched and pressure-tight about each end portion of the shell to provide a pressure-tight chamber between the shell and ring. An aperture in each of the rings permits application of fluid pressure

within each end chamber sufficient to deform the shell inwardly thereat urging the shell or a contained gasket into uniform pressure seal engagement against received pipe sections to be coupled.



3,429,588
JOINT CONSTRUCTION

Arthur J. Nelson, Santa Barbara, Calif.
(1998 Broadway, San Francisco, Calif. 94109)
Original application Nov. 18, 1964, Ser. No. 412,003, now Patent No. 3,286,286, dated Nov. 22, 1966. Divided and this application May 26, 1966, Ser. No. 553,199
U.S. Cl. 285—11 **1 Claim**
Int. Cl. F16l *17/00*

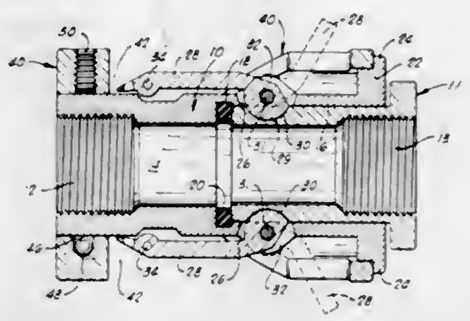


A coupling for flexibly joining a pair of pipeline sections together in end to end fluid communication. The coupling comprises a ball element adapted to be secured to one of the sections and a segmented socket element adapted to be secured to the other of the sections. The socket element is made up of two radially flanged components matingly received on the ball element to either side thereof for articulation relative thereto. The flanged components are releasably held together in juxtaposition relative to each other by a strap extending therearound and having internal snap rings engaged therewith. The snap rings are releasably retained within the strap to provide for the selective assembly and disassembly of the coupling. Fluid ducts are provided in the strap and socket components to provide for the supply of flushing and lubricating fluid to the external surfaces of the ball element.

3,429,589
QUICK DISCONNECT COUPLING

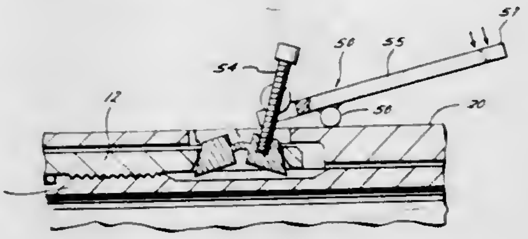
Reuel C. Parrish, 3005 N. Enid Blvd., Enid, Okla. 73701
Filed Sept. 20, 1965, Ser. No. 488,492
U.S. Cl. 285—86 **13 Claims**
Int. Cl. F16l *37/18;* **F16j** *15/10*

A quick disconnect coupling assembly which includes a tubular body having an annular internal seat and handles pivotally connected to the outside of the body and each having a portion extending through an opening in the body and functioning upon pivotation of the handles to bias an adapter into sealing engagement with the internal seat. A tubular housing surrounds the tubular body and has apertures in the side thereof dimensioned to permit the handles to extend therethrough when they are pivoted to an adapter-releasing position. A locking device is provided for preventing relative axial movement between the body and housing while permitting relative concentric rotational movement between these elements. A spring assembly cooperates with the body and housing to bias the housing relative to the body in a rotational sense into a position where the handles are protectively covered by the housing.



3,429,590
APPARATUS FOR COUPLING MEMBERS OF A WELL TOOL

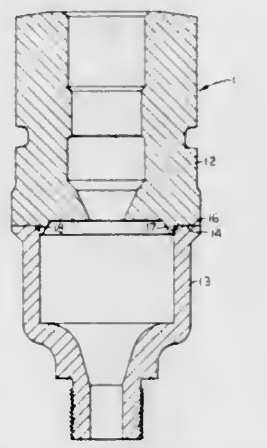
James W. Kisling III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 1, 1966, Ser. No. 554,518
U.S. Cl. 285—91 **6 Claims**
Int. Cl. F16e *25/00;* **F16b** *7/00*



Apparatus for securing inner and outer tubular members against relative rotation including an initially bent elongated key which is inserted within an aperture in the outer member and a recess means in the inner member and then flattened so that retaining means on the ends of the key are activated to restrain dislodgement of the key from the aperture, said key having enlarged end sections joined by a reduced intermediate section about which said key can be readily bent.

3,429,591
PRECOMBUSTION CHAMBERS

Calvin D. Loyd and Ralph W. Yocum, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation of application Ser. No. 407,119, Oct. 28, 1964. This application Sept. 6, 1967, Ser. No. 665,937
U.S. Cl. 285—189 **2 Claims**
Int. Cl. F16e *13/02;* **B23k** *27/00*

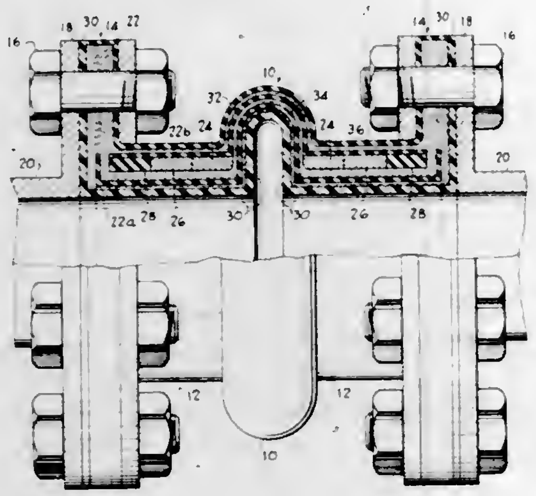


The abutting surfaces of two parts are rotated under pressure relative to each other producing a friction weld.

Trap means are provided for containing and preventing the flash from the welded area moving to an undesired location.

3,429,592
REINFORCED EXPANSION JOINT

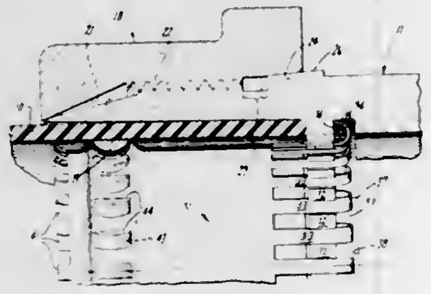
Joseph Merkwacz, Penfield, N.Y., assignor to Garlock Inc., Palmyra, N.Y., a corporation of New York
Filed Sept. 11, 1967, Ser. No. 666,745
U.S. Cl. 285—229 **5 Claims**
Int. Cl. F16l *27/10, 51/02*



Cylindrical portions of an expansion joint, between which an expansion arch is integrally connected, are each provided with reinforcing means in the form of a pair of strong (preferably steel) rings each of rectangular shape in cross section, of corresponding inner and outer diameters, and preferably of greater width than thickness. Opposed flat sides of the rings of each pair slidably engage each other and flat, axially inner ends of the innermost rings of each pair are at the junctures of said arch and said cylindrical portions. Suitable back-up means coact with the paired rings to oppose axially outward displacement thereof. Also, the inter-action of such rings, thus arranged, and their coaction with adjacent material of the joint, strongly opposes any tendency of the paired rings to shift and thereby rupture the joint, as a result of pressure within the expansion joint and its arch.

3,429,593
PIPE FITTING CONSTRUCTION

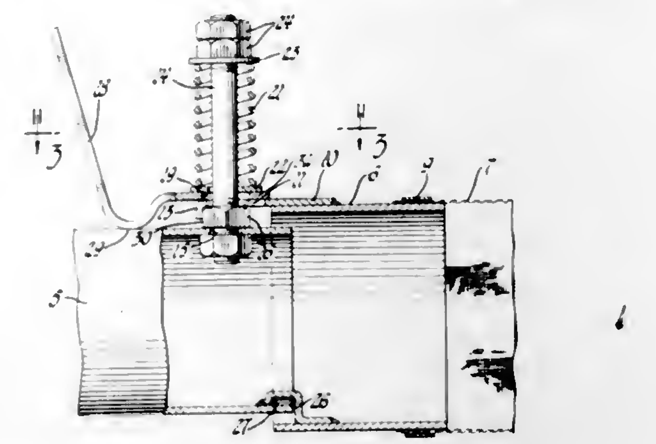
Wendell Seablom, Santa Rosa, Calif., assignor to Controlled Mercury Switch Corporation, Santa Rosa, Calif., a corporation of California
Filed Aug. 15, 1966, Ser. No. 572,562
U.S. Cl. 285—247 **5 Claims**
Int. Cl. F16l *21/08, 47/00*



A pipe fitting construction having an interiorly disposed locking insert for locking the pipe, fitting, and insert together to preclude relative rotation between any two. A nut having tapered wedging surfaces cooperates with wedging surfaces on the fitting at two locations longitudinally thereof.

3,429,594
QUICK DISCONNECT COUPLING

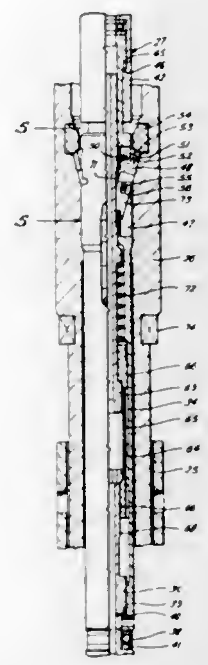
Rowland L. Stedfeld, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 22, 1967, Ser. No. 647,966
U.S. Cl. 285—317 **3 Claims**
Int. Cl. F16l *37/08*



A coupling for two telescoping tubes embodies a flange on one, an abutment on the other, a post on the other, a spring on the post operative to hold the abutment and flange in overlapping relation, and a lever on the post operable to disengage the abutment from the flange.

3,429,595
WELL TOOL WITH LOAD-FREE PIVOT CONNECTIONS

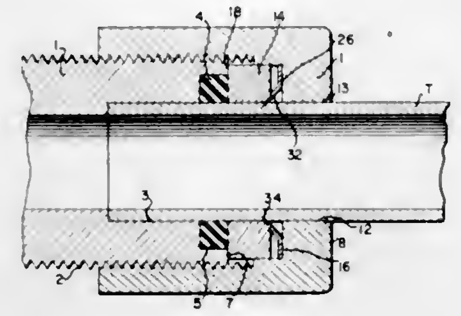
Howard L. McGill, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 18, 1965, Ser. No. 464,938
U.S. Cl. 285—320 **5 Claims**
Int. Cl. F16l *39/00, 37/18, 25/00*



This application discloses a latch arrangement for releasably connecting one member of a well tool to another member thereof. More particularly, the disclosed latch members are pivotally mounted to one member for lateral movement into and out of interposition between longitudinally spaced, opposed shoulders on the two members, respectively. By leaving longitudinal play between each latch member and its pivot connection, once the latch is interposed between its respective opposed shoulders, the interconnected members can shift relative to one another until halted by the latch members without imposing any loading on the pivot connections.

3,429,596
QUICK-CONNECT COUPLING ASSEMBLY

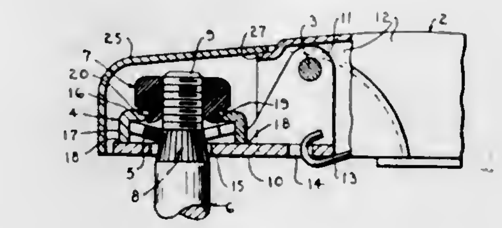
Charles Marshall, Kent, Ohio, assignor to D & G Plastic Co., Kent, Ohio, a corporation of Ohio
Filed Aug. 15, 1966, Ser. No. 572,449
U.S. Cl. 285—340 **3 Claims**
Int. Cl. F16l *19/08, 21/04*



The coupling assembly is defined by a cylindrical counterbored body, the counterbore receiving an O-ring seal, a cylindrical thrust-spacer member abutting against the O-ring and having at its opposite end a beveled cam surface surrounding the interior bore and a thin metallic locking ring having a central segmented conical surface in abutment with the cam surface of the thrust spacer whereby when a hollow cap member mounted on the body and encasing said ring and said spacer is moved axially both the seal and the segmental portion of the locking ring are compressed inwardly to engage the outer peripheral wall of a tube inserted within and passing through the ring, the spacer and at least partially into the coupling body.

3,429,597
CLUTCH ASSEMBLY FOR WINDSHIELD WIPER ARM

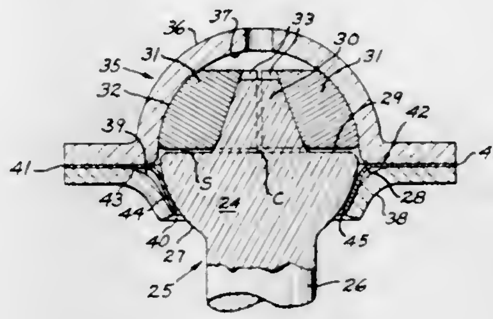
Fred A. Krohm, Hobart, Ind., assignor to The Anderson Company, a corporation of Indiana
Continuation-in-part of applications Ser. No. 411,470, Feb. 19, 1954, Ser. No. 507,578, May 11, 1955, and Ser. No. 540,469, Oct. 14, 1955. This application July 1, 1960, Ser. No. 40,276
U.S. Cl. 287—53 **30 Claims**
Int. Cl. B60s *1/34;* **F16d** *1/06;* **A47l** *1/02*



7. A windshield wiper arm structure adapted for attachment to a shaft having a tapered portion and a threaded portion comprising an inner section having a base wall provided with an aperture, a cup-like member rigidly connected to said base wall, said cup-like member having an annular side wall and a bottom wall, said bottom wall being spaced from said base wall and being provided with an aperture in substantial alignment with the aperture in said base wall, a plurality of clutch elements disposed within said cup-like member between said base wall and said bottom wall, each of said clutch elements having an inner surface for engagement with said tapered portion of the shaft and an outer surface for engagement with said side wall of the cup-like member, and a nut engaging the base wall for connection with the threaded portion of the shaft.

3,429,598
BALL JOINT UNIT FOR STEERABLE VEHICLE WHEELS

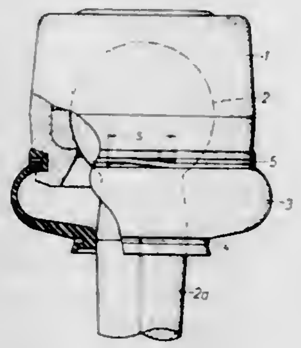
William A. Scheublein, Jr., Ballwin, and Louis P. Fister, St. Louis, Mo., assignors to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Oct. 15, 1965, Ser. No. 496,538
U.S. Cl. 287—87 **6 Claims**
Int. Cl. F16c *11/06*



A ball joint unit in which the housing encloses a stud having an enlarged end composed of a head portion on the stud formed with an outwardly convergently directed conical portion surrounded by an annular surface located substantially in the great circle plane, and a plurality of bearing elements having first surfaces which are segments of a sphere and second surfaces which are segments of a cone, with the spherical segments substantially conforming to and bearing upon the interior bearing surface of the housing and the second surfaces engaged on the conical projection which is part of the stud so that the load carrying surfaces within the ball joint assembly, at least in the initial wear-in stages, will be substantially located at or closely adjacent the great circle plane of the assembly.

3,429,599
BALL JOINT

Andreas Schmidt, Osterath-Bovert, Germany, assignor to A Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed Aug. 17, 1965, Ser. No. 480,342
Claims priority, application Germany, Aug. 19, 1964, E 20,394
U.S. Cl. 287—87 **7 Claims**
Int. Cl. F16c *11/06;* **F16j** *15/48, 15/32*



The present invention concerns a ball joint the housing of which has a peripheral annular groove provided in that end portion thereof which is adjacent the stud, while bellows means having one end portion surrounding said stud are in sealing engagement therewith whereas the other end portion in the form of a lip engages the said peripheral annular groove, said lip having an outer contour corresponding substantially to the inner contour of the peripheral annular groove in the housing.

Furthermore, said bellows means is provided with an outer annular groove in said lip while a spring ring located in said outer annular groove extends over a length slightly less than twice the circumferential length of said annular groove in said lip, said spring ring having a width in excess of its height and having a substantially rectangular cross section corresponding to the cross section of said annular groove in said lip. The said spring ring in the form of a helical coil comprises a complete winding and two partial windings respectively located on opposite sides of said complete winding and having their free ends circumferentially spaced from each other and located in planes extending substantially perpendicularly to the axis of said spring ring.

3,429,600

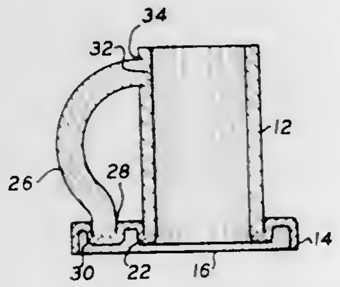
POST AND RAIL FITTING

John Edie and Fred Burmann, both of 40 Newtown Plaza, Hicksville, N.Y. 11803

Filed June 29, 1967, Ser. No. 649,991

U.S. Cl. 287—119 **3 Claims**

Int. Cl. F16l *13/02*



A construction for ships' fittings such as post and rail members comprising a flange base member having a hole with a depending skirt formed therein receiving an upstanding post member which is fitted and fused to the skirt.

3,429,601

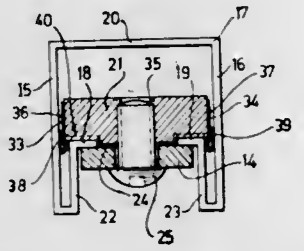
STRUCTURE FOR THE ASSEMBLY OF ADJUSTABLE FRAMEWORK

Victor M. J. Bremers, Prins Mauritslaan 30, The Hague, Netherlands

Filed July 21, 1966, Ser. No. 566,963

U.S. Cl. 287—189.36 **1 Claim**

Int. Cl. F16b *1/00;* **E04b** *2/58*



1. Structural means comprising in combination at least one channel shaped member having side walls and a connecting wall defining a space therebetween and provided with an ever open opening through one side thereof communicating with said space, said side walls having portions turned inwardly upon themselves through said ever open opening and extend for a substantial distance into said space toward said connecting wall, the free end parts of said inwardly turned side wall portions being inwardly turned towards one another to provide flanges disposed in a plane parallel to the plane of said connecting wall, a nut received by said space inwardly of said flanges and bearing against the inner faces of said flanges, a connecting element having a through bore received by said space inwardly of the ever open opening and bearing upon the outer faces of said flanges, and a threaded bolt extending through said bore in the connecting element and received by said nut so that the nut, the connecting element and the bolt are completely housed within said space in the channel shaped member inwardly of the ever open open side of the channel shaped member to present a flat bearing surface for bearing gutters and other kinds of supports.

3,429,602

WELDED LIGHT-METAL CORNER CONSTRUCTION

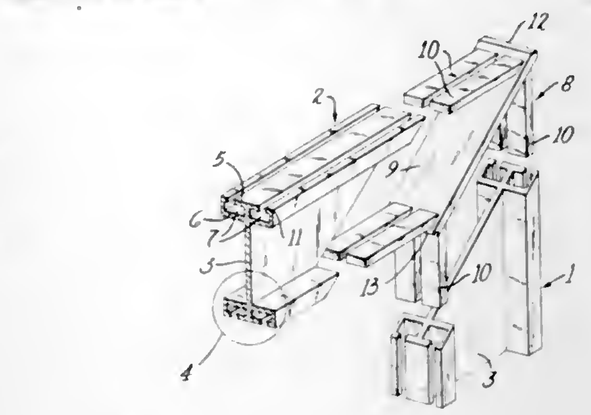
Necdet Dirilgen, Uitikon Waldegg, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland

Filed Apr. 23, 1968, Ser. No. 723,537

Claims priority, application Switzerland, Apr. 26, 1967, 5,963/67

U.S. Cl. 287—189.36 **5 Claims**

Int. Cl. F16b *1/00, 5/00, 7/00*



A welded light-metal corner construction has two I-sections with mitered ends, and a connecting piece consisting of a web plate having legs that fit into corresponding grooves of the I-sections. The legs are welded to the groove edges and the plate is welded to the ends of the sections.

3,429,603

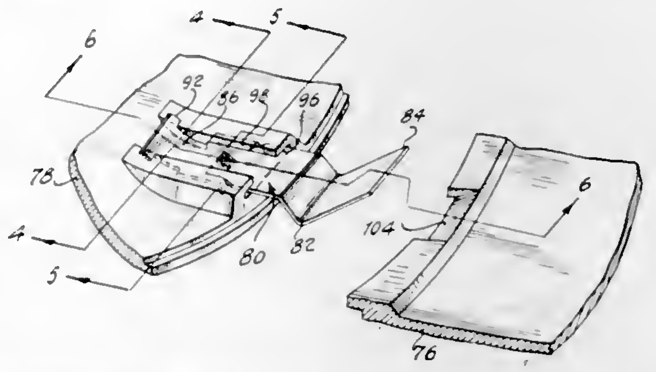
MEANS FOR ASSEMBLING TOGETHER A TWO-PART HOUSING

James T. Gejoff, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Apr. 21, 1967, Ser. No. 632,648

U.S. Cl. 292—80 **6 Claims**

Int. Cl. E05c *19/06*



This specification describes a two-part housing for a steering column gearshift assembly in an automotive vehicle. Interlock retainer elements, which permit quick assembly and disassembly of the housing parts, are locked to one of the parts by means of a tongue-and-groove connection that is adapted especially for volume production assembly techniques.

3,429,604

SNAP LOCK FOR A CONTAINER WITH HINGED LID

Georg Reitzel, Altenmittlau Kreis, Gelnhausen, Germany, assignor of one-half each to Drescher & Kiefer, Altenmittlau Kreis, Gelnhausen, Germany, a German firm, and Randolph-Rand Corporation, New York, N.Y., a corporation of New York

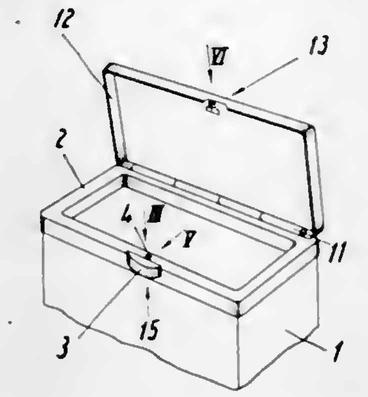
Filed Apr. 20, 1967, Ser. No. 632,298

Claims priority, application Germany, Jan. 14, 1967, D 52,014

U.S. Cl. 292—175 **5 Claims**

Int. Cl. E05c *1/10*

The invention relates to a snap lock for a container with a spring loaded lid hinged thereto. The snap lock comprises a concealed catch mechanism and a protruding grip. It locks itself when the lid is pressed against the container body and it is released by displacing the grip in either one of two opposite directions.



3,429,605

CLOSING RING FOR SHIPPING CONTAINERS

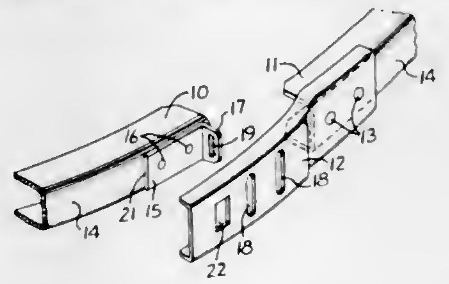
Adrianus Soesbergen, Utrecht, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed May 11, 1967, Ser. No. 637,705

Claims priority, application Great Britain, May 12, 1966, 21,155/66

U.S. Cl. 292—256.65 **5 Claims**

Int. Cl. B65d *45/32, 45/30, 63/02*



A split closing ring for shipping containers is described, which is joined circumferentially by a projection engageable with corresponding apertures, and having a means by which a tool can be inserted to draw the ends tightly together for sealing the container.

3,429,606

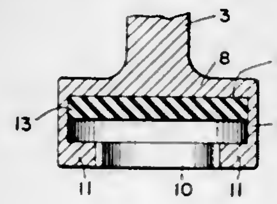
CONTAINER LIFTING DEVICE

Roger N. Brasseur, 6260 Dewhirst, Saginaw, Mich. 48603

Filed July 13, 1967, Ser. No. 653,110

U.S. Cl. 294—26 **4 Claims**

Int. Cl. B65g *7/12, 65/24;* **F16b** *7/20*



A device for lifting a container such as a beer barrel or the like having an opening in one wall thereof surrounded by a peripheral flange having circumferentially spaced, radially extending slots, the lifting device having at one end thereof a number of projections capable of passing through the flange slots for rotation into underlying relation with the flange so as to enable the container to be lifted by the lifting device. The lifting device preferably includes a resilient cushioning member that is adapted to bear against the container flange so as frictionally to retain the lifting device in its operative position relative to the container flange.

3,429,607

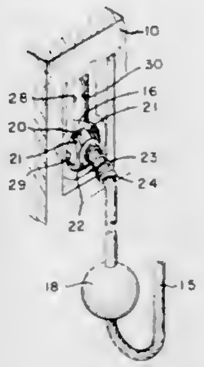
SYSTEM FOR ERECTING PRE-CAST CONCRETE PANELS IN A CONCRETE WALL STRUCTURE

James L. White, Bellevue, Wash., assignor of one-third to John W. Rumsey, Seattle, Wash.

Filed Oct. 3, 1967, Ser. No. 672,471

U.S. Cl. 294—89 **9 Claims**

Int. Cl. E04b *1/60;* **B66c** *1/10*



A system for attaching hoist lines to pre-cast concrete wall panels so that the panels can be lifted into place in a pre-fab wall, and when the panels have been located in the wall disengaging the lines from the panel automatically by slacking off the lines.

3,429,608

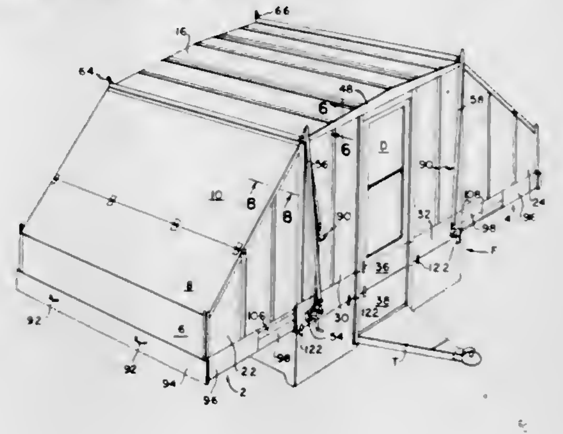
KNOCKDOWN TRAILER UNIT

Charles Ernest Farnum, 1375 9th Ave. N., Fargo, N. Dak. 58102

Filed Jan. 23, 1967, Ser. No. 611,131

U.S. Cl. 296—23 **10 Claims**

Int. Cl. B60p *3/34;* **B60r** *15/00*



A camper unit which can be carried on a trailer or truck in a collapsed condition to provide a small easily transportable package but which can be quickly set up by a single person using an attached winch and cable. The roof and sidewalls are arranged to interlock, on setting up, with the end walls to provide a sturdy structure. The bunks which provide sleeping comfort are connected to the sidewalls and base and are a permanent part of the structure.

3,429,609

COLLAPSIBLE TRAILER

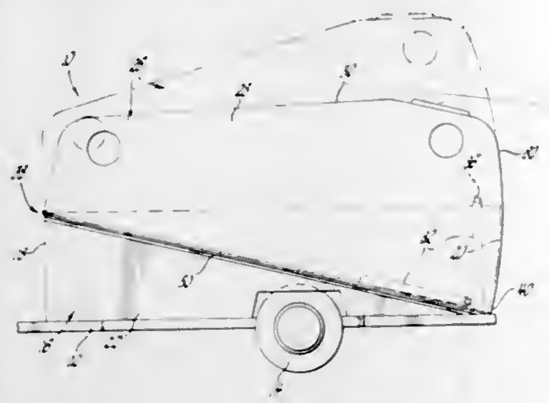
William W. Robb, 31406 Meadows, Madison Heights, Mich. 48071

Filed Mar. 28, 1966, Ser. No. 537,965

U.S. Cl. 296—23 **14 Claims**

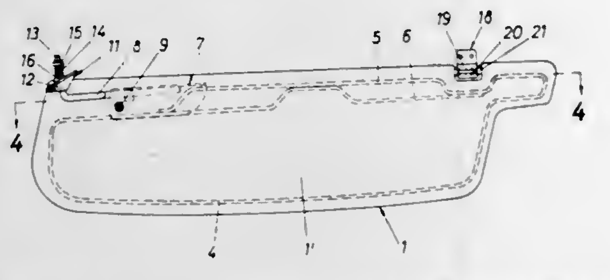
Int. Cl. B60p *3/34;* **B62d** *53/04*

A collapsible trailer assembly including a frame supported by a plurality of wheels, a bottom portion disposed on the frame and having an opening defined by the upper extremities of the walls thereof, a top portion having an opening defined by the lower extremities of the walls thereof, and pivot means operatively connecting the top portion to the bottom portion adjacent the upper extremity of the front wall of the bottom portion for allowing the top portion to pivot relative to the bottom portion between a collapsed position and an expanded position so that the periphery of the opening in the top portion is disposed in overlapping relationship with the bottom portion in both the collapsed and expanded positions.



3,429,610
SUN VISOR, PARTICULARLY FOR AUTOMOTIVE VEHICLES

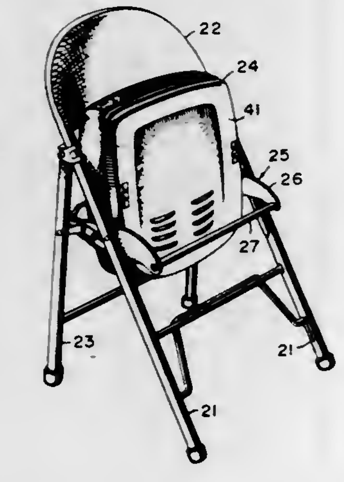
Heinz Bornefeld, Wuppertal-Elberfeld, Germany, assignor to Gebr. Happich G.m.b.H., Wuppertal-Elberfeld, Germany, a corporation of Germany
Filed Mar. 2, 1967, Ser. No. 620,012
Claims priority, application Germany, Mar. 10, 1966, H 58,764
U.S. Cl. 296—97 **4 Claims**
Int. Cl. B60j *3/02*



A sun visor, particularly for automotive vehicles formed as a pillow body comprises a pivot bearing protected by upholstering and a holding rod for the pivot bearing projects at an acute angle from the outer face of the sun visor, when the latter is turned into upright position. This outer face covers up protectingly the holding rod.

3,429,611
FOLDING CHAIR

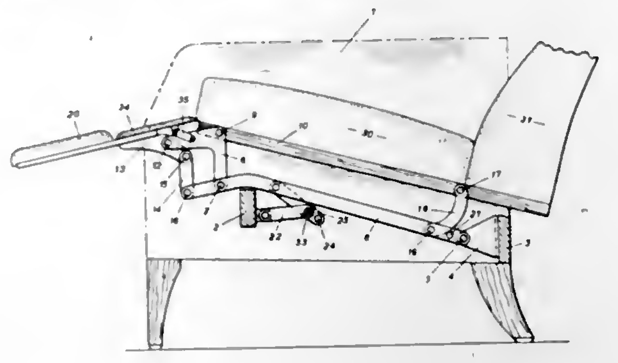
Arthur L. Van Ryn, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Apr. 2, 1968, Ser. No. 718,093
U.S. Cl. 297—58 **9 Claims**
Int. Cl. A47d *1/02, 5/10*



A folding chair is provided with linkage which automatically lowers the seat as the chair is folded so that the seat rests below the back panel in a compact folded unit. A bumper piece is provided which may be used as a right or lefthand piece interlocked with the seat pan.

3,429,612
CHAIRS EQUIPPED WITH LEGRESTS OR FOOTRESTS

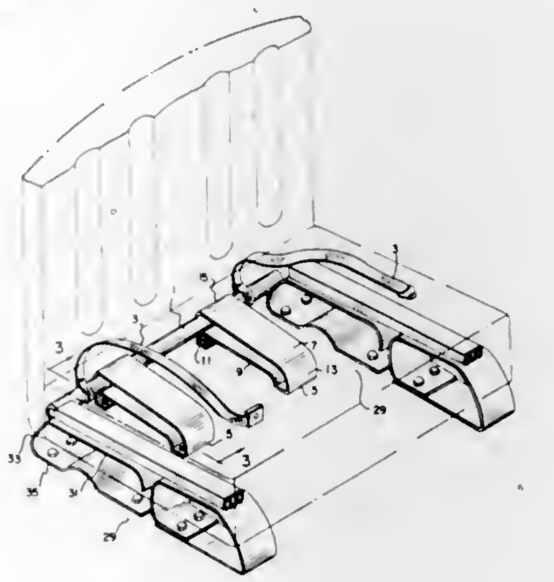
William Reginald Cobb, Hunters Lodge, Mill Lane, Old Harlow, Essex, England
Filed Feb. 20, 1967, Ser. No. 618,288
U.S. Cl. 297—75 **4 Claims**
Int. Cl. A47c *7/50, 1/02*



A legrest actuating mechanism and linkage adapting it to a reclining chair or to a simple legrest chair with a tiltable seat. The mechanism comprising a simple bell-crank lever to raise the front of the seat and swing the legrest from beneath the seat to a position in front of the seat, and a control link to govern the rate at which the legrest is turned relative to the rate at which the front of the seat is raised.

3,429,613
SAFETY SEAT BELT ANCHORAGE

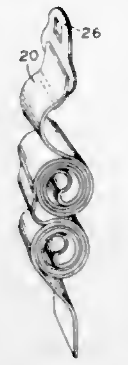
Herbert C. Rice, 16940 Log Cabin, Detroit, Mich. 48203
Filed May 19, 1967, Ser. No. 639,709
U.S. Cl. 297—386 **7 Claims**
Int. Cl. B60r *21/10*



The subject matter of this invention is a mechanical energy dissipating anchoring system for automotive seat belts. In its preferred embodiment, the anchoring system consists of a round bar which is plcaed in a hollow truncated V-shaped guide chute. During normal operation the bar fits snugly inside the chute at its rear end and the seat belt is anchored to the bar. During a collision resulting in a severe deacceleration the inertial energy of the restrained passenger acting through the seat belt drives the bar to the forward end of the chute wherein the impact force to which the restrained passenger is subjected is lowered and the movement of the bar through the chute frictionally dissipates a substantial amount of the passenger's energy. In addition, the bar may be so positioned that its travel crushes the rear portion of the seat support brackets thereby lowering the rear portion of the seat with respect to its front portion to further restrain the passenger during a collision.

3,429,614
RETRACTABLE SEAT BELT

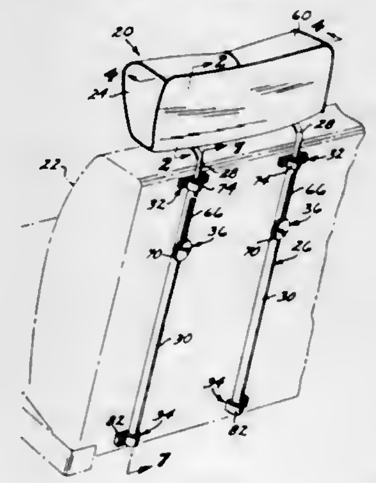
James A. Huggins, 3270 Westchester, Birmingham, Mich. 48009
Filed Nov. 6, 1963, Ser. No. 321,769
U.S. Cl. 297—388 **8 Claims**
Int. Cl. A62b *35/00;* **D06c** *7/02*



1. A seat belt device comprising an elongated, flexible member woven from flexible strands, said member in its free state condition being transversely distorted from a linear condition so that certain longitudinally extending sections of said member overlie one another to reduce the overall length of said member, means at one end of said member for anchoring the same, said member being adapted to be extended from said free state condition, means at the other end of said member to releasably secure said member in extended condition across the body of a person to serve as a safety belt, at least some of said longitudinally extending sections pulling away from overlying relation when said member is extended, at least some of the strands from which said member is woven being resilient and being increasingly stressed as longitudinally extending sections of said member are pulled away from overlying relation, whereby to cause said member to automatically spring back to its free state condition when said securing means is released.

3,429,615
HEAD REST FOR VEHICLE SEAT

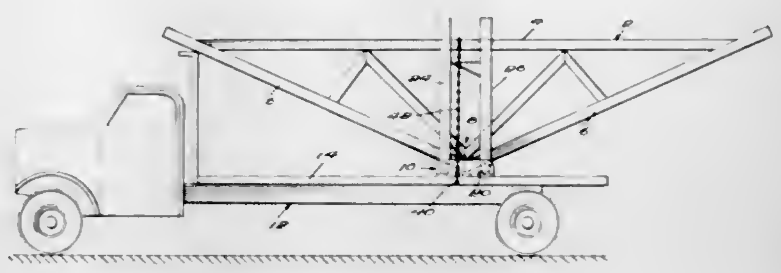
Earl H. Belk, 931 Long Beach Blvd., Long Beach, Calif. 90813
Original application Mar. 21, 1966, Ser. No. 535,827, now Patent No. 3,337,268, dated Aug. 22, 1967. Divided and this application May 25, 1967, Ser. No. 641,344
U.S. Cl. 297—410 **8 Claims**
Int. Cl. A47c *1/10, 7/38;* **B60n** *1/00*



A head rest for a vehicle seat and including a pair of elongated arms telescopable in a complementary pair of columns, the columns being attachable to the vehicle seat frame and designed for location within or upon the back of the vehicle seat, and the head rest further including a clamp assembly for fixedly clamping the arms relative to the columns in various vertical positions of the head rest and for preventing separation of the arms from the columns in an accident or the like.

3,429,616
TRUSS PALLET

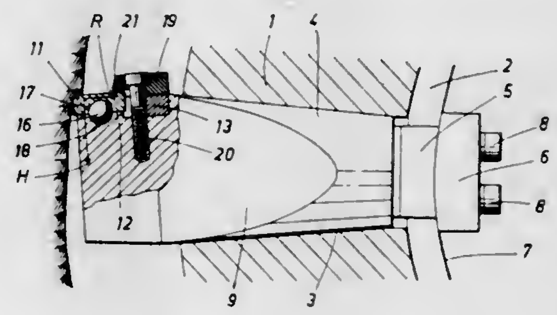
Robert B. Gardner, P.O. Box 496, Ashland, Va. 23005
Filed Nov. 9, 1966, Ser. No. 593,208
U.S. Cl. 298—17 **8 Claims**
Int. Cl. B60p *1/64;* **B65g** *67/24;* **B65d** *19/26*



A truss pallet for supporting wood roof trusses during transportation on a vehicle having a base with a pair of transverse rods upon which two pairs of posts are mounted adapted to receive the trusses between the pairs of posts in inverted relation. The rods are spaced apart to be disposed immediately on opposite sides of the center joint of each roof truss and support pairs of posts which normally stand upright, being adjustable if need be to hold the roof trusses securely in place. Provision is made for locking the upright posts of each pair together in spaced relation.

3,429,617
CUTTER HEAD FOR USE IN A TUNNEL DRIVING MACHINE

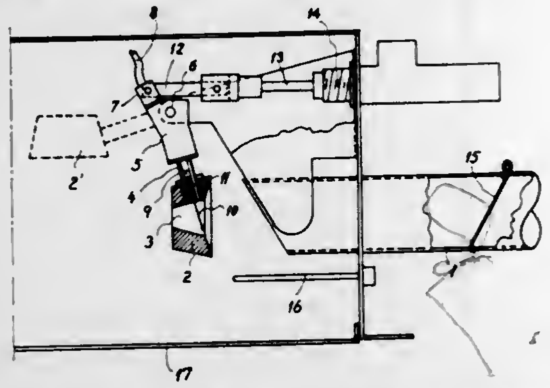
Ernst Lauber, Thun, Switzerland, assignor to Maschinenfabrik Habegger AG, Thun, Switzerland
Filed Dec. 6, 1966, Ser. No. 599,503
Claims priority, application Germany, Dec. 18, 1965, M 67,678; May 20, 1966, M 69,551
U.S. Cl. 299—93 **4 Claims**
Int. Cl. E21c *13/00*



In a cutter head for use in a tunnel driving machine, a cutter bit holder is mounted in a radial bore in a cutter head body, and a cutter bit is detachably held between a bearing surface of a projecting portion of the holder and that of a clamping element. The cutter bit defines a spherical recess in one surface and a spherical bearing element extends from the bearing surface of the holder portion or of the clamping element into the spherical recess of the bit.

3,429,618
APPARATUS FOR THE FLAT LAYING OF STOCKINGS

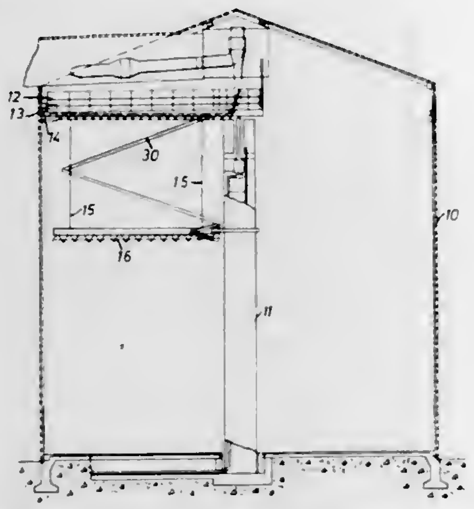
Viggo H. Sparsø, Virum, and Anders Nielsen, Birkerod, Denmark, assignors to Hans Christian Andersen, Kastanienbaum, Switzerland
Filed Jan. 17, 1968, Ser. No. 698,640
Claims priority, application Denmark, Jan. 17, 1967, 277/67
U.S. Cl. 302—2 **5 Claims**
Int. Cl. B65g *51/00;* **A41h** *43/00*



An apparatus for the flat laying of stockings comprises a holder for holding one end of a stocking while a flow of air is produced for straightening out the stocking while so held at one end thereof.

3,429,619
SILO UNLOADER

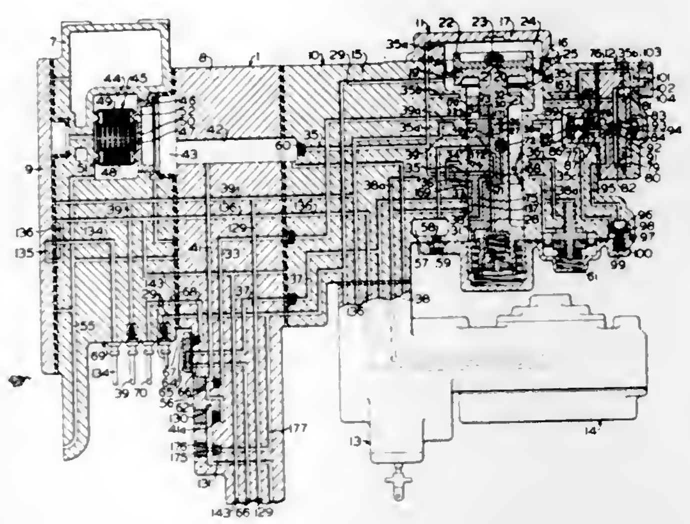
Claes Martin Weibull, Malmo, Sweden, assignor to Ingeniorsfirman Nils Weibull AB, Malmo, Sweden
Filed Aug. 25, 1967, Ser. No. 663,302
Claims priority, application Sweden, Sept. 1, 1966, 11,766/66
U.S. Cl. 302—50 **5 Claims**
Int. Cl. B65g *53/42, 33/14*



In a silo for bulk storage of particulate material there is provided between the discharge end of a scraping type conveyor feeding the stored material at the surface thereof, and a pressurized air flow conduit, screw conveyor means feeding the material from the discharge end of the scraping type conveyor into said conduit, such material being conveyed through said conduit by the pressurized air flow therein.

3,429,620
FLUID PRESSURE BRAKE CONTROL VALVE APPARATUS WITH SELECTIVE DIRECT OR GRADUATED RELEASE FUNCTION

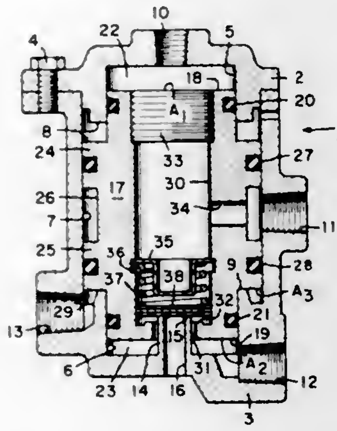
Daniel G. Scott, Apollo, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed June 20, 1967, Ser. No. 647,440
U.S. Cl. 303—36 **15 Claims**
Int. Cl. B60t *15/52, 15/54*



A brake control valve device, for railway cars, of the so-called "direct-release" type, such as the Westinghouse Air Brake Company's ABD control valve, having a new and improved graduated release valve device to provide for optionally effecting either a direct release of the brakes or a graduated release of the brakes dependent on the rate at which recharging of the brake pipe is effected incidental to effecting a brake release.

3,429,621
CONTROL VALVE

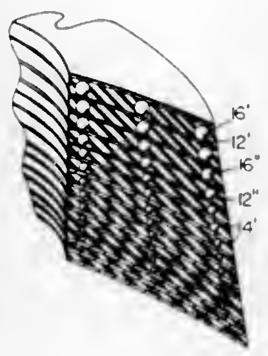
Richard C. Bueler, St. Louis, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,155
U.S. Cl. 303—71 **9 Claims**
Int. Cl. B60t *13/22, 15/02, 17/02*



A control valve for normally effecting the application of fluid pressure supplied thereto to the emergency chamber of a spring set brake cylinder and also responsive to a control fluid pressure metered thereto for isolating the supplied fluid pressure and effecting a metered reduction of the applied fluid pressure.

3,429,622
FLEXIBLE BEARINGS AND PROCESS FOR THEIR MANUFACTURE

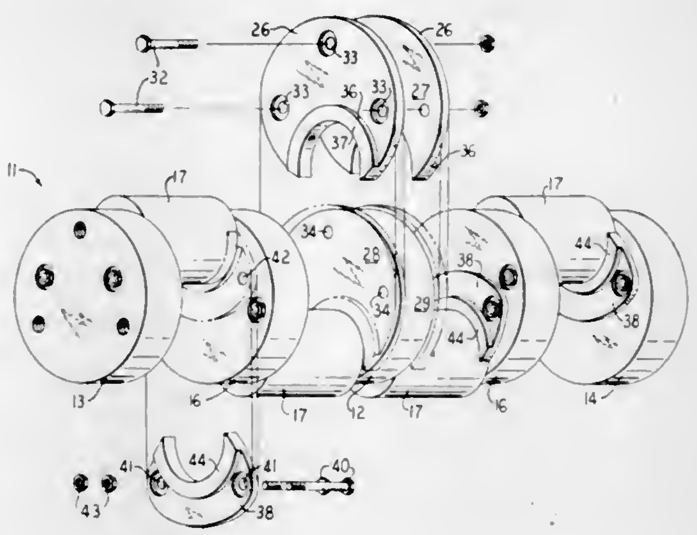
Robert E. Lee, Ogden, and Edward E. McCullough, Brigham City, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 621,011
U.S. Cl. 308—2 **7 Claims**
Int. Cl. F16c *7/00, 9/00, 11/00*



A bearing formed of (1) a plurality of rigid layers, (2) a plurality of elastomeric layers disposed between said rigid layers and bonded thereto, and (3) a plurality of rigid spacers embedded within said elastomeric layers; and a process employing rigid spacers to space rigid layers of a bearing having elastomeric layers disposed between and bonded to rigid layers.

3,429,623
CRANKSHAFT THRUST PLATE

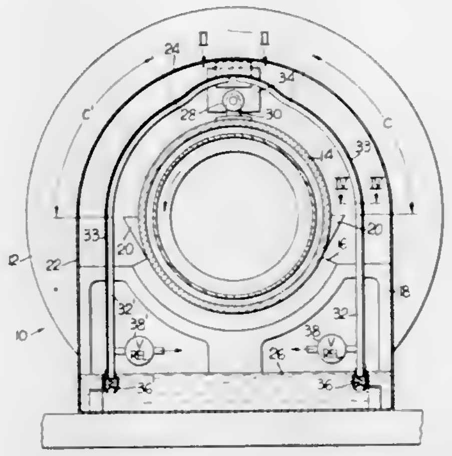
Robert D. Dunston, Washington, Gerald E. Whitehurst, East Peoria, and Jacob S. Saletzki, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 2, 1967, Ser. No. 635,568
U.S. Cl. 308—23 **5 Claims**
Int. Cl. F16c *9/00, 13/00, 3/06*



Apparatus for countering axial thrust of an engine crankshaft and for controlling connecting rod edge loading. Means disposed upon a central journal of the crankshaft to act against a main bearing housing and connecting pin guide means replaceably disposed upon additional journals of the crankshaft to act against the connecting rods.

3,429,624
LUBRICATION APPARATUS FOR JOURNAL BEARING ASSEMBLIES AND COMBINATION OF SUCH LUBRICATION APPARATUS WITH JOURNAL BEARING ASSEMBLIES

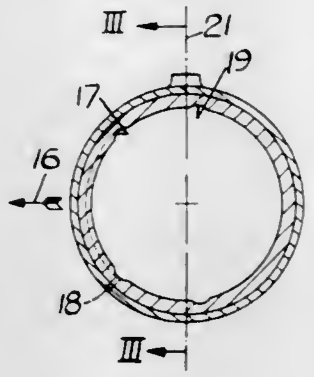
Donley D. Freshwater and Raymond C. Jenness, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 23, 1967, Ser. No. 618,161
U.S. Cl. 308—84 **9 Claims**
Int. Cl. F16c *1/24, 33/66, 13/02*



A lubricating apparatus for journal bearings such as trunnion bearings. A pressure exerting means, preferably a roller member, is mounted on and rotates with the rotating journal or trunnion. A flexible hose is mounted adjacent the path of rotary movement of the trunnion, with the inlet end of the hose being immersed in an oil reservoir and the discharge end of the hose being located in overlying relation to the bearing assembly. Upward movement of the roller during rotation of the journal or trunnion causes the roller to compress the hose whereby to pump oil through the hose onto the bearing assembly.

3,429,625
HYDROSTATIC BEARINGS

Donald Stott, Luton, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Aug. 11, 1966, Ser. No. 571,769
U.S. Cl. 308—122 **3 Claims**
Int. Cl. F16c *33/66;* **F04c** *1/04*

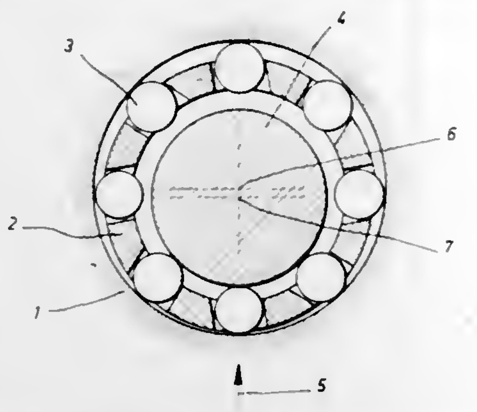


A journal bearing having in its interior one or more openings disposed symmetrically about a plane containing the journal axis and extending in the direction of action of a load which is applied when the bearing is in use, the opening being at the side of the axis remote from that at which the load is applied and at least one further opening at or near a further plane extending perpendicularly to the first mentioned plane, lubricant entering the first opening or openings and escaping through the further opening or openings.

3,429,626
BEARING FOR A STRUCTURAL ELEMENT ROTATING ABOUT A SHAFT AND ENGAGEABLE THEREWITH

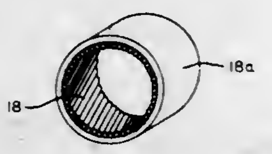
Anton Teufel, Tubingen, Germany, assignor to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Nov. 1, 1966, Ser. No. 591,171
Claims priority, application Germany, Nov. 24, 1965, J 29,442
U.S. Cl. 308—217 **2 Claims**
Int. Cl. F16c *19/20, 33/46, 33/38*

A bearing for a structural element rotating about a shaft and engageable therewith for the transfer of torques



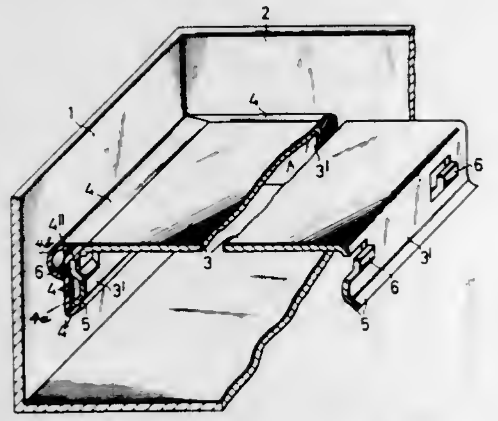
or angular moments by rollers accommodated in pockets of a cage.

3,429,627
FILAMENTARY FACED BEARING
Richard Freund, 273 Lawton Ave.,
Cliffside Park, N.J. 07010
Filed Dec. 29, 1965, Ser. No. 517,217
U.S. Cl. 308—238 **5 Claims**
Int. Cl. F16c *27/02, 33/20, 27/06*



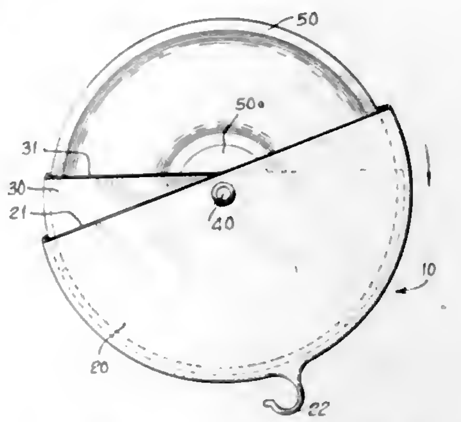
A bearing comprises a rigid backing member having a bearing surface in the form of a surface of revolution and a plurality of coextensive lengths of monofilamentary bearing material such as polytetrafluoroethylene arranged in a single layer around the surface of the bearing member and bonded thereto. All of the exposed surfaces of the lengths of material extend in the same direction and constitute the sole bearing support. The rigid backing member may alternatively be in the form of an annular sleeve or one having segmental spherical, frustoconical, or other desired forms of a surface of revolution.

3,429,628
UP AND DOWN MOVABLE PLATE WITH MARGINAL SEALING
Karl Laszlo, Welzheim, Wurttemberg, Germany, assignor to G. Bauknecht G.m.b.H., Elektrotechnische Fabriken, Stuttgart, Germany, a company of Germany
Filed Sept. 5, 1967, Ser. No. 665,438
Claims priority, application Germany, Sept. 8, 1966,
B 88,828
U.S. Cl. 312—214 **6 Claims**
Int. Cl. F25d *11/00;* **A47b** *81/00;* **A47f** *3/04*



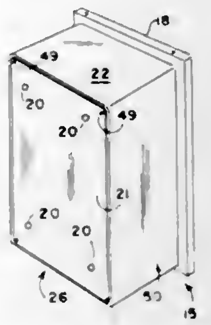
A plate upwardly and downwardly movable in a container, such as a refrigerator, in sealing relationship with the container walls has a depending peripheral flange to which a sealing strip encompassing the flange is anchored so that the plate can be slid up and down without losing sealing contact with the container walls.

3,429,629
HANGER FOR DISC-SHAPED PHONOGRAPH RECORDS
Paolo Cilia, 1858 78th St., Brooklyn, N.Y. 11214
Filed June 23, 1967, Ser. No. 648,329
U.S. Cl. 312—10 **3 Claims**
Int. Cl. A47b *81/06*



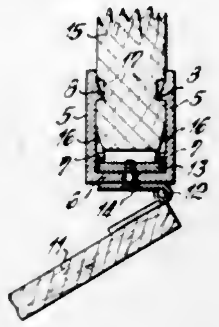
A hanger for disc-shaped phonograph records comprising first and second mutually pivoted parts, each part having an open edge leading into the interior thereof, one part fitting within the other so that it can be rotated full circle relative thereto upon the mutual pivot, and a hook on the outer part, so that said inner part can be rotated until said open edges face in the same direction or sufficiently close to the same direction to permit placement of a phonograph record edgewise into the interior of said inner part through its open edge, or to withdraw a record therefrom, after which the parts may be rotated until the pair of open edges face toward one another thereby closing their mutual interiors, and the holder can be hung by the hook.

3,429,630
RECESS CABINETS
Jacob M. Katz, New York, N.Y., assignor to U.S. Borax & Chemical Corp., Los Angeles, Calif., a corporation of Nevada
Filed Apr. 10, 1967, Ser. No. 629,616
U.S. Cl. 312—242 **11 Claims**
Int. Cl. A47b *67/02*



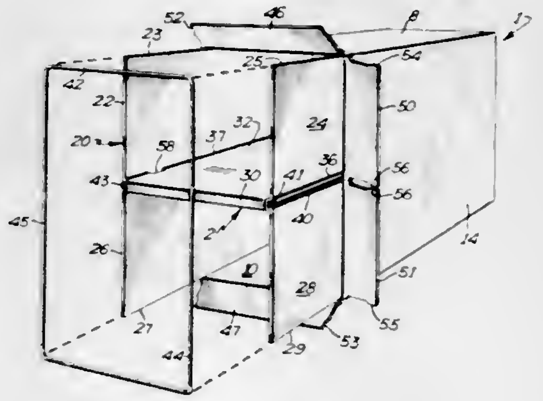
A length cut from an extruded tubular stock provides the top, bottom and side walls. The rear end of this tubular length is closed by a back panel. A length cut from a second extruded stock provides the front wall and an integral rearward shelf, the latter riding in tracks which are integral with the side walls. Ball bearing structure may be included to ease sliding movement. Fillets along the corners in said tubular length, each have a lengthwise passage to receive and engage screws or the like which secure the rear panel. The back surface of the front panel has a recess for a shank extending from a passage in a fillet thereat. A set screw through an edge of the front wall engages such shank to maintain the assembly. Suitable openings as need be are made in the front wall. Holes in the shelf may accommodate the mounting of a soap-dispensing device for example, whose operating member and discharge nozzle are accessible through a front wall opening. A drip collector which is cut from a third length of extruded stock may be provided, and kept from removal except upon opening the cabinet.

3,429,631
HOME-ASSEMBLED FURNITURE KIT
Walter Neyroud, Zurich, Switzerland, assignor to Holzbau-und Finanz-Etablissement, Vaduz, Liechtenstein
Filed Apr. 10, 1967, Ser. No. 629,559
Claims priority, application Belgium, Apr. 3, 1966,
679,441
U.S. Cl. 312—257 **8 Claims**
Int. Cl. A47b *47/00, 43/00*



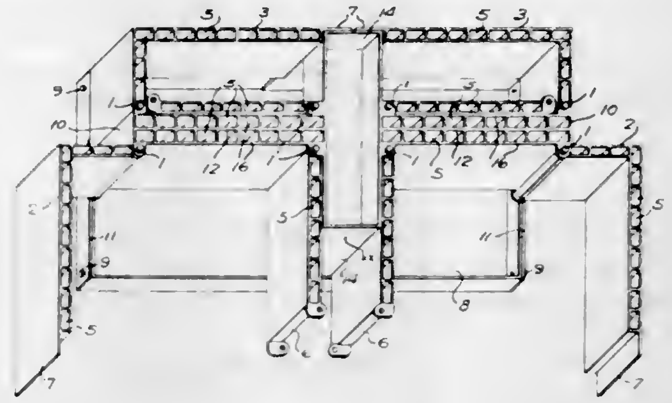
The furniture kit of the present invention comprises a skeletal, self-supporting frame having at least four members each of substantially U-shaped cross-section, the limbs of each member being adapted to be forced apart by the insertion of one edge of a panel, in order to grip the panel, at least two parallel members having inwardly-directed ribs projecting from their limbs and adapted to engage in grooves or channels spaced inwardly from the edge of the panel to prevent or inhibit withdrawal of the panel from the respective frame member.

3,429,632
MULTIPLE DRAWER FILE CABINET
Peter Alan Simon, Leonard M. Paletz, and Benjamin Fiterman, Minneapolis, Minn., assignors to Safco Products Co., Golden Valley, Minn., a corporation of Minnesota
Filed Mar. 15, 1968, Ser. No. 713,439
U.S. Cl. 312—259 **4 Claims**
Int. Cl. A47b *43/00, 57/00;* **B65d** *5/48*



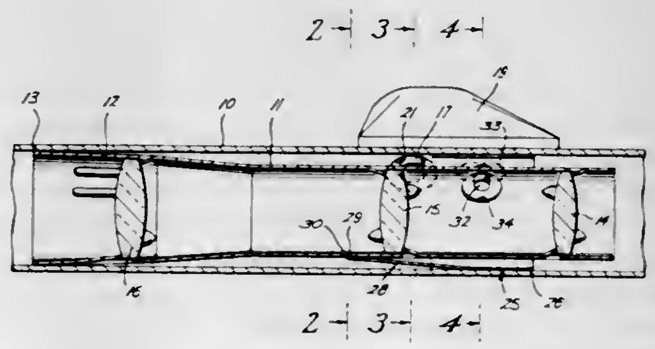
A file cabinet of the lightweight, collapsible type constructed from cardboard, fiberboard or like materials having an outer shell within which a collapsible H-frame structure is inserted, the H-frame being formed from a single blank of bendable material and including a horizontally extending divider section and vertically depending reinforcing panels which supportably engage the top and bottom walls of the outer shell. A rigid, reinforcing rim extends around the inside periphery of the open front end of the outer shell and is held in place against front edge portions of the aforesaid H-frame by inwardly turned flaps.

3,429,633
SECTION TOOL DISPENSER WITH AUTOMATIC INVENTORY INDICATION
Walter W. Flatt, Redding, Calif., assignor of one-half to Alvin M. Cibula, Redding, Calif.
Filed Aug. 15, 1966, Ser. No. 573,137
U.S. Cl. 312—324 **6 Claims**
Int. Cl. A47b *88/20;* **B65d** *85/54*



A cabinet for tools comprising a tray having a bottom and upstanding short sides about its periphery, a cross-like central frame secured to and extending above said tray, and including fixed walls, outer walls hingedly secured to ends of said fixed walls to turn about vertical pivot axes adjacent the sides of said tray and extending thereabove to define an enclosure, and inner walls within said enclosure removably and hingedly pivoted at one of their ends to ends of said fixed walls, all of said walls being of double-wall construction and including spaced partitions to define upwardly opening pockets for the reception of tools.

3,429,634
ERECTOR SUPPORT FOR TELESCOPE SIGHTS
William R. Weaver, El Paso, Tex., assignor to W. R. Weaver Company, El Paso, Tex., a corporation of Texas
Filed May 20, 1965, Ser. No. 457,438
U.S. Cl. 350—54 **7 Claims**
Int. Cl. G02b *21/00, 23/00, 7/00*



The present invention pertains to an improved support structure for an erector system in a telescopic firearm sight including a simplified pivot and simplified spring mechanism. The pivot includes an enlarged end on the erector tube (in which the erector lens system is located) for mating with the surface bore wall of the telescope barrel, thereby forming a circular pivot for radially pivoting the erector tube and which allows slidable, longitudinal movement of the erector tube, as well. The spring mechanism radially secures and biases the erector tube with respect to the telescope barrel at a longitudinal position from the pivot, providing a first force component that biases the windage control means and a second force component that biases the elevation control means. Described embodiments of the spring mechanism include a compressible, flat length portion having an end turned inwardly to engage a slot on the erector tube and having its other end stressed against the telescope barrel by a securably releasable connection. One embodiment also includes an arcuate section that partly surrounds the erector tube and contacts the telescope barrel bore at a location more than circumferentially half-way around the bore from the location of the flat length portion.

3,429,635

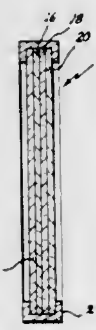
COMPENSATED GENERALIZED SAVART PLATE

John L. Dailey, West Berlin, N.J., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 12, 1965, Ser. No. 447,589

U.S. Cl. 350—157 **12 Claims**

Int. Cl. G02f *1/24;* **G02b** *21/06, 21/14*



A linear, birefringent, combination plate which comprises a pair of Savart plates, each of which comprises two plates, wherein all of the plates are cut from a uniaxial crystal and joined in a superposed relation with one Savart plate rotated 90° about the plate normal with respect to position in which the optic axis of one of the Savart plates is parallel to the corresponding axis of the other Savart plate. In one embodiment adjacent plates of the Savart plates are combined to a single plate of double thickness. The angle of the cut of the individual plates of the Savart plates with respect to the optic axis of the uniaxial crystal is the same for each plate and is greater than 0°, the angle chosen being determinative of the spacing of the interference lines of the assembly of plates when viewed in polarized light. Variations in thickness, birefringence of the crystal or the aforementioned cutting angle provide variations in the angular line separation of the interference pattern of the assembled combination of plates when viewed in polarized light. Cycle angles of 10° are made possible by the use of the compensated plate thereby improving the utilization of the assembly as an angle sensing unit.

3,429,636

ELECTRO-OPTICAL LIGHT MODULATION MEANS USING BIREFRINGENT CRYSTALS

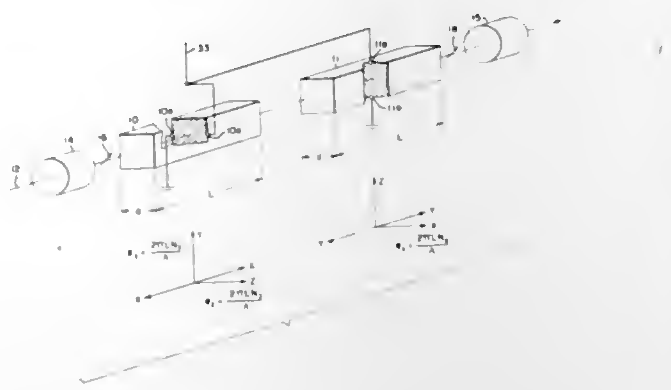
John L. Wentz, Randallstown, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 7, 1964, Ser. No. 343,319

U.S. Cl. 350—160 **7 Claims**

Int. Cl. G02f *1/28;* **H04b** *9/00*

Herein is described an electro-optical modulator or light valve in which two birefringent crystals, having substantially the same index of refraction, are arranged in light-transmitting relation with the respective optic axes of the crystals in orthogonal relation. The Z-axes of both crystals are at right angles to the optical axis which is determined by the coaxial alignment of one of each of the axes of the respective crystals. The modulation voltage is applied across a crystal with the electric vector parallel to the Z-axis of the crystal. The modulation voltage can be applied across one crystal only or across both crystals simultaneously. Since the phase shift is proportional to the length of the crystal the same phase shift can be obtained with a lower modulation voltage when the latter is applied to both crystals. Natural birefringence is cancelled by the orthogonal arrangement of Z-axes. The light valve action is obtained by means of an analyzer in the optical path. In the embodiment of FIG. 2 the device is illustrated as being applied to a laser optical cavity wherein the laser output is polarized and no separate analyzer is needed. The laser medium serves as the polarizer for light propagated in one direction and as the analyzer for the reflected light.



3,429,637

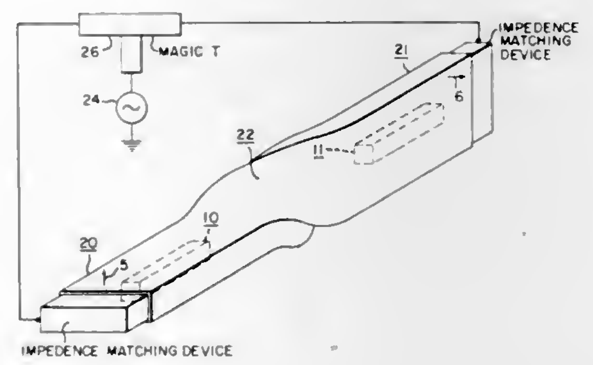
NON-RECIPROCAL OPTICAL DEVICE

John L. Wentz, Randallstown, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 4, 1965, Ser. No. 506,352

U.S. Cl. 350—160 **5 Claims**

Int. Cl. G02f *1/28, 1/36*



1. Light transmission apparatus comprising a pair of elongated birefringent crystals having their physical axes in coaxial alignment and their optic axes transverse to their longitudinal axes, the optic axes of said crystals also being orthogonal to each other, microwave structure for propagating microwaves surrounding said crystals, said microwave structure including respective portions having their E vectors, respectively, perpendicular to each other and parallel, respectively, to the optic axes of the crystal which they surround.

3,429,638

COMBINATION SEMI-CYLINDRICAL MAGNIFIER AND GUIDE BAR

Helge S. Koenig and Ragna Höst Schjerven, both of Martiusstr. 7, 8000 Munich 23, Germany, and Friedrich Dehler, Siegesstr. 5, 8000 Munich 23, Germany

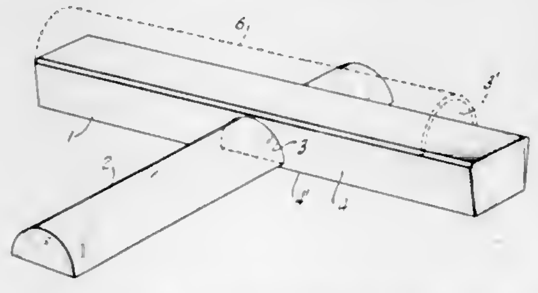
Filed Feb. 26, 1965, Ser. No. 435,426

Claims priority, application Germany, Feb. 27, 1964, H 51,861

U.S. Cl. 350—241 **4 Claims**

Int. Cl. G02b *5/04, 27/02*

A reading glass assembly for providing, for people of weak vision, a magnified image of printed text. The assembly includes an elongated guide bar having at least on one side a lower straight edge adapted to engage the side of an open book to be guided along the latter side of the book. This guide bar is formed intermediate its ends with a transverse opening passing therethrough. An elongated magnifying lens whose cross-section matches that of the transverse opening extends slidably through the latter transversely of the guide bar and has a lower surface which is adapted to rest on the page of the book with the elongated magnifying lens situated over the text to provide a magnified image thereof. This assembly of magnifying lens and guide bar can be shifted down the page of the book with the assembly guided by engagement of the straight edge of the guide bar with the side of the open book, so that in this way by extending the elongated magnifying lens over the printed text it is possible for the reader to achieve a magnified image of the printed text as the assembly is advanced down a page.



3,429,639

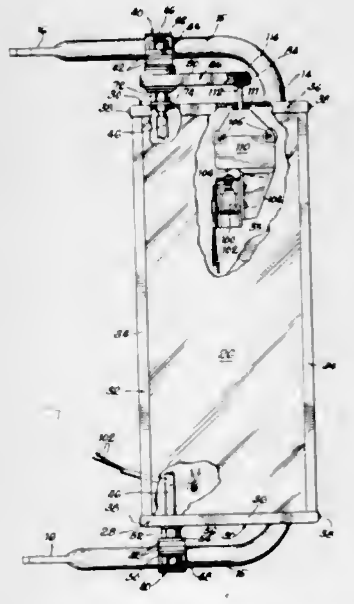
REMOTELY OPERABLE VEHICULAR MIRROR AND COUPLING MECHANISM

John J. Peters, Springfield, Ill., assignor to John Peters Associates, Inc., Springfield, Ill., a corporation of Illinois

Filed Aug. 19, 1965, Ser. No. 481,031

U.S. Cl. 350—289 **4 Claims**

Int. Cl. B60r *1/06;* **G02b** *5/08*



A remotely operable vehicular mirror having a frame attachable to a vehicle and which mounts a housing bearing a mirror. The frame has an axle about which the housing is oscillatably movable and to which is non-rotatably affixed a reference gear segment. A remotely controlled motor is secured internally within the housing and is provided with an output gear in toothed engagement with the reference gear segment for driving the mirror oscillatably to desired positions of viewing.

3,429,640

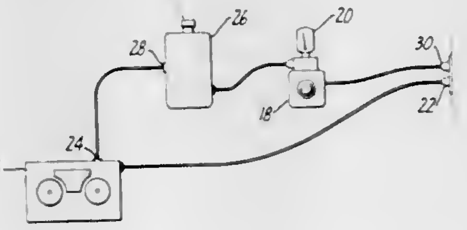
PROCEDURE FOR SOUND/IMAGE MOVIE FILM SYNCHRONIZATION

Duane A. Machtig, Newark, Calif., assignor to The Bank of California, National Association, San Francisco, Calif.

Filed Dec. 30, 1966, Ser. No. 606,435

U.S. Cl. 352—5 **2 Claims**

Int. Cl. G03b *31/02*



1. The method of synchronizing a magnetic sound track on a motion picture film comprising the steps of:

(a) taking a motion picture scene,

(b) simultaneously recording sound from said scene on a tape recorder, said tape recorder being supplied with current from a variable voltage transformer having a voltmeter connected thereto,

(c) developing and running said film,

(d) simultaneously playing back said tape recorder and recording the sound on said film, and

(e) adjusting said variable voltage transformer whereby the playback voltage is the same as the record voltage.

3,429,641

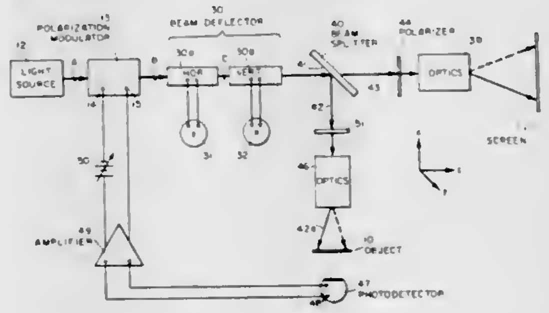
PROJECTION SYSTEM

Vernon J. Fowler, East Meadow, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,350

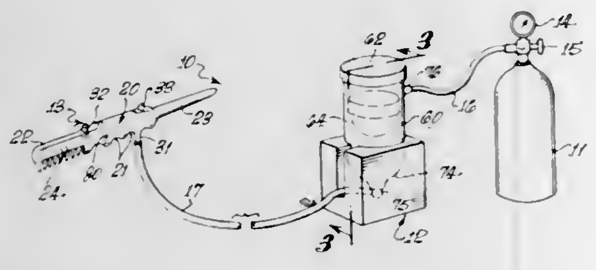
U.S. Cl. 352—198 **11 Claims**

Int. Cl. G03b *21/00, 21/20;* **G02f** *1/22*



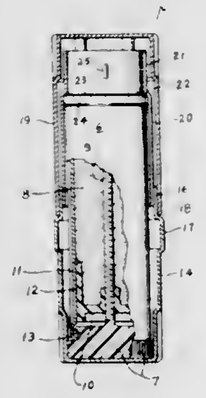
A projection system in which a polarized light beam is transmitted through a polarization modulator thereby varying the plane of polarization of the beam in response to variations in the voltage applied between the terminals of the modulator. From the modulator, the beam travels through a beam deflector which imparts a scanning motion thereto before being split into two components, one of which scans the image to be projected. The light from the image is received by a photodetector which, through an amplifier, controls the voltage applied to the terminals of the modulator. The second beam component travels through a plane polarizer which changes the variations in polarization to intensity variations such that the image is reconstructed on a screen.

3,429,642
HAIR TREATMENT APPLICATOR
James David Underwood, 1714 Grant Ave.,
Redondo Beach, Calif. 90278
Filed Sept. 5, 1967, Ser. No. 665,345
U.S. Cl. 401—16 **4 Claims**
Int. Cl. A46b *11/02, 11/06;* **A45d** *24/22*



A hair treatment applicator for precisely controlled application of bleach liquids and the like, the applicator being comprised of a hand-held reservoir tube, applicator nozzles of different shape at each end of said tube, separate valves in said tube for finger control of release of treatment liquid from a selected one of said nozzles, and a stationary reservoir supplying said hand-held reservoir tube with treatment liquid under controlled pressure through a flexible supply hose.

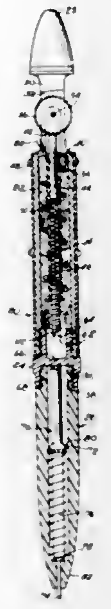
3,429,643
REPLACEABLE LIPSTICK CONTAINER
Donald A. Seaver, West Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 22, 1965, Ser. No. 500,662
U.S. Cl. 401—75 **2 Claims**
Int. Cl. A45d *40/04;* **B43k** *21/08*



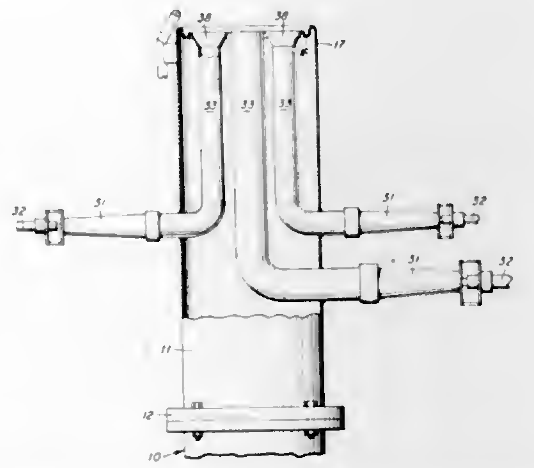
An improved refillable lipstick container provides a 3-piece holder of relatively expensive material and finish, in combination with a lipstick cartridge which can be made of cheap material and quickly assembled with or removed from the holder. One part of the holder grips the bottom head of the cartridge, a second part has a friction fit over the cartridge shell and the third part is a cover cap.

3,429,644
COMBINED PEN AND CIGARETTE LIGHTER
Hans G. Mueller, % Landl's Restaurant, corner Foster and Lockwood, Skokie, Ill. 60076
Filed Sept. 14, 1966, Ser. No. 579,373
U.S. Cl. 401—195 **2 Claims**
Int. Cl. B43k *29/16*

A combined pen and cigarette lighter comprising aligned pen and cigarette portions with adjoining peripherally knurled portion having opposite threads for attachment to both first set forth portions, the removal of which third portion allows access to the pen portion for either applying pressure thereto or replacement thereof, the said removal also allowing access to pressure means on the lighting system to compensate for wear of the customary spark producing elements. In one embodiment, a wick is used to propagate the spark; in another, a valve controls fuel admission to the sparking elements.



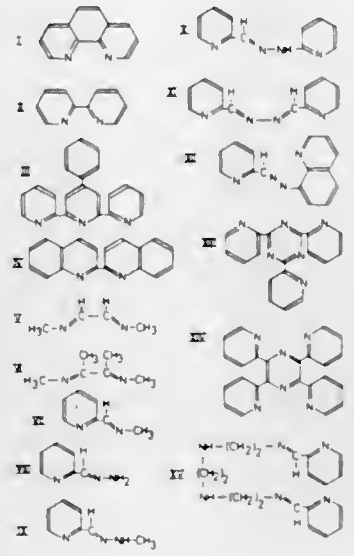
3,429,645
FLARE STACK BURNER
Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,130
U.S. 431—202 **3 Claims**
Int. Cl. F23b *5/00;* **F23c** *9/00*



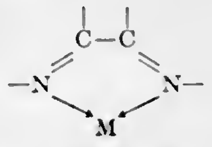
A burner structure for smokeless combustion of gas at the upper end of a flare stack. Aspirating devices draw air thereinto which is mixed with an aspirating medium and the mixture is discharged upwardly within the body of the flared gas moving upwardly in the stack. Low pressure is developed which draws the flared gas into the mixture to promote complete combustion. The flame is projected vertically upwardly and it is not deflected by transverse wind currents.

CHEMICAL

3,429,646
DYEING PROCESS
Michael William Steed, Cranford, Hounslow, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed July 15, 1965, Ser. No. 472,166
Claims priority, application Great Britain, Aug. 5, 1964, 31,787/64
U.S. Cl. 8—10 **10 Claims**
Int. Cl. D06p *3/10;* **A61k** *7/12*



The specification is concerned with a process for dyeing a keratinous material, such as hair, with a complex cation containing the structure:



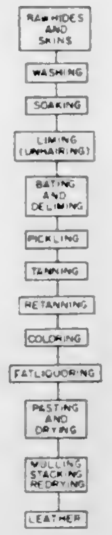
where M is a transition metal and the missing valences have hydrogen, an organic group or an inorganic group.

3,429,647
METHOD OF PREVENTING JUTE STAINING
David C. T. Yao, Julian J. Hirshfeld, and Bertie J. Reuben, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Jan. 6, 1965, Ser. No. 423,859
U.S. Cl. 8—21 **26 Claims**
Int. Cl. D06p *3/84*

1. A method for preventing the jute staining of synthetic fibers at pH's ranging from 2 to about 7 comprising the steps of impregnating said jute with an acidic aqueous solution containing as solutes from about 1 to about 7 percent of a zirconium salt from about 1 to about 4 percent of hydroxylamine sulfate, said percentages being based on the weight of the article, and acetic acid, said solution being maintained at a temperature of from about 100° F. to about 212° F., and maintaining impregnating contact between said article and said solution for from about 10 minutes to about 90 minutes.

3,429,648
DELIMING, BATING OR PICKLING WITH SOLUTION CONTAINING DIMETHYLSULFOXIDE
William J. Langley, 9 Belfast St., Peabody, Mass. 01960
Filed Aug. 30, 1965, Ser. No. 483,567
U.S. Cl. 8—94.17 **3 Claims**
Int. Cl. C14c *1/08*

1. In the process of bating and deliming hides and skins the step which comprises immersing them in an aqueous solution of a bating and deliming agent to which has been added dimethylsulfoxide.



3,429,649
PREPARATION OF CONDENSATION PRODUCTS
Franz Schade, Cologne-Buchheim, and Ernst Komarek and Viktor Trescher, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 3, 1967, Ser. No. 613,756
U.S. Cl. 8—94.24 **4 Claims**
Int. Cl. C14c *3/18*

A process for condensing in an acid medium diphenyioxide sulfonic acid with formaldehyde and an aromatic hydroxycarboxylic acid, e.g. salicylic acid. A process for tanning skins or hides using the product of this condensation as the tanning agent.

3,429,650
INCLUDING FINISHING AGENTS IN AT LEAST ONE OF TWO MUTUALLY IMMISCIBLE SOLUTIONS CONTAINING COREACTANTS AND SERIALLY APPLYING SAID SOLUTIONS TO FIBROUS MATERIALS
William L. Wasley, Berkeley, and Robert E. Whitfield and Lowell A. Miller, Walnut Creek, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed May 29, 1962, Ser. No. 198,653
The portion of the term of the patent subsequent to Feb. 19, 1980, has been disclaimed
U.S. Cl. 8—115.6 **19 Claims**
Int. Cl. D06m *13/54*

1. A process for treating a fibrous material which comprises

serially applying to said material a pair of complementary direct-acting, organic, polyurea-forming intermediates in separate phases of limited mutual solubility,

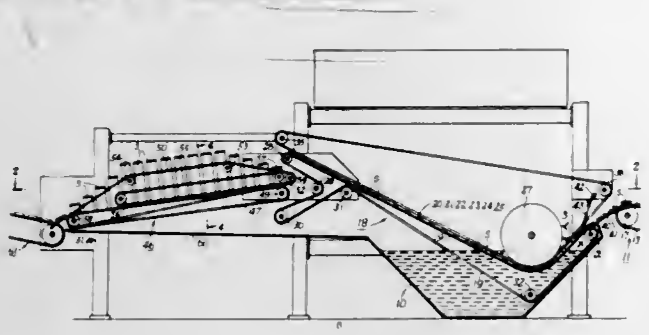
at least one of said phases also containing a textile finishing agent.

3,429,651
REACTIVE DRESSINGS INTENDED TO RENDER CELLULOSE FABRICS UNCREASABLE
Pierre Talet, Alfortville, and Louis Gandon, Trosly-Breuil, France, assignors to Nobel-Bozel, Paris, France, a joint-stock company of France
No Drawing. Filed May 11, 1965, Ser. No. 454,990
Claims priority, application France, May 13, 1964, 974,388
U.S. Cl. 8—116.3 **11 Claims**
Int. Cl. D06m *13/38*

A process is disclosed for treating cellulose fabrics with cyclic urea-formol resins to provide "wash and wear" fabrics which are resistant to chlorine degradation. This is accomplished by utilizing with the dressing resin in a catalyst of glyoxylic acid.

3,429,652
DRAINING CONVEYOR

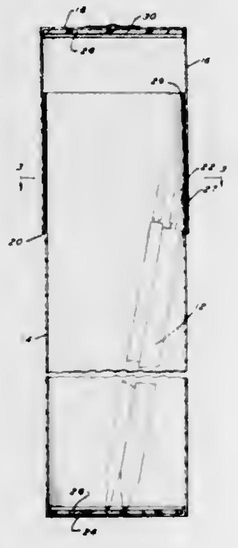
Le Roy M. Varga, Dover, N.J., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,436
U.S. Cl. 21—70 **9 Claims**
Int. Cl. B27k *3/00*



An apparatus for dipping slat material in a liquid which includes a liquid tank and a conveyor for moving said slat material through the tank and further including a slat draining means at the discharge end of the conveyor. The conveyor has inner and outer courses onto which the slat material is discharged and guide means for guiding the outer course upwardly from its receiving end relative to the inner course to tilt and, thereby, drain surplus solution from the slat material.

3,429,653
CONTAINER FOR USE WITH AUTOCLAVES

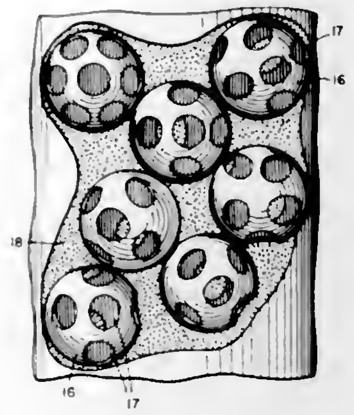
Perry A. Brett, Vineland, N.J., assignor to Bellco Glass, Inc., Vineland, N.J., a corporation of New Jersey
Filed Oct. 19, 1965, Ser. No. 497,717
U.S. Cl. 21—103 **4 Claims**
Int. Cl. A61l *3/02;* **B65d** *41/00*



1. A container for use in a wet heat sterilizer comprising a hollow elongated rigid body member having a closed end and an open end, a hollow elongated rigid closure having a closed end and an open end, said closure being slightly larger in cross section than said open end of said body member so that said closure may be placed over said open end of said body member in telescoping relation thereto to form a closed container, and an autoclavable elastomeric coating on the inside of each of said closed ends for cushioning impact between the container and apparatus therein.

3,429,654
REACTING GASES OR VAPORS IN A FLUIDIZED BED

Wilhelm Friedrichsen, Ludwigshafen (Rhine), and Anton Wegerich, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Oct. 29, 1965, Ser. No. 505,749
Claims priority, application Germany, Nov. 5, 1964, B 79,207
U.S. Cl. 23—1 **8 Claims**
Int. Cl. B01j *9/22, 11/06;* **C07b** *1/00*



Process and apparatus for fluidized bed reactions of gasiform chemicals in reaction zone containing perforated hollow sphere packing and fluidized, finely divided solids serving as catalysts and/or inert particles.

3,429,655
METHOD AND FILTER FOR REMOVING IODINE FROM GASES

Forrest N. Case, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 9, 1966, Ser. No. 526,662
U.S. Cl. 23—2 **3 Claims**
Int. Cl. B01d *50/00, 47/02*

A method for removing iodine from an iodine-containing off-gas stream is provided by contacting the stream with a metallic fatty acid solution wherein the metal is selected from silver, copper, or mercury. Also provided is an iodine removal filter medium which comprises a polyurethane backing impregnated with copper oleate.

3,429,656
EXHAUST GAS PURIFICATION

William F. Taylor, Scotch Plains, and John H. Sinfelt, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company
Filed Dec. 10, 1965, Ser. No. 512,875
U.S. Cl. 23—2 **6 Claims**
Int. Cl. B01d *53/34*

Air pollutants are removed from exhaust gases by contacting the gases with a catalytic material containing metal oxides such as CuO, MnO, V_2O_5, etc., interspersed with alumina and sodium oxide. The preferred catalytic material additionally contains an adsorbent solid comprised of CaO and Na_2O combined with SiO_2.

3,429,657
METHOD FOR RECOVERING AND PRODUCING POTASSIUM SALTS

D'Arcy R. George, James M. Riley, and J. Richard Ross, Salt Lake City, Utah, assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Sept. 2, 1966, Ser. No. 577,085
U.S. Cl. 23—63 **9 Claims**
Int. Cl. C01d *3/14, 5/00, 9/02*

A potassium-bearing brine is contacted with $NaClO_4$ to precipitate $KClO_4$ which is then separated and formed into solution. The potassium in the solution is ion exchanged with sodium, after which the resultant free potassium is combined with chloride, sulfate, nitrate or carbonate ion.

3,429,658
PREPARATION OF ALKALI METAL DICYANAMIDES

George V. Vosseller, Niagara Falls, N.Y., assignor to Nilok Chemicals, Inc., Lockport, N.Y.
No Drawing. Filed Aug. 23, 1966, Ser. No. 574,301
U.S. Cl. 23—78 **7 Claims**
Int. Cl. C07c *129/14*

1. The process for direct preparation of an alkali metal salt of dicyanamide which comprises reacting together, in aqueous media ammonia, a cyanogen halide and an alkali metal hydroxide in about equal molecular proportions and at a temperature between about 0° C. and about 35° C.

3,429,659
PREPARATION OF PHOSPHORYL FLUORIDE AND DIFLUOROPHOSPHORIC ACID FROM PHOSPHATE ROCK

Robert A. Wiesboeck, Atlanta, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed July 19, 1966, Ser. No. 566,197
U.S. Cl. 23—139 **10 Claims**
Int. Cl. C01b *25/10*

Phosphate rock is mixed with a fluorosulfonate salt such as an alkali or alkaline earth fluorosulfonate and the mixture heated to about 150–350° C. (preferably about 250° C.) to evolve vapors of phosphoryl fluoride or difluorophosphoric acid or both, and collecting the vapors. The vapors may be chilled under vacuum to condense separately the phosphoryl fluoride or difluorophosphoric acid.

3,429,660
ALUMINA PRODUCTION

Carl D. Keith, Summit, N.J., and Kurt W. Cornely, Syosset, N.Y., assignors to Engelhard Industries, Inc.
No Drawing. Filed Dec. 8, 1964, Ser. No. 416,891
U.S. Cl. 23—143 **8 Claims**
Int. Cl. C01f *7/42*

An aqueous hydrous alumina slurry containing boehmite and amorphous hydrous alumina is made by hydrolyzing aluminum having a surface area of about 75,000 to 1,000,000 square millimeters per gram, in the presence of a water-soluble carboxylic acid, for instance, formic acid, at a temperature of about 60 to 250° C. The mole ratio of the reactants can be about 1 mole of acid per 2 to 30 gram-atoms of aluminum and at least about 18 moles of water. Incremental addition of the aluminum and acid is especially advantageous.

3,429,661
PROCESS FOR THE PREPARATION OF FINELY DIVIDED, NON-PYROPHORIC NITRIDES OF ZIRCONIUM, HAFNIUM, NIOBIUM, AND TANTALUM

Ernst Neuenschwander, Basel, Klaus Schuett, Zollikerberg, and Walter Scheller, Munchenstein, Switzerland, assignors to Ciba Limited, Basel, Switzerland
Filed Dec. 2, 1965, Ser. No. 511,182
Claims priority, application Switzerland, Dec. 10, 1964, 15,999/64
U.S. Cl. 23—191 **1 Claim**
Int. Cl. C01b *21/06*

A process is provided for the preparation of finely divided, non-pyrophoric nitrides of the elements zirconium, hafnium, niobium and tantalum, in which a halide of one of the above elements and nitrogen or a nitrogen hydride are subjected, in the gaseous state, to the action of a hydrogen plasma. The nitrides produced in the present process are especially useful in metallurgical processes such as dispersion stabilization.

3,429,662
ZINC OXIDE

Otto C. Klein, Collinsville, Ill., and Gilbert E. Mason, Columbus, Ohio, assignors to American Zinc Company, St. Louis, Mo., a corporation of Maine
No Drawing. Filed Mar. 15, 1965, Ser. No. 440,000
U.S. Cl. 23—148 **5 Claims**
Int. Cl. C01g *3/02, 9/02;* **G03g** *7/00*

French process zinc oxide is heated in a flowing stream of air and water vapor in a time-temperature range of between about 5 minutes at 700° C. and 4 hours at 200° C., to produce zinc oxide with a dispersed water absorption, as defined in the specification, under 300 ml., uniform within each lot within plus or minus 15, particularly suited for aqueous photoconductive coating compositions.

3,429,663
DEFLUORINATION OF PHOSPHORIC ACID

George B. Shearon and Gerald L. Stevenson, Lakeland, Fla., assignors to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed Jan. 6, 1965, Ser. No. 423,823
U.S. Cl. 23—165 **11 Claims**
Int. Cl. C01b *25/22*

Animal feed grade phosphoric acid is produced from wet process superphosphoric acid containing excessive fluoride by sparging steam through the superphosphoric acid in the presence of silica either concomitantly with, or shortly after, the dilution and hydrolysis of the superphosphoric acid.

3,429,664
PROCESS FOR THE PRODUCTION OF CAUSTIC CALCINED MAGNESIA

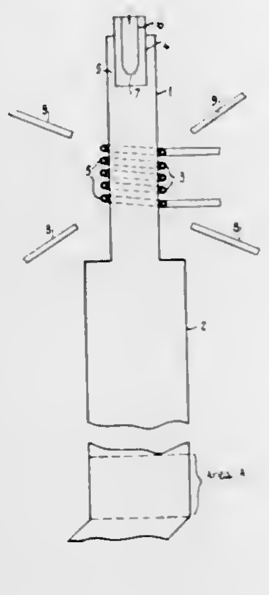
William W. Campbell, Ludington, Mich., and Earl Leatham, Wexford, Pa., assignors to Dresser Industries, Inc., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,968
U.S. Cl. 23—201 **3 Claims**
Int. Cl. C01f *5/08;* **B01d** *45/12*

A process for treating magnesium hydroxide filter cake to produce caustic magnesia, wherein the filter cake is heated in a burning zone and flue gas is removed from the burning zone. Magnesia dust is recovered from the flue gas and then combined with the filter cake to render the filter cake rabbleable.

3,429,665
PRODUCTION OF PIGMENTARY SIZE TITANIUM DIOXIDE

Arthur Wallace Evans, Middlesbrough, and Denis Cleaver, Saltburn, England, assignors to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom
Filed May 7, 1965, Ser. No. 454,022
Claims priority, application Great Britain, May 13, 1964, 20,000/64
U.S. Cl. 23—202 **11 Claims**
Int. Cl. C01g *23/04;* **C09c** *1/36;* **B01d** *7/00*

Pigmentary titanium dioxide particles are produced by heating gas inert to titanium dioxide to a plasma state and admixing oxidic titaniferous material with the plasma state gas to vaporize the material and thereafter condensing from the mixture discrete particles of titanium dioxide of substantially reduced particle size as compared to the starting oxidic titaniferous material.



3,429,666
PREVENTION OF PRECIPITATE FORMATION IN STANNATE STABILIZED HYDROGEN PEROXIDE

George V. Morris, Riverside, and Paul B. Weill, Newport, R.I., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed May 7, 1965, Ser. No. 454,224

U.S. Cl. 23—207.5 **10 Claims**

Int. Cl. C01b *15/02*

A method of preventing precipitate formation in a stabilized peroxide composition by the addition of a soluble fluoride and the resulting peroxide composition containing stabilizer and fluoride.

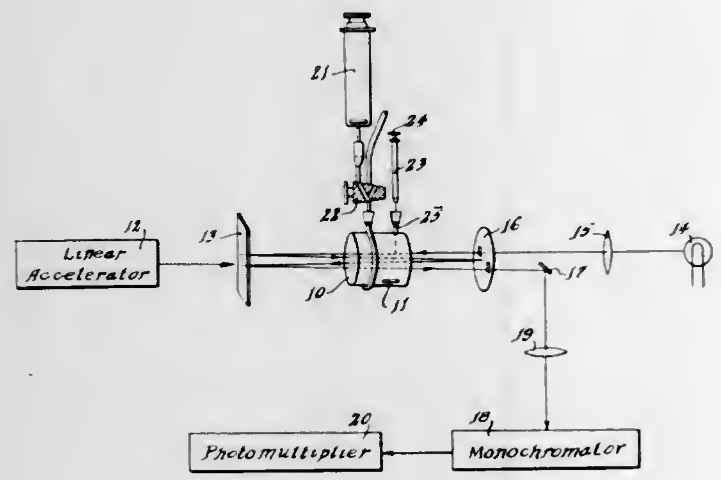
3,429,667
METHOD OF QUANTITATIVE ANALYSIS OF REDUCIBLE SUBSTANCES WITH HYDRATED ELECTRONS

Edwin J. Hart, Hinsdale, and Edward M. Fielden, Elmhurst, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 2, 1966, Ser. No. 547,032

U.S. Cl. 23—230 **3 Claims**

Int. Cl. G01n *33/18, 27/00*



1. A method of analyzing an aqueous solution containing a very small quantity of a reducible substance to determine the concentration of said reducible substance, comprising irradiating said solution with a low-intensity pulse of radiation capable of producing hydrated electrons therein, said solution having a pH of 11 to 12 and having been saturated with hydrogen, passing a beam of light through the solution, and comparing the change in transmission of the light as the hydrated electrons decay with a standard.

3,429,668
SEPARATING ALKALI METAL HALATES FROM HALIDES BY ADDITION OF AMMONIA

Remigius A. Gaska and Robert D. Goodenough, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,058

U.S. Cl. 23—296 **7 Claims**

Int. Cl. B01d *9/00*

1. A method of separating alkali metal halates selected from the group consisting of sodium iodate, sodium bromate, rubidium chlorate, rubidium bromate, rubidium iodate, cesium chlorate, cesium bromate and cesium iodate from their corresponding halides, the said halates being less soluble in water than the said halides, comprising admixing water containing said halates and said halides with between about 10 to 50% by weight, based on the combined weight of water and NH_3, NH_3 to effect precipitation of a major proportion of the alkali metal halate and separating the precipitated alkali metal halate from the mother liquor.

3,429,669
METHOD OF PROCESSING NUCLEAR FUEL BY SELECTIVE ClF FLUORINATION WITH SEPARATION OF UF_6 AND PuF_4

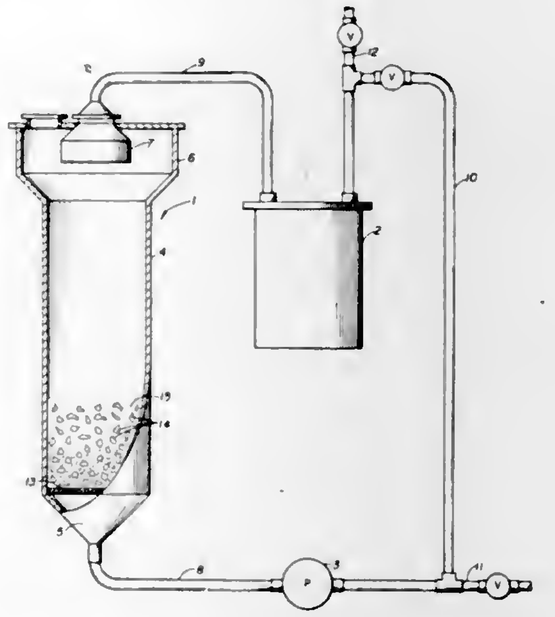
Giovanni Camozzo, Mol, Francois Coenen, Antwerp, Aldo Francesconi, Turnhout, Walter Goossens and Giancarlo Pierini, Mol, Jean J. Schmets, Mol-Donk, and Adolf Stynen, Eindhout, Belgium, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 5, 1967, Ser. No. 673,528

Claims priority, application Luxembourg, Sept. 6, 1966, 51,894

U.S. Cl. 23—326 **13 Claims**

Int. Cl. G21c *19/48;* **C01g** *1/00, 43/06*



Nuclear fuels are reprocessed by reacting them with chlorine monofluoride which converts the uranium in said fuels to volatile UF_6 and the plutonium to non-volatile PuF_4. The chlorine produced in the reaction is separated from the UF_6 by distillation and reacted with fluorine to produce more chlorine monofluoride.

3,429,670
METHOD OF FLUORINATING NUCLEAR FUEL WITH RECOVERY OF PLUTONIUM TETRAFLUORIDE AND URANIUM HEXAFLUORIDE

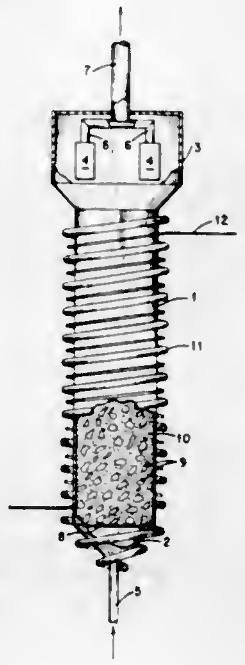
Giovanni Camozzo, Mol, Francois Coenen, Antwerp, Aldo Francesconi, Turnhout, Giancarlo Pierini, Mol, Jean J. Schmets, Mol-Donk, and Adolf Stynen, Eindhout, Belgium, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 5, 1967, Ser. No. 673,527

Claims priority, application Luxembourg, Sept. 6, 1966, 51,893

U.S. Cl. 23—326 **9 Claims**

Int. Cl. C01g *1/06, 56/00, 43/06*



Fluorination of nuclear fuel with a mixture of chlorine trifluoride and at least one of the substances, chlorine and chlorine monofluoride, in order to suppress the formation of plutonium hexafluoride.

3,429,671
METHOD OF TREATING CARBON CONTAINING MATERIAL

Charles V. Ellison, Delmont, and Benedict L. Vondra, Greensburg, Pa., assignors to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania

No Drawing. Filed May 26, 1965, Ser. No. 459,097

U.S. Cl. 23—342 **7 Claims**

Int. Cl. C01g *43/00*

The method of separating out uranium from uranium-carbonaceous material in the practice of which the material is mixed with a sodium salt such as NaCl or Na_2CO_3 to a temperature of about 800° C. to 860° C. to produce a fluffy yellow residue, NA_2UO_4, readily soluble in about 4 molar nitric acid.

3,429,672
FUEL FOR CHEMICAL HEATERS

Harland H. Young, Western Springs, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 7, 1966, Ser. No. 592,510

U.S. Cl. 44—3 **5 Claims**

Int. Cl. F24j *1/00, 1/04*

Unique fuel composition for chemical heaters, especially self-heating food containers, are disclosed. Such fuels include active lime particles coated with an unsaponifiable oil which has been bodied with a thickening agent.

3,429,673
CORROSION INHIBITING ADDITIVE COMPOSITIONS FOR FUEL OILS

Günter Reese, Dusseldorf, and Günter Felletschin, Metzkausen uber Mettmann, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,922

Claims priority, application Germany, Apr. 5, 1966, H 59,019

U.S. Cl. 44—66 **11 Claims**

Int. Cl. C10l *1/22, 1/18*

This invention relates to a corrosion inhibitor composition for fuel oils consisting of a mixture of:

(A) salts of aliphatic carboxylic acids having from 6 to 12 carbon atoms, with alkylamines substituted with hydroxyl groups; and

(B) salts of aliphatic carboxylic acids having from 4 to 12 carbon atoms, with alkylamines having from 4 to 16 carbon atoms, with the proviso that the total number of carbon atoms in said salt is more than 10;

said salts being present in said mixture in a ratio of 1:9 to 9:1 parts by weight. The invention also relates to fuel oils containing from 50 to 1000 parts per million of the aforesaid corrosion inhibitor composition.

3,429,674
OIL-SOLUBLE NITROGEN COMPOSITION

Donald I. Hoke, Chagrin Falls, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Original application Feb. 2, 1962, Ser. No. 170,820. Divided and this application Aug. 19, 1965, Ser. No. 481,061

U.S. Cl. 44—58 **16 Claims**

Int. Cl. C10m *1/32;* **C10l** *1/22, 1/06*

An oil-soluble fatty acid-amine reaction product useful as additives in hydrocarbon oils especially lubricating compositions for internal combustion engines such as two-cycle spark ignition engines.

3,429,675
PISTON CONTROL MECHANISM FOR WATERLESS GAS STORAGE TANK

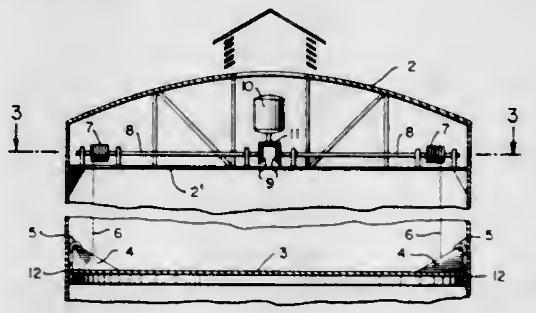
Saburo Kano, Shibuya-ku, Tokyo-to, Yoshio Yamada, Yokohama-shi, and Shigeo Watanuki, Aioi-shi, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan

Filed Nov. 25, 1964, Ser. No. 413,920

Claims priority, application Japan, Nov. 26, 1963, 38/63,194

U.S. Cl. 48—176 **8 Claims**

Int. Cl. F17b *1/16*

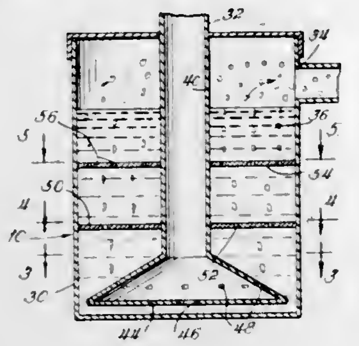


Mechanism for maintaining the piston of a waterless gas storage tank substantially level at all vertical positions by the provision of suspension means including cables or the like attached to the piston at a plurality of spaced points, the cables being wound on drums carried by interconnected shafts so as to wind up or unwind equal lengths of cable simultaneously on or from each drum as the vertical position of the piston is varied.

3,429,676

GAS SATURATOR AND DETECTOR

Casper J. Gatza, 3040 Elston Ave., Chicago, Ill. 60618
Filed Aug. 26, 1965, Ser. No. 482,864
U.S. Cl. 48—195 **7 Claims**
Int. Cl. C10j *1/28*

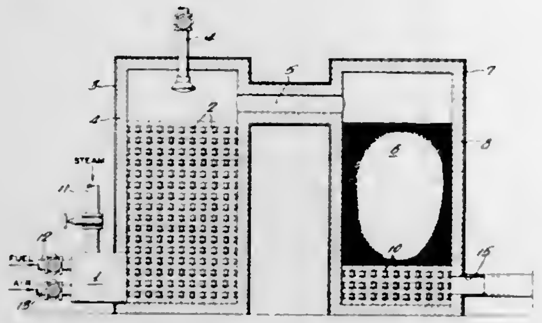


An apparatus having a casing which contains liquid, a gas inlet having a perforated enlargement near the bottom of the liquid, means to progressively decrease the sizes of the bubbles being passed through the liquid in their path to the gas outlet.

3,429,677

MANUFACTURE OF GAS RICH IN HYDROGEN AND IN OXIDES OF CARBON

John T. Pinkston, Jr., Swarthmore, and Charles Gordon Milbourne, Lansdowne, Pa., assignors to United Engineering & Constructors Inc., Philadelphia, Pa., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 400,989
U.S. Cl. 48—196 **4 Claims**
Int. Cl. C10k *3/00;* **C10j** *1/00*



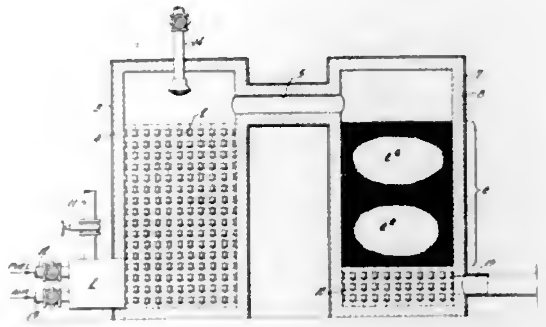
Gases rich in hydrogen and oxides of carbon, mainly carbon monoxide, are produced in twin cyclic catalytic reforming gas units, operated under a pressure of at least 50 p.s.i.g. in association with a common gas expander in which the operation of the two units is coordinated into one cycle which produces an uninterrupted, continuous and substantially uniform flow of gases under pressure into the common gas expander where the gases expand with a release of energy which is utilized to drive an air compressor supplying a continuous flow of air under pressure for use in the twin reforming units.

3,429,678

PROCESS AND APPARATUS FOR MANUFACTURING GAS RICH IN HYDROGEN AND IN OXIDES OF CARBON

Charles Gordon Milbourne, Lansdowne, and John T. Pinkston, Jr., Swarthmore, Pa., assignors to United Engineering & Constructors Inc., Philadelphia, Pa., a corporation of Delaware
Filed Oct. 30, 1964, Ser. No. 407,706
U.S. Cl. 48—196 **18 Claims**
Int. Cl. C10k *3/00;* **C10j** *1/00*

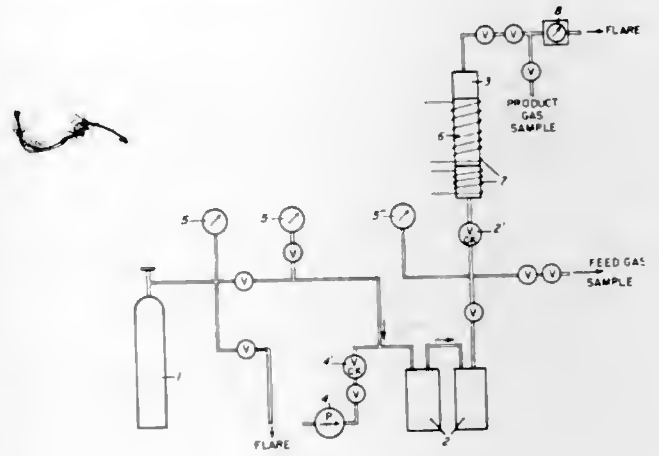
A cyclic catalytic process for the reformation of hydrocarbons and steam into a gas rich in hydrogen and oxides of carbon, mainly carbon monoxide, wherein during one part of the cycle hot gaseous combustion products are passed through a zone of reforming catalyst to store heat therein and, in another part of the cycle, a gaseous mixture of hydrocarbons and steam is passed through the catalyst zone in the same direction as said combustion products, wherein the catalyst zone comprises discrete catalyst bodies arranged in a plurality of layers in which the average ratio of unit surface area to unit volume of the catalyst bodies in each layer increases in a defined manner, from layer to layer in the direction of flow of said gaseous materials.



3,429,679

PROCESS FOR IMPROVING THE HEATING VALUES OF FUEL GASES

Sam Friedman and Raymond W. Hiteshue, Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior
Filed June 7, 1965, Ser. No. 462,150
U.S. Cl. 48—197 **7 Claims**
Int. Cl. C07c *1/04, 1/12*



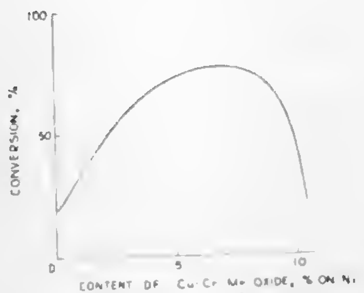
CO and/or CO_2 are reacted with H_2 in the presence of WS_2 to form CH_4.

3,429,680

STEAM REFORMING OF HYDROCARBONS

Isaburo Watanabe, Haruo Yoshioka, and Seiji Sanga, Tokyo, Shohachi Egashira, Sagamihara-shi, and Taketo Ohki, Tokyo, Japan, assignors to Japan Gasoline Company, Limited, and Nikki Chemical Company, Limited, Tokyo, Japan, both corporations of Japan
Filed Oct. 15, 1964, Ser. No. 404,131
Claims priority application Japan, Oct. 15, 1963, 38/55,304; Mar. 18, 1964, 39/14,940
U.S. Cl. 48—214 **23 Claims**
Int. Cl. C07c *3/34*

A process for steam reforming a hydrocarbon having a boiling point of 220° C. or lower, in which the hydrocarbon is contacted in the presence of steam at an elevated temperature within the range of about 200° C. to 1000° C. and at a pressure within the range of about 0 to 50 atmospheres gauge, with a catalyst comprising a mixture of (a) from 5 to 50% by weight, calculated as nickel, of a nickel component, (b) an effective amount but less than 10% by weight, calculated as the metals and with the percentage being based on the weight of nickel, of a promotive component selected from the group consisting of copper-chromium oxides and copper-chromium-manganese oxides, and (c) an inorganic oxide support material serving as a carrier for both the nickel component and the promotive component.



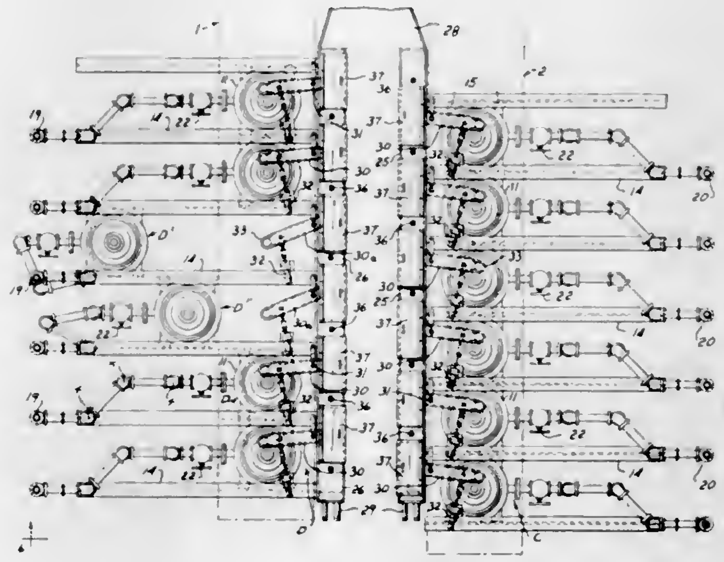
ERRATUM

For Class 51—309 see:
Patent No. 3,429,080

3,429,681

APPARATUS FOR PRODUCTION OF GLASS FIBERS

Sidney Krakauer, Glen Cove, N.Y., Solomon Musikant, Mountaintop, Pa., and David J. Rosenberg, Glen Cove, N.Y., assignors to Certain-Teed Fiber Glass Corporation, Ardmore, Pa., a corporation of Maryland
Filed Dec. 17, 1965, Ser. No. 514,475
U.S. Cl. 65—9 **6 Claims**
Int. Cl. C03b *37/10;* **C04b** *43/02;* **B32b** *17/00*

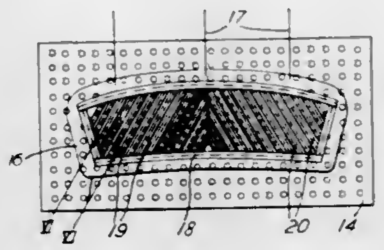


Equipment for use in making glass fiber blanket including a furnace having a pair of parallel forehearths supplying glass to a pair of rows of attenuator assemblies. The attenuator assemblies are individually movable in a horizontal direction between operative and inoperative position and fuel supply lines are provided for the attenuator assemblies and are jointed on vertical axes to accommodate the horizontal movement of the assemblies. The glass fibers produced are laid in a blanket on a travelling conveyor and are thereby carried through a binder curing oven. Mechanism is provided in line with the conveyor to package fiber blanket in rolls, and alternatively operable mechanism is provided to a side of the conveyor to package blanket bats in bundles.

3,429,682

METHOD FOR TOUGHENING SHEETS OF GLASS

Henry W. Baker, Birmingham, England, assignor to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain
Original application Mar. 16, 1965, Ser. No. 440,258, now Patent No. 3,363,936, dated Jan. 16, 1968. Divided and this application Nov. 21, 1967, Ser. No. 684,784
Claims priority, application Great Britain, Mar. 24, 1964, 12,498/64
The portion of the term of the patent subsequent to June 1, 1985, has been disclaimed and dedicated to the Public
U.S. Cl. 65—115 **3 Claims**
Int. Cl. C03c *27/00*

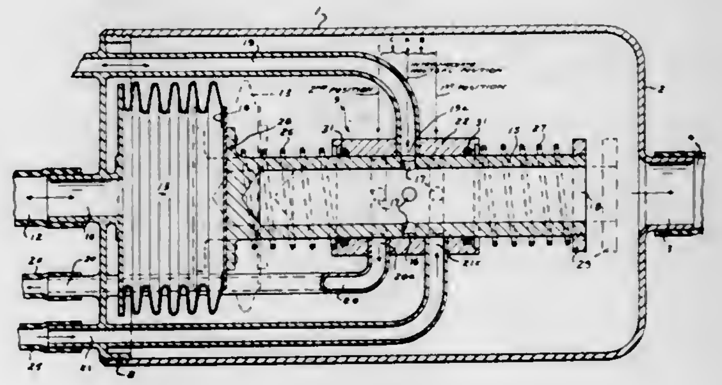


A method of producing a sheet of toughened glass for use as windscreens in an automobile comprises interposing, in the paths of a gaseous chilling medium directed towards both faces of a heated glass sheet in that part of the glass sheet intended to form a vision zone, a continuous frame and a series of parallel strip-like members sloped angularly outwardly with respect to the edge of the glass sheet which will be the upper edge when the toughened glass sheet is used as a windscreen in an automobile.

3,429,683

ORAL CONTROLLED PRESSURE REGULATOR FOR BLOWING GLASS

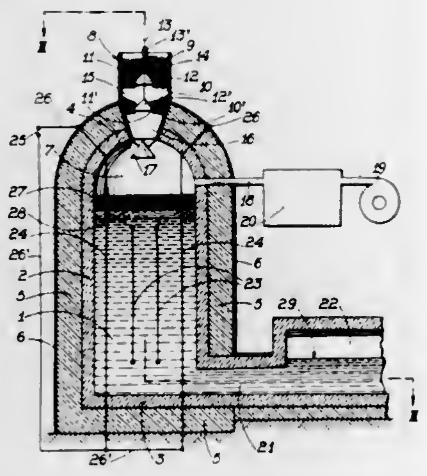
Werner F. Jehn, 438 Twinning Drive, Dayton, Ohio 45431
Filed Mar. 21, 1966, Ser. No. 537,616
U.S. Cl. 65—301 **6 Claims**
Int. Cl. C03b *9/02*



The present invention relates to a pressure regulator adapted for connection to a glass blowing device for blowing glass articles, including a leak proof chamber wherein an axially extensible bellows is connected at one end to the chamber through an oral suction-pressure supply port and at the other end is connected to a tubular slide valve which terminates in an opening into the chamber and wherein said slide valve contains ports for communication with an exterior air conduit, a suction pressure supply conduit, and a positive pressure supply conduit which operates to control blowing of the glass article connected to the chamber near the termination opening of said tubular slide valve.

3,429,684
GLASS MELTING FURNACE WITH VACUUM FEED MEANS

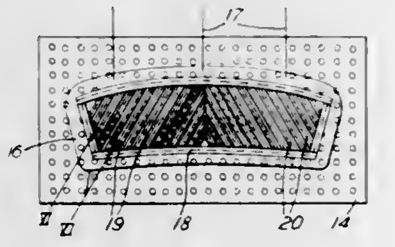
Emile Plumat, Gilly, Belgium, assignor to Glaverbel, Brussels, Belgium, a Belgian company
Continuation-in-part of application Ser. No. 253,791, Jan. 25, 1963. This application May 18, 1967, Ser. No. 657,433
U.S. Cl. 65—335 **2 Claims**
Int. Cl. C03b *3/00*



This invention is directed to a furnace and continuous process for melting and refining glass in which glass raw materials are fed at subatmospheric pressure into the upper portion of a melting chamber, are then both melted and refined in the chamber at a temperature less than that normally required to effect refining of the molten glass in the absence of reduced pressure at the upper portion of the melting chamber and then the refined molten glass is continuously passed from the bottom of the chamber laterally through a duct into a withdrawal compartment maintained at or about atmospheric pressure.

3,429,685
APPARATUS FOR TOUGHENING SHEETS OF GLASS

Henry W. Baker, Lower Willingdon, Eastbourne, England, assignor to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain
Original application Mar. 16, 1965, Ser. No. 440,258, now Patent No. 3,363,936, dated Jan. 16, 1968. Divided and this application Nov. 21, 1967, Ser. No. 684,783
Claims priority, application Great Britain, Mar. 24, 1964, 12,498/64
The portion of the term of the patent subsequent to June 1, 1985, has been disclaimed and dedicated to the Public
U.S. Cl. 65—348 **3 Claims**
Int. Cl. C03b *27/00*



Apparatus for toughening a sheet of glass for use as windscreens in an automobile, comprises a continuous metal frame located on each side of a heated glass sheet between quenching means and the surfaces of the glass sheet suspended therebetween, the frame carrying at least one series of parallel strip-like members extending angularly outward with respect to the edge of the glass sheet which will be the upper edge when the toughened glass sheet is used as a windscreen in an automobile.

3,429,686
METHOD OF PRECIPITATING CALCIUM SULFATE FROM AN ACIDULATED PHOSPHATE ROCK SLURRY

Simon Dingemans and Willem Slot, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Oct. 13, 1964, Ser. No. 403,634
Claims priority, application Netherlands, Oct. 15, 1963, 299,280
U.S. Cl. 71—39 **4 Claims**
Int. Cl. C05b *11/06*

A process for making fertilizers containing nitrogen and phosphate by acidulating natural phosphates with a nitric acid-containing acidulating agent to provide a calcium nitrate-containing product. This product is then reacted in a first zone with ammonium sulfate and/or potassium sulfate at a temperature ranging from about 15° C. up to about 60° C. with the simultaneous formation of gypsum. The mole ratio of soluble calcium nitrate to the sulfate in this first zone is maintained above 0.8:1. The resulting reaction product is kept in suspension in a second zone at a temperature of about 15° C. up to about 60° C. for a period of at least 10 minutes. Thereafter the suspension is filtered to remove the gypsum and the substantially gypsum-free filtrate is treated with ammonia and water is extracted to produce the fertilizer.

3,429,687
HERBICIDAL MIXTURE AND METHOD OF USE

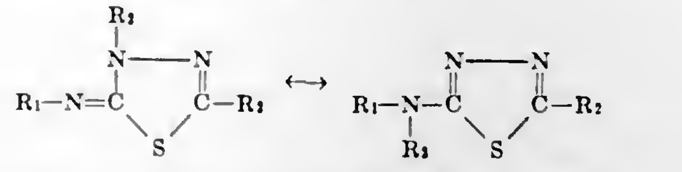
Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Original application Aug. 12, 1963, Ser. No. 301,602, now Patent No. 3,328,454, dated June 27, 1967. Divided and this application Dec. 2, 1966, Ser. No. 623,150
U.S. Cl. 71—80 **4 Claims**
Int. Cl. C07c *141/18;* **A01n** *9/14*

A method for destroying weeds comprises applying to the locus to be treated a phytotoxic amount of a polyhalobenzyloxyalkanol sulfate. Mixtures of such sulfates also may be employed and other herbicidal compounds may be applied at the same time to the locus to be treated.

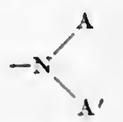
3,429,688
METHOD FOR COMBATING UNDESIRED PLANT GROWTH

Dieter Duerr, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed May 23, 1963, Ser. No. 282,588
Claims priority, application Switzerland, May 28, 1962, 6,460/62
U.S. Cl. 71—90 **3 Claims**
Int. Cl. A01n *5/00;* **C07d** *91/46*

1. The method for combating undesired plant growth, which comprises applying to the area where the plant-combating effect is desired as active principle a herbicidal amount of a member selected from the group consisting of (a) a compound of the formulae



wherein R_1 represents a member selected from the group consisting of lower alkyl, lower alkenyl, phenyl, phenyl substituted by lower alkyl and phenyl substituted by the group $—CF_3$, R_2 represents a member selected from the group consisting of the hydrogen atom, lower alkyl, phenyl, phenyl substituted at at most 2 places by a member selected from the group consisting of the chlorine atom, the bromine atom, the group $—NO_2$, the group $—CF_3$, lower alkyl, lower alkoxy and the group



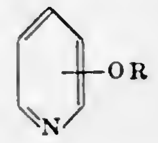
$$—N\begin{matrix}A\\A'\end{matrix}$$

wherein A and A′ each represents lower alkyl, R_3 represents a member selected from the group consisting of the hydrogen atom, lower alkyl and the R—CO—, wherein R represents lower alkyl, and (b) a salt of a compound set forth above in this claim under (a) with an acid selected from the group consisting of HCl, HBr, HJ, HF, H_2SO_4, H_3PO_4, HPO_3, HNO_3, $HClO_4$, HSO_3NH_2, CH_3COOH, CCl_3COOH, citric acid, lactic acid, formic acid, oxalic acid, glycollic acid, benzoic acid, oleic acid; 2,3,6-trichloro-benzoic acid, dodecyl benezene sulfonic acid, salicylic acid, nicotinic acid and $CH_3—CCl_2—COOH$.

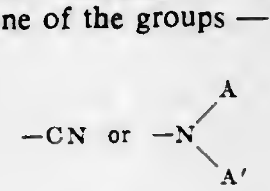
3,429,689
PHENOXY PYRIDINES AS HERBICIDES

Dieter Duerr, Basel, Otto Rohr, Neuallschwil, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aakgau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Jan. 27, 1965, Ser. No. 428,536
Claims priority, application Switzerland, Feb. 10, 1964, 1,532/64
U.S. Cl. 71—94 **5 Claims**
Int. Cl. A01n *5/00;* **C07d** *31/32*

Compounds of the general formula



in which R is an aromatic radical which may be substituted by one or more halogen atoms, a lower alkyl or alkoxy radical or one of the groups $—NO_2$, $—OH$, $—CF_3$,



$$—CN \text{ or } —N\begin{matrix}A\\A'\end{matrix}$$

(in which A and A′ be identical or different and each is a hydrogen atom or a lower alkyl group) or the N-oxides or salts of these compounds with acids, are biocidally active and, together with a suitable carrier, provide pesticidal preparations, particularly valuable for combating insects, acarides, nematodes and micro-organisms and in the control of plant growth.

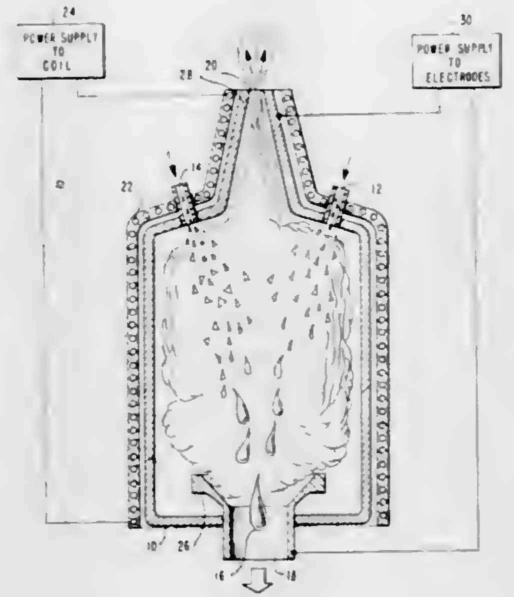
3,429,690
HERBICIDAL α-HALO-N-CYCLOHEXYL-ACETAMIDES

John F. Olin, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Original application Sept. 18, 1964, Ser. No. 397,655, now Patent No. 3,356,724, dated Dec. 5, 1967. Divided and this application Apr. 28, 1967, Ser. No. 647,275
U.S. Cl. 71—118 **8 Claims**
Int. Cl. A01n *9/20*

Herbicidal compositions containing as an active ingredient N-(2′-tert-butyl - 6′ - methylcyclohexyl)-2-chloroacetamide.

3,429,691
PLASMA REDUCTION OF TITANIUM DIOXIDE

William J. McLaughlin, Claremont, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Aug. 19, 1966, Ser. No. 573,526
U.S. Cl. 75—10 **10 Claims**
Int. Cl. C22b *53/00;* **C22d** *7/04*



A method to reduce titanium dioxide powder to elemental titanium by introducing the said oxide powder into a plasma chamber wherein the oxide powder is melted into finely divided liquid droplets. The hydrogen plasma which is in countercurrent flow to the oxide droplets reduces the liquid oxide to elemental titanium by oxygen exchange from the titanium oxide to react with hydrogen to form water vapor or steam. The steam is evolved as a by-product and the liquid titanium is recovered as finely divided droplets.

3,429,692
PROCESS FOR REMOVING MERCURY FROM METALLIC SODIUM CONTAINING THE SAME

Mineo Doi and Masamichi Miura, Toyama-ken, Ryozo Sakuraba, Tokyo, and Takeo Ando, Kanagawa-ken, Japan, assignors to Tekkosha Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,672
Claims priority, application Japan, Nov. 25, 1965, 41/71,954
U.S. Cl. 75—63 **5 Claims**
Int. Cl. C22b *7/00, 27/00, 43/00*

1. A process for removing mercury from metallic sodium containing the same which comprises contacting said sodium in its molten state with at least one chloride salt selected from the group consisting of calcium and magnesium chlorides to form an amalgam which is substantially immiscible with said sodium metal and separating said amalgam from said sodium metal.

3,429,693
EXTRACTION OF METALS

William C. Bauer, Boulder, and Carl K. Amano, Denver, Colo., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,669
U.S. Cl. 75—101 **10 Claims**
Int. Cl. C22b *3/00;* **C01f** *3/00;* **C01g** *41/00*

The selective extraction of beryllium, vanadium, molybdenum or tungsten from gangue impurities present in the ores and concentrates of these metals is carried out by contacting these ores or concentrates with an aqueous extracting solution containing sodium carbonate and sodium bicarbonate in a molar ratio of about 1:1 dissolved in water and having a concentration of from about 1 to about 50% by weight and a pH of about 9.5 to about 10.5, maintaining the extracting solution in contact with the above ores or concentrates for about 30–480 minutes at a temperature of about 60–250° C., and recovering a metal-rich extracting solution.

3,429,694
RECOVERY OF COPPER AND CYANIDE FROM SOLUTIONS THEREOF BY SOLVENT EXTRACTION

George William Lower, Bethel, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed May 10, 1965, Ser. No. 454,502

U.S. Cl. 75—117 **6 Claims**
Int. Cl. C22b *15/12, 15/08;* **C01g** *3/12*

Copper is recovered from ores, or an ore froth flotation fraction, or a slag, by grinding fine enough to expose the copper bearing particles, which may be sulfide, or oxide or mixed, then leaching with an aqueous alkaline cyanide, liquid-liquid extracting the copper cyanide complex from the leach liquor thus formed with a quaternary ammonium salt or a phosphonium salt extractant such as tricaprylmethyl ammonium chloride or trioctylmethyl phosphonium bromide in a water-insoluble solvent which is a petroleum fraction or monocyclic aromatic liquid such as kerosene or benzene, separating the solvent containing the copper complex, liquid-liquid stripping copper from the solvent solution with a concentrated aqueous alkaline cyanide solution, then acidifying and precipitating the copper from said concentrated solution as a sulfide of copper. The extractions may be countercurrent. The extractant, organic solvent, and the cyanide are all recycled.

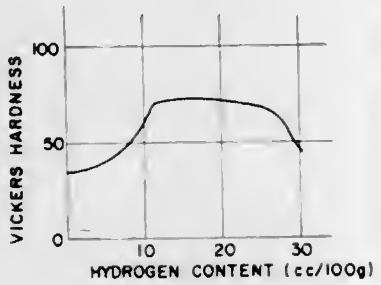
3,429,695
HIGH STRENGTH ALUMINUM ALLOY AND ITS PRODUCTION METHOD

Hajime Nakamura, Tokyo-to, Toshimitsu Hori, Matsudo-shi, and Kazuo Sezaki, Tokyo-to, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

Filed June 15, 1966, Ser. No. 557,816

Claims priority, application Japan, Oct. 12, 1965, 40/62,557

U.S. Cl. 75—138 **6 Claims**
Int. Cl. C22f *1/04;* **C22c** *21/02*



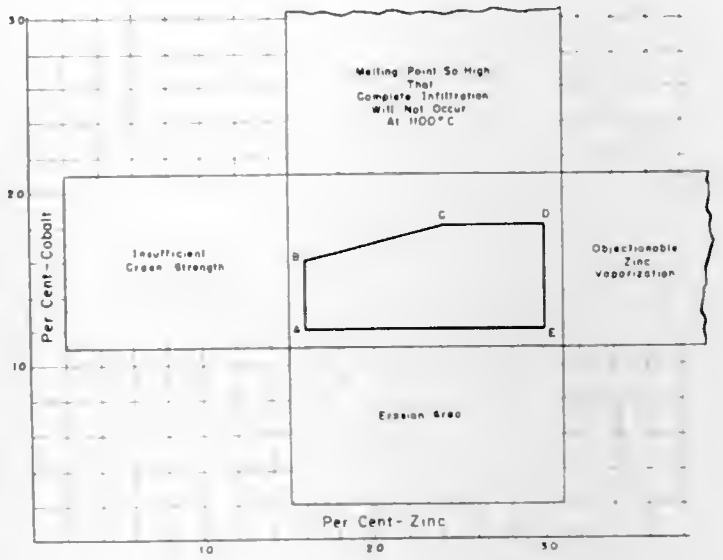
An aluminum base alloy having high tensile strength and hardness and consisting essentially of by weight percent about 0.3 to 1.2% zirconium and hydrogen of about 6 to 25 cc. at standard temperature and pressure per 100 grams of the alloy, the balance essentially being aluminum including incidental impurities. Also provided are hot working and heat treating processes for the alloys whereby particularly good mechanical properties are obtained.

3,429,696
IRON POWDER INFILTRANT

George L. Werley, Palmerton, Pa., assignor to The New Jersey Zinc Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 5, 1966, Ser. No. 570,547

U.S. Cl. 75—157.5 **4 Claims**
Int. Cl. C22c *9/06, 9/04*



1. An infiltrant for iron powder compacts having a melting point lower than that of iron and capable, when melted in contact with an iron powder compact at a sintration temperature not in excess of about 1100° C., of infiltrating the compact without pitting the surface of the compact and without leaving a residue on the surface of the compact, and consisting essentially of 1.2 to 1.8% by weight of cobalt, 1.6 to 3.0% by weight of zinc, and the balance copper with the amounts cobalt and copper being substantially within the boundaries of the curve ABCDEA in FIG. 1 of the drawing.

3,429,697
PROCESS FOR PRODUCING COBALT-ALUMINUM BODIES

Harvey E. Cline, Latham, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 30, 1967, Ser. No. 626,931

U.S. Cl. 75—170 **6 Claims**
Int. Cl. C22c *19/00;* **C22f** *1/10*

A process for producing ductile two-phase alloy bodies of cobalt-7 to 12 weight percent aluminum, is described in which the starting alloy is heated to within the range of 950° C. to 1050° C., and hot reduced in successive stages to some final size while the hot working temperature is lowered during the working stages. The final working temperature goes no lower than 600° C. and the final product has a fine grain size. The ductile cobalt-aluminum two-phase body created is also described.

3,429,698
IRIDIUM ALLOY

Walter Betteridge, Beckenham, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1966, Ser. No. 566,211

Claims priority, application Great Britain, Aug. 12, 1965, 34,587/65

U.S. Cl. 75—172 **6 Claims**
Int. Cl. C22c *5/00*

Iridium-base alloy containing columbium has good workability for production of wrought products such as sheet, strip, wire and the like and provides enhanced characteristics, including high strength and high recrystallization temperature, in comparison to characteristics of pure iridium.

3,429,699
HIGH LOADED UO_2-COLUMBIUM CERMETS

Nathan Fuhrman, Shrub Oak, N.Y., Emanuel Gordon, New Haven, Conn., and Robert B. Holden, Pleasantville, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 24, 1967, Ser. No. 658,306

U.S. Cl. 75—206 **3 Claims**
Int. Cl. B22f *3/16*

A process for producing improved UO_2-columbium cermets having ceramic phase loadings of over 70 volume percent, comprising coating UO_2 spheres with a wax coating then with a mixture of powdered columbium and carbon, forming a compact, dewaxing the compact, and heat sintering the compact, wherein the carbon is used to remove oxygen impurities and to increase the theoretical density of the cermet.

3,429,700
METHOD OF PRODUCING COMPOSITE METAL ARTICLES BY UNITING TWO IDENTICAL SHAPES

Hans Wiegand, Boyertown, and Albert F. Salter, Lansdale, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,754

U.S. Cl. 75—208 **3 Claims**
Int. Cl. B22f *7/02;* **B23p** *15/14*

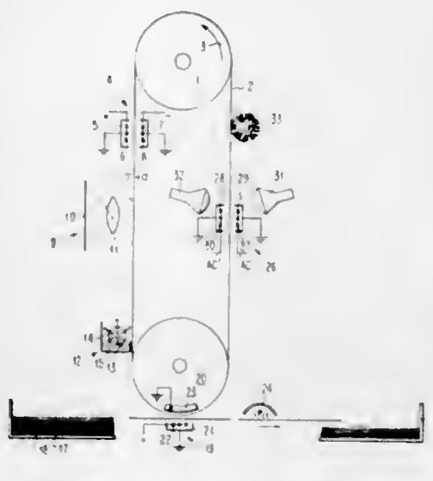
The invention relates to a method for making a metal article wherein two powdered metal sections of substantially identical composition and shape and with interacting projections and depressions are brought together and then simultaneously sintered and bonded together to form a unitary body.

3,429,701
MULTIPLE COPY ELECTROPHOTOGRAPHIC DEVICE UTILIZING A CHARGE PATTERN AT THE INTERFACE OF A PHOTOCONDUCTIVE LAYER AND A DIELECTRIC LAYER

Thomas R. Koehler, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 24, 1965, Ser. No. 504,712

U.S. Cl. 96—1 **5 Claims**
Int. Cl. G03g *7/00*



A method for forming a latent electrostatic image of a light pattern on a belt to be used for making multiple copies of the image. The latent image is formed at the interface of a dielectric and a photoconductor so that the image charge is not dissipated upon toning and transfer of the image.

3,429,702
PROCESS OF PRODUCING MULTICOLOR UTILIZING A SINGLE PRINTING PLATE

Leslie Howard Lorber, New York, N.Y., assignor of one-third interest to Bernard Olcott, New York, N.Y.

Filed June 19, 1963, Ser. No. 289,119

U.S. Cl. 96—30 **20 Claims**
Int. Cl. G03f *1/00;* **G03c** *7/00*

Producing an apparently natural multicolor picture by: forming fields of color, e.g., red, into a pattern upon a receiving surface of another color, e.g., white paper; forming a positive "long record" image on first areas of a printing plate which areas are patterned to register with the fields of color, and forming a positive "short record" image on second areas of the printing plate which areas are patterned to register with spaces of the receiving surface between the fields of color; inking the printing plate with ink, e.g., black, and transferring the two ink images on the plate to the receiving surface and fields of color thereon, so that the image on first areas is registered with fields of color while the image on second areas is registered with spaces of receiving surface between the fields of color.

3,429,703
PHOTOLITHOGRAPHIC PRINTING PLATES AND PROCESS FOR PRODUCING SAME

John R. Kane, Piffard, N.Y., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,141

U.S. Cl. 96—33 **16 Claims**
Int. Cl. G03f *7/06*

In a process for producing a lithographic printing plate comprising exposing an imaging medium comprising a developer layer containing a developing agent capable of oxidation in the presence of a hydrophilic organic colloid to form an image receptive to greasy printing ink, and over the developer layer a hydrophilic organic colloid photosensitive emulsion capable of reacting with the developer to produce a visible metal image, and the emulsion containing a hardener, in which the colloid has a hardness equivalent to that of a gelatin layer containing from about 2 grams to about 15 grams of dry formaldehyde per gram of gelatin, which exposed imaging medium is contacted with an activator solution for the developer to produce a lithographic plate, the improvement comprising reducing the water absorption characteristics of printing plate by contacting the imaging medium with an antiswelling agent which is preferably a solution of an alkali metal halide, sulfate or nitrate.

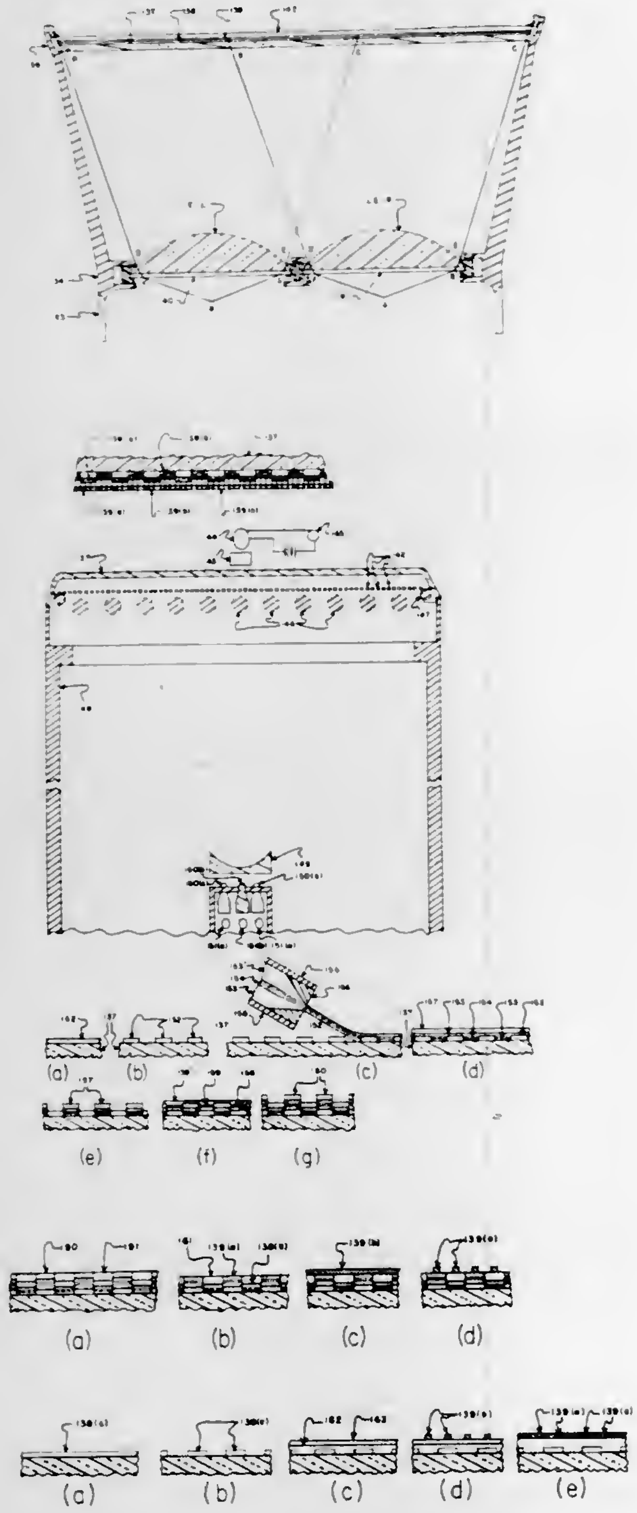
3,429,704
PROCESS FOR MAKING A COLOR SCREEN

Harvey L. Ratliff, Jr., Oxon Hill, Md., assignor to Jetru Inc., Amarillo, Tex.

Original application Apr. 24, 1963, Ser. No. 275,411, now abandoned. Divided and this application Oct. 22, 1965, Ser. No. 500,725

U.S. Cl. 96—36.1 **2 Claims**
Int. Cl. G03 *9/08*

A quantity of radiant energy sensitive dichroic material with its axis of polarization in a first plane is extruded upon a work piece. This material is then exposed to three point sources of radiant energy through an affixed first mask and a removable second mask or equivalent with the first mask enabling the illumination by each said point source of narrow strips that will be struck by beams from the electron guns at the same location as the point sources later, said strips are each as high as the work piece but only half as wide as the lateral distance between each strip and enabling the illumination by all three point sources of the entire work piece, and with the second mask or an equivalent means enabling the illumination of strips which are each as wide and long as the area illuminated by all three point sources and blocking from illumination alternate adjacent strip areas of the same width. The material between the exposed strips is then removed and a quantity of radiant energy sensitive dichroic material with its axis of polarization substantially perpendicular to the first plane is extruded upon the work piece. This material is then exposed as before except means are used in conjunction with the second mask whereby the areas between the first exposed areas are alone exposed. The material in the first exposed areas is then removed leaving adjacent strips of oppositely polarized material upon the work piece. Then a red phosphor which is radiant energy sensitive is applied to the work piece and the areas thereof which will be struck by the red electron gun are exposed to the point source corresponding to the red electron gun through the affixed mask. The strips between these exposed strips are removed. Next a green phosphor which is radiant energy sensitized is applied to the work piece and areas thereof which will later be struck by the green electron gun are exposed to the point source corresponding to the green electron gun through the affixed mask. The strips of green phosphor between the exposed strips of green phosphor are then removed. Next a blue phosphor which is radiant energy sensitive is applied to the work piece and areas thereof which will later be struck by the blue electron gun are exposed to the point source corresponding to the blue electron gun through the affixed mask. And finally the strips of blue phosphor between the exposed strips of blue phosphor are removed leaving strips of red, green, and blue phosphor on top of the strips having said first axis of polarization adjacent strips of red, green, and blue phosphor on top of the strips having said second axis of polarization, to thus enable a new form of wide angle stereoscopic viewing.



3,429,705

PROCESS FOR THE PRODUCTION OF COLORED PHOTOGRAPHIC IMAGES

Bernhard Piller and Alfred Oetiker, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss Company

No Drawing. Filed June 29, 1965, Ser. No. 468,097

Claims priority, application Switzerland, July 7, 1964, 8,878/64

U.S. Cl. 96—53 **12 Claims**

Int. Cl. G03c *7/02*

The present invention relates to the use of quinoxaline compounds free from acid groups imparting solubility in water, further substituted at the phenylene radical by an acylamino group and at the nitrogen-containing ring by hydrocarbon radicals, as dyestuff bleaching catalysts in the silver dyestuff bleaching process.

3,429,706

RADIATION-SENSITIVE SYSTEM

Joseph W. Shepard, St. Paul, and Benjamin L. Shely, White Bear Lake, Minn., assignors to Minnesota Mining and Mfg. Co., St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation of abandoned application Ser. No. 221,329, Sept. 4, 1962, which is a continuation-in-part of application Ser. No. 809,927, Apr. 30, 1959. This application Dec. 29, 1965, Ser. No. 517,469

The portion of the term of the patent subsequent to Oct. 13, 1981, has been disclaimed

U.S. Cl. 96—64 **22 Claims**

Int. Cl. G03c *1/08*

The present invention relates to an embodiment of the invention disclosed in U.S. Patent No. 3,152,903 in which three separate solid phases of active ingredients, one phase being the photocatalyst phase, another phase being the oxidizing phase and another phase being the reducing phase, form a light-sensitive sheet material. In accordance with the present embodiment the above phases are characterized further by incorporating either an oxidizing agent or a reducing agent or both with a binding material which is incompatible or immiscible with it or with the other agent or with another binding material used to form separate reactive phases on the carrier sheet. Although the oxidizing agent and reducing agent are in separate solid phases and are present in substantially dry condition on the sheet, they at least partially react with each other upon light exposure in the presence of the photocatalyst.

3,429,707

PHOTOGRAPHIC SENSITIVE MATERIALS CONTAINING MORPHOLINO ALKYLALKENOYLAMIDE POLYMERS

Yosuke Nakajima, Daijiro Nishio, and Syu Wataral, Kanagawa-ken, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan

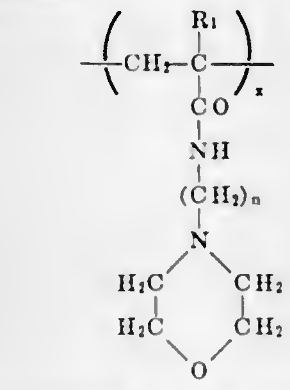
Filed Oct. 4, 1965, Ser. No. 492,667

Claims priority, application Japan, Oct. 5, 1964, 39/56,599

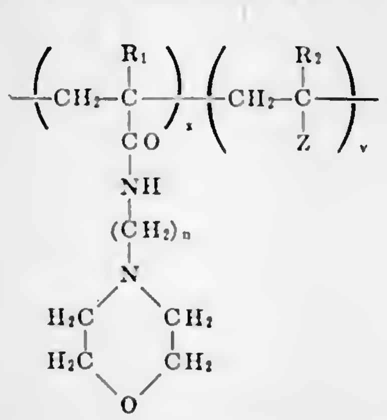
U.S. Cl. 96—85 **10 Claims**

Int. Cl. G03c *1/86, 1/04*

1. A photographic sensitive material comprising a support and a silver halide photographic emulsion layer, said emulsion layer containing at least one additive selected from the group consisting of a polymer shown by the general formula

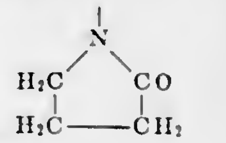


wherein R_1 represents a member selected from the group consisting of H and CH_3; x is a positive integer; and n is 1, 2, or 3 and a copolymer shown by the general formula

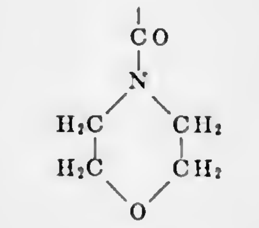


wherein R_1 and R_2 each represents a member selected from the group consisting of H and CH_3; x and y are positive integers; n is 1, 2, or 3; and Z represents a member selected from the group consisting of

$-CONH_2$, $-OCOCH_3$, $-COOCH_3$,



and



3,429,708

ACCELERATOR FOR CHEMICAL RIPENING

Guenther H. Klinger, Binghamton, and Martin V. Cwikla, Johnson City, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

Filed May 25, 1966, Ser. No. 552,945

U.S. Cl. 96—94 **6 Claims**

Int. Cl. G03c *1/06*

1. In a process for preparing a light-sensitive gelatin-silver halide emulsion including precipitation, digestion, coagulation, washing and ripening periods, the step which comprises adding to the emulsion, before the end of the coagulation step, about 2 to 4%, based on the weight of the gelatin, of a water-soluble polyhydroxy compound having a molecular weight of about 180 to 300,000 and selected from the group consisting of a d-mannitol, sorbitol, dextran, pentaerythrytol and glucoheptanoic acid.

3,429,709

PROCESS FOR DE-TOXIFYING SUBSTANCES CONTAMINATED WITH AFLATOXIN

Merle Sid Masri, Berkeley, Calif., and Henry L. E. Vix and Leo A. Goldblatt, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,279

U.S. Cl. 99—2 **7 Claims**

Int. Cl. A23k *1/00;* **A23b** *9/00*

Agricultural products contaminated with aflatoxins are de-toxified by mixing them with at least 0.3 gram of NH_3 per kilogram of agricultural product, and heating the mixture at 70–250° F. Enhanced results are attained by moistening the contaminated material to 10–15% H_2O, and then heating it at 200–250° F. in an autoclave with NH_3 gas under a pressure of 20 p.s.i.g.

3,429,710

PRESSURE COOKING PROCESS TO PRODUCE FISH CAKES FOR ANIMAL USE

Richard H. Gnaedinger, Ann Arbor, Mich., assignor to The United States of America as represented by the Secretary of the Interior

Filed Oct. 20, 1965, Ser. No. 499,114

U.S. Cl. 99—7 **2 Claims**

Int. Cl. A23k *1/10*

Ground raw fish is rapidly passed, as a thin layer, through a cooking zone wherein steam is passed in contact therewith through the bottom and top surfaces of the fish layer to heat the fish to above 180° F. The cooked fish is then compressed into a cake. Harmful bacteria and enzymes such as thiaminase are destroyed by the proper duration of heating during the cooking and compressing steps.

3,429,711

NUTRITIOUS INFANT CEREAL

Fred W. Billerbeck, Francisco S. Hing, and George A. Purvis, Fremont, Mich., assignors to Gerber Products Company, Fremont, Mich.

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,095

U.S. Cl. 99—83 **10 Claims**

Int. Cl. A23l *1/10*

A wet, precooked, nutritious fruit-rice cereal product having a pH adjusted to about 4.3–4.6 and prepared from a combination of rice flour with apple puree and banana puree, and including a sequestered iron salt.

3,429,712

METHOD FOR PRODUCING YEAST-LEAVENED BAKED GOODS

Joe E. Turner, San Antonio, Tex., assignor to Mrs. Bohnet's Bakery, Inc., San Antonio, Tex., a corporation of Texas

Filed Apr. 29, 1965, Ser. No. 451,776

U.S. Cl. 99—90 **3 Claims**

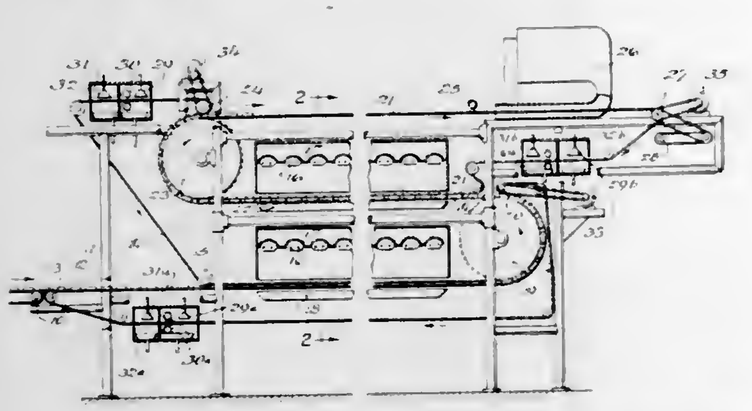
Int. Cl. A21d *13/02, 8/00*

Bread of improved body, aroma, texture and appearance is obtained by preparing a fermented sponge, combining the sponge with additional dough-forming ingredients to form a preliminary dough which contains 63–75% water, based on total flour, and is in such substantially undeveloped state as to exhibit no significant elasticity, and subjecting the preliminary dough to a short time high speed developing step, as by the usual continuous-mix developer. Particularly advantageous embodiments use no oxidant.

3,429,713

PRODUCTION OF PRE-COOKED SLICED BACON

Richard P. Nelson, La Grange, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Original application Jan. 6, 1961, Ser. No. 81,040, now Patent No. 3,256,803, dated June 21, 1966. Divided and this application Feb. 28, 1966, Ser. No. 612,283
U.S. Cl. 99—107 **1 Claim**
Int. Cl. A47j *35/00*



A process for cooking meat pieces by radiant heating in which the meat pieces are cooked first on one side and then on the other while being confined under pressure during the process.

3,429,714

BAKER'S ALL-PURPOSE, PLASTIC SHORTENING COMPOSITION

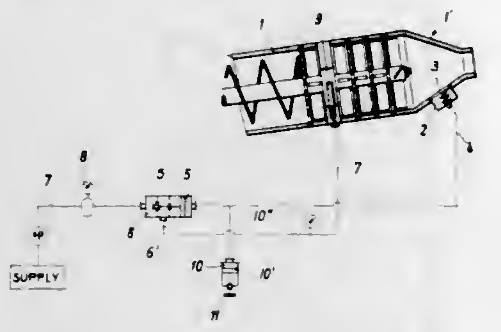
Kenneth W. Nelson, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,219
U.S. Cl. 99—118 **9 Claims**
Int. Cl. A23d *5/00*

Baker's all-purpose, plastic shortening useful for the preparation of high volume cakes and stable cream icings, which comprises a shortening base and a combination of three additives in certain amounts and proportions. The three additives are: monoester of glycerol and fatty acid; monoester of propylene glycol and fatty acid; and monoester of polyoxyethylene sorbitan and fatty acid.

3,429,715

METHOD AND APPARATUS FOR TREATING BUTTER

Heinrich Feuerstake, Dortmund-Mlederhofen, Germany, assignor to Holstein & Kappert Maschinenfabrik "Phönix" G.m.b.H., Dortmund, Germany
Filed Feb. 21, 1966, Ser. No. 529,138
Claims priority, application Germany, Feb. 23, 1965, H 55,259
U.S. Cl. 99—119 **11 Claims**
Int. Cl. A23c *15/10;* **A01j** *17/00, 21/02*



1. In a method of treating butter, the steps of conveying a mass of butter at a variable rate of feed along a predetermined path and at a pressure which varies as a function of variations in said rate of feed; measuring said pressure; admitting to said mass of butter an additive; and regulating the admission of such additive as a function of variations in said pressure.

3,429,716

OXIDATION RESISTANT COMPOSITIONS FOR HUMAN CONSUMPTION

Frederick A. Andrews, Minneapolis, Minn.
No Drawing. Continuation-in-part of application Ser. No. 345,081, Feb. 17, 1964. This application May 10, 1967, Ser. No. 637,372
U.S. Cl. 99—150 **9 Claims**
Int. Cl. A23l *3/00;* **A23d** *5/04;* **C11b** *5/00*

A technique for retarding oxidation and deterioration of compositions for human consumption or the like, the technique including the addition of a stabilizing composition to materials being preserved, the stabilizing composition being a cis type sugar of the pyranose or furanose type wherein the hydroxyl groups of the 2 and 3 positions are disposed outwardly on the same side of the ring.

3,429,717

FLEXIBLE FILM WRAPPER

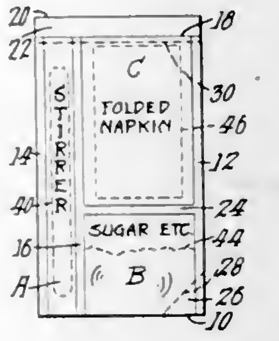
John M. Cook, Greenville, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
No Drawing. Filed May 24, 1965, Ser. No. 458,387
U.S. Cl. 99—171 **6 Claims**
Int. Cl. A23l *3/00;* **B32b** *27/18, 33/00*

A multi-ply film structure made by distributing a mixture of antioxidant and solvent between two adjacent intimately associated film layers. The film is used to package food.

3,429,718

COMPARTMENTED PACKAGE

Jan Helms, Sterling, Mass., assignor to General Packets, Inc., Hopkinton, Mass., a corporation of Massachusetts
Filed June 8, 1967, Ser. No. 644,693
U.S. Cl. 99—171 **2 Claims**
Int. Cl. B65d *31/12*



A package and method of making it wherein the package comprises an envelope of sealable material having seals extending across it presenting a relatively elongated pocket for an implement such as a stirrer for a beverage and two other seals which extend transversely thereto and therefrom to an opposite side edge of the package providing sealed compartments for pourable materials, e.g. sugar and instant coffee or tea, wherein all three of the compartments are easily openable by making but two tears, one at each end of the package.

3,429,719

SAND COMPOSITIONS

Russell E. Manley, 25 Skyline Drive, Ogden Dunes, Ind.
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,959
U.S. Cl. 106—38.3 **4 Claims**
Int. Cl. C04b *35/14;* **B22c** *1/02*

A reconstituted foundry molding sand composition wherein the previously used sand composition includes an unused additive of 200 mesh silica sand in a predetermined weight range; and a method of reconstituting previously used molding sand compositions which includes the steps of removing calcined clay and carbonaceous materials from the previously used sand composition and the addition thereto of a predetermined quantity of unused 200 mesh silica sand to complete the reconstitution of the previously used sand composition and to enhance the water retention properties of the composition.

3,429,720

MATERIALS HAVING HIGH CORROSIVE RESISTANCE TO ATTACK BY FLUORINE AT CRYOGENIC TEMPERATURES AND METHOD OF PREPARING THEM

Harry H. Houston, Elmhurst, Gerald A. Keitel, Park Ridge, and William R. Williamson, Normal, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Apr. 18, 1960, Ser. No. 22,665
U.S. Cl. 106—39 **6 Claims**
Int. Cl. C04b *41/26;* **B01l** *11/00*

1. A sintered fluorine resistant composite article consisting essentially (1) from about 80% calcium fluoride and correspondingly about 20% barium fluoride.

5. A fluorine resistant composite article consisting essentially of (1) from about 75% to 95% by weight of a material selected from the group consisting of barium fluoride and calcium fluoride and correspondingly (2) from about 25% to 5% by weight of powdered metal selected from the group consisting of cobalt, antimony, nickel, silver, iron, aluminum, tin and stainless steel.

6. A process for making sintered fluorine resistant composite articles for use as bearings and seals which comprises calcining powders consisting essentially of from about 75% to 95% by weight of a 4:1 molar ratio of calcium fluoride and barium fluoride correspondingly and adding thereto 25% to 5% by weight powdered metals selected from the group consisting of cobalt, antimony, nickel, silver, iron, aluminum, tin, stainless steel and copper; further reducing particle size of said powders in a ball mill; adding a green binder to said powders to form a mix; introducing said mix into a die; applying pressure of up to about 20,000 p.s.i. to said die to thereby form a cohesive specimen; removing said specimen from the said die, placing said specimen in an oven; and heating said specimen at a temperature from 1500° F. to 1700° F. for a period of time to sinter the specimens to a porosity of less than 0.5 percent.

3,429,721

HIGH MELTING POINT GLASS BEADS WITH SHARP MELTING RANGE AND PROCESS FOR MAKING THE SAME

James D. Sproul, House Springs, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
No Drawing. Filed Oct. 20, 1964, Ser. No. 405,283
U.S. Cl. 106—52 **8 Claims**
Int. Cl. C03c *3/30, 3/12, 3/04*

A glass bead having a high melting point of at least about 1800° F. and a relatively sharp softening range. The glass bead composition consists essentially of about 3.6% to 9.9% metal oxide by weight, about 35.4% to 39.4% of at least one member of the group consisting of an alkali earth oxide and zinc oxide, and about 54.7% to 57.0% silica.

3,429,722

BORON NITRIDE FIBER MANUFACTURE

James Economy, Buffalo, and Raymond V. Anderson, Ransomville, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,208
U.S. Cl. 106—55 **17 Claims**
Int. Cl. C04b *35/58;* **C01b** *21/06*

Fibers incorporating a boron and nitrogen containing composition are produced by reacting, with a nitrogen and hydrogen containing composition, fibers having a maximum diameter of about 20–30 microns and incorporating substantially throughout their thickness a boron and oxygen containing composition. Preferably, boric oxide fibers having a maximum diameter of about 10 microns are heated in an ammonia atmosphere according to a suitable temperature program to produce fibers consisting essentially of a boron nitride composition. Fibers produced according to the invention are useful for a wide variety of purposes including thermal and electrical insulation, fabrication of textiles and reinforcement of plastics, ceramics and metals.

3,429,723

PROCESS FOR THE MANUFACTURE OF REFRACTORY MAGNESIA-CHROME AND CHROME-MAGNESIA PRODUCTS

Kurt Maria Maier and Viktor Mayer, Radenthein, Gunther Lorenz Mortl, Villach, and Norbert Franz Skalla, Radenthein, Austria, assignors to Osterreichisch-Amerikanische Magnesit Aktiengesellschaft, Carinthia, Austria, a corporation of Austria
No Drawing. Continuation-in-part of application Ser. No. 540,825, Apr. 7, 1966, which is a continuation-in-part of application Ser. No. 449,646, Apr. 20, 1965. This application Aug. 29, 1967, Ser. No. 663,983
Claims priority, application Austria, Apr. 22, 1964, A 3,520/64; Apr. 13, 1965, A 3,510/65
U.S. Cl. 106—59 **24 Claims**
Int. Cl. C04b *35/12*

A shaped mixture of a source of chromium oxide and natural magnesite having an MgO content no more than 92%, said mixture having specified particle size and chemical composition characteristics is sintered without fusion at a temperature of at least 1700° C., the sintered material is granulated and the granulated material is used to make burned or unburned bricks.

3,429,724

CEMENT SET RETARDING COMPOSITION

John C. Keenum, Jr., Odenton, and Richard L. Angstadt, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,239
U.S. Cl. 106—89 **5 Claims**
Int. Cl. C04b *7/56, 7/00*

A process for retarding the setting time of portland cement by adding from 0.1 to 5 weight percent zinc chloride or zinc nitrate.

3,429,725

CEMENT RETARDER COMPOSITION

John C. Keenum, Jr., Odenton, and Richard L. Angstadt, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,278
U.S. Cl. 106—89 **6 Claims**
Int. Cl. C04b *7/56, 7/00*

A process for producing cement mixtures having reduced hardening rates by adding 0.1 to 5 weight percent of a copper acetate or copper nitrate to the portland cement and mixing the ingredients.

3,429,726

METHOD OF PRODUCING CEMENT MORTAR OR CONCRETE

Toshiaki Takabayashi, No. 1 Sasazuka-3-chome, Shibuya-ku, Tokyo, Japan
Filed Oct. 2, 1963, Ser. No. 313,367
Claims priority, application Japan, Oct. 14, 1962, 37/45,546
U.S. Cl. 106—89 **8 Claims**
Int. Cl. C04b *7/52*

1. A method of producing mortar and concrete of improved strength characteristics, comprising the steps

of introducing hydraulic cement particles into a vibrating ball mill, thereafter forming a partial vacuum in said mill and, while maintaining said partial vacuum, introducing water into said mill; operating the water-containing ball mill so as to triturate said cement particles in the presence of water while maintaining said partial vacuum and to form an aqueous slurry of ground hydraulic cement particles having a particle size corresponding to a Blaine ratio of between about 4,500 and 12,000 cm.^{2}/g.; and mixing the thus formed slurry with mortar- or concrete-forming aggregate.

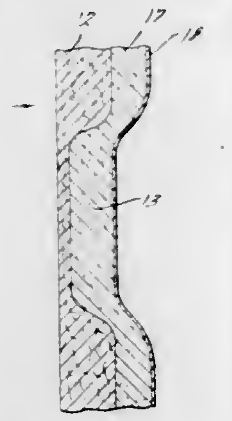
3,429,727
PROCESS FOR MAKING SYNTHETIC SUEDE SHEET MATERIAL

Jerome Hochberg, Newburgh, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 22, 1965, Ser. No. 515,764
U.S. Cl. 117—11 **10 Claims**
Int. Cl. B44d *5/10*

1. In the process for making a man-made microporous leather-like suede sheet material having good smoothness and grain break characteristics which comprises coating the surface of a porous flexible sheet material with a layer of a polymeric solution, coagulating the polymer solution of said layer into the form of a cellular structure by bathing in a liquid which is a non-solvent for the polymeric component and which is miscible with the solution, removing substantially all the solvent from said layer, and abrading the surface of the polymeric layer to form a leather-like suede material; the improvement in combination therewith comprising the additional steps before the surface of said polymeric layer is abraded; consisting essentially of reducing the non-solvent content to less than 90% by weight of the amount of non-solvent necessary to saturate said sheet, applying a backcoating composition to the uncoated side of the porous substrate in an amount amount sufficient to uniformly color said substrate and drying said back-coating composition, said backcoating composition containing a polymeric film-forming binder in a solution or in a dispersion and finely divided pigment particles, the binder to pigment weight ratio being at least 1:9.

3,429,728
SOUND INSULATING BARRIER AND METHOD OF MAKING THE SAME

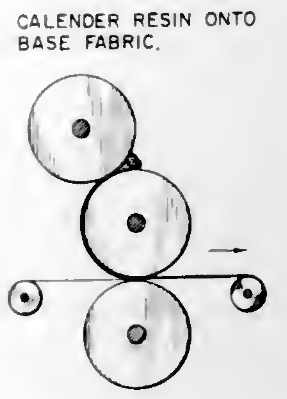
Edward G. Goldstone and Hans K. Neumann, Detroit, Mich., assignors to Allen Industries, Inc., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,217
U.S. Cl. 117—11 **7 Claims**
Int. Cl. B44d *1/40, 1/44*



A method for making a sound insulating barrier of a preselected size and contour in which a fibrous mat is molded to a predetermined size and shape-retaining contour and thereafter is passed through a curtainous stream of a heat-liquefied asphaltic material effecting the deposition of a substantially uniform coating of the asphaltic material thereon and which coating is substantially immediately chilled thereafter so as to prevent a puddling of the material due to the variations in the angular contour of the surface thereof. The asphaltic material which is not deposited on the surface of the precontoured mat is continuously recovered and recycled to the curtainous stream.

3,429,729
CHLOROSULFONATED POLYETHYLENE FABRIC HAVING VINYL AND POLYURETHANE COATINGS

Edward W. McCarthy, Poughkeepsie, N.Y., assignor to Chemical Rubber Products, Inc., Beacon, N.Y., a corporation of New York
Filed July 26, 1965, Ser. No. 474,877
U.S. Cl. 117—11 **9 Claims**
Int. Cl. B32b *27/40, 27/04, 27/30*



Composite fabric for use as shoe materials comprising a chlorosulfonated polyethylene impregnated base fabric coated with a vinyl resin such as a vinyl halide and a transparent polyurethane resin.

3,429,730
COATING OF THE SURFACES OF LIGHT TRANSPARENT MATERIALS ASSOCIATED WITH LIGHT SOURCES

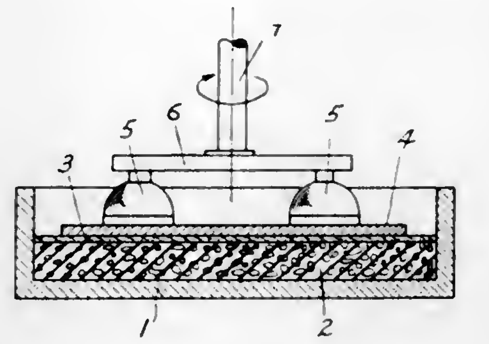
David G. Guthrie, Chalvey, Slough, England, assignor to Saunders Roe & Nuclear Enterprises Limited, Hayes, England
No Drawing. Continuation of application Ser. No. 377,092, June 22, 1964. This application Feb. 5, 1968, Ser. No. 703,181
Claims priority, application Great Britain, June 27, 1963, 25,537/63
U.S. Cl. 117—18 **8 Claims**
Int. Cl. C09k *1/36;* **B44c** *1/06*

An improved process for forming a coating of a substantially uniform thickness onto a surface, as for forming a layer of binder material on the interior surface of a glass body to be used as a light source. A coating material is spread onto the surface as a layer which adheres to the said surface. A plurality of small beads are placed adjacent the surface and moved vigorously, for example, by vibration, in an enclosed area including the surface, so that the beads move against and relative to the surface to spread the said coating material evenly about the surface until the thickness of the coating is substantially uniform.

3,429,731
MAKING OF MULTI-COLOR LUMINESCENT SCREENS

Henri de France and Roger R. Cahen, Levallois, France, assignors to CFT—Compagnie Francaise de Television, a corporation of France
Filed June 2, 1965, Ser. No. 460,756
Claims priority, application France, June 8, 1964, 977,420; May 19, 1965, 17,610
U.S. Cl. 117—19 **4 Claims**
Int. Cl. B44c *1/00;* **B44d** *1/44*

A method of making multi-color luminescent screens, wherein the screen is provided with a pattern of varnish and phosphor particles are deposited on the screen by applying the screen under pressure to a layer of the particles spread upon a sponge rubber support.



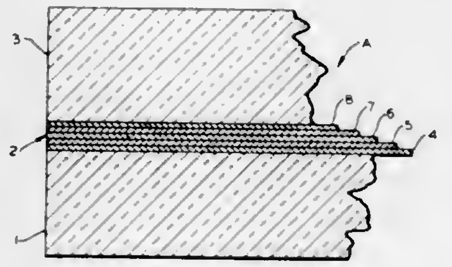
3,429,732
LIGHT SENSITIVE ARTICLE COATED WITH VIRGIN POLYVINYL CHLORIDE AND ULTRAVIOLET LIGHT ABSORBER

William Frederick Baitinger, Jr., Belle Mead, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 10, 1965, Ser. No. 454,744
U.S. Cl. 117—33.3 **12 Claims**
Int. Cl. B32b *33/00;* **C08f** *45/54*

A light stable composition comprising in combination a polymeric material which is sensitive to ultraviolet radiation and on the surface of said polymeric material a coating consisting essentially of virgin poly(vinyl chloride) and 2 to 15% by weight of the poly(vinyl chloride) of an ultraviolet light absorber. The surface coating acts as a protective screen capable of serving as a barrier to ultraviolet radiation and thereby protects the polymeric substrate from degradation by the action of said radiation.

3,429,733
METHOD OF MAKING A TRANSPARENT LAMINATE WHICH SELECTIVELY TRANSMITS AND REFLECTS RADIATION OVER EXTENDED SPECTRAL RANGES

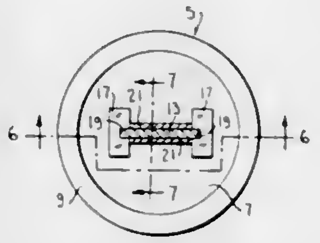
William D. Wolf and Edward H. Mottus, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,305
U.S. Cl. 117—33.3 **16 Claims**
Int. Cl. B29d *11/00;* **C03c** *17/28;* **B32b** *33/00*



The method of making of pellucid laminate which selectively transmits and reflects radiation over extended spectral ranges by depositing a dichroic filter on one flat surface of a panel. The filter is generally deposited by evaporation techniques and consists of multilayer dielectric films. Thereafter, a polymeric material selected from alkyl methacrylates and alkyl acrylates is polymerized on the upper surface of the filter and by low-temperature, low-pressure polymerization techniques. In order to accomplish this polymerization, a catalyst mixture containing boron compounds and peroxygen compounds is employed.

3,429,734
METHOD AND APPARATUS FOR COATING METAL STRIP

Brian C. Coad, Oakland, Calif., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,605
U.S. Cl. 117—38 **4 Claims**
Int. Cl. B44d *1/06*



A crucible for a melt of a metallic coating material is provided with a rectangular slot in its bottom. The slot is of substantially the same size and shape as the transverse cross section of a solid metal strip to be coated. The strip is continuously drawn up through the slot. The crucible up to a certain level contains a melt of the coating material through which the core material is drawn and leaves the melt at said level. The strip being cooler than the melt absorbs heat therefrom to congeal it on the strip. Extending from the bottom of the crucible to points above said level and located at opposite ends of the slot are members grooved to slidably fit with the margins of the core material so as to act as shields against the melt reaching marginal portions of the strip, whereby the effect of the uneven marginal heat-flow pattern is avoided and a constant thickness of coating congeals on the strip between its uncoated margins. The uncoated margins may later be trimmed off.

3,429,735
HIGH WET STRENGTH WEBS IMPREGNATED WITH POLYMERIC ALCOHOL

Douglas J. Bridgeford, Danville, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois
No Drawing. Continuation-in-part of application Ser. No. 473,236, July 19, 1965. This application Apr. 10, 1967, Ser. No. 629,397
U.S. Cl. 117—62 **5 Claims**
Int. Cl. B44d *1/44;* **C09d** *3/12*

High wet strength webs are prepared by impregnating and coating a fibrous web, such as a paper, with an aqueous solution of a polymeric alcohol xanthate and regenerating a polymeric alcohol on the web by acid or thermal treatment. The xanthate solution used is preferably a xanthate of a polyvalent metal and thus produces a reinforced web upon regeneration which contains a salt or oxide or hydroxide of the polyvalent metal as a pigment.

3,429,736
CERAMIC-METAL SEALS

Stewart Philip Thompson and William Delroy, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,939
Claims priority, application Great Britain, Nov. 20, 1964, 47,320/64
U.S. Cl. 117—70 **7 Claims**
Int. Cl. B32b *17/06;* **B28b** *19/00*

Ceramic articles have a fired coating of a eutectic mixture of metal oxides having a melting temperature below that of the ceramic and including another metal of the group of nickel, cobalt and iron. The coating does not react chemically with the ceramic and is wettable by brazing alloys to provide a hermetic seal.

3,429,737
STYRENE POLYMER PARTICLES COATED WITH HYDROXY AMIDES

Peter D. Marsden, Dunscar, Bolton, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 8, 1964, Ser. No. 416,875
U.S. Cl. 117—100 **7 Claims**
Int. Cl. C08f *45/60, 7/04*

A particulate expandable polyvinyl aromatic composition wherein the separate particles are coated with a hydroxy amide having from 12 to 20 carbon atoms and the method of making and using such compositions.

3,429,738
POLYVINIC CHLORIDE RESIN PARTICLES OVERCOATED WITH A POLYMERIC FLUORINE CONTAINING RESIN

Frank J. Donat, Cleveland, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 10, 1966, Ser. No. 571,429
U.S. Cl. 117—100 **2 Claims**
Int. Cl. B44d *1/22;* **C08f** *29/24*

Poly(vinyl chloride) resin is improved for injection molding by coating the individual resin particles with a layer of a fluoro polymer which is incompatible with the base PVC, forms a matrix around the PVC particles, and keeps the coated PVC particles separated from direct contact with each other, hence easily movable in relationship to each other, in the waxy fluorocarbon matrix as the mold is filled. At the molding temperature, the outer phase overcoat fluoro polymer fuses and fluxes or disperses into the PVC particle, becoming an inner phase. The molded article evinces properties of poly(vinyl chloride) only.

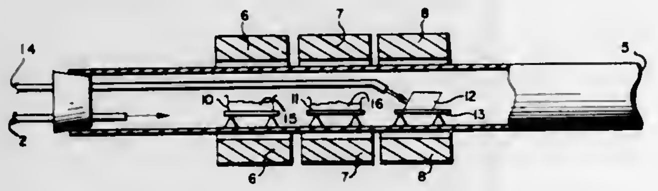
3,429,739
FIBROUS MATERIALS COATED WITH LINEAR p-XYLYLENE POLYMERS

Frederick R. Tittmann, Plainfield, Michael M. Goldin, North Plainfield, and William E. Loeb, Martinsville, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,912
U.S. Cl. 117—106 **5 Claims**
Int. Cl. B32b *27/12;* **C08g** *53/14*

Fibrous materials such as fabrics are coated by vapor depositing linear p-xylylene polymers which are essentially free of cross-linking and solvent extractable low molecular weight components.

3,429,740
GROWING GARNET ON NON-GARNET SINGLE CRYSTAL

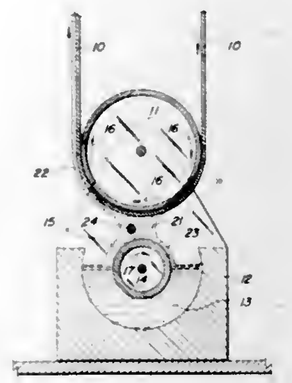
Jack E. Mee, Anaheim, Calif., assignor to North American Rockwell Corporation
Filed Sept. 24, 1965, Ser. No. 489,930
U.S. Cl. 117—106 **9 Claims**
Int. Cl. B01j *17/30*



An article comprising a monocrystalline substrate of non-garnet material, and a film of monocrystalline garnet epitaxially disposed on the substrate. The composite may be prepared by vaporizing halides of the garnet constituent metals, and transporting the resultant halide vapors substrate and an oxygen-providing gas to adjacent the heated substrate, thereby causing a garnet to deposit epitaxially on the substrate.

3,429,741
METHOD OF COATING USING A BEAD COATER

Jerome J. Moriarty, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 11, 1965, Ser. No. 463,155
U.S. Cl. 117—111 **2 Claims**
Int. Cl. B05c *5/02, 3/18, 1/12*



A method and apparatus for continuously applying a layer of coating liquid to the surface of a web by moving the web across and in contact with a bead of the liquid maintained between the surface of the web and a lifter roller which rotates in a supply of said liquid and feeds liquid to said bead in excess of that coated out on said web. To improve the uniformity of the coating at high coating rates the bead is internally stabilized by a taut wire extending the full length of said bead and completely immersed therein.

3,429,742
RED STAINED SODA LIME GLASS

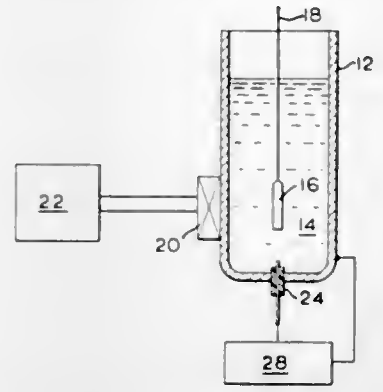
Peter Grego and Robert G. Howell, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Sept. 10, 1965, Ser. No. 486,531
U.S. Cl. 117—124 **7 Claims**
Int. Cl. C03c *17/06*

Method of staining the surface of a soda lime glass to produce a red colored article by applying to the surface of the glass a copper-staining paste, heating the glass in a mild reducing atmosphere at a temperature to ion exchange copper ions for sodium ions, then heating the glass in a hydrogen containing atmosphere until the copper ions are substantially reduced to metallic copper, and finally firing the glass at a temperature sufficient to develop in the glass a red color.

3,429,743
SHOCK WAVE TREATMENT METHOD AND APPARATUS

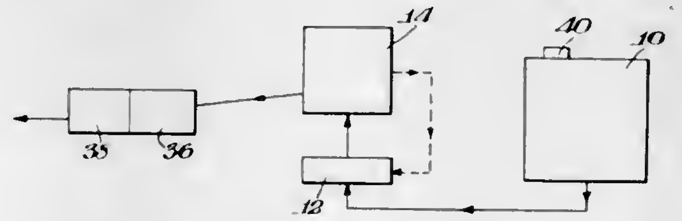
Norman G. Branson, Stamford, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,112
U.S. Cl. 134—1 **18 Claims**
Int. Cl. B08b *3/10*

Method and apparatus providing high intensity shock waves caused by electrical spark discharges in a sonically degassed liquid for the purpose of cleaning, sterilization, etc. The sonic energy means causing degassing and the electrical discharge circuit means may be operated simultaneously or sequentially.



3,429,744
METHOD AND APPARATUS FOR WASHING MOLDED ARTICLES

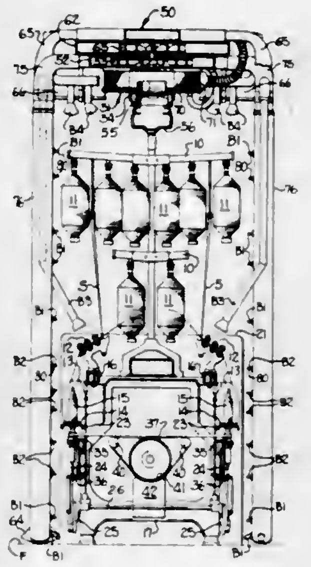
William A. McCormick, Jr., Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,200
U.S. Cl. 134—7 **9 Claims**
Int. Cl. B24b *31/06;* **B08b** *3/10*



A method and assembly for cleaning molded articles including the removal of excess material from the articles by a freeze-blast process and then inserting the articles in a vibratory washer which cleans the articles by rubbing a cleaning media against them. The articles are then separated from the cleaning media and subsequently rinsed and dried.

3,429,745
METHOD OF REMOVING FIBER WASTE FROM SPINNING FRAMES

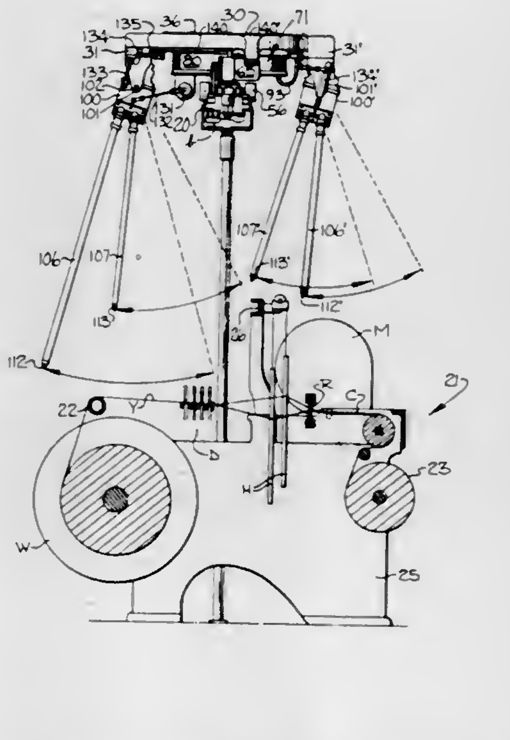
Robert L. Black, Jr., Charlotte, N.C., assignor to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Sept. 1, 1965, Ser. No. 484,301
U.S. Cl. 134—37 **4 Claims**
Int. Cl. D01h *11/00*



A method of removing lint and the like from the interior underframe portion of textile spinning frames arranged in rows in which traveling high velocity, jet-like air streams are directed inwardly from small nozzles of about one inch internal diameter at a velocity within the range of about 9,000 to 17,000 feet per minute toward the lower underframe areas of the spinning frames as the nozzles travel along the sides of the spinning frames.

3,429,746
METHOD OF CLEANING LOOMS

George Seress and Woodrow W. Hewitt, Charlotte, N.C., assignors to Parks-Cramer Company, Charlotte, N.C., a corporation of Massachusetts
Original application May 14, 1964, Ser. No. 367,323, now Patent No. 3,304,570 dated Feb. 21, 1967. Divided and this application Oct. 12, 1966, Ser. No. 586,179
U.S. Cl. 134—37 **7 Claims**
Int. Cl. D03j *1/00*



1. A method of removing lint from a row of looms during the weaving operation and particularly from the banks of warp yarns thereon and the associated yarn stop motions and other adjacent upper portions of the looms, said method comprising the steps of:

(a) directing a plurality of very high velocity, fine jet air streams downwardly onto the looms with an impingement velocity at the warp level of the looms of about 5,000 to about 20,000 feet per minute while

(b) moving the downwardly directed air streams in a predetermined path of travel longitudinally of and over the row of looms while oscillating the air streams transversely of the row of looms to cover areas to be cleaned and while

(c) restricting the area of each air stream at the warp level of the looms, to prevent actuation of the yarn stop motions by the oscillating air streams during movement of the air streams in the removal of lint from the yarn stop motions, by

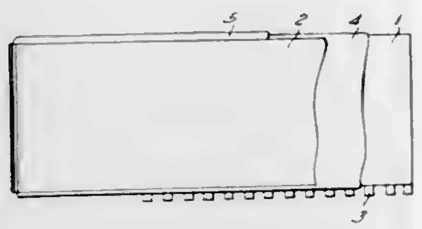
  (1) confining each air stream to a cross-sectional diameter of not more than about 1¼ inches at a point spaced a predetermined distance upwardly of the warp level of the looms and

  (2) passing the air streams downwardly from the points of confinement in a substantially unconfined state, and

(d) automatically repeating the foregoing steps along said path of travel at sufficiently frequent intervals to maintain the banks of warp yarns, yarn stop motions and adjacent upper portions of the looms at a high level of cleanliness.

3,429,747
ELECTRIC CELL

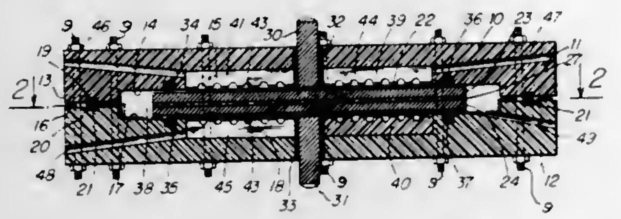
Philipp Deseniss, Hagen, Westphalia, Germany, assignor to Varta Aktiengesellschaft, Frankfurt am Main, Germany
Filed Dec. 12, 1966, Ser. No. 601,126
Claims priority, application Germany, Dec. 11, 1965, V 29,907
U.S. Cl. 136—13 **7 Claims**
Int. Cl. H01m *35/16*



An electric cell having a composite roll consisting essentially of rolled electrodes spaced from each other by a rolled separator, wherein an edge of at least the rolled electrode of one polarity is located adjacent an electrically conductive housing portion, and said edge is provided with conductive lugs which extend from said edge of the electrode and contact the electrically conductive housing portion thereby ensuring a reliable electrical connection between the electrode and the housing portion.

3,429,748
FUEL CELLS WITH MEANS TO EXHAUST GAS FROM ELECTRODE EDGE

Anthony J. Stankavich, Syracuse, and Thomas E. Geckle, Liverpool, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,128
U.S. Cl. 136—86 **16 Claims**
Int. Cl. H01m *27/04*

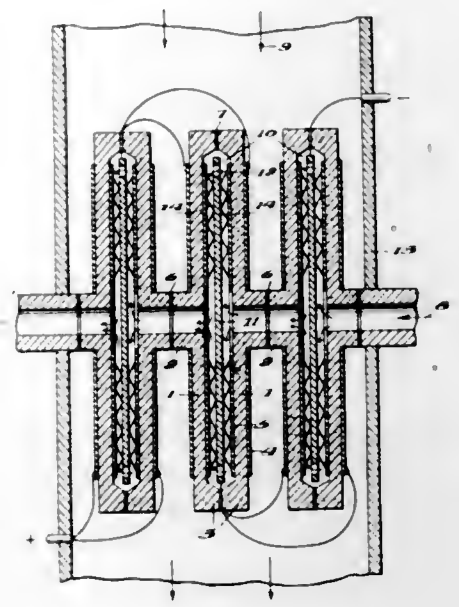


A sealed fuel cell utilizing gas permeable electrodes separating reactant fuel and oxidant from liquid electrolyte maintains higher terminal voltage under load by virtue of venting exhaust gas from the edge of the electrodes.

3,429,749
FUEL BATTERY WITH STABILIZED ZIRCONIUM OXIDE ELECTROLYTE

Werner Baukal, Neuenhof, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Mar. 25, 1966, Ser. No. 537,569
Claims priority, application Switzerland, Apr. 8, 1965, 4,834/65
U.S. Cl. 136—86 **13 Claims**
Int. Cl. H01m *27/16*

1. A fuel battery of the type wherein the chemical energy of a combustion gas and a gas containing oxygen are converted at high operating temperatures of the order of 800° C. and above into electrical energy in a plurality of electrically interconnected fuel cells, each of said cells being comprised of a pair of stabilized zirconium oxide discs serving as a solid electrolyte, each of said discs of each pair having a centrally located through bore, a centrally located tubular union projecting from one face of the disc and a raised rim portion projecting from the opposite face of the disc, electrodes applied to both faces of each disc, each pair of discs being arranged with their rim portions jointed together to establish a chamber therebetween and the tubular unions of adjacent pairs of discs being jointed together, means for passing one of said gases through a continuous passageway established by all of said jointed tubular unions into and out of all of said chambers in series, and means for passing the other of said gases externally of said disc pairs and in contact therewith.



3,429,750
PROCESS FOR PREPARING AN IMPROVED PLATINUM ELECTRODE

Robert F. Waters, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed July 31, 1963, Ser. No. 299,065
U.S. Cl. 136—120 **8 Claims**
Int. Cl. H01m *27/10*

1. A process for preparing an improved platinum electrode, said process comprising: (1) impregnating an electrically conducting inert support with salts of platinum and a second metal to produce a codispersion of said salts, said second metal being selected from the group consisting of iron, nickel, cobalt, manganese, copper and combinations thereof, (2) drying said impregnated support, (3) treating said salts at a temperature of from 500° C. to 1500° C. in an inert atmosphere for a sufficient time to produce an intimate mixture composed of said platinum and said second metal, and (4) removing a major amount of said second metal to produce an increased internal surface area in said electrode which exposes increased amounts of said intimate mixture, said intimate mixture comprising from about 2 to about 300 atomic percent of said second metal based on said platinum.

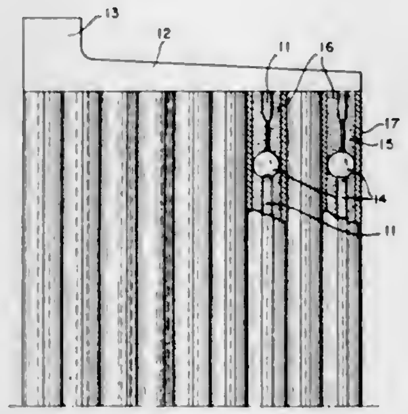
3,429,751
ELECTROLYTICALLY DISSOLVING ONE ALLOY COMPONENT FROM A RANEY-TYPE ALLOY ENCASED IN A POROUS INERT MATERIAL

Otto Heuse, Kronberg, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany
No Drawing. Filed Nov. 10, 1965, Ser. No. 507,223
Claims priority, application Germany, Nov. 18, 1964, F 44,464
U.S. Cl. 136—120 **8 Claims**
Int. Cl. H01m *13/06*

1. A process for the manufacture of oxygen solvent electrodes having a supporting skeleton with interposed metal in porous, gas-permeable form from an alloy of the electrode metal with a less noble metal by dissolution of the less noble component, which comprises covering the surface of the alloy with an inert material, at least part of which has areas of porosity, and exposing the alloy via said porous area in an electrolytic bath as anode to a current flow with a current density of 1 to 20 milliamperes until at least 80% by weight of the less noble component of the alloy have been dissolved in the parts accessible to the current.

3,429,752
SHEATH FOR BATTERY ELECTRODE AND METHOD

Erik Gustav Sundberg, Osbacken, Sweden, assignor to Aktiebolaget Tudor, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 6, 1966, Ser. No. 584,735
Claims priority, application Sweden, Oct. 15, 1965, 13,421/65; Nov. 1, 1965, 14,063/65
U.S. Cl. 136—147 **11 Claims**
Int. Cl. H01m *3/02*



A method of fabricating and a sheath for the active material surrounded conductive rods of a lead acid storage battery of the liquid electrolyte type in which a thin foil of plastic insulating material is formed into a tube and the walls thereof perforated with a heated needle to simultaneously provide the necessary porosity and to effect the joining of the foil layers.

3,429,753
METHOD OF FORMING METAL BORIDE COATING ON WIRE

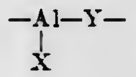
Bernard C. Wagner, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 29, 1965, Ser. No. 468,017
U.S. Cl. 148—6 **9 Claims**
Int. Cl. C23f *14/02, 17/00;* **C23c** *3/00*

1. A process of coating comprising:
applying boron nitride to the surface of a high melting point, low vapor pressure metal substrate,
heating the resulting coated metal substrate to a temperature of at least 1000° C. at a pressure of below 2×10^{-1} mm. Hg and reacting the boron nitride with the metal of the substrate and forming a metal boride coating on the substrate.

3,429,754
ALUMINUM CONTAINING POLYMERIC PROPELLANT COMPOSITION

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware
No Drawing. Continuation of applications Ser. No. 751,106, July 28, 1958, Ser. No. 761,485, Sept. 17, 1958, and Ser. No. 762,226, Sept. 22, 1958. This application June 5, 1961, Ser. No. 125,891
U.S. Cl. 149—19 **20 Claims**
Int. Cl. C06b *1/00, 11/00;* **C06d** *5/06*

1. A polymeric composition useful as a solid propellant fuel consisting essentially of 5–95 percent by weight of an oxidizer selected from the class consisting of perchlorates, nitrates, persulfates and perborates of sodium, potassium and ammonia, potassium chlorate, manganese dioxide, potassium iodate, potassium dichromate, chloric acid, perchloric acid, ammonium dichromate, ammonium iodate, barium chlorate, barium perchlorate, barium permanganate, lithium perchlorate, lithium dichromate, lithium permanganate, and aryl perchloryl compounds and 95–5 percent by weight of a polymer having a plurality of repeating units in the polymer molecule thereof having a formula



$$-\underset{\substack{|\\ X}}{\mathrm{Al}}-Y-$$

wherein X is a group selected from the class consisting of R and Y groups, R is a radical selected from the class consisting of hydrogen and hydrocarbon radicals having no more than 24 carbon atoms therein, and Y is a polyvalent radical consisting of hydrocarbon and ether portions, said valencies being connected to hydrocarbon portions thereof and having at least 2 carbon atoms between said valency and each ether group therein.

3,429,755
NITROCELLULOSE-BASE PROPELLANT CONTAINING ETHYLENE CYANOHYDRIN

Bernard B. Lampert, Carmichael, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
No Drawing. Filed Dec. 14, 1967, Ser. No. 693,690
U.S. Cl. 149—100 **9 Claims**
Int. Cl. C06b *5/02*

This patent describes nitrocellulose-containing propellants which contain ethylene cyanohydrin (2-cyano ethanol) to permit the rapid curing of the propellant at ambient temperatures.

3,429,756
METHOD FOR THE PREPARATION OF INORGANIC SINGLE CRYSTAL AND POLYCRYSTALLINE ELECTRONIC MATERIALS

Warren O. Groves, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Feb. 5, 1965, Ser. No. 430,748
U.S. Cl. 156—17 **4 Claims**
Int. Cl. H01l *7/00*

1. Process for the preparation of semiconductor single crystals having a substantially smooth, flat, uniform and damage-free surface, and being selected from the group consisting of III–V compounds and alloys thereof which comprises immersing an epitaxial film of one of said single crystals deposited on a compatible substrate material which is selected from the same group as said single crystals, in an etching solution in which said substrate material has a higher solution rate than said epitaxial single crystal and is selectively dissolved and said epitaxial single crystal is essentially unaffected.

3,429,757

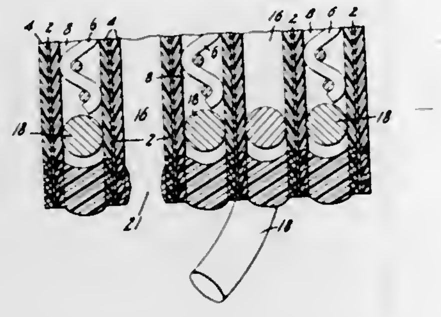
METHOD OF SEALING GAS TRANSFER DEVICES

James L. Nash, Glens Falls, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 26, 1965, Ser. No. 483,393

U.S. Cl. 156—70 **5 Claims**

Int. Cl. B29c *27/22*



A potting method for sealing together the thin, flow channel-defining membranes, which form a leak proof gas transfer apparatus, is described. Gas entrance and exit openings are located and created with removable members to which the potting compound does not adhere during the potting process. These members are removed to clear entrance and exit openings after the potting compound has set.

3,429,758

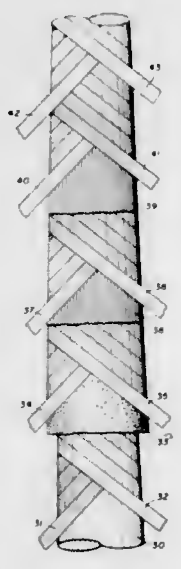
METHOD OF MAKING FILAMENT WOUND STRUCTURAL COLUMNS

Edwin C. Young, 7139 Dover Lane, Richland Hills, Tex. 76118

Filed Jan. 24, 1966, Ser. No. 522,644

U.S. Cl. 156—79 **6 Claims**

Int. Cl. B32b *5/20*



A tube-like structural member is constructed about a mandrel by helically wrapping two resin-carrying warps of fibers about the outer surface of the mandrel in opposite senses and thereafter forming an integral cellular core about the outer surface of the layer formed by the two resin-carrying warps. Additional layers of resin-carrying warps of fibers are helically wrapped in opposite senses about the outside of the cellular core. When the warps and cellular cores are cured, the mandrel is then removed from within the inner layer of resin-carrying warps to provide a tube-like structural member having significant structural strength.

3,429,759

HIGH TEMPERATURE CEMENT

Arnold A. Kellar and Morris B. Carter, Lawrenceburg, Tenn., assignors to Union Carbide Corporation, a corporation of New York

Filed June 17, 1963, Ser. No. 290,576

U.S. Cl. 156—155 **4 Claims**

Int. Cl. C09j *3/00*

4. A method for joining high density graphite segments which comprises preparing a cement comprising particles of finely divided titanium diboride and a carbonizable binder, said binder capable of yielding bond forming carbon at temperatures of less than 2200° C. and being present in a range of from about 40 to 60 parts by weight per 100 parts by weight of said titanium diboride and said titanium diboride having a particle size of 74 microns or less, providing the segments to be joined with flat, parallel and moisture free opposed surfaces, coating the surfaces to be joined with said cement, clamping said segments together to form a thin joint, curing said cement in said joint and subsequently heating said cement in said joint to a temperature of at least about 2200° C.

3,429,760

METHOD OF MAKING GLASS REINFORCED RESIN ARTICLES

Thomas George Roskos, Brookfield, Wis., and Bruce J. Green, Kent, Wash., assignors, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,658

U.S. Cl. 156—167 **3 Claims**

Int. Cl. D04h *3/16*

A method of treating glass fibers having a coating of sizing composition containing a resin component. The glass fibers are initially contacted with a solvent capable of dissolving the resin component and maintained in contact with the solvent for sufficient period of time to dissolve only a portion of the resin component and more evenly distribute the remaining portion of the sizing composition on the fibers. Subsequently a second coating of a thermosetting resin bonder is applied to the fibers. The fibers are then formed into the shape of the desired article and the resin is cured to provide a rigid integral structure.

3,429,761

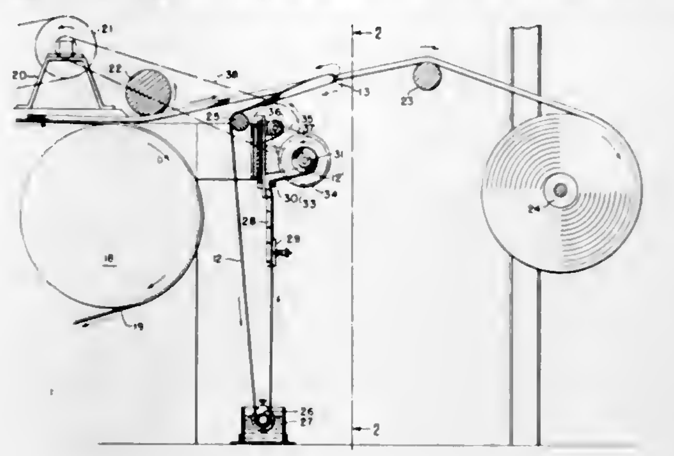
TAPE RECLAIMING DEVICE AND PROCESS

William C. Bleher, West Roxbury, Mass., assignor to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware

Filed Apr. 2, 1965, Ser. No. 445,178

U.S. Cl. 156—247 **10 Claims**

Int. Cl. B32b *35/00*



Process and apparatus for reclaiming for reuse tape adhesively attached to elastomeric belting characterized by the steps of stiffening a section of flexible tape-carrying belting, forming a transverse fold vertex in the tape at a point in the stiffened section of the belting and stripping the tape from the belting at the vertex so formed.

3,429,762

METHOD FOR PRODUCING LAMINATED PLATES OF PHENOL TYPE RESIN

Takehisa Nakagawa and Rikio Asanuma, Shimodate-shi, Japan, assignors to Hitachi Chemical Company, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,510

Claims priority, application Japan, Jan. 24, 1964, 39/3,162

U.S. Cl. 156—335 **9 Claims**

Int. Cl. C09j *3/00*

The present disclosure is directed to a method of producing laminated plates which comprises impregnating base materials for said laminated plates with a first varnish comprising a solution in a water-containing organic solvent of a water-soluble phenol type resin obtained by reacting a phenol group compound a formaldehyde-producing compound in the presence of an alkaline catalyst and a second varnish comprising an aromatic hydrocarbon modified phenol type resin obtained by reacting an aromatic hydrocarbon formaldehyde resin with a phenol group compound, a formaldehyde-producing compound and a vegetable oil having at least one hydrocarbon chain of 15 to 17 carbon atoms in the phenol nucleus, and heating and pressing a number of plates of the impregnated base materials to bond them together.

3,429,763

ETCHING GRILL FOR ONE-STEP ETCHING MACHINES

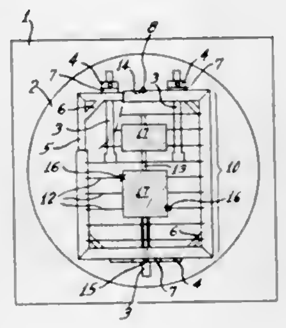
Walter Hertenstein, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

Filed Jan. 27, 1965, Ser. No. 428,349

Claims priority, application Germany, Jan. 30, 1964, K 51,986

U.S. Cl. 156—345 **1 Claim**

Int. Cl. B41f *27/00*



This invention relates to a device for supporting a plate in a one-step etching machine having a plate support which comprises a base frame adapted to be connected to the plate support, an etching grill adapted to be connected to the base frame, the grill having a plurality of grid bars, and means for attaching to the grill at least one plate to be etched.

3,429,764

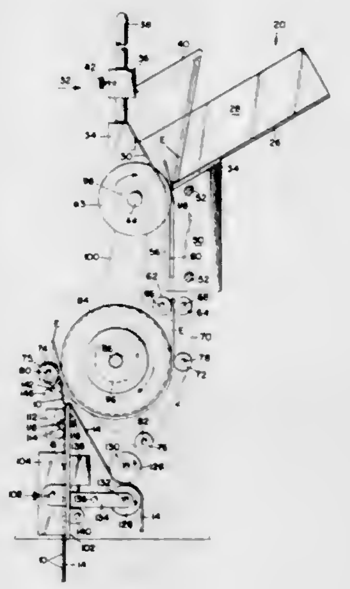
LABELING MACHINE

Joseph Bragga, Jr., West Springfield, Mass., assignor to Hinsdale Smith, Jr., doing business as Nikor Products Company, West Springfield, Mass.

Filed Apr. 19, 1965, Ser. No. 448,930

U.S. Cl. 156—361 **1 Claim**

Int. Cl. B65h *25/00;* **B32b** *31/00*



Apparatus for applying pressure-sensitive labels to envelopes comprising: an envelope supply hopper; means for maintaining the envelopes in the supply hopper generally perpendicular to the plane of the supply hopper; a first system of vertically-arranged rolls for advancing the envelopes in a certain path comprising: a feed roll rotating in the supply hopper for withdrawing envelopes in seriatim from the supply hopper; and a main drive roll cooperating with a plurality of auxiliary rolls for advancing envelopes so withdrawn from the supply hopper to a registration station; a second system of vertically-arranged rolls for supporting a supply of a transparent carrier having spaced pressure sensitive labels removably mounted thereon and for guiding the carrier through a certain path transversely of the path of the envelopes and around a sharp corner to cause the labels to peel off of the carrier and be advanced thereby into adhering engagement with an envelope at the registration station; a guide finger for guiding the so advanced label onto the envelope; first drive means for effecting rotation of the rolls of the first system of rolls; second drive means for effecting rotation of the rolls of the second system of rolls; means for projecting a beam of light onto the labels and through the carrier between the labels as the carrier advances; and photoelectric control means actuated by the beam of light passing through the carrier between the labels for stopping the second drive means and the carrier.

3,429,765

FORMER FOR BEAD BUILDING MACHINES OR THE LIKE

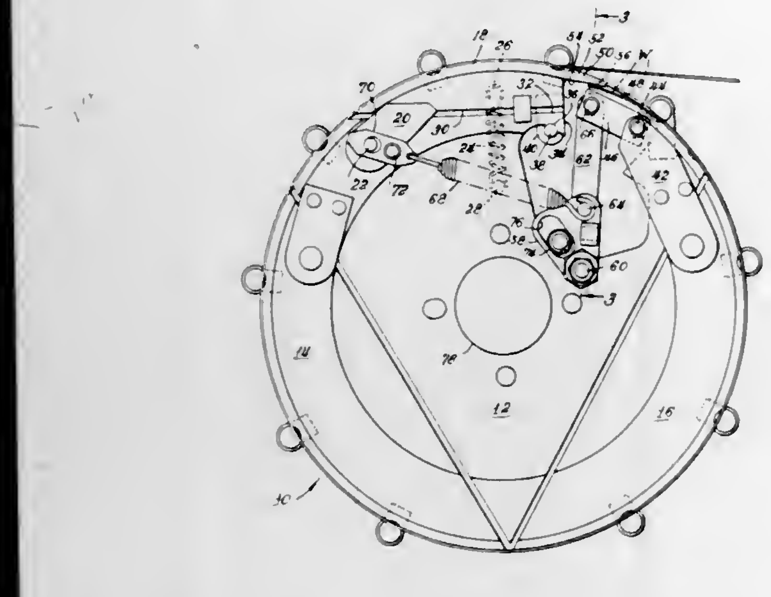
Edwin E. Mallory and Donald H. Shook, Niles, Mich., assignors to National-Standard Company, Niles, Mich., a corporation of Delaware

Filed Oct. 29, 1964, Ser. No. 407,463

U.S. Cl. 156—422 **5 Claims**

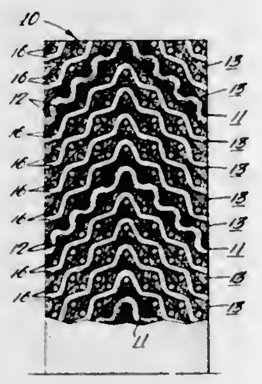
Int. Cl. B29h *17/32*

A former having wire gripping means for gripping the leading end of the wire at a location inwardly of but closely adjacent the periphery of the former on which the wire is wound in a manner to avoid any permanent set in the wire so that when the finished bead is removed from the former the leading end of the wire will spring outwardly against the main body of the bead.



3,429,766
CLUTCH FACING

Robert W. Stormfeltz, Manheim, Pa., assignor to Raybestos-Manhattan, Inc., Manheim, Pa., a corporation of New Jersey
Filed Oct. 21, 1965, Ser. No. 499,328
U.S. Cl. 161—35 **8 Claims**
Int. Cl. F16d *69/02*

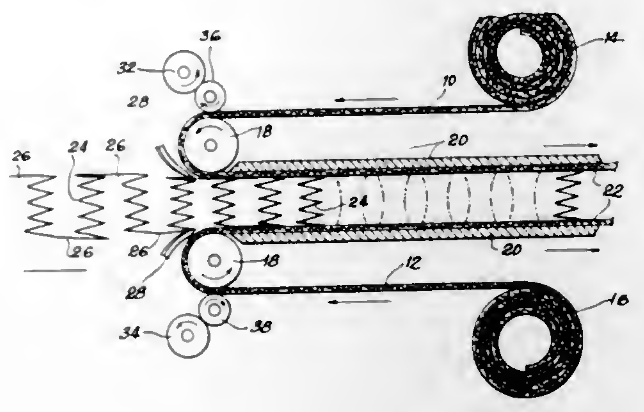


A clutch facing comprising a cured resin impregnated spirally wound strip including a woven reinforced strand fabric and plies of dry carded asbestos fiber material reinforced by an open mesh woven glass fabric.

3,429,767
PRODUCTION OF CUSHION AND MATTRESS CONSTRUCTIONS

Edward L. Bronstien, Jr. and David W. Akerson, St. Paul, Bernard J. Gaffney, Stillwater, and Richard A. Fisher, Minneapolis, Minn., assignors of fifty percent to The United States Bedding Company, St. Paul, Minn., a corporation of Minnesota, and Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,768
U.S. Cl. 161—43 **17 Claims**
Int. Cl. A47c *23/04*

A system for producing articles such as cushions and mattresses wherein a plurality of coil springs are arranged with their vertical axes in substantially parallel relationship with a panel of material on at least one side overlying the coil ends. The panels are provided with an adhesive on one surface, and the panels are continuously fed to a coil supply station. Rows of coils are provided at this station for engagement with the panel whereby the coils can be secured to the panel.



3,429,768
PROTEIN INSULATION MATERIAL

Harland H. Young, Western Springs, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed May 11, 1964, Ser. No. 366,657
U.S. Cl. 161—214 **5 Claims**
Int. Cl. B32b *15/00;* **C04b** *43/00*

This disclosure relates to insulating material having a closed cellular structure. These materials are self-supporting foams made from degreased and defatted proteinaceous substances, the cells of which are filled with helium. A non-limiting example comprises an article having at least one metallic foil sheet and one foam layer possessing a closed cellular structure containing helium.

3,429,769
ARTICLE AND PROCESS FOR THE PRODUCTION OF BONDS BETWEEN METALS AND ELASTOMERS

Jakob Ippen, Cologne-Flittard, and Erwin Alfons Müller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed July 9, 1963, Ser. No. 293,656
Claims priority, application Germany, July 12, 1962, F 37,296
U.S. Cl. 161— 217 **5 Claims**
Int. Cl. B32b *25/16;* **C09j** *3/12*

A method and the resulting article of adhering a vulcanizable rubber to a metallic base including in order the metallic base, a layer of chlorinated elastomer adhered to said base and a layer including a copolymer of butadiene with methyl methacrylate bonded to said elastomer and said vulcanizable rubber. The rubbery layers are superimposed in the above order upon the base and the assembly is vulcanized at a suitable temperature.

3,429,770
PLYWOOD GLUE EXTENDER OF DENSIFIED WALNUT SHELL FLOUR AND COMPOSITIONS CONTAINING IT

Joseph W. Ayers, Easton, Pa., assignor to Agrashell, Inc., Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Dec. 14, 1965, Ser. No. 513,844
U.S. Cl. 161—262 **9 Claims**
Int. Cl. C09j *3/16*

An extender that is used in the preparation of plywood adhesive solutions of reduced resin requirements and with desired working, holdout and bonding properties, comprises a walnut shell flour the particles of which have been densified by compression and, by weight, at least 95% will pass through a 325 mesh screen, said particles being predominately not larger than 20 microns in size; this flour can be prepared by ball-milling a flour obtained by attrition-milling English walnut shells to predominantly a minus 325-mesh screen size.

3,429,771
CELLULOSE DISSOLVING PULP PRODUCED FROM GRAIN PARCHMENT

Alexander Kasser and Ivan Michael Kasser, both of 159 Gates Ave., Montclair, N.J. 07042
Original application Feb. 6, 1964, Ser. No. 342,956, now Patent No. 3,354,141, dated Nov. 21, 1967. Divided and this application Sept. 18, 1967, Ser. No. 668,596
U.S. Cl. 162—82 **8 Claims**
Int. Cl. D21c *3/02, 9/12;* **D01b** *1/50*

A grain parchment such as coffee parchment, is pulped through an acid pretreatment step, a brief digestion step and multistage chlorine bleaching step producing an undegraded pulp suited to the manufacture of regenerated cellulose or cellulose derivatives.

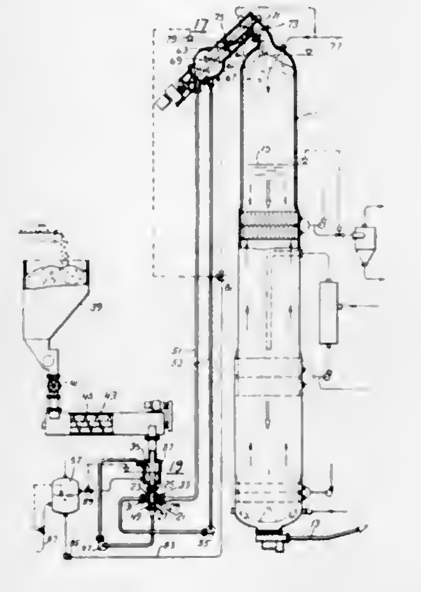
3,429,772
MANUFACTURE OF PAPER

Roland Michael Harvey, Leicester, and Christopher Richard Napier Johnson, Braintree, England, assignors to Chemstrand Limited, London, England
No Drawing. Filed June 1, 1965, Ser. No. 460,534
Claims priority, application Great Britain, June 3, 1964, 23,014/64
U.S. Cl. 162—157 **9 Claims**
Int. Cl. D21h *5/20*

By treatment with oxygen-forming agents, fibres formed from acrylonitrile polymers containing at least 80 percent by weight acrylonitrile spilt into sub-deniers requiring less beating than untreated fibres and when formed into paper sheets by conventional papermaking methods exhibit enhanced physical properties as tear and bursting strengths. Preferable oxygen-forming agents are potassium permanganate or ammonium persulphate.

3,429,773
CONTINUOUS CELLULOSE DIGESTER WITH CHARGING DEVICE

Johan C. F. C. Richter, St. Jean-Cap-Ferrat, France, assignor to Aktiebolaget Kamyr, Karlstadt, Sweden, a company of Sweden
Filed Apr. 12, 1965, Ser. No. 447,179
Claims priority, application Sweden, Apr. 16, 1964, 4,682/64
U.S. Cl. 162—237 **11 Claims**
Int. Cl. D21c *7/08*



An upright continuous cellulose digester charging device is disclosed, wherein a conduit loop connects a cellulose feeder to a casing containing a screen and a rotary screw conveyor. The casing opens into the area of the top of the digester, and the screen and the conduit loop connections in the casing are located at a level below the level of the casing opening into the area of the top of the digester. The device prevents excessive heat transfer from the digester back to the cellulose feeder.

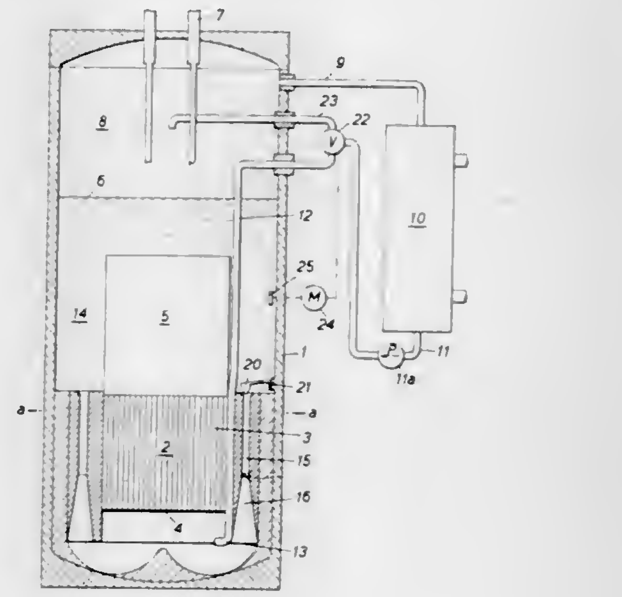
3,429,774
PREVENTION OF SEIZING IN LIQUID METAL ENVIRONMENTS

David H. Gurinsky, Center Moriches, Richard M. Powers, Stormville, and Herbert Susskind, Huntington, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Nov. 28, 1967, Ser. No. 686,299
U.S. Cl. 176—38 **5 Claims**
Int. Cl. G21c *9/00;* **C23c** *11/00*

A method of operating a sodium cooled nuclear reactor containing a stacked bed of spherical fuel elements in which the fuel is dispersed in a matrix of stainless steel. In order to prevent sintering of the fuel elements, the steel is provided with a deoxidant selected from the group consisting of titanium, niobium and aluminum.

3,429,775
NUCLEAR REACTOR

Eirik Nicoll Petersen, Kjeller, Norway, assignor to Institutt for Atomenergi, Kjeller, Norway
Filed June 17, 1966, Ser. No. 558,389
Claims priority, application Norway, June 17, 1965, 158,538
U.C. Cl. 176—54 **11 Claims**
Int. Cl. G21c *15/22*



This invention relates to nuclear reactors and means for maintaining a uniform flow of circulating cooling fluid through the core.

This is accomplished by a restricted flow section in the downcomer in the reactor.

3,429,776
PROCESS FOR THE PRODUCTION OF GLUTAMIC ACID

Robert H. Newell, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Jan. 3, 1966, Ser. No. 518,035
U.S. Cl. 195—29 **2 Claims**
Int. Cl. C12d *13/06;* **C07c** *99/00*

An improved proces for the production of glutamic acid by the cultivation of *Brevibacterium divaricatum* in a fermentation medium wherein the pH of the medium is adjusted to 9.0–9.8 with ammonia prior to inoculation.

3,429,777
HIGH PURITY MAGNESIUM LACTATE FROM STEEPWATER

Harold Eli Bode, Room 308, Schofield Bldg., Cleveland, Ohio 44115

No Drawing. Continuation-in-part of application Ser. No. 437,010, Mar. 1, 1965. This application Sept. 24, 1965, Ser. No. 490,054

6 Claims

U.S. Cl. 195—48

Int. Cl. C12d *1/02;* **C07c** *59/08*

Corn steepwater contains lactic acid and active lactic acid creating microorganisms. By using an inorganic magnesium compound as the lactic acid neutralizing agent and removing the resulting insoluble magnesium phytate compound, the magnesium lactate in the filtrate is capable of crystallizing in a state of high purity. By adding molasses to the lactic microorganisms in the steepwater, the amount of recoverable high purity magnesium lactate crystals is increased.

3,429,778
SYNTHESIS OF STEROIDS

Samuel Cheng Pan, Metuchen, Barbara Junta, Somerset, and Pacifico A. Principe, South River, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 15, 1966, Ser. No. 527,501. Divided and this application Aug. 24, 1967, Ser. No. 671,524

4 Claims

U.S. Cl. 195—51

Int. Cl. C12d *13/08*

7β-hydroxyestranes are prepared by a two-step process. In the first step a 19-nor-Δ^4-androstene is subjected to the action of enzymes of a 7β-hydroxylating microorganism to form the corresponding 7β-hydroxy-19-nor-Δ^4-androstene derivative. The latter compound is then subjected to the action of enzymes of a 1-dehydrogenating microorganism to yield the final 7β-hydroxyestrane product.

3,429,779
SYNTHESIS OF STEROIDS

Samuel Cheng Pan, Metuchen, Barbara Junta, Somerset, and Pacifico A. Principe, South River, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,487

6 Claims

U.S. Cl. 195—51

Int. Cl. C07c *169/10, 167/14, 167/08*

11-ketoestranes are prepared in a two-step process by first 11-ketonizing a 19-nor-Δ^4-androstene to yield the 11-keto derivative and then 1-dehydrogenating the latter.

3,429,780
FERMENTATION PROCESS FOR THE PRODUCTION OF TETRACYCLINE

Karel Culik, Josef Palkoska, Miloslav Vondracek, and Jan Skoda, Prague, and Milos Herold, deceased, late of Prague, by Josefa Heroldova, sole heir, Prague, Czechoslovakia, assignors to Spofa Sdruzeni Pro Zdrovotnickou Vyrobu, Prague, Czechoslovakia

No Drawing. Filed Sept. 16, 1965, Ser. No. 487,931

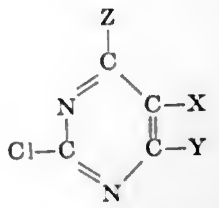
Claims priority, application Czechoslovakia, Sept. 19, 1964, 5,228/64

10 Claims

U.S. Cl. 195—80

Int. Cl. C12d *9/18*

1. In a process for the production of tetracycline by submerged fermentation in a liquid medium containing assimilable carbon and nitrogen sources plus inorganic nutrient salts under aerobic conditions microorganisms of the genus Streptomyces capable of producing both chlorotetracycline and tetracycline, followed by isolation of the desired product from the fermented broth, the improvement which comprises adding to the fermentation medium at least one chlorination inhibitor corresponding to the general formula



wherein Z is a substance selected from the group consisting of H, OH and Cl, X is a substance selected from the group consisting of halogen, alkyl, aryl, H, NH_2 and NO_2 and wherein Y is a substance selected from the group consisting of H, Cl, NH_2 and COOH, said chlorination inhibitor being present in an amount effective to inhibit chlorination.

3,429,781
PROCESS FOR THE PRODUCTION OF TETRACYCLINE

Karel Culik, 1772 Petriny; Milos Herold, 112 Nadrazni; Josef Palkoska, 2 Skorepka; Bohumil Sikyta, 4 Pocatecka; and Josef Slezak, 486 U Krcske vodarny, all of Prague, Czechoslovakia

No Drawing. Filed June 10, 1965, Ser. No. 463,986

Claims priority, application Czechoslovakia, June 13, 1964, 3,414/64

11 Claims

U.S. Cl. 195—80

Int. Cl. C12d *9/18*

In a process of producing tetracycline by submerged fermentation in liquid nutrient media containing assimilable carbon and nitrogen source plus inorganic nutrient salts under aerobic conditions by means of producing microorganisms belonging to the genus Streptomyces, which are capable of producing both chlortetracycline and tetracycline followed by isolation of the antibiotic from the fermented broth, the improvement comprising adding to the fermentation media at least one organic tetracycline chlorination inhibitor together with benzyl thiocyanate.

3,429,782
HYDRAULICALLY OPERATED BOTTOM CLOSURE FOR A STRAINING TANK

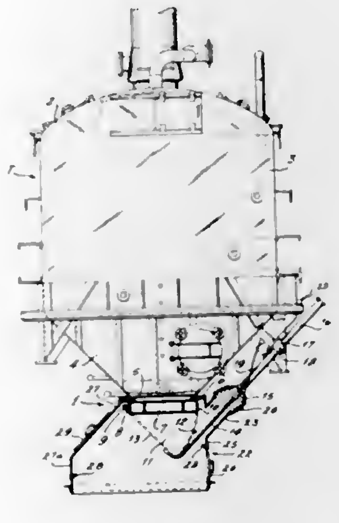
Harold E. Hicks, Kirkwood, and Bernard F. Pohl, Affton, Mo., assignors to Nooter Corporation, St. Louis, Mo., a corporation of Missouri

Filed Oct. 21, 1965, Ser. No. 499,470

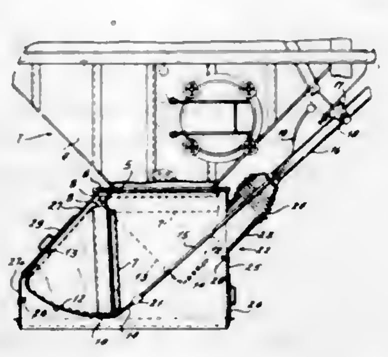
14 Claims

U.S. Cl. 195—135

Int. Cl. F17c *1/00*



A bottom closure for a straining tank, said bottom closure being maintained in closed position by hydraulic pressure within a cylinder. On the bottom closure is mounted a guide member having a front edge extending downwardly and rearwardly. To the guide member is fixedly attached a flexible means which actuates the bottom closure to its closed position when pressure is applied by the hydraulic cylinder.



3,429,783
PROCESS FOR UPGRADING AN ACRYLONITRILE ELECTROHYDRODIMERIZATION EFFLUENT CONTAINING ADIPONITRILE BY DISTILLATION AND ALKALINE TREATMENT

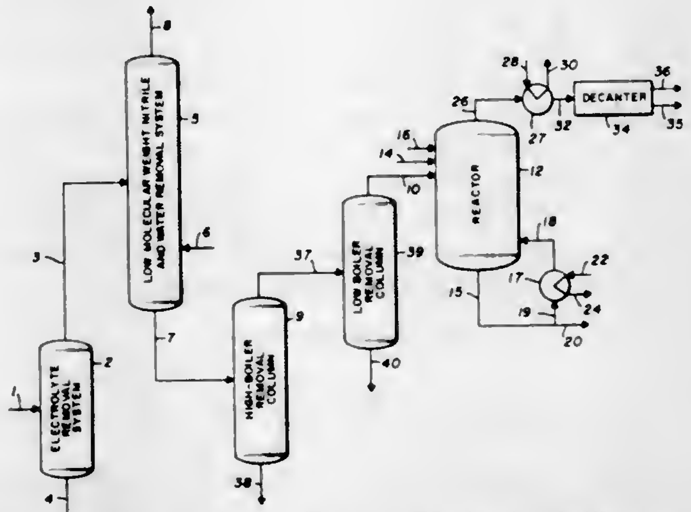
Charles R. Campbell, John J. Hicks, Jr., and Marion J. Mathews III, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of application Ser. No. 431,737, Feb. 10, 1965. This application Nov. 9, 1967, Ser. No. 681,834

10 Claims

U.S. Cl. 203—36

Int. Cl. B01d *3/34, 3/14*


DECANTER
REACTOR
LOW MOLECULAR WEIGHT NITRILE AND WATER REMOVAL SYSTEM
LOW BOILER REMOVAL COLUMN
HIGH-BOILER REMOVAL COLUMN
ELECTROLYTE REMOVAL SYSTEM

An acrylonitrile electrohydrodimerization effluent containing adiponitrile and 3-hydroxypropionitrile can be substantially upgraded in its content of recoverable constituents by distilling it to remove an overhead fraction containing adiponitrile and at least 25% by weight of 3-hydroxypropionitrile and then contacting the overhead fraction with an aqueous solution of an alkali metal hydroxide, an alkaline earth hydroxide or a quaternary ammonium hydroxide.

3,429,784
METHOD AND APPARATUS FOR MEASURING GAS CONTENT

Everett W. Molloy, Yellow Springs, Ohio, assignor to The Yellow Springs Instrument Company, Inc., Yellow Springs, Ohio, a corporation of Ohio

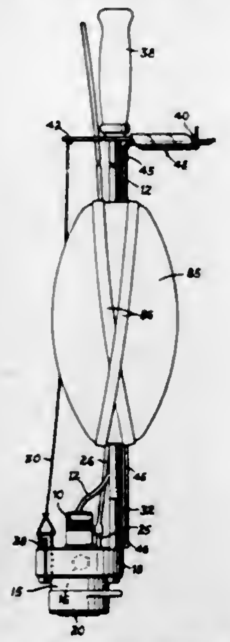
Filed Jan. 13, 1964, Ser. No. 337,246

6 Claims

U.S. Cl. 204—1

Int. Cl. B01k *3/02;* **B01l** *5/00*

A polarographic cell with a covering membrane permeable to a gas to be measured comprising a housing forming a test chamber around the cell and a temperature probe supported externally thereof. A float and depending rod support the housing and temperature probe, and a vent from the housing admits atmospheric air into the housing. The housing is first immersed into the sample fluid and an indicator connected to the cell is compensated according to known response of the cell at the indicated temperature, then a normally closed port in the housing is opened to admit the sample fluid.



3,429,785
ORGANIC LIQUID ION-EXCHANGER ELECTRODE AND METHOD OF USING SAME

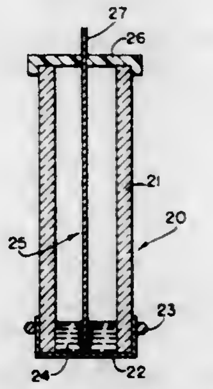
James W. Ross, Newton, Mass., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Aug. 17, 1964, Ser. No. 390,016

25 Claims

U.S. Cl. 204—1

Int. Cl. B01k *3/00*



An electrode for determining the concentration of ionic species in an aqueous solution wherein the sensing portion is a liquid organic phase containing an organic ion exchange material capable of exchanging ions with the aqueous solution and the organic phase being substantially immiscible with the aqueous solution.

3,429,786
CONTROLLED ELECTROPLATING PROCESS

James R. Kubik, Upland, Calif., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Oct. 21, 1966, Ser. No. 588,609

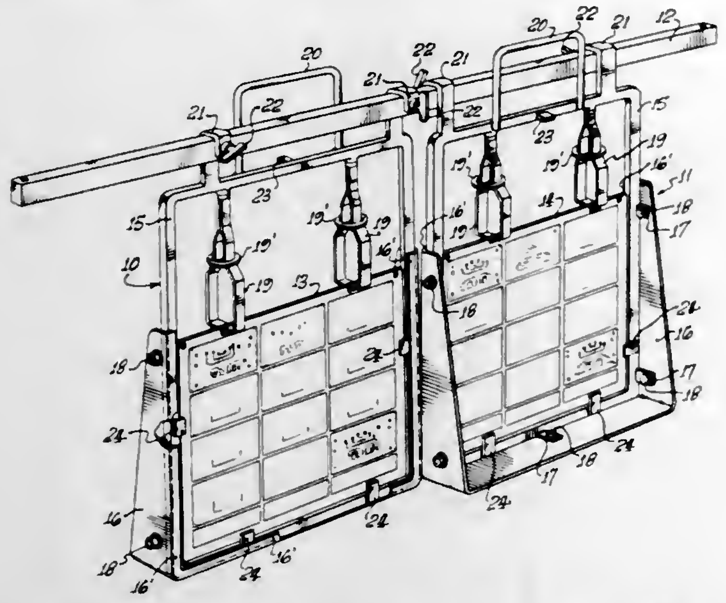
6 Claims

U.S. Cl. 204—15

Int. Cl. C23b *5/64*

1. A controlled electroplating process for circuit boards and the like requiring two dimensional plating comprising the steps of: positioning at least one pair of plating rack members containing items to be plated in a suitable plating solution, operatively connecting the rack members to a cathode bar assembly such that the desired surface areas to be plated are facing the opposite direction, with cathode rack agitation plating the items for a required period of time to obtain desired first dimensional thickness, attaching a cathode jumper wire to one of rack members of each pair of the rack members, detaching that rack member from the cathode bar assembly without removing same from the plating solution, placing the detached rack member in a back-to-back relationship with the associated rack member of that pair such that the desired surface areas of the items being plated face one another,

operatively reconnecting the detached rack member on the cathode bar assembly, removing the cathode jumper wire, continue plating the items for a required period of time to obtain desired second dimensional thickness,



stopping the cathode agitation, disconnecting the rack members from the cathode bar assembly, removing the rack members from the plating solution, and rinsing and cleaning the plated items as required.

3,429,787
PROCESS AND APPARATUS FOR ELECTROLYTICALLY TREATING METAL TUBES

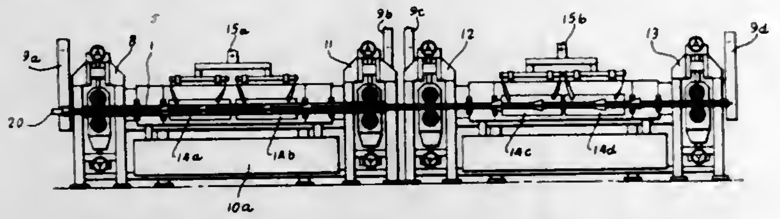
Wolfgang Weinreich, Paderborn, Germany, assignor to Benteler-Werke A.G. Werk Neuhaus, Paderborn, Germany

Filed June 15, 1964, Ser. No. 375,116

Claims priority, application Germany, June 18, 1963, B 72,320

U.S. Cl. 204—26 **12 Claims**

Int. Cl. C23b *5/56*



A process for electrolytically depositing on the interior and exterior surfaces of elongated metal tubes a metal coating while passing the tubes successively through an electrolytic bath in which an elongated conductor located in the bath passes coaxially through the tubes without touching the latter, in which a metal anode is located in the bath while the tubes are connected as cathodes and in which the tubes are advanced through the bath in such a manner as to maintain at all times one-half to one-third of the conductor uncovered so that the conductor will have a dipole function receiving metal from the anode while the conductor is uncovered by a tube and giving up the metal thus received from the anode to the interior surface of the tube while the conductor is covered thereby, and an apparatus for carrying out the process.

3,429,788
ELECTRICAL INTERCONNECTION OF MICROMODULE CIRCUIT DEVICES

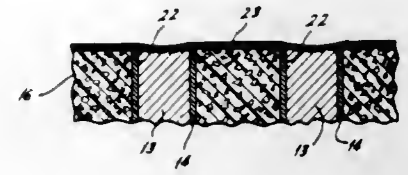
John Parstorfer, Philadelphia, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 8, 1966, Ser. No. 541,219

U.S. Cl. 204—30 **13 Claims**

Int. Cl. H01r *43/00;* **H01l** *19/00;* **C23b** *5/58*

1. A method for making electrical connections to the terminal wires of integrated circuit devices, comprising the steps of: providing such devices with terminal wires extending from at least one side thereof; plating said wires with a metal capable of being removed by a suitable etchant; assembling a plurality of said devices so that terminal wires extend substantially unidirectionally; encapsulating the assembly in an electrically insulative material having interspersed therein particles of a material capable of being dissolved by the etchant, to form a body having terminal wires protruding therefrom; smoothing the side of the insulative block encapsulating the protruding terminal wires so that the terminal wires and the metal plated thereon are exposed in cross-section, and to expose portions of the embedded particles at the smooth surface; etching the exposed particles and portions of the recited plated metal; and electrically interconnecting the exposed terminal wire portions by applying the desired interconnection pattern upon the etched side of the insulative block and across the exposed portions of the terminal wires.



3. The method according to claim 1, and characterized in that said last recited step comprises; plating a layer of metal upon the etched side of said insulative block and upon the exposed portions of the terminal wires; depositing on said layer of metal an etch resist defining the desired terminal wire interconnection pattern; and etching away the exposed portions of the layer of metal to form the desired interconnection pattern.

6. The method according to claim 3, and further characterized in that plating said layer of metal comprises the steps of depositing a first layer of metal on the etched side of said block by electroless plating techniques followed by depositing a second layer of metal on the first layer of metal by electroplating techniques.

3,429,789
CARBAMATE CONTAINING ACID NICKEL PLATING BATH

Barnet D. Ostrow and Fred I. Nobel, Roslyn, N.Y., assignors to Lea-Ronal, Inc., a corporation of New York

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,077

U.S. Cl. 204—49 **11 Claims**

Int. Cl. C23b *5/08*

Electrolytes for the electrodeposition of nickel comprising as leveling agent certain carbamate substituted acetylenic alcohols which may have one or more alkoxy groups therein. Various sulfo-oxygen compounds may be present as cooperating additives.

3,429,790
ACIDIC TIN DEPOSITING BATH

Cornelis Johannes Schoot and Johannes Jacobus Ponjee, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 25, 1966, Ser. No. 537,300

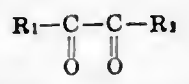
Claims priority, application Netherlands, May 11, 1965, 6505921

U.S. Cl. 204—54 **2 Claims**

Int. Cl. C23b *5/14, 5/46*

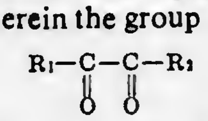
1. An aqueous acidic electro-plating bath for depositing tin, containing bivalent tin ions, as anions sulphate-,

sulphonate- or fluoborate-ions and, as a brightening agent, one or more sufficiently soluble compounds of the general formula:



$$R_1-\underset{\overset{\|}{O}}{C}-\underset{\overset{\|}{O}}{C}-R_2$$

wherein R_1 is an aliphatic, aromatic, alicyclic or heterocylic group or a mixed aliphatic aromatic group, substituted only with non-ionisable substituents or substituents not reducible in said bath and R_2 is hydrogen or one of the said groups or wherein the group



$$R_1-\underset{\overset{\|}{O}}{C}-\underset{\overset{\|}{O}}{C}-R_2$$

forms a ring system or part of a ring system, said compound being present in an amount sufficient to produce a bright tin deposit, and that, moreover, the bath contains a non-ionic surface-active compound.

3,429,791
ELECTROCHEMICAL MACHINING FERROUS METALS USING A FILM FORMING ELECTROLYTE INCLUDING FLUORIDE SALTS

Mitchell A. La Boda, East Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,096

U.S. Cl. 204—143 **4 Claims**

Int. Cl. B23p *1/20, 1/16*

Electrolyte and coolant for the electrochemical machining of metals consisting essentially of an aqueous solution of an alkali metal chloride and an electrochemical erosion inhibiting film forming additive containing fluoride ions.

3,429,792
METHOD OF ELECTROLYTICALLY DESCALING AND PICKLING STEEL

Saburo Fukui, Hiroshima-shi, and Masato Yamamoto, Hiroshima-ken, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed July 22, 1966, Ser. No. 567,078

Claims priority, application Japan, July 30, 1965, 40/46,278

U.S. Cl. 204—145 **3 Claims**

Int. Cl. C23b *1/06*

Two-step process for descaling stainless steel surfaces. The steel article is first electrolytically descaled in an aqueous electrolyte containing at least 2% by weight of the sodium or potassium salt of sulfuric or nitric acid. The article is then pickled with an aqueous solution containing about 6.5–15% of ferric chloride and 5–10%, calculated as NO_3, of nitric acid or an inorganic nitrate. The electrolyte of the first step contains advantageously 0.1–10% of a soluble fluoride and less than 10% of a complex-salt forming substance, such as tartaric or citric acid.

3,429,793
GLOW DISCHARGE PRODUCTION OF OXIDES OF CHLORINE

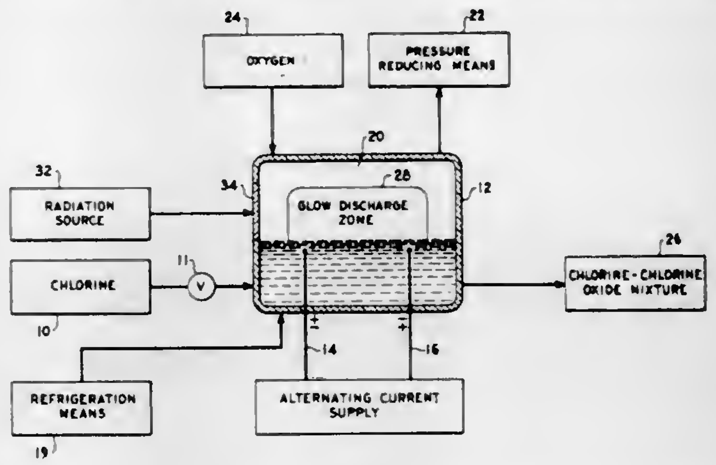
Emil J. Hellund, South Laguna, Calif., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Dec. 2, 1965, Ser. No. 511,198

U.S. Cl. 204—157.1 **13 Claims**

Int. Cl. B01j *1/10*

1. A process for the production of an oxide of chlorine comprising providing a body of liquid or solid chlorine and an atmosphere comprising gaseous oxygen in contact with the surface of the body of chlorine to thereby maintain the sum of the oxygen pressure and the chlorine pressure at less than one atmosphere of pressure, immersing a plurality of electrodes in the body of chlorine and impressing an electrical current across said electrodes to cause a glow discharge to form across said electrodes and into said atmosphere, causing interaction between the chlorine and oxygen at the surface of said body.



3,429,794
SOLVENT SHRINKABLE POLYMERIC MATERIAL

William A. Patterson, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,506

U.S. Cl. 204—159.14 **7 Claims**

Int. Cl. B29f *5/00*

This invention relates to a process for treating a soluble polymeric material by reducing its solubility in a solvent, orienting and thereafter shrinking in said solvent.

3,429,795
PHOTOPOLYMERISATION OF ETHYLENICALLY UNSATURATED ORGANIC COMPOUNDS USING A CARBOXYLIC DITHIOCARBAMIC ANHYDRIDE AS A PHOTOINITIATOR

Gerard Albert Delzenne and Urbain Leopold Laridon, Wilrijk-Antwerp, Belgium, assignors to Gevaert-AGFA N.V. Mortsel, Belgium, a Belgian company

No Drawing. Filed May 2, 1967, Ser. No. 635,359

Claims priority, application Great Britain, May 23, 1966, 22,929/66

U.S. Cl. 204—159.24 **8 Claims**

Int. Cl. C08f *1/16, 1/76*

Ultraviolet photopolymerization of ethylenically unsaturated organic compounds where in a carboxylic dithiocarbamic anhydride is employed as a photoinitiator, said radiation being in the range of 2500 to 5000 angstroms.

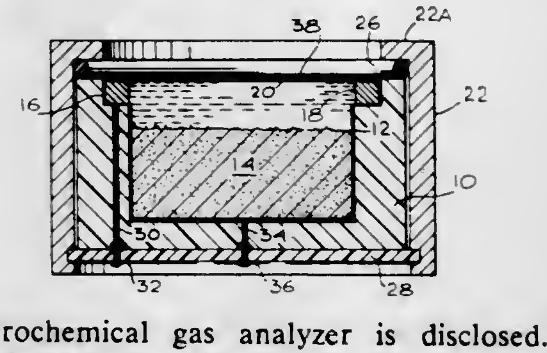
3,429,796
GAS ANALYZER

Jay M. Lauer, Torrance, Calif., assignor to Analytic Systems Company, Pasadena, Calif., a corporation of California

Filed Sept. 16, 1965, Ser. No. 487,745

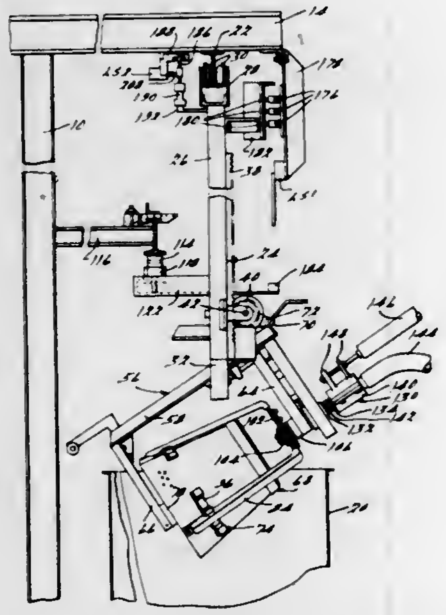
U.S. Cl. 204—195 **12 Claims**

Int. Cl. B01k *3/02;* **B01l** *5/00*



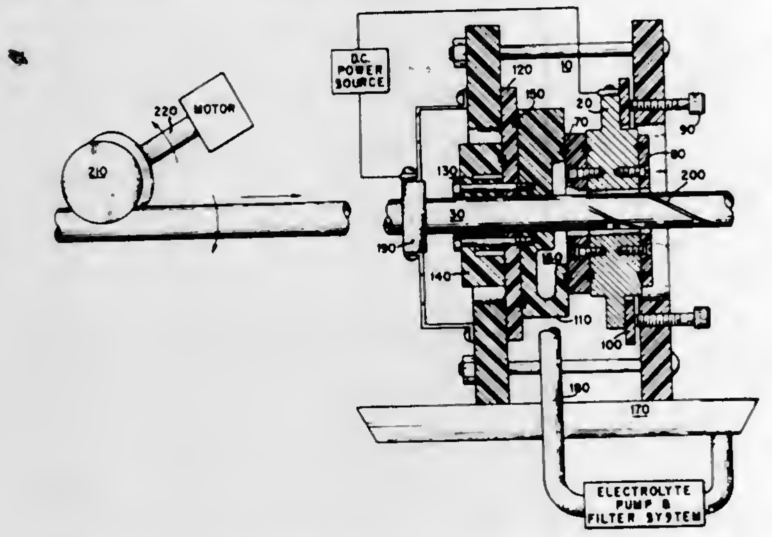
An electrochemical gas analyzer is disclosed. The analyzer is formed of an insulator body having an open recess. The side and bottom walls of the recess form a container which is lined with conductive metal foil. The container is filled with granules of a nonpolarizable metal such as lead to form an anode. The cathode comprises a thin flat nonwoven mesh of a polarizable metal such as silver which covers the opening of the cell and a gas-permeable, electrolyte-impermeable membrane is spread over the cathode. An aqueous potassium hydroxide electrolytic solution fills the container until the inner surface of the cathode mesh is wetted.

3,429,797
ELECTROPLATING APPARATUS
William H. Jackson, Birmingham, and Richard C. Kayser, Mount Clemens, Mich., assignors to The Udylite Corporation, a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,541
U.S. Cl. 204—202 **17 Claims**
Int. Cl. C23b *5/68*



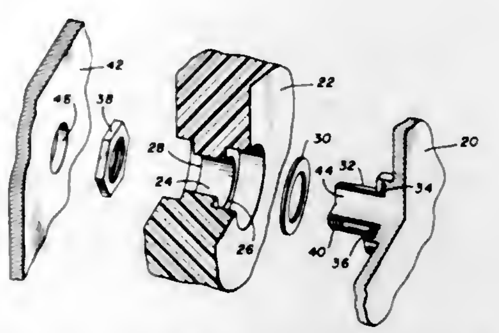
An endless conveyor system for a rotating and tiltable plating basket which includes a frame for the basket permitting the basket to be rotated or tilted and the frame plus basket to be moved horizontally or vertically.

3,429,798
ELECTROCHEMICAL ETCHING OF SPIRAL LANDS
Clarence J. Beck and Martin R. Birnby, Schenectady, and Paul G. Lozier, Ballston Lake, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 19, 1967, Ser. No. 641,427
U.S. Cl. 204—206 **2 Claims**
Int. Cl. C23b *5/72;* **B23p** *1/02*



Removal of metal by electrochemical etching in which spiral lands are formed on a tube. Portions of the outer surface of the rotating and longitudinally moving tube are isolated from the electrolyte by spring biased land covers located within the cathode.

3,429,799
FLUID-TIGHT ELECTRICAL CONNECTIONS FOR ELECTROLYTIC CELLS
Robert W. McWhorter, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,852
U.S. Cl. 204—279 **9 Claims**
Int. Cl. B01k *3/02*



1. Apparatus for sealingly securing an electrode formed of a soft metal to an insulating supporting block, comprising in combination:

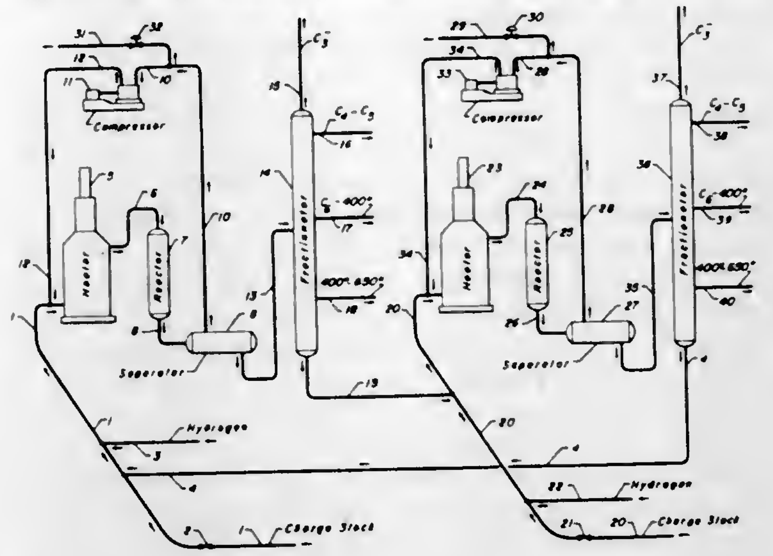
(a) means defining a block bore extending through said insulating block from a first surface thereof to the opposite surface,
(b) a first soft metal electrode,
(c) a structural metal member extending along an axis through said block bore and including a first flange extending radially outwardly from said axis sufficiently far to oppose said first surface around said block bore, said flange being imbedded in said electrode,
(d) a compressible gasket surrounding said member between said first flange and said first surface, and
(e) securing means engaging said member and said opposite surface of said block for urging said member axially toward said opposite surface, whereby said gasket is sealingly compressed without applying tension to said soft metal.

3,429,800
EMULSION DEWAXING WITH IMMISCIBLE LIQUID DISPERSED IN A CONTINUOUS OIL WAX SLURRY PHASE
Robert E. Sparks, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Continuation of application Ser. No. 299,237, Aug. 1, 1963. This application June 22, 1967, Ser. No. 648,171
U.S. Cl. 208—29 **9 Claims**
Int. Cl. C10g *43/04*

Wax is removed from oil by chilling the finely-divided wax particles, mixing the wax-oil slurry with brine or other heavy oil immiscible liquid, forming an emulsion of droplets of the heavy liquid dispersed in oil, and separating the droplets from the oil by centrifugation or settling. The wax particles adhere to the droplets of the immiscible liquid and are removed with the droplets of the immiscible liquid.

3,429,801
TWO-STAGE HYDROREFINING OF ASPHALTENE-CONTAINING OILS
William K. T. Gleim, Island Lake, and Mark J. O'Hara, Mount Prospect, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,749
U.S. Cl. 208—58 **4 Claims**
Int. Cl. C10g *37/00*

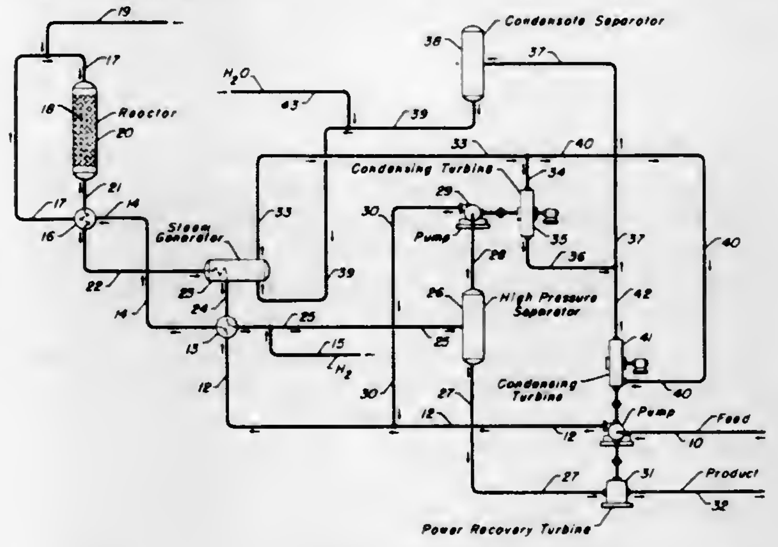
Two stage continuous-cyclic catalytic hydrorefining of asphaltene-containing heavy oil wherein the first stage reactor effluent is separated to provide a first fraction having a 650° F.+IBP which is passed to the second stage reactor. The second stage reactor effluent is separated to provide a second fraction having a 650° F.+IBP which is recycled to the first stage reactor. The point of introducing the charge stock is periodically alternated between the first and second stage reactors, as required according to the extent of catalyst deactivation therein, while the flow of the first and second fractions is continuously maintained.



3,429,802
METHOD FOR PRODUCING A SOLVENT FOR EDIBLE OILS
Kenneth D. Uitti, Bensenville, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 16, 1966, Ser. No. 602,155
U.S. Cl. 208—87 **3 Claims**
Int. Cl. C10g *31/14, 23/00, 21/06*

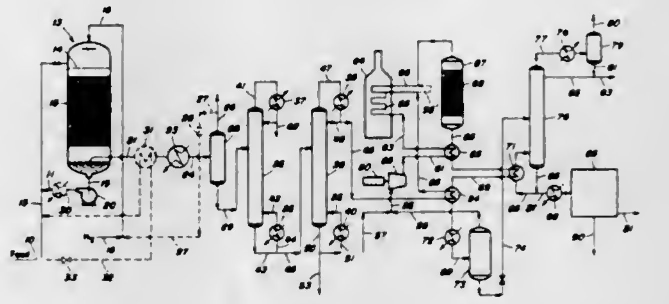
Method for producing an edible oil solvent which comprises subjecting a pretreated non-aromatic raffinate stream from a solvent extraction zone with hydrogen to produce a non-aromatic hydrocarbon product having from 6 to 9 carbon atoms per molecule and containing less than 1% aromatic hydrocarbons and less than 10 parts per million of solvent. The hydrotreated non-aromatic product is uniquely suitable for use as an edible oil solvent.

3,429,803
METHOD FOR CONVERTING HYDROCARBONS
Newt M. Hallman, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,446
U.S. Cl. 208—108 **9 Claims**
Int. Cl. C10g *13/02*



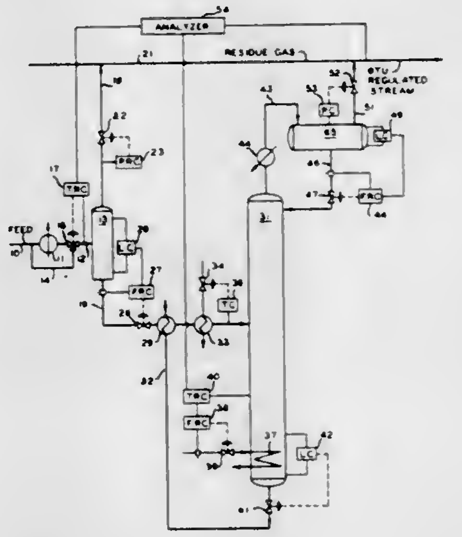
Method for achieving thermal balance within a catalytic hydrocracking process whereby the effluent from the hydrocracking reaction is cooled by the generation of steam and the steam so generated is utilized to drive condensing turbines for the movement of the process hydrocarbons through the hydrocracking system.

3,429,804
TWO-STAGE HYDROTREATING OF DRIPOLENE
Morgan C. Sze, Garden City, and William V. Bauer, New York, N.Y. (both % The Lummus Company, 385 Madison Ave., New York, N.Y. 10017)
Filed May 25, 1965, Ser. No. 458,540
U.S. Cl. 208—144 **7 Claims**
Int. Cl. C07c *3/42, 5/16*



Process for hydrotreating a liquid hydrocarbon fraction containing predominantly C_6–C_8 aromatic hydrocarbons wherein the polymerizable components in the fraction are substantially instantaneously vaporized by effecting mixing thereof with a hot hydrogen-containing stream. The mixture is then introduced into a hydrotreating zone containing a suitable hydrotreating catalyst. The fraction may be obtained from an effluent produced by the hydrotreating of dripolene in the presence of a noble metal catalyst at a temperature between 120° and 400° F.

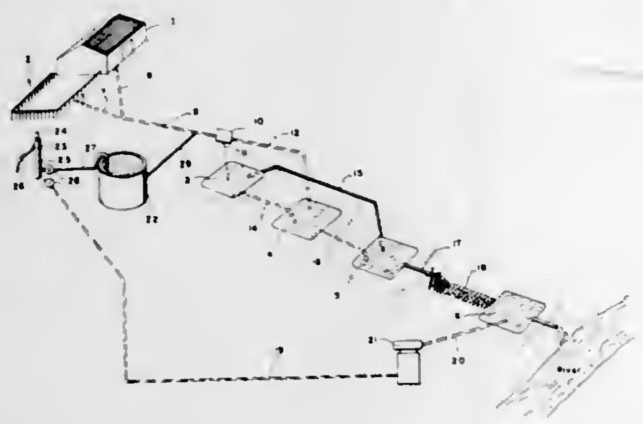
3,429,805
B.t.u. REGULATION OF A MATERIAL STREAM
Joseph T. Karbosky, % Phillips Petroleum Company, Bartlesville, Okla. 74003
Filed Mar. 10, 1967, Ser. No. 622,342
U.S. Cl. 208—354 **9 Claims**
Int. Cl. C10g *5/06, 7/00;* **C10l** *3/00*



A method of obtaining a desired heating value in a gas stream by flashing a fluid stream to obtain overhead vapors which are combined with the gas stream, fractionating liquid from the flash step to obtain a second vapor stream which is combined with the gas stream, measuring the heating value of the combined stream and regulating the temperature of the flashing or fractionation step in accordance with the measured value.

3,429,806
SEWAGE DISPOSAL PROCESS AND SYSTEM FOR MEAT PACKING WASTES

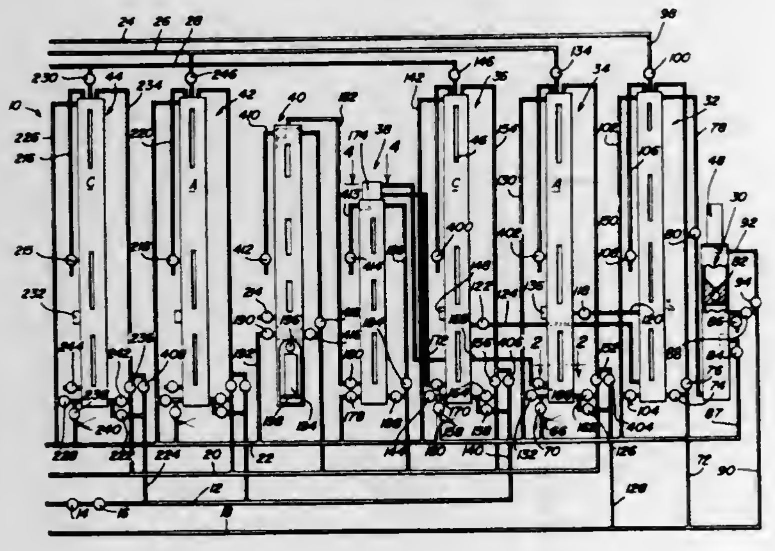
Melvin W. Carter and Emery L. Wiser, both of Rte. 4, Buhl, Idaho 83316
Filed Mar. 24, 1967, Ser. No. 625,705
U.S. Cl. 210—3 **12 Claims**
Int. Cl. C02c *1/10, 1/02, 5/10*



A process and arrangement for the decomposition of meat packing wastes by flowing the wastes through a series of stabilization ponds and an aeration pond with the contents of the aeration pond being recirculated back through the stabilization ponds and the overflow from the aeration pond being discharged into a stream. The recirculated contents of the aeration pond constitute a soil conditioner.

3,429,807
METHOD OF REGENERATING ION EXCHANGE MATERIAL FROM SERVICE DEMINERALIZERS

William R. Burgess, P.O. Box 26428, 1013 Wall St., El Paso, Tex. 79926
Continuation-in-part of application Ser. No. 493,188, Oct. 5, 1965. This application Dec. 8, 1966, Ser. No. 609,975
U.S. Cl. 210—25 **13 Claims**
Int. Cl. B01d *15/06*



The regeneration of ion exchange material from service demineralizer units in which the ion exchange materials are separated, independently regenerated and subsequently remixed and returned to the service demineralizer unit and employing procedures and techniques in all stages of the regeneration process for assuring complete regeneration, compaction of the ion exchange materials, the use of demineralizer water in conveying, mixing and filling of regenerated ion exchange material for retaining the efficiency at the highest possible level.

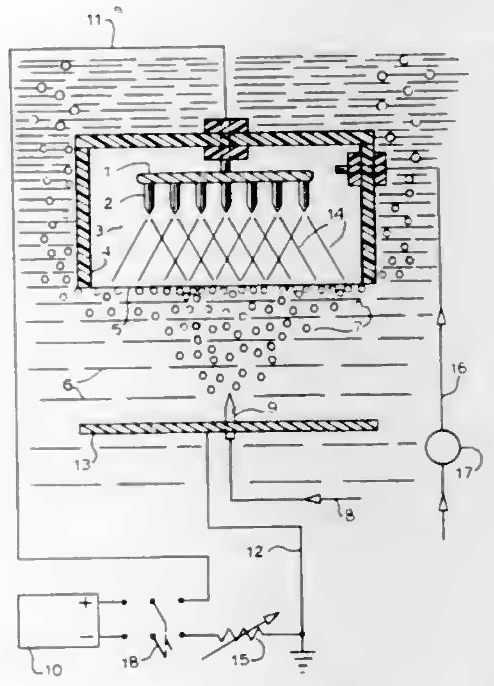
3,429,808
METHOD OF TREATING A FILTER BED

Warren H. Smith, Rte. 1, Chaska, Minn. 55318
No Drawing. Filed June 28, 1967, Ser. No. 649,494
U.S. Cl. 210—35 **8 Claims**
Int. Cl. C02b *1/26;* **B01d** *37/00*

Disclosed herein is an improved method of increasing the effectiveness of a water treatment filter bed of activated carbon by conditioning the bed with a backwash of very dilute available chlorine in order to enable the same to more effectively eliminate iron from the water that is passed therethrough during its normal usage. The available chlorine attaches to the particles of activated carbon so that when water is subsequently passed therethrough, the chlorine converts the iron that is in the ferrous state to the ferric state which is precipitated by the carbon and consequently separated out by the bed. As a consequence, a more effective separation of iron from the water that is treated is accomplished and, in addition, odors are removed from the water and an effective bacteria control is provided. The bed is treated with an alkaline rather than acidic solution, the particular chemical which is used being sodium hypochlorite.

3,429,809
AIR FLOTATION PROCESS FOR REMOVAL OF PARTICLES OF SUSPENDED MATTER FROM WATER

Walter M. Dotts, Jr., 2605 Monument Ave., Richmond, Va. 23220
Filed June 26, 1967, Ser. No. 648,678
U.S. Cl. 210—44 **12 Claims**
Int. Cl. C02b *1/20;* **B03c** *5/00*



The efficiency of air flotation for recovery or removal of particles of suspended matter from process or waste waters is improved by attaching electrical charges of preselected polarity to fine air bubbles used in the flotation process. One side of a thin, porous, membrane made of electrical non-conducting material, which separates a gaseous atmosphere from water, is bombarded by gas ions bearing electrical charges. Some of the electrical charges are transferred through the membrane and become attached to air bubbles impinging on the opposite side of the membrane. After acquiring electrical charges, the air bubbles exhibit improved ability to cause flocculation of oppositely charged colloids and other suspended particles, and otherwise increase the efficiency of the flotation process.

3,429,810
METHOD OF EXTINGUISHING FIRES AND A COMPOSITION EMPLOYED IN THE METHOD

Glen B. White, Odessa, Tex., assignor to Cardinal Products, Inc., Odessa, Tex., a corporation of Texas
No Drawing. Continuation of application Ser. No. 285,900, June 6, 1963. This application Sept. 6, 1967, Ser. No. 665,713
U.S. Cl. 252—3 **6 Claims**
Int. Cl. A62d *3/00;* **A61c** *1/14*

A method of extinguishing a fire by saturating the area of the flames of the fire with a spray of an aqueous solution of an amphoteric surfactant whose particles combine with fuel particles vaporized from the substance on fire to interrupt the chain reaction of the fire and a solution for use in the method.

3,429,811
PREPARATION OF OVERBASED SULFONATES

Max L. Robbins, South Orange, Frederic Leder, Elizabeth, and George R. Chludzinski, South Orange, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 573,096
U.S. Cl. 252—33 **8 Claims**
Int. Cl. C10m *1/40*

An overbased metal sulfonate is prepared by dispersing hydrocarbon sulfonic acid and/or metal hydrocarbon sulfonate in a hydrocarbon oil, adding hydrated lime and promoter to the dispersion and then contacting the mixture with carbon dioxide in a quantity sufficient at least to convert to colloidally dispersed calcium carbonate all of the lime that is not used for formation of sulfonate salt. The point of novelty in the invention is the control of the water content of the mixture during the reaction so that it is at all times within the limits of 0.1 to 1.75 weight percent, based on the total mixture.

3,429,812
METHOD OF PREPARING LUBRICATING OIL CONCENTRATE CONTAINING CALCIUM SALT OF ALKYLPHENOL - FORMALDEHYDE - DIAMINOALKANE CONDENSATION PRODUCT

Doris Kivelevich and Louis E. Ruidisch, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,748
U.S. Cl. 252—42.7 **10 Claims**
Int. Cl. C10m *1/54, 1/32*

A method of producing improved lubricating oil concentrates containing the normal, overbased, or CO_2 overbased calcium salt of alkylphenol-formaldehyde-diaminoalkane condensation product comprising contacting said condensation product in the presence of lube oil with a calcium alcoholate or a mixture of calcium carbide and alcohol, alternatively treated with carbon dioxide, thereby forming useful oxidation and corrosion inhibitors and detergent-dispersants.

3,429,813
SYNTHETIC LUBRICANTS CONTAINING PHOSPHOROTHIONATES AND ARYLAMINES

Francis H. Waight, Eastham, Wirral, and Alexander C. B. MacPhail, Little Sutton, Wirral, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 23, 1964, Ser. No. 398,742
Claims priority, application Great Britain, Oct. 25, 1963, 42,137/63
U.S. Cl. 252—46.7 **9 Claims**
Int. Cl. C10m *3/42*

9. A lubricant composition consisting essentially of a major amount of a synthetic ester base lubricant, a minor stabilizing amount of a triaryl ester of phosphorothionic acid having 6 to 14 carbon atoms per aryl group and a minor amount of a diarylamine selected from the group consisting of diarylamines having one to two rings per aryl group, ring alkylated derivatives thereof, thiodiarylamines having a thiazine nucleus, and ring-alkylated derivatives thereof, said amine being present in an amount sufficient to enhance the oxidative stability imparted by said organophosphorus compound.

3,429,814
GREASE COMPOSITIONS

Herbert Myers, Barrington, William F. Olszewski, Cherry Hill, and Richard A. Butcosk, Westmont, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,220
U.S. Cl. 252—48.2 **4 Claims**
Int. Cl. C10m *7/40*

This invention relates to the use of resorcinol sulfides as load-carrying and anti-wear agents in lubricating greases.

3,429,815
ROLLING OILS

Herbert J. Drake, Nazareth, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
No Drawing. Filed Oct. 8, 1965, Ser. No. 494,232
U.S. Cl. 252—49.5 **6 Claims**
Int. Cl. C10m *1/06, 1/24*

1. In the rolling of light gage steel strip the method of lubricating which comprises applying to the strip at a point prior to the work rolls an aqueous dispersion of from 5% to 30% of an oil mixture wherein said oil mixture contains

(A) from 40% to 80% of a non-soluble mineral oil having a viscosity between 35 SSU and 75 SSU at 100° F., and

(B) from 60% to 20% of a member of the group consisting of
  (a) fatty acid in which a major portion represents fatty acid chain lengths of 16 to 18 carbon atoms,
  (b) a fatty oil in which a major portion of the total free and combined fatty acid content represents fatty acid chain lengths of 16 to 18 carbon atoms and which includes at least 7% free fatty acid, and
  (c) mixtures thereof.

3,429,816
THERMOSTABLE MIXTURES OF DIPHENOXYBENZENES AND MONO- AND DIPHENOXYDIPHENYLS USABLE AS FUNCTIONAL LIQUIDS

François Giolito and Jean Philippe, Lyon, France, assignors to Progil, Paris, France, a corporation of France
No Drawing. Filed Aug. 12, 1966, Ser. No. 571,993
Claims priority, application France, Sept. 1, 1965, 46,350
U.S. Cl. 252—52 **9 Claims**
Int. Cl. C10m *3/14;* **C09** *3/02*

Compositions are provided usable as lubricants, heat transfer agents and hydraulic fluids. Such compositions consist essentially of a mixture of diphenoxybenzenes, monophenoxydiphenyls or diphenoxydiphenyls and may also include ortho or meta terphenyl.

3,429,817
DIESTER LUBRICITY ADDITIVES AND OLEOPHILIC LIQUIDS CONTAINING THE SAME

Michael J. Furey, Berkeley Heights, N.J., and Albin F. Turbak, Danville, Ill., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation of application Ser. No. 486,187, Sept. 9, 1965, which is a continuation-in-part of application Ser. No. 284,856. This application Feb. 29, 1968, Ser. No. 709,498
U.S. Cl. 252—56 **3 Claims**
Int. Cl. C10m *3/20*

Lubricity and load carrying ability of a synthetic ester lubricating oil is improved by addition of an ester formed by reacting about two moles of C_2 to C_5 glycol with about one mole of C_{36} dicarboxylic acid dimer of a C_{18} unsaturated fatty acid.

3,429,818
METHOD OF GROWING CRYSTALS

Bernard A. Di Benedetto, Waltham, and Abraham I. Mlavsky, Lexington, Mass., assignors to Tyco Laboratories, Inc., Waltham, Mass., a corporation of Massachusetts

Filed Feb. 12, 1965, Ser. No. 432,277

U.S. Cl. 252—62.9 14 Claims

Int. Cl. B01j *17/14;* **B01d** *9/00*

Method of growing a solid solution single crystal combining selected compounds involving passing a zone of matter solvent through a selected crystalline feed material by the process of dissolution and recrystallization under conditions such that the feed material which enters the solvent as solute recrystallizes out of the solvent onto a selected seed crystal in the form of a solid solution single crystal. The feed material has the same stoichiometry as the desired end product and the interface temperatures of the solvent zone (and thereby the composition of the solvent zone) are held constant during movement thereof so that the end product will have a uniform composition.

3,429,819
THERMALLY STABLE CELLULOSIC INSULATION MATERIAL

Paul A. Tierney, Ballwin, Mo., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 28, 1966, Ser. No. 568,668

U.S. Cl. 252—63.7 4 Claims

Int. Cl. H01b *3/48;* **H01g** *1/00*

A cellulosic electrical insulation material having improved thermal stability when used at elevated temperatures, the material being composed of partially acetylated cellulose with from 1 to 2 hydroxyl groups per glucopyranose molecule, and having admixed therein from 0.1 to 10% by weight of a non-acidic nitrogenous compound such as dicyandiamide, melamine, urea, and alkyl substituted ureas.

3,429,820
POWER STEERING PROCESS AND LUBRICATING COMPOSITION

Joseph F. Lyons, Poughkeepsie, and Jackson W. Wisner, Jr., and Paul R. Thomas, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 280,719, May 15, 1963. This application June 6, 1966, Ser. No. 555,261

U.S. Cl. 252—78 6 Claims

Int. Cl. C10m *1/24*

Method for operating a power steering unit using a lubricating oil containing an estolide of 12-hydroxystearic acid having a neutralization number of less than 30 and a compounded hydraulic fluid containing as estolide of 12-hydroxystearic acid having a neutralization number from 10 to 30.

3,429,821
BLEACHING TABLET

Bernard Weinstein, Plainfield, Daniel H. Terry, Cranford, and Harold S. Jensen, Westfield, N.J., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 21, 1966, Ser. No. 559,072

U.S. Cl. 252—97 5 Claims

Int. Cl. C09k *3/00;* **C11d** *9/30*

1. A crush-resistant, easily soluble, bleaching tablet, consisting essentially of: from about 15 to about 50 parts by weight of a compound selected from the group consisting of dichlorocyanuric acid and the alkali metal salts thereof; from about 20 to about 50 parts by weight of an alkali metal phosphate selected from the group consisting of alkali metal tripolyphosphates, alkali metal tetrapyrophosphates and alkali metal trimetaphosphates; from about 20 to about 30 parts by weight of a salt selected from the group consisting of sodium chloride and sodium sulfate; and from about 1 to about 3 parts by weight of a soap composition consisting essentially of from about 10 to about 15 parts by weight of a sodium coconut soap, from about 85 to about 90 parts by weight of a sodium tallow soap.

3,429,822
DETERGENT COMPOSITIONS

Helmut Grunewald, Goteborg, and Åke Wååg, Stenungsund, Sweden, assignors to Mo och Domsjo Aktiebolaget, Ornskoldsvik, Sweden, a limited company of Sweden

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,900

Claims priority, application Sweden, Oct. 19, 1964, 12,155/64; Jan. 16, 1965, 598/65

U.S. Cl. 252—99 19 Claims

Int. Cl. C11d *1/72, 3/20*

A water-soluble surface active detergents are provided which have a low foaming tendency and good cleansing power, containing (A) a water-soluble surface-active ethylene oxide adduct having good cleansing power and a high foaming tendency and (B) a water-insoluble water-dispersible surface-active dialkylphenol-ethylene oxide adduct having a low-foaming tendency and relatively poor cleansing power, in an amount to reduce the foaming tendency of (A) without substantially adversely affecting the cleansing power of (A).

3,429,823
PAINT COAGULATOR COMPOSITIONS

Ralph J. Cataneo, Brooklyn, N.Y., assignor to Oakite Products, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,120

U.S. Cl. 252—170 21 Claims

Int. Cl. C09d *9/00;* **B08b** *3/08*

1. A liquid paint-coagulator composition which by weight consists essentially of

(a) from about 3 to about 35 parts of a dialkyl ketone having a total of from 8 to about 35 carbon atoms and being dissolved in

(b) from about 96 to about 60 parts of an organic solvent vehicle which dissolves said ketone without reacting with it and is a member of the class of the liquid solvents consisting of (i) aliphatic hydrocarbons, (ii) mono-nuclear aromatic hydrocarbons, (iii) chlorinated aliphatic hydrocarbons, and (iv) mixtures of any of these solvents, said organic solvent vehicle being insoluble in water and lighter than it and giving the resulting composition a flash point of at least about 100° F.; said overall composition being liquid, substantially insoluble in water and lighter than it to form a layer over it, and effective to destroy the tacky film-forming property of and coagulate paint-spray booth overspray paint particles.

3,429,824
COMPOSITION AND METHOD FOR TREATING SCALE

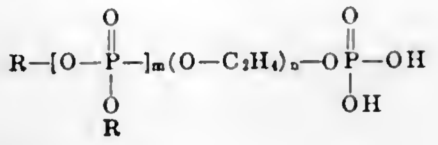
Jack F. Tate, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1966, Ser. No. 560,117

U.S. Cl. 252—180 11 Claims

Int. Cl. C07f *9/08;* **C02b** *5/06*

1. A method of controlling the build-up of scale deposits in an aqueous system which comprises incorporating in said system a scale treating composition consisting essentially of an ester of polyphosphoric acid containing polyethoxy linkages partially esterified with alkoxypolyethoxyethanols and mixtures of said esters, the ester having the general formula



$$R-[O-\underset{\underset{\displaystyle R}{\overset{|}{O}}}{\overset{\overset{\displaystyle O}{\|}}{P}}-]_m(O-C_2H_4)_n-O\underset{\underset{\displaystyle OH}{|}}{\overset{\overset{\displaystyle O}{\|}}{P}}-OH$$

wherein R is either hydrogen or a

$$C_{13}H_{27}O-(C_2H_4O)_{n-1}-C_2H_4$$

group in which *n* is 1 to 3, *m* is equal to 2 or 3 and R is a hydrogen atom not more than *m* minus one times, said ester having a molecular weight in the range of from about 750 to about 1730, said treating composition being employed in an amount sufficient to inhibit the development of scale in an aqueous system.

3,429,825
WATER SOLUBLE DAYLIGHT FLUORESCENT PIGMENT AND COMPOSITION

Robert W. Voedisch, Morton Grove, Ill., assignor to Lawter Chemicals, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 519,011

U.S. Cl. 252—301.2 10 Claims

Int. Cl. C09k *1/02;* **C08g** *9/24, 51/14*

1. A water soluble dylight fluorescent pigment comprising finely divided particles of a water soluble hydantoin-aldehyde polymerized resin and a daylight fluorescent dyestuff dissolved in the resin.

8. A fibrous fabric having daylight fluorescent color in which the fabric comprises fibers wet with a water soluble hydantoin-aldehyde resin containing a daylight fluorescent dyestuff in a dissolved state therein.

3,429,826
GEL-FORMING INSPECTION PENETRANT AND EMULSIFIER COMPOSITIONS EMPLOYING HYDROPHILIC AND LIPOPHILIC SURFACTANTS

James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 91011

Continuation-in-part of application Ser. No. 497,058, Oct. 18, 1965. This application Oct. 17, 1967, Ser. No. 675,896

U.S. Cl. 252—301.2 8 Claims

Int. Cl. C09k *1/02;* **G01n** *21/16*

An inspection penetrant process and applicable water-washable penetrant and emulsifier compositions which utilize as essential ingredients a combination of lipophilic and hydrophilic surfactant liquids. By employing these two ingredients in appropriate relative proportions, water-washable or water-emulsifiable compositions are formulated which exhibit a feature of a broad gel-range such that a high level of flaw entrapment efficiency is obtained. By use of appropriate extender liquids, such as glycols, mineral thinners, or other solvents, the gel-range characteristic and resultant flaw entrapment efficiency may be adjusted to a desired condition.

3,429,827
METHOD OF ENCAPSULATION

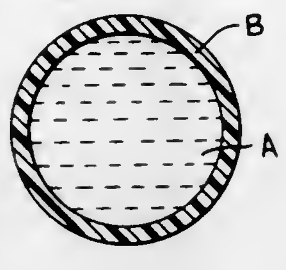
Henn Ruus, Niagara Falls, N.Y., assignor to Moore Business Forms, Inc., Niagara, Falls, N.Y., a corporation of Delaware

Filed Nov. 23, 1962, Ser. No. 239,732

U.S. Cl. 252—316 7 Claims

Int. Cl. B01j *13/02*

1. The method of encapsulating a substance in a shell of solid synthetic condensation polymer formed by the polycondensation of two polyfunctional reactants adapted to condense to give said polymer, which method comprises the steps of: (1) dispersing one of said reactants and said substance to be encapsulated in the first fluid continuous phase, (2) dissolving said second reactant in a second fluid continuous phase which is a solvent for said second reactant and which is compatible with said first continuous phase, and (3) admixing said two continuous phases, whereby the reactants therein condense to form microcapsules of said substance in a shell of said polymer.



3,429,828
PEPTIZING AND VISCOSITY STABILIZERS FOR ADHESIVES

Max H. Laden and Richard Shenfeld, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 9, 1966, Ser. No. 532,885

U.S. Cl. 252—353 10 Claims

Int. Cl. C08f *25/02;* **C09j** *3/06*

Process of peptizing and stabilizing the viscosity of starch solutions and a composition for accomplishing the same comprising a liquefying salt in combination with an aromatic sulfonate.

3,429,829
ORGANOLITHIUM INITIATOR PLUS HALOGEN AND HALOGEN CONTAINING COMPOUND ADJUVANTS FOR THE PREPARATION OF DIENE POLYMERS

Gerald R. Kahle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 450,172, Apr. 22, 1965, which is a division of application Ser. No. 137,015, Sept. 11, 1961. This application Oct. 14, 1966, Ser. No. 586,621

U.S. Cl. 252—431 6 Claims

Int. Cl. C08d *1/14;* **C08f** *1/28*

A catalyst composition for polymerizing monomers such as isoprene, the composition being formed on mixing an organolithium compound and a halogen containing compound.

3,429,830
PROCESS FOR PREPARING A CRYSTALLINE ZEOLITE CATALYST COMPOSITE

Malden Ward Michael, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 396,398, Sept. 14, 1964. This application Apr. 18, 1967, Ser. No. 631,618

U.S. Cl. 252—453 5 Claims

Int. Cl. B01j *11/44, 11/40*

This invention relates to a process for preparing an intimately associated catalyst composite of improved stability comprising a silica-alumina hydrogel and a crystalline alumino-silicate characterized by the addition of aluminum sulfate to a preformed aqueous mixture of alkali metal silicate and crystalline alkali metal aluminosilicate while maintainign a pH above 7.

3,429,831
LITHIATED NICKEL OXIDE CRYSTALS

Marvin Garfinkel and Joseph L. Weininger, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 18, 1965, Ser. No. 426,293
U.S. Cl. 252—519 **9 Claims**
Int. Cl. C23c *9/00, 13/04*

A single crystal of lithiated nickel oxide is disclosed which has a strain-free single crystal of nickel oxide, and lithium contained uniformly therein. A method is disclosed for forming a single crystal of lithiated nickel oxide which comprises the steps of providing a single crystal of nickel oxide, heating the crystal in an oxidizing atmosphere containing oxygen, heating the crystal at a temperature in a temperature range below the melting point of the crystal, heating the crystal in the presence of lithium, and diffusing lithium uniformly into the single crystal.

3,429,832
GLOWER LAMP AND PROCESS

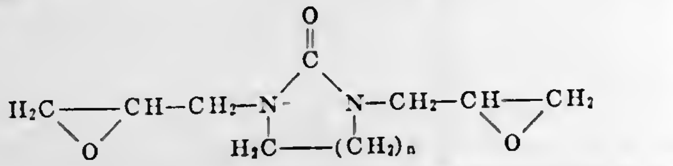
Ralph E. Carter, Colonie, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 31, 1966, Ser. No. 554,022
U.S. Cl. 252—520 **2 Claims**
Int. Cl. H01b *1/02;* **H01j** *17/20*

A method is disclosed for electrolyzing a Nernst-type glower lamp filament so that the usual auxiliary heating element may be eliminated in use. The element which is composed of a sintered zirconia-yttria ceramic which optionally may contain some calcium oxide is heated in a two step process to a temperature of about 1600° C. or higher in an oxygen-free environment for a period of time necessary to complete the electrolysis of the element.

3,429,833
WATER-SOLUBLE N,N'-DIGLYCIDYL COMPOUNDS AND CURABLE COMPOSITIONS COMPRISING SAID COMPOUNDS

Daniel Porret, Binningen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Feb. 9, 1967, Ser. No. 614,806
Claims priority, application Switzerland, Feb. 18, 1966, 2,425/66; June 17, 1966, 8,835/66
U.S. Cl. 260—2 **4 Claims**
Int. Cl. C07d *51/36, 49/34;* **C08g** *51/18*

New water-soluble N,N'-diglycidyl compounds of the formula



in which $n=1$ or 2, are prepared; an epihalohydrin is reacted in the presence of a catalyst, preferably of a tertiary amine, a quaternary ammonium base or a quaternary ammonium salt, with ethylene-urea or propylene-urea and in a second stage the product thus obtained is treated with a dehydrohalogenating agent. Said compounds are suitable for use in textiles. Curable composition comprising said compounds may be used as laminating resins, paints, lacquers, casting resins, coating compositions, adhesives, etc.

3,429,834
DIOL OF POLY(BUTENE-2-OXIDE)S

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 298,434, July 29, 1963. This application Mar. 2, 1964, Ser. No. 348,764
U.S. Cl. 260—2 **7 Claims**
Int. Cl. C08g *23/04;* **C07c** *43/04, 41/02*

1. As a new composition of matter, a diol of a poly (butene-2 oxide) wherein each of the hydroxyl groups is attached to a terminal carbon of the polymer chain, said diol having a number average molecular weight of from about 1,000 to about 20,000.

3,429,835
REGENERATION OF WEAK BASE ANION EXCHANGE RESINS

Karsten Odland, La Grange Park, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,172
U.S. Cl. 260—2.1 **2 Claims**
Int. Cl. B01d *15/06*

A process for regenerating weak base anion exchange resins. In the process a weak base resin which is exhausted by contact with acids is regenerated by contact with an aqueous lime slurry. The acid sorbed on the resin is hydrolyzed off the resin and into the water phase where it is neutralized by the lime. The addition of the acid to the water phase causes additional lime to be dissolved during the neutralization process. The concentration of the lime slurry is in the range of from about 2,000 to 10,000 p.p.m. total alkalinity as $CaCO_3$. The subject process provides a much improved regeneration system for weak base resins.

3,429,836
FOAMED ARTICLES COMPRISING AN ALKALI METAL SILICATE AND A STYRENE RESIN

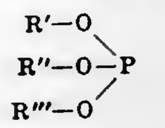
Fritz Stastny, Ludwigshafen (Rhine), Rudolf Gaeth, Limburgerhof, Pfalz, Bernhard Schmitt, Heidelberg, and Udo, Haardt, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 29, 1964, Ser. No. 422,032
Claims priority, application Germany, Jan. 2, 1964, B 74,874; Apr. 2, 1964, B 76,156
U.S. Cl. 260—2.5 **5 Claims**
Int. Cl. C08f *47/08, 45/04*

Heat-resistant organic foam plastics prepared by introducing into aqueous solutions of alkali metal silicates having particles of water-containing alkali metal silicate suspended therein (1) substances which react with the dissolved silicates with the precipitation of insoluble silicates, and (2) expandable plastic particles, and then foaming these mixtures at temperatures above the softening point of the expandable plastic particles to form a homogeneous foam article.

3,429,837
POLYURETHANE FOAMS CONTAINING TERTIARY ESTERS OF PHOSPHOROUS ACID

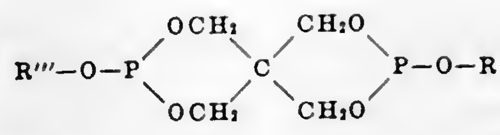
John Langrish and Philip David Perry, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Oct. 8, 1965, Ser. No. 494,249
Claims priority, application Great Britain, Oct. 20, 1964, 42,732/64, Patent 1,086,736
U.S. Cl. 260—2.5 **10 Claims**
Int. Cl. C08g *22/44*

A polyurethane foam prepared by reacting organic polyisocyanate with a hydroxyl group-containing polyester in the presence of a gas-generating agent, an organic halogen compound having a boiling point above 75° C. at atmospheric pressure and from 0.1% to 5% based on the weight of the polyester of a tertiary ester of phosphorous acid having the following structures:



$$(R'{-}O)(R''{-}O)(R'''{-}O)P$$

or



wherein R', R'', and R''' individually represent an unsubstituted or hydrocarbon substituted alkyl, aralkyl, cycloalkyl or aryl group; said tertiary ester of phosphorous acid being used to prevent scorching and discoloration of the polyurethane foam.

3,429,838
ELASTOMERIC FOAMABLE ABLATION COMPOSITION

Harold R. Hersh, Cherry Hill, N.J., assignor to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Feb. 11, 1966, Ser. No. 527,387
U.S. Cl. 260—2.5 **1 Claim**
Int. Cl. C08g *47/10, 53/08*

A foamed ablative material useful as a heat shield for the aft end of re-entry vehicles comprising a room temperature vulcanizing silicone rubber, a blowing agent, a catalyst and a low temperature degrading, high gas evolving, powdered polymethylmethacrylate filler material.

3,429,839
EPOXY POLYMER DERIVED POLYMERS CONTAINING QUATERNARY PHOSPHONIUM GROUPS

Simone Franco, Casalgrasso, Cuneo, Italy, assignor to Ferrania S.p.A., Milan, Italy
No Drawing. Filed Mar. 29, 1966, Ser. No. 538,245
Claims priority, application Italy, Apr. 23, 1965, 16,333/65, Patent 767,082
U.S. Cl. 260—8 **10 Claims**
Int. Cl. C08f *3/66, 29/50*

Polymers having a plurality of quaternary phosphonium groups and having utility in the photographic art are prepared by the quaternization of tri-substituted phosphines with polymers containing a plurality of 1,2-epoxy groups.

3,429,840
ACRYLIC RESINS CONTAINING CELLULOSE BUTYRATE BENZOATE, COATINGS AND COMPOSITIONS

Jack W. Lowe, Jr., and Gilliam S. Teague, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 14, 1967, Ser. No. 660,231
U.S. Cl. 260—15 **9 Claims**
Int. Cl. C08b *21/06*

Lacquers containing either thermoplastic or thermosetting acrylic resin, and cellulose butyrate benzoate provide improved lacquers for such applications as automotive finishes.

3,429,841
PROTECTION OF PROPYLENE POLYMER FIBERS FROM DETERIORATION BY LIGHT

Mark W. Pollock, Teaneck, N.J., and Arthur C. Hecker, Forest Hills, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,058
U.S. Cl. 260—28 **9 Claims**
Int. Cl. C08f *45/58, 47/12*

A stabilizer composition is provided for coating propylene polymer fibers to shield the fibers from light and containing a 2-hydroxybenzophenone and an oxidized polymeric wax to enhance the light absorbing protection afforded by the benzophenone and improve the adherence of the benzophenone to the fibers, and optionally, an epoxidized fatty acid ester and/or a cross-linking agent.

Propylene polymer fiber coated with such a stabilizer composition is also provided.

3,429,842
POLISH FORMULATION

Richard L. Wolstoncroft, Erie, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 9, 1964, Ser. No. 417,232
U.S. Cl. 260—28.5 **4 Claims**
Int. Cl. C09g *1/10*

An aqueous polish formulation containing an emulsifiable polyolefin wax, an acrylic interpolymer, an alkali-soluble resin and a leveling agent containing tributoxyethyl phosphate, a hydrolytically stable polysiloxane-oxyalkylene block copolymer and diethylene glycol monoethyl ether.

3,429,843
HOT MELT ADHESIVES CONTAINING DIMETHYL ALPHA-METHYL STYRENE/ALPHA-METHYL STYRENE/STYRENE TERPOLYMERS

Vernon W. Arnold, Hammond, Ind., and Robert J. Lee, Dolton, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Continuation-in-part of application Ser. No. 580,168, Sept. 19, 1966. This application May 19, 1967, Ser. No. 639,630
U.S. Cl. 260—28.5 **6 Claims**
Int. Cl. C08f *29/36, 33/08, 45/52*

Terpolymers of dimethyl alpha-methyl styrene, alpha-methyl styrene and styrene are used in the formulation of hot melt adhesives and paper coatings.

3,429,844
STABILIZATION OF POLYVINYL FLUORIDE

Clifford A. Neros, Willoughby, and Charles P. Tomba, Plainesville, Ohio, assignors to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Feb. 11, 1966, Ser. No. 526,723
U.S. Cl. 260—29.1 **8 Claims**
Int. Cl. C08f *29/16;* **B44d** *1/36*

A thermally stable, resinous vinyl fluoride composition incorporates tripentaerythritol into a vinyl fluoride polymer containing at least 75% by weight of the total weight of the polymer of vinyl fluoride. The composition can be applied from a dispersion system through use of a latent solvent and may be colored through use of pigments. Substrates may be coated with the thermally stable resinous vinyl fluoride compositions of this invention.

3,429,845
COMPOSITIONS COMPRISING POLYSILICIC ACID AND COPOLYMERS OF FLUORINATED MONOMERS WITH OMEGA-HYDROXYALKYL VINYL ETHERS

Max F. Bechtold, Kennett Square, Pa., and Frank Shumate Fawcett, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,063
U.S. Cl. 260—29.6 **32 Claims**
Int. Cl. C08f *29/26, 45/04;* **C09g** *3/78*

Described and claimed are compositions comprising polysilicic acid and copolymers of fluorinated monomers with omega-hydroxyaliphatic vinyl ethers, e.g., copolymers of tetrafluoroethylene and 4-hydroxybutyl vinyl ether, useful as scratch-resistant coatings for plastics, e.g., poly(methyl methacrylate).

3,429,846

POLYSILICIC ACID/TETRAFLUOROETHYLENE SECONDARY ALCOHOL COPOLYMER COMPOSITIONS

Max F. Bechtold, Kennett Square, Pa., and Wallace R. Brasen, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 15, 1965, Ser. No. 464,064

U.S. Cl. 260—29.6 **27 Claims**

Int. Cl. C08f *29/26, 45/04;* **C09d** *3/78*

Described and claimed are compositions comprising polysilicic acid and copolymers of fluorinated monomers with compounds containing secondary alcohol groups, e.g., copolymers of tetrafluoroethylene and hydrolyzed vinyl acetate, useful as scratch-resistant coatings for plastics, e.g., poly(methyl methacrylate).

3,429,847

ORGANOSILICON COMPOUNDS AND COMPOSITIONS CONTAINING THE SAME

Jean Boissieras and Louis Frederic Ceyzeriat, Lyon, France, assignors to Rhone Poulenc S.A., Paris, France, a French body corporate

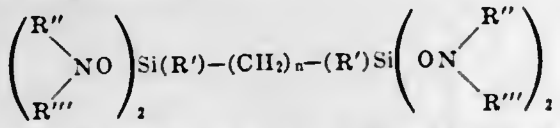
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,209

Claims priority, application France, Nov. 10, 1964, 994,478

U.S. Cl. 260—37 **15 Claims**

Int. Cl. C08g *47/02, 51/74;* **C07c** *7/10*

The invention provides new α,ω-bis(diaminoxysilyl) alkanes of the formula:



$$\left(\begin{array}{l}R''\\ \quad\;\; > NO\\ R'''\end{array}\right)_2 \mathrm{Si}(R')-(\mathrm{CH}_2)_n-(R')\mathrm{Si}\left(\begin{array}{r}R''\\ ON < \quad\;\;\\ R'''\end{array}\right)_2$$

where *n* is an integer and R′, R″ and R‴ are organic radicals, R″ and R‴ being optionally joined. When mixed with α,ω-dihydroxyorganopolysiloxane oils, these new compounds give compositions which can be cured to elastic solids, especially useful for joining concrete slabs, by exposure to ambient moisture.

3,429,848

FOUNDRY BINDER COMPOSITION COMPRISING BENZYLIC ETHER RESIN, POLYISOCYANATE, AND TERTIARY AMINE

Janis Robins, St. Paul, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,106

U.S. Cl. 260—38 **21 Claims**

Int. Cl. C08g *37/18, 51/78;* **B22c** *1/22*

Foundry binder compositions employing novolac or benzylic ether type of phenolic resins in combination with polyisocyanates are cured by the use of a curing agent comprising a tertiary amine or a metal ion used in combination with a silane.

3,429,849

PROCESS FOR THERMALLY STABILIZING ISOTACTIC POLYMERS WITH (I) ALKALI METAL OR ALKALINE EARTH METAL HYDROXIDE AND (II) CONVENTIONAL THERMAL STABILIZERS

Gerardus Henricus Kroes, Arnhem, Netherlands, and Erhard Siggel, Seckmauern, Odenwald, Albert Schöpf, Hering, Odenwald, and Gerhard Meyer, Obernburg (Main), Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

Filed Apr. 21, 1965, Ser. No. 449,694

Claims priority, application Germany, Apr. 24, 1964, V 25,882

U.S. Cl. 260—45.85 **11 Claims**

Int. Cl. C08f *1/88, 45/58*

Process of thermally stabilizing a polyolefine obtained by polymerization of an alkene-1 monomer in contact with a Ziegler catalyst wherein the initial polyolefine is produced, purified and dried under an inert atmosphere, the purified and dried polyolefine is melted and admixed with 0.001–1% by weight of an alkaline compound, such as sodium hydroxide, while still maintaining the polyolefine under an inert atmosphere, and thereafter adding at least one thermal stabilizing agent to the polyolefine. A preferred thermal stabilizing agent is a mixture of a sterically hindered phenol and a compound of the formula $(\text{alkyl-O—CO—CH}_2\text{—CH}_2\text{—})_2\text{S}$. The stabilized polyolefine product is useful in the production of filaments, films, foils and the like.

3,429,850

STABILIZED POLYPHENYLENE ETHER COMPOSITIONS

Klaus E. Holoch, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,006

U.S. Cl. 260—45.9 **6 Claims**

Int. Cl. C08g *51/60, 51/56, 43/00*

A stabilized polyphenylene ether composition consisting of a major portion of a polyphenylene ether and a minor portion of a stabilizer composed of a hexaalkylphosphoric triamide, a boron compound and an acidic phosphorus compound.

3,429,851

SILICATE RESINS

Harold Coates, Wombourn, David Albert Brown, Longhope, and Francis Michael Peters, Birmingham, England, assignors to Electric Reduction Company of Canada Ltd., Islington, Ontario, Canada, a Canadian company

No Drawing. Continuation-in-part of application Ser. No. 466,461, June 23, 1965. This application Nov. 21, 1966, Ser. No. 595,469

Claims priority, application Great Britain, July 7, 1964, 28,021/64

U.S. Cl. 260—46.5 **8 Claims**

Int. Cl. C08g *31/04;* **B32b** *17/00*

A silicon containing formaldehyde-resin precondensate useful for producing thermoset laminates. The precondensate is the reaction product of formaldehyde and precursors thereof, upon the products of the partial transesterification of a organic silicate tetraester with at least one polyhydroxy compound. The molar ratio of OH groups provided by said polyhydroxy compound per molar proportion of said silicate tetraester is between 7.2:1 and 8.4:1.

3,429,852

ETHYLENICALLY UNSATURATED DERIVATIVES OF BENZOPHENONE AND CROSSLINKABLE POLYMERS THEREOF

Martin Skoultchi, Somerset, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1967, Ser. No. 626,945

U.S. Cl. 260—47 **12 Claims**

Int. Cl. C08f *15/18, 37/06*

Ethylenically unsaturated derivatives of substituted benzophenones which are prepared by means of a method involving reacting the substituted benzophenone with an ethylenically unsaturated reagent such as glycidyl acrylate and glycidyl methacrylate. The resulting monomers may, thereafter, be homo- or copolymerized with a wide variety of conventional ethylenically unsaturated, i.e. vinyl, monomers. As a result of the presence of such benzophenone monomers, the resulting copolymers are sensitive to external stimuli such as ultra-violet light and visible light and will readily crosslink upon exposure to such stimuli.

3,429,853

PROCESS FOR PREPARING PREPOLYMERS OF UNSATURATED HETEROCYCLIC COMPOUNDS AND RESULTING PRODUCTS

Roy T. Holm, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 24, 1964, Ser. No. 385,077

U.S. Cl. 260—63 **9 Claims**

Int. Cl. C08f *7/12, 1/64*

Prepolymer compositions prepared from unsaturated heterocyclic monomers are disclosed. These compositions comprise a reaction product of (1) a compound containing at least one cyclic structure containing an ethylenic group adjacent to a hetero atom, and one other ethylenic group, and (2) a salt of an inorganic acid, the anion portion of which contains at least two dissimilar elements. Uses of the above-noted compositions such as in the preparation of laminated products, are also disclosed.

3,429,854

PROCESS FOR SHEET FORMING POLYETHYLENE TEREPHTHALATE

Erhard Siggel, Seckmauern, and Walter Rein, Obernburg, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,951

Claims priority, application Germany, Dec. 3, 1964, V 27,281

U.S. Cl. 260—75 **8 Claims**

Int. Cl. B29d *25/00;* **C08g** *53/14, 53/16*

Process for the vacuum deep-drawing of a polyethylene terephthalate sheet material which must have a solution viscosity of about 1.4 to 1.7, measured as a 1% solution in meta-cresol at 25° C., and a degree of crystallization from 0 up to about 25%, wherein the polyethylene terephthalate sheet is first heated to a temperature of 75–180° C., preferably 75–120° C., the sheet is then shaped by vacuum deep-drawing onto the mold surface, and the sheet in the mold is then immediately cooled to a tempertaure below 70° C. The process yields 3-dimensional polyethylene terephthalate products of improved properties, including a better impact resistance, greater transparency and good electrical properties.

3,429,855

NOVEL ORGANIC POLYOL COMPOSITIONS AND FILLED NON-CELLULAR POLYURETHANES PREPARED THEREFROM

David S. Cobbledick, Amherst, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,568

U.S. Cl. 260—77.5 **10 Claims**

Int. Cl. C08g *22/40, 51/56*

Production of liquid organic polyol compositions comprising a mixture of at least one organic polyol, an inert filler dispersed therein and an organo-mercuric salt catalyst dissolved therein which is devoid of ionizable halogen, and a stabilizing amount of red lead oxide dispersed in the mixture, useful in producing filled noncellular polyurethane compositions upon reaction with organic polyisocyanate.

3,429,856

POLYURETHANES CURED WITH 4,4′-METHYLENE-BIS-(o-TRIFLUOROMETHYLANILINE)

Guenther Kurt Hoeschele, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Sept. 14, 1964, Ser. No. 396,349, now Patent No. 3,345,412, dated Oct. 3, 1967. Divided and this application July 21, 1967, Ser. No. 678,122

U.S. Cl. 260—77.5 **1 Claim**

Int. Cl. C08g *22/04*

A polyurethane prepared by reacting (1) an isocyanato-terminated polyurethane prepolymer with (2) a curing amount of 4,4′-methylene-bis-(o-trifluoromethylaniline). The curing agent provides a long pot life and yet reasonable cure time for the castable polyurethane.

3,429,857

POLYMERIC COMPOSITION AND PROCESS OF PREPARING THE SAME

Ralph Earl Layman, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 11, 1966, Ser. No. 549,177

U.S. Cl. 260—78.5 **10 Claims**

Int. Cl. C08f *21/02;* **C08g** *9/30*

1. A process for producing a polymeric material comprising heat reacting maleic anhydride with a mixture of polymethyl ethers of hexamethylol melamine, wherein said methyl ethers are preponderantly pentamethyl ethers and hexamethyl ethers, until an acid number of between about 10 and 90 is reached, thereafter reacting the reaction product thus produced with a polymerizable monomer having a $CH_2{=}C{<}$ group and a boiling point of at least 60° C. until at least 50% of said polymerizable monomer has been polymerized, wherein said maleic anhydride is used in an amount varying between about 1% and 20%, by weight, based on the total weight of said maleic anhydride and said mixture of melamine compounds and wherein said monomer is used in an amount varying between about 1% and 50%, by weight, based on the total weight of the monomer, maleic anhydride and melamine compounds final reaction product.

3,429,858

STYRENE/DIALKYL FUMARATE PROCESS USING A SOLUBILITY MODIFIER

Robert J. Slocombe, Kirkwood, Mo., and Ronald H. Dahms, Springfield, and Charles R. Williams, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,112

U.S. Cl. 260—78.5 **6 Claims**

Int. Cl. C08f *19/10*

Described herein is an improvement in a process for the emulsion polymerization of copolymers of styrene and certain dialkyl fumarates wherein the improvement comprises carrying out the polymerization reaction in the presence of at least about 2% by weight based on the total amount of water of a solubility modifier selected from the group consisting of monohydric aliphatic alcohols having up to 5 carbon atoms, aliphatic ketones and cycloaliphatic ketones.

3,429,859

DICHLOROALICYCLIC SULFIDE POLYMERS

Robert A. Meyers, Encino, and Edgar R. Wilson, Glendale, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Nov. 24, 1967, Ser. No. 685,516

U.S. Cl. 260—79 **14 Claims**

Int. Cl. C08g *23/00*

This invention relates to novel dichloroalicyclic sulfide polymers and to a method of preparing same which comprises reacting a diunsaturated alicyclic compound such as cyclopentadiene with a sulfur chloride to obtain the corresponding dichloroalicyclic sulfide polymers having an average molecular weight of at least 10,000.

3,429,860

METHOD OF PREPARING AMIDE POLYMERS

Jack Hurst, Merriam, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation of applications Ser. No. 172,806, Feb. 12, 1962, and Ser. No. 512,195, Dec. 7, 1965. This application Apr. 11, 1967, Ser. No. 630,138

U.S. Cl. 260—86.7 **16 Claims**
Int. Cl. C08f *19/10;* **C08g** *20/00, 41/00*

Polyethylene-type polymers having side chains containing carboxamide groups are prepared by a process which comprises reacting a polyethylene-type polymer having carboxylate alkyl ester-containing side chains with a nitrogenous base in the presence of a minor quantity of an alkali metal hydroxide.

3,429,861

PROCESSES FOR POLYMERIZATION OF ACRYLONITRILE USING ORGANOMETALLIC COORDINATION COMPLEXES AS CATALYSTS

Robert Chiang, Durham, Roger A. Evans, Chapel Hill, and Jerome H. Rhodes, Raleigh, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Original application Mar. 30, 1964, Ser. No. 355,602. Divided and this application Dec. 21, 1965, Ser. No. 515,443

U.S. Cl. 260—88.7 **6 Claims**
Int. Cl. C08f *1/28, 3/74;* **B01j** *11/00*

Catalyst represented by the formula

$$M[M'''(R)_{4-i}(SR)_i]_m$$

wherein M is an alkali or alkaline earth metal, M''' is a Group III–A metal, preferably aluminum, R is a monovalent hydrocarbon radical having up to 12 carbon atoms, *i* is 1–4 and *m* corresponds to the valence of M having been prepared and used to initiate polymerization of acrylonitrile, preferably at low temperatures to produce polyacrylonitrile having unusually high decomposition temperatures and solution and crystallization temperatures in propylene carbonate higher than previously observed. Physical properties of the novel polymers are indirect evidences of highly ordered acrylonitrile polymers.

3,429,862

PROCESS AND CATALYSTS FOR PRODUCTION OF OLEFIN POLYMERS

Lawrence M. Fodor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,127

U.S. Cl. 260—93.7 **9 Claims**
Int. Cl. C08f *1/42, 1/44;* **B01j** *11/84*

Solid polymers of 1-olefins having high modulus and low xylenes-soluble content are produced by polymerization of said olefin in the presence of a catalyst formed by addition of compounds of the formula PX_3 and X_2 to a mixture of compounds of the formula R_nAlX_{3-n} and $TiCl_3 \cdot \frac{1}{3}AlCl_3$. In the foregoing formulas X is a halogen; *n* is 1, 2 or 3; and R is selected from the group consisting of hydrogen, alkyl, aryl and cycloalkyl radicals having 1 to 20 carbon atoms.

3,429,863

ELASTOMERIC POLYMER

Yung-Kang Wei, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Filed July 12, 1965, Ser. No. 471,387

Claims priority, application Canada, July 23, 1964, 907,902

U.S. Cl. 260—94.3 **11 Claims**
Int. Cl. C08d *3/06, 1/14*

A substantially gel-free polymer of butadiene-1,3 is produced in the presence of a catalyst system consisting of a lithium hydrocarbon and a halide of tetravalent titanium mixed in a molar ratio from 8:1 to 16:1.

The polymer has less than 25% of butadiene units in the 1,2 structure, between 25 and 40% in the cis-1,4 structure and the remainder is in the trans-1,4 configuration. It has a molecular weight which corresponds to an intrinsic viscosity of 1.0 to 3.0 dl./g. and a Mooney viscosity of not less than the Mooney viscosity defined by equation $\text{Mooney}=5.6[\eta]^{2.6}$ where $[\eta]$ is the intrinsic viscosity measured in toluene at 30° C. The polymer is resistant to cold flow and shows improved processability.

3,429,864

ETHYLENE POLYMERIZATION USING CATALYST COMPRISING A MIXTURE OF RARE EARTH COMPOUNDS

Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,176

U.S. Cl. 260—94.9 **13 Claims**
Int. Cl. C08f *1/34, 3/06;* **B01j** *11/64*

Ethylene is polymerized to solid polymer by contacting said ethylene with a catalyst which forms on mixing (a) an organolithium compound and (b) a rare earth metal component, said rare earth metal component containing at least 5 weight percent halogen and at least 0.5 weight percent oxygen. An example of this catalyst system, is the catalyst which forms on mixing n-butyllithium, anhydrous cerium trichloride, and ceric oxide.

3,429,865

CHLORINATED POLYETHYLENE COMPOSITIONS

Joseph J. Baron, Jr., Morris Plains, and Albert A. Kveglis, Clifton, N.J., assignors, by mesne assignments, to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,164

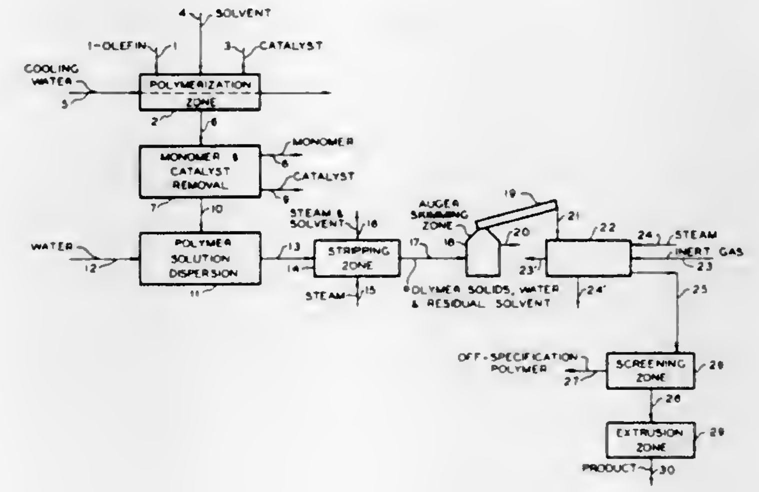
U.S. Cl. 260—94.9 **6 Claims**
Int. Cl. C08f *27/03, 45/36*

More particularly, the invention relates to chlorination of ethylene polymers in aqueous slurry with elemental chlorine in the presence of a member selected from the group consisting of a fatty acid containing 16–18 carbon atoms which acid is generated in situ in the aqueous slurry by the action of hydrochloric acid on a metallic salt of such acid and an alkylphenyl polyethylene glycol ether containing 4–20 ethylene groups where the alkyl group contains 6–18 carbon atoms; whereby agglomeration of the polymer is avoided and chlorination rates are substantially improved while also enabling the production of chlorinated polyethylene products having significantly improved free-flowing and handling properties.

3,429,866

POLYMERIZATION

Frank C. Gibbs, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,571
U.S. Cl. 260—94.9 **4 Claims**
Int. Cl. C08f *1/94;* **B07b** *1/30*

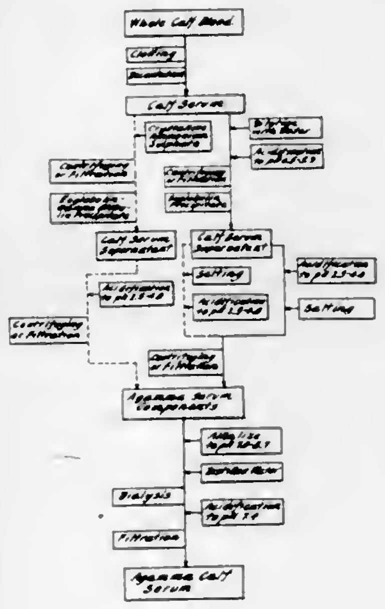


Specification polymer produced in a system wherein polymer particles are dried in a drying zone is recovered using a vibrating screen zone from which nonspecification material is continuously removed.

3,429,867

SERUM SUBSTANTIALLY FREE FROM GAMMA GLOBULIN AND METHOD OF PREPARING SAME

John Bozicevich, Bethesda, Md., assignor to Microbiological Associates Inc., Bethesda, Md., a corporation of Florida
Filed Apr. 30, 1965, Ser. No. 452,286
U.S. Cl. 260—112 **14 Claims**
Int. Cl. C08h *1/00;* **C07g** *7/00*



An agamma calf serum suitable for cell and tissue culture is prepared from calf serum by first precipitating and separating euglobulin, acidifying to pH 4.5–5.3 to precipitate albumin, alpha globulin and beta globulin components leaving gamma globulin in solution, separating the components and then uniformly distributing them in a weakly alkaline aqueous medium having a pH approximately that of normal blood serum.

3,429,868

METHOD OF PREPARING A SERIES OF PROSTHETIC GROUPS AND COENZYMES OF A NEW REDOX-ENZYME WHICH ARE PRESENT IN PLANTS, ANIMALS, OR FOODS AND HAVE VITAMIN-LIKE ACTIVITY

Kiyoshi Kominato, No. 15 Shimogamo-Hagiga-kakiuchicho, Sakyoku, Kyoto, Japan
No Drawing. Continuation of application Ser. No. 410,307, Nov. 10, 1964. This application Nov. 4, 1966, Ser. No. 592,231
Claims priority, application Japan, Mar. 12, 1956, 31/6,218
U.S. Cl. 260—112.5 **3 Claims**
Int. Cl. A01k *19/02;* **C07g** *7/02*

The disclosed compounds are of the class of coenzymes having a 3-creatinyl-4-methyl-5β-oxyethylthiazol as its central nucleus, such as Scordinin B, useful as growth-promoting and metabolically active agents.

3,429,869

MANNICH BASES OF TETRACYCLINE COMPOUNDS AND CARNOSINE

Carlos Ferrer Salat, Lauria 29, Jorge Ferrer Batlles, Vallmajo 18, and Juan Colome Riera, San Elias 34, all of Barcelona, Spain
No Drawing. Filed Sept. 15, 1965, Ser. No. 487,573
Claims priority, application France, Sept. 15, 1964, 988,203
U.S. Cl. 260—112.5 **4 Claims**
Int. Cl. C07d *49/30;* **C07c** *103/19*

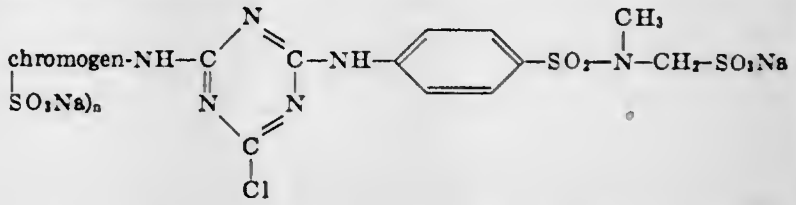
A compound of the formula $A—CH_2—P$ wherein A is selected from the group consisting of tetracycline, oxytetracycline and chlortetracycline, and wherein P is a polypeptide residue.

3,429,870

REACTIVE TRIAZINE CONTAINING AZO DYESTUFFS

Luigi Carati, Milan, Ugo Moiso, Cesano Maderno, and Giulio Craia, Saronno, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy
No Drawing. Filed Aug. 6, 1965, Ser. No. 477,931
Claims priority, application Italy, Aug. 10, 1964 17,310/64
U.S. Cl. 260—153 **8 Claims**
Int. Cl. C09b *62/50, 29/38, 29/16*

Dyestuffs for dyeing cellulose and polyamide having the general formula



where *n*=2, 3 or 4 and the chromogen is a residue of azo, metallized azo, anthraquinone or phthalocyanine dyestuff. Foregoing dyestuffs prepared by reacting cyanuric chloride with Na salt of N'-methyl-sulfanilamido-methanesulfonic acid and then condensing the product with the dyestuff residue. Textile materials dyed with foregoing dyestuffs.

3,429,871

THIAZOLYL MONOAZO DYES FOR HYDROPHOBIC TEXTILE FIBERS

Max A. Weaver and David J. Wallace, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,652
U.S. Cl. 260—158 **8 Claims**
Int. Cl. C09b *39/00*

Thiazolyl-azo-aniline compounds containing substituted dicarboximido and glutarimido groups bonded to the aniline nitrogen atom through an alkylene bridge are useful as dyes for hydrophobic textile materials.

3,429,872
AZO COMPOUNDS CONTAINING DIHYDROXYPHENYL GROUPS AND OXALYL ESTER GROUPS

Elkan R. Blout, Belmont, Saul G. Cohen, Lexington, and Milton Green and Myron S. Simon, Newton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 813,702, May 18, 1959, which is a continuation-in-part of application Ser. No. 697,809, Nov. 21, 1957. This application Nov. 3, 1965, Ser. No. 506,281

U.S. Cl. 260—162 **6 Claims**

Int. Cl. C09b *1/106, 55/00, 37/00*

The present invention is directed to azo and anthraquinone dyes containing at least one and not more than two groups selected from the group consisting of alkoxalyl and aryloxalyl esters of aliphatic hydroxyl groups, said dyes further containing at least one and not more than two groups selected from the group consisting of ortho- and para-dihydroxyphenyl groups.

3,429,873
PREPARATION OF HESPERETIN DIHYDROCHALCONE GLUCOSIDE

Robert M. Horowitz, Pasadena, and Bruno Gentili, Glendale, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,653

U.S. Cl. 260—210 **4 Claims**

Int. Cl. C08b *19/00;* **C07c** *15/12*

Hesperidin is treated with aqueous alkali and then hydrogenation is applied to produce hesperidin dihydrochalcone. This intermediate is refluxed with dilute aqueous hydrochloric acid to split off the rhamnose portion of the sugar moiety of the intermediate, yielding hesperetin dihydrochalcone glucoside, a compound which exhibits intense sweetness.

3,429,874
1-POLYHALOGENOALKYL-2-OXO-1,3-DIHYDRO-2H-1,4-BENZODIAZEPINES

John G. Topliss, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 603,737, Dec. 22, 1966. This application July 3, 1967, Ser. No. 650,581

U.S. Cl. 260—239.3 **11 Claims**

Int. Cl. A61k *27/00;* **C07d** *53/06*

This invention relates to 2-oxo-1,3-dihydro-2H-1,4-dibenzodiazepines, and the 4-N-oxides thereof, having a polyfluoroalkyl radical attached at the 1-position thereof, to their use as muscle relaxants, as sedatives, an anticonvulsants, and as anti-anxiety agents and to the intermediates useful in the preparation thereof. The compounds may be prepared by N-polyfluoroalkylating the appropriately substituted 2-oxo-1,3-dihydro-2H-1,4-benzodiazepines. Alternate methods for the synthesis of the compounds of this invention are also described.

3,429,875
OXIDATION OF 3-HYDROXY-17-ALKYNYL-STEROIDS

Max Salomon de Winter, Pieter Modderman, and Johannes Kloosterman, Oss, Netherlands, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 28, 1966, Ser. No. 537,691

Claims priority, application Netherlands, Dec. 31, 1965, 6517213

U.S. Cl. 260—239.55 **6 Claims**

Int. Cl. C07c *167/00, 169/22*

3,5α,17β-trihydroxy-6β-methyl-17α-alkynyl-steroids and their 17-derivatives are oxidized to the corresponding 3-keto compounds with a lead-tetra acylate, such as lead tetra-acetate, in a basic medium. The products produced are intermediates in the preparation of active ovulation inhibiting agents.

3,429,876
REDUCTION METHOD OF CARBONYL GROUP

Wataru Nagata, Nishinomiya-shi, and Hiroshi Itazaki, Takarazuka-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,373

Claims priority, application Japan, Feb. 14, 1964, 39/7,924

U.S. Cl. 260—239.55 **1 Claim**

Int. Cl. C07c *173/00, 169/26;* **C07b** *1/00*

1. A method for the reduction of a compound containing a member selected from the group consisting of =O, =N—H, =N—alkyl=N—NH$_2$, =N—CONH$_2$ and =N—CSNH$_2$ connected to a nuclear carbon atom, which comprises heating said compound at 100–150° C. in a member selected from the group consisting of glycols, glycol ethers and mixtures thereof, each of said glycols and glycol ethers being freely miscible with water, having a boiling point above 190° C., being liquid at room temperature, containing 3 to 10 carbon atoms, and corresponding to the formula

$$\mathrm{R{—}O(C_nH_{2n}{—}O)_m{—}H}$$

wherein R is a member selected from the group consisting of H and C_mH_{2m+1}, m being a number from 1 to 5 inclusive and n being a number from 2 to 8 inclusive, said heating being effected at a temperature of 100–160° C. for 1 to 10 hours in the presence in the reaction medium of a strong acid having a pKa value less than 1 and of excess hydrazine, then adding alkali hydroxide and heating the resultant mixture to a temperature above 180° C. for 1 to 5 hours.

3,429,877
AZOLE COMPOUNDS

Erwin Maeder, Aesch, Basel-Land, Peter Liechti, Binningen, Leonardo Guglielmetti, Birsfelden, and Adolf Emil Siegrist, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

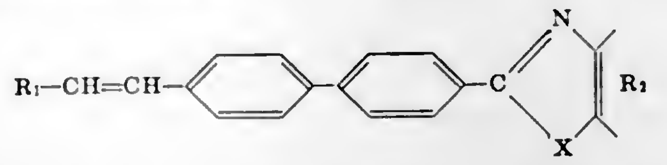
No Drawing. Filed Feb. 2, 1966, Ser. No. 524,503

Claims priority, application Switzerland, Feb. 15, 1965, 1,993/65

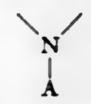
U.S. Cl. 260—240 **8 Claims**

Int. Cl. C09b *23/14;* **D06l** *3/12*

New compounds are provided which may be represented by the formula



where R_1 represents a benzene residue, R_2 a benzene or naphthalene residue which is condensed with the azole ring in the manner indicated by the valency lines, and X represents either oxygen, the group —NH— or the group



where A represents, for example, a lower alkyl, alkenyl or hydroxyalkyl group or an aralkyl radical such as benzyl. The benzene or naphthalene ring R_2 is condensed with the azole ring in the manner indicated by the valency lines. The residues R_1 and R_2 may contain further substituents.

The compounds of this invention are useful as optical brighteners for organic materials.

3,429,878
6-AMINO-5-METHYLENEAMINOPYRIMIDINES

Irwin J. Pachter, Woodbury, N.Y., and Joseph Weinstock, Phoenixville, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Application June 29, 1962, Ser. No. 206,153, which is a continuation-in-part of application Ser. No. 142,541, Oct. 3, 1961. Divided and this application Jan. 31, 1967, Ser. No. 612,836

U.S. Cl. 260—240 **4 Claims**

Int. Cl. C07d *51/42;* **A61k** *27/00;* **C09b** *23/00*

7-aminopteridines, which are useful as diuretic and hypotensive agents and as intermediates for dyestuffs or as antifolic acid compounds, are prepared from 5,6-diaminopyrimidines by a process with Schiff bases (6-amino-5-methyleneaminopyrimidines), 6-amino-5-cyanomethylaminopyrimidines and 7-amino-dihydropteridines as intermediates. The 6-thiazolylpteridines also have utility as central nervous system stimulants. The 2,4,6-triamino-5-cyanomethylaminopyrimidines which are intermediates for 7-aminopteridines also have diuretic activity.

3,429,879
GUANIDINIUM AZIDES

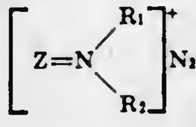
Anthony J. Papa, Grand Blanc, Mich., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 475,868, July 29, 1965. This application Apr. 21, 1966, Ser. No. 544,108

U.S. Cl. 260—246 **26 Claims**

Int. Cl. C07c *117/00;* **C07d** *87/40*

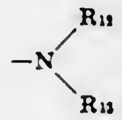
1. A guanidinium azide having the formula



wherein:

R_1 is selected from the group consisting of hydrogen and methyl;

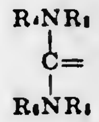
R_2 is selected from the group consisting of hydrogen, C_1–C_5 alkyl, phenyl, phenylsulfonyl and substituted phenyls and phenylsulfonyls having not more than three substituent groups (X) individually selected from the group consisting of C_1–C_5 alkyl, —O—R_{12},



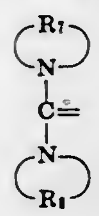
—NO$_2$, —CO$_2$—R_{12}, Cl, Br, —F, —OH, and SO$_2$—R_{12} wherein R_{12} and R_{13} are individually C_1–C_5 alkyl; and

Z is selected from the group consisting of

(a)

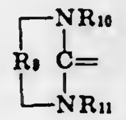


(b)



and

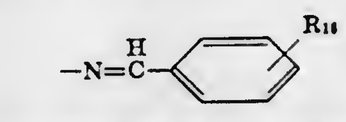
(c)



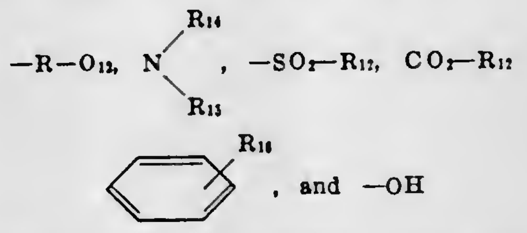
wherein:

R_4 and R_6 are individually selected from the group consisting of hydrogen and C_1–C_6 alkyl;

R_3 and R_5 are individually selected from the group consisting of hydrogen,



phenyl, substituted phenyls having not more than three substituent groups (X), C_1–C_5 alkyl, and C_1–C_5 alkyl having not more than three hydrogen atoms replaced by a radical (Y) selected from the group consisting of



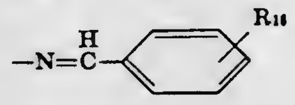
wherein R_{14} and R_{15} are selected from the group consisting of C_1–C_5 alkyl and phenyl, and R_{16} is from the group consisting of hydrogen and (X);

R_{10} and R_{11} are individually selected from the group consisting of hydrogen, C_1–C_5 alkyl, and C_1–C_5 alkyl having not more than three hydrogen atoms replaced by (Y);

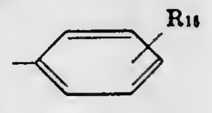
R_7 and R_8 are individually selected from the group consisting of C_2–C_6 alkylenes and C_2–C_6 alkylenes containing a hetero atom selected from the group consisting of oxygen, sulfur, and C_1–C_5 alkyl substituted nitrogen; and

R_9 is C_2–C_6 alkylene with the proviso that:

R_1 is hydrogen when R_3, R_4, R_5, R_6, R_{10} or R_{11} is hydrogen,



or a C_1–C_5 alkyl having a hydrogen atom replaced by a



or —OH; and

R_2 is methyl when R_1 is methyl.

9. The compound of claim 1 having Z, R_1, and R_2 selected such that the compound is 4,4′-iminomethylenedimorpholinium azide.

3,429,880
7-TRIAZINYLAMINO-COUMARIN

Heinrich Hausermann, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Greenburg, N.Y., a corporation of Delaware

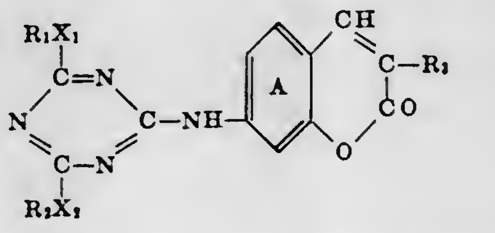
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,386

Claims priority, application Switzerland, Mar. 11, 1965, 3,425/65

U.S. Cl. 260—249.5 **5 Claims**

Int. Cl. C07c *97/00;* **D06l** *3/12*

7-triazinylamino-coumarin compounds of the formula:



wherein each of R_1 and R_2 represents an unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, aralkyl or aryl radical or one substituted by non-coloring substituents; X_1 and X_2 each represent oxygen or sulfur; R_3 represents an unsubstituted isocyclic-aromatic ar heterocyclic-aromatic radical or one of these radicals substituted by non-coloring substituents, and the benzene ring A can carry non-coloring substituents; are useful for optical brightening agents, particularly for high molecular weight organic materials especially hydrophobic polymeric material such as polyvinyl chloride, nylons, polyolefins and the like.

3,429,881
DIAMINO-TRIAZINE DERIVATIVES

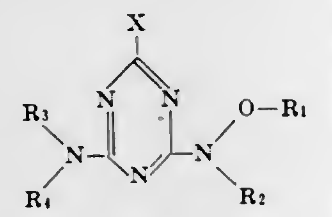
Enrico Knüsli, Riehen, and Jürg Rumpf, Binningen, Basel-Land, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 170,263, Jan. 31, 1962. This application Sept. 10, 1963, Ser. No. 307,776

Claims priority, application Switzerland, Feb. 1, 1961, 1,153/61, 1,154/61

U.S. Cl. 260—249.8 **8 Claims**
Int. Cl. C07d *55/48;* **A01n** *9/22*

1. A member selected from the group consisting of a triazine derivative of the formula



wherein
- X is a member selected from the group consisting of halogen, lower alkoxy, lower alkenyloxy, lower alkylmercapto and lower alkenyl mercapto,
- R_1 is a member selected from the group consisting of lower alkyl, lower alkenyl and lower alkinyl,
- R_2 and R_4 are independently selected from a group consisting of hydrogen, lower alkyl and lower alkenyl, and
- R_3 is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkanoyl and —OR_1

and the acid addition salts of said triazine derivative.

3,429,882
1,2,8,9-TETRAAZAPHENALENES

Karl J. Doebel, Ossining, and John E. Francis, Pleasantville, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Mar. 25, 1968, Ser. No. 715,525

U.S. Cl. 260—250 **15 Claims**
Int. Cl. C07d *51/02;* **A61k** *27/00*

1,2,8,9-tetraazaphenalenes optionally substituted in the 4,5,6,7 and/or 9 positions and their salts are cardiovascular agents. Representative embodiments are 1,2,8,9-tetraazaphenalene, 9-methyl-1,2,8,9-tetraazaphenalene and 9-phenyl-1,2,8,9-tetraazaphenalene.

3,429,883
S-BENZOYLOXYMETHYL-THIAMINE ESTERS

Franco D'Alo and Arnaldo Masserini, Milan, Italy, assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,244

U.S. Cl. 260—256.5 **11 Claims**
Int. Cl. C07d *51/42;* **A61k** *15/12*

New O-esters with hydrocarbon acyl groups up to 9-carbon atoms of S-benzoyloxy- or substituted benzoyloxymethyl-thiamines, their non-toxic acid addition salts with organic or inorganic acids, which compounds have prolonged vitamin B_1 activity and are useful as nutritional supplements for foods and animal feedstuffs and for therapeutic purposes.

ERRATUM

For Class 260—257 see:
Patent No. 3,430,258

3,429,884
NOVEL QUINOLIZIDINE DERIVATIVES OR SALTS THEREOF AND PROCESS FOR PREPARING THE SAME

Ichiro Matsuo, Kawasaki-shi, and Sadao Ohki, Tokyo, Japan, assignors to Chugai Seiyaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,368

Claims priority, application Japan, Mar. 31, 1964, 39/17,661

U.S. Cl. 260—293 **9 Claims**
Int. Cl. C07d *29/02;* **A61k** *27/00*

The compounds of the class of 3-halobenzylquinolizidine and salts thereof having oxytocic, antihistaminic, antiacetylcholine and antibarium activity are prepared by reacting a metal salt of 3-carboalkoxy-4-ketoquinolizidine with a halobenzylhalide, reacting the formed 3-carboalkoxy-3-halobenzyl-4-ketoquinolizidine with a mineral acid, heating and closing the ring of the produced α-halobenzyl-γ-(2-piperidyl)-butyric acid to afford 3-halobenzyl-4-ketoquinolizidine and reducing this material.

3,429,885
PYRIDYLETHYL AND PIPERIDYLETHYL PYRROLES

John L. Archibald, Malvern, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,276

U.S. Cl. 260—294.3 **14 Claims**
Int. Cl. A61k *27/00;* **C07d** *57/00*

The compounds are 5-pyridylethyl and 5-piperidylethyl pyrroles, which may be further substituted in the 1 to 4 positions, and their acid-additional salts, which are useful as hypotensive and anti-tremor agents. The compounds may be prepared by direct C-pyridylethyl- or C-piperidylethylethylation of a suitable pyrrole with a 2- or 4-vinyl pyridine or piperidine compound in an acid medium, under an inert atmosphere.

3,429,886
1-TERTIARYAMINOALKYL-3-(4-PYRIDYL)-INDOLES

Dieter Beck, Basel, and Karl Schenker, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,326

Claims priority, application Switzerland, Nov. 11, 1964, 14,525/64; Sept. 21, 1965, 13,065/65

U.S. Cl. 260—294.8 **12 Claims**
Int. Cl. C07d *31/42;* **A61k** *27/00*

New indoles which contain in position 1 an alkyl radical substituted by an amino group and in position 3 a pyridyl-(4)-group, and their salts. The compounds are useful as anti-inflammatory agents, anti-protozoa agents; they also stimulate the biosynthesis of steroids.

3,429,887
1,7-NAPHTHYRIDINE-3-CARBOXYLIC ACID DERIVATIVES AND THEIR PREPARATION

George Y. Lesher, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 255,210, June 31, 1963. This application Jan. 26, 1965, Ser. No. 428,244

U.S. Cl. 260—294.9 **37 Claims**
Int. Cl. C07d *39/10;* **A61k** *27/00*

1-(lower-alkyl)-3-Z-1,4-dihydro - 4 - oxo - 1,7 - naphthyridines where Z is carboxy or groups convertible thereto by hydrolysis, having antibacterial properties, are prepared by 1-alkylating corresponding 3-Z-1,4-dihydro-4-hydroxy-1,7-naphthyridines. Other aspects include: 7-alkyl-1,7-naphthyridinium quaternary salts; a rearrangement conversion of said salts bearing an 8-alkyl substituent under alkaline conditions to yield 8-hydroxyquinolines; acylation of 8-alkyl-1,7-naphthyridines to form 8-acyloxy(and diacyloxy)methyl - 1,7 - naphthyridines; and, intermediate 4-hydroxy-1,7-naphthyridine-3-carboxylic acid derivatives bearing lower-alkyl substituents at the 8- and/or 6-positions of the 1,7-naphthyridine ring.

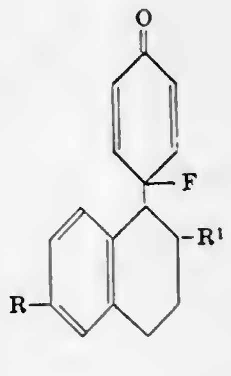
3,429,888
TETRAHYDRONAPHTHALENE DERIVATIVES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,803

U.S. Cl. 260—294.7 **10 Claims**
Int. Cl. C07d *29/20, 29/24, 49/54*

This invention is directed to novel compounds of the formula:



wherein R is hydrogen, lower alkoxy, diloweralkylaminoethoxy or piperidinoethoxy, R^1 is phenyl, halophenyl, loweralkylphenyl, and loweralkoxyphenyl. The compounds are useful as estrogenic agents.

3,429,889
8 - ALKYL - (AND 8 - CYCLOALKYL - LOWER-ALKYL -)10 - HYDROXY - 5 - OXO - 1,2,3,4-TETRAHYDRO - 5H[1]BENZO - PYRANO[3,4 - d] PYRIDINES

Alexander T. Shulgin, Lafayette, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,667

U.S. Cl. 260—295 **4 Claims**
Int. Cl. C07c *87/54;* **A01n** *9/22*

8-alkyl- (and 8-cycloalkyl-lower-alkyl-) 10-hydroxy-5-oxo - 1,2,3,4 - tetrahydro - 5H - [1]benzopyrano[3,4-d] pyridines useful as intermediates in preparing 1,2,3,4-tetrahydro-5H-[1]benzopyrano[3,4-d]pyridines and 1,2,3,4,13,14 - hexahydro-5H-[1]benzopyrano - [3,4-d]pyridines, wherein the latter are useful as psychotropic agents.

3,429,890
CERTAIN 2-THIAZOLYLBENZIMIDAZOLE-1-OXY DERIVATIVES

Meyer Sletzinger, North Plainfield, and Dale R. Hoff, Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 422,543, Dec. 31, 1964. This application Oct. 14, 1965, Ser. No. 495,769

U.S. Cl. 260—302 **4 Claims**
Int. Cl. C07d *49/38, 91/30*

Water soluble anthelmintically active 1-ether benzimidazole derivatives are prepared by treating the corresponding benzimidazole 1-oxide under basic conditions with an alkylating agent selected from the group consisting of alkyl halides and dialkyl sulfates.

3,429,891
CERTAIN BIS[2-(2-BENZOTHIAZOLINETHIONE-3-YL)ETHYL]SULFONE COMPOUNDS

Adel F. Halasa, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of applications Ser. No. 473,498 and Ser. No. 473,501, both July 20, 1965. This application July 25, 1967, Ser. No. 655,754

U.S. Cl. 260—306 **2 Claims**
Int. Cl. C07d *91/44;* **C08g** *17/28;* **C08d** *13/28*

Bis[2-(2-benzothiazolinethione-3-yl)ethyl] sulfone and derivatives thereof are made by reacting benzothiazoline-2-thione with divinyl sulfone and alkyl- and aryl-divinyl sulfones. The compounds are delayed-action rubber accelerators.

3,429,892
SPIRO[NAPHTHALENE-2,2'-OXAZOLIDINE] COMPOUNDS

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,916

U.S. Cl. 260—307 **4 Claims**
Int. Cl. C07d *85/26, 5/16, 31/40*

Spiro compounds, prepared by reacting an α-aminoalkyl substituted methanol with 3,4-dihydro-2(1H)naphthalenone, have antidepressant activity.

ERRATUM

For Class 260—309.2 see:
Patent No. 3,430,259

3,429,893
1-HYDROCARBON-3-ARYL-4-SUBSITUTED ETHYL-2-IMIDAZOLIDINONES

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Original application Dec. 31, 1964, Ser. No. 422,570, now Patent No. 3,337,580, dated Aug. 22, 1967. Divided and this application Dec. 28, 1966, Ser. No. 605,183

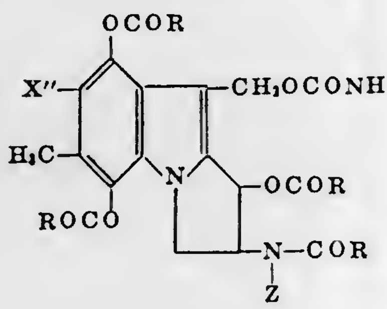
U.S. Cl. 260—309.7 **7 Claims**
Int. Cl. C07d *49/30;* **A61k** *27/00*

1 - hydrocarbon - 3 - aryl - 4 - substituted ethyl - 2-imidazolidinones wherein the substituent on the 4-ethyl group is cyano, carb-lower-alkoxy or carbamyl. The compounds are useful as analeptics.

3,429,894
ACYLATED MITOSENES

Masano Matsui, 1097 Wadahoncho, Suginami-ku, Tokyo, Japan; Yashuhiro Yamada, 2–6 Fujimicho, Chiyoda-ku, Tokyo, Japan; Keizo Uzu, 1188 Shimotogari, Nagaizumicho, Sunto-gun, Shizuoka-ken, Japan; Tadashi Hirata, 1–49 Nozawacho, Setagaya-ku, Tokyo, Japan; and Shigetoshi Wakaki, 2–480 Soshigaya, Setagaya-ku, Tokyo, Japan
Filed Nov. 8, 1965, Ser. No. 511,018
U.S. Cl. 260—326.3 **12 Claims**
Int. Cl. C07d *27/80, 27/56;* **A61k** *27/00*

Acylated mitosenes having the formula

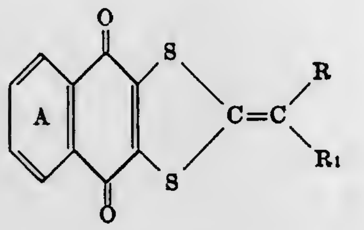


wherein X'' is OCH_3, NHCOR or OCOR, R is H or CH_3 and Z is H or CH_3.

3,429,895
2-METHYLENENAPHTHO[2,3-d]-1,3-DITHIOLE-4,9-DIONES

William Lindsay Mosby, North Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 16, 1965, Ser. No. 464,573
U.S. Cl. 260—327 **5 Claims**
Int. Cl. C07d *71/00;* **A01n** *9/12;* **C09b** *49/00*

2 - methylenenaphtho[2,3-d]-1,3-dithiole-4,9-diones of the formula:



I

wherein R is —NO_2, COOR', $CONH_2$, —COR', or SO_2R'; R_1 is hydrogen or R; R' is lower alkyl; and ring A may be substituted with halogen, lower alkyl, lower alkoxy and/or nitro groups. The compounds are useful as pigments, dyes and herbicides. The compounds are prepared by reacting the proper 2,3-dichloro-1,4-naphthoquinones and a di(alkali metal) salt of a 2-substituted 1,1-ethylenedithiol in an inert solvent.

3,429,896
CHROMONE AND THIOCHROMONE GUANYLHYDRAZONES

Friedrich Bossert, Wuppertal-Elberfeld, and Wulf Vater, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Sept. 29, 1965, Ser. No. 491,450
Claims priority, application Germany, Oct. 1, 1964, F 44,112
U.S. Cl. 260—327 **8 Claims**
Int. Cl. C07d *7/32, 65/14;* **A61k** *27/00*

Disclosed are guanylhydrazones of hydroxyacetic acid-substituted chromones and thiochromones which have coronary dilator activity. These products are prepared, for example, by heating the chromone or thiochromone hydroxyacetic acid compound with an aminoguanidine hydrohalide in alcohol.

3,429,897
3,6-DIHYDRO-1,2-DIOXIN AND ITS METHOD OF PRODUCTION

Peter I. Pollak, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Original application Oct. 21, 1965, Ser. No. 500,345, now Patent No. 3,365,461, dated Jan. 23, 1968. Divided and this application Aug. 3, 1967, Ser. No. 671,174
U.S. Cl. 260—340.6 **2 Claims**
Int. Cl. C07d *15/00, 31/28*

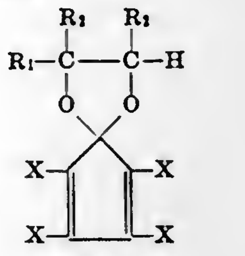
1. A process for the preparation of 3,6-dihydro-1,2-dioxin which comprises reacting 1,4-dihalo-2-butene with hydrogen peroxide in the presence of an alkali metal base.

2. 3,6-dihydro-1,2-dioxin.

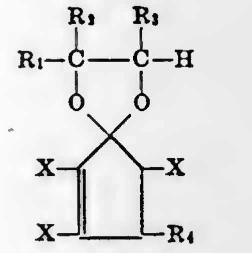
3,429,898
1,2,3,4,5,6,7,8-OCTAHALO-3,7-TRICYCLO[4.3.0.1^{2,5}] DECADIENE-9,10-DIONE DIKETALS

Wen-Hsuan Chang, Gibsonia, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 234,846, Nov. 1, 1962. This application Apr. 10, 1967, Ser. No. 629,402
U.S. Cl. 260—340.9 **6 Claims**
Int. Cl. C07d *13/04, 15/14, 15/12*

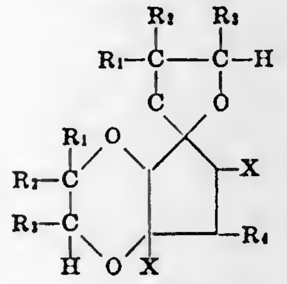
This application relates to compounds produced from the reaction of a hexahalocyclopentadiene and a polyol having hydroxyl groups on adjacent carbon atoms corresponding to the formulae:



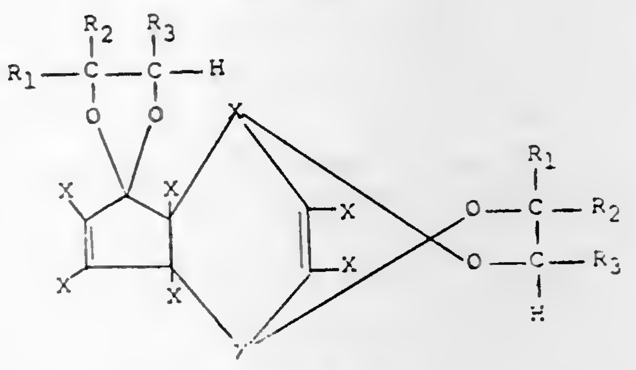
Formula A



Formula B

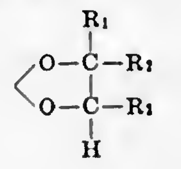


Formula C

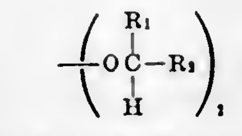


Formula D

In the above formulae, X represents chlorine or bromine and R_1, R_2 and R_3 are each selected from the class consisting of hydrogen and alkyl, cycloalkyl, aryl, alkoxyalkyl, aryloxyalkyl and hydroxyalkyl radicals usually having up to 20 carbon atoms, and preferably 1 to 10 carbon atoms. R_4 is either the structure:



or the structure:



where R_1, R_2 and R_3 are as above.

3,429,899
OXYGEN CONTAINING HETEROCYCLIC ETHERS

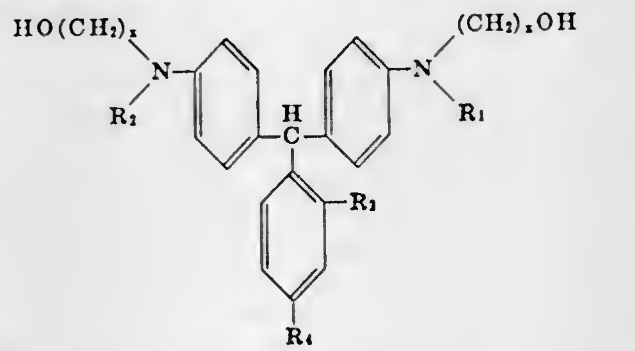
Alexander D. Cross, Mexico City, Mexico, and John A. Edwards, Palo Alto, and Belig Berkoz, Los Altos, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,368
U.S. Cl. 260—345.7 **12 Claims**
Int. Cl. A61k *27/00;* **C07d** *5/04*

Ortho-tetrahydrofuran-2'-yloxy benzoate and ortho-tetrahydropyran-2'-yloxy benzoate salts and esters with optional hydroxymethyl or acyloxymethyl ω-substitution of the tetrahydrofuran or tetrahydropyran moiety and/or acetamido substitution of the benzoate moiety exhibit analgesic and antipyretic activity.

3,429,900
STABLE TRIPHENYL-METHANE DYE LEUCOS

Sydney M. Spatz and Benjamin Lipka, Williamsville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,631
U.S. Cl. 260—391 **5 Claims**
Int. Cl. C09b *11/00*

1. Stable leuco derivings of polyaminotriphenylmethanes having the formula



wherein

x is an integer selected from the group consisting of 2 and 3,

R_1 and R_2 are each alkyl groups having no more than two carbon atoms,

R_3 is selected from the group consisting of chlorine, bromine, methyl and ethyl, and

R_4 is dialkylamino, wherein the alkyl radical contains no more than two carbon atoms.

3,429,901
TELOMERIZATION PROCESS

Alden E. Blood, Joseph E. Dworsky, Jr., and Hugh J. Hagemeyer, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 5, 1965, Ser. No. 423,569
U.S. Cl. 260—410.9 **6 Claims**
Int. Cl. C11c *3/00;* **C07c** *69/02, 17/20*

Telomerization reactions are readily conducted in the presence of a metal oxide catalyst selected from the group consisting of an oxide of a Group I–B, II–B, V–B and VI–B and mixtures thereof. The disclosed catalyst systems provide improved telomerization reactions.

3,429,902
PROCESS FOR PURIFYING STEARIC ACID

Samuel Serota, Philadelphia, and Harold E. Kenney, Chalfont, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Sept. 10, 1965, Ser. No. 486,570
U.S. Cl. 260—419 **3 Claims**
Int. Cl. C07c *53/22;* **C11c** *1/08;* **B01d** *9/00*

Stearic acid is purified by crystallization at ambient room temperatures from a solvent mixture consisting of about 97–96% petroleum ether and about 3–4% methylene chloride. The process eliminates the need for low-temperature crystallizations and large volumes of solvent.

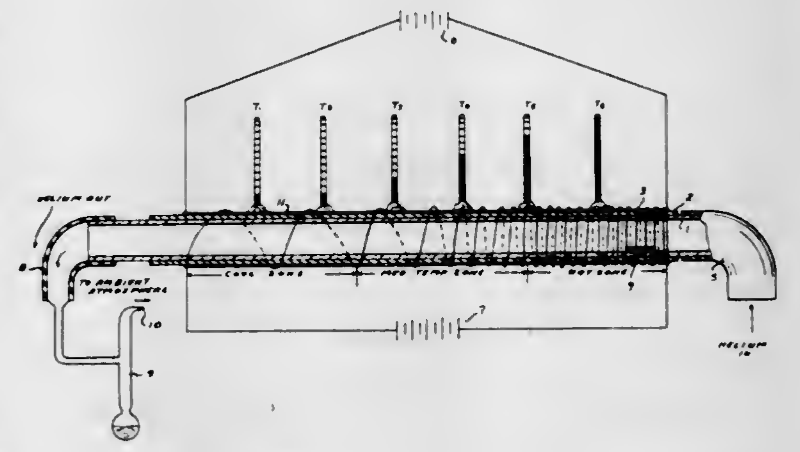
3,429,903
METHOD OF PREPARING MOLYBDENUM (III) ACETYLACETONATE

Melvin L. Larson, Royal Oak, Mich., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 304,236, Aug. 23, 1963. This application Mar. 12, 1968, Ser. No. 712,574
U.S. Cl. 260—429 **6 Claims**
Int. Cl. C07f *11/00*

A method of making molybdenum (III) acetylacetonate which comprises the steps of interreacting an alkali hydroxide with acetylacetone in an aqueous solution in which the mole ratio of the alkali hydroxide to the acetylacetone is controlled to a level less than one, and thereafter interreacting trivalent molybdenum ions with said aqueous solution in an amount to provide a concentration of about one atom equivalent of molybdenum for about 3.5 to about 6 moles acetylacetone and about 1 up to 3 moles of said alkali hydroxide present. The resulting compound has utility as a catalyst for various processes.

3,429,904
SEPARATION OF CHELATES OF RARE EARTH COMPOUNDS AND PROMETHIUM BY FRACTIONAL SUBLIMATION

Kent J. Eisentraut, 642 Turnbull Road, Dayton, Ohio 45431, and Robert E. Sievers, 2628 N. Emerald Drive, Fairborn, Ohio 45324
Filed Nov. 4, 1966, Ser. No. 592,692
U.S. Cl. 260—429.1 **3 Claims**
Int. Cl. C07f *5/00;* **C01g** *57/00*

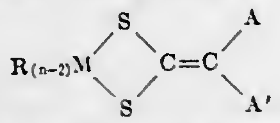


The disclosure is the separation and purification of the rare earths and promethium as chelates by fractional deposition, with apparatus.

3,429,905
ORGANOTIN-, ARSENIC AND ANTIMONY 1,1-ETHYLENE DITHIOLATES

William Lindsay Mosby, North Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 23, 1965, Ser. No. 474,476
U.S. Cl. 260—429.7 **6 Claims**
Int. Cl. C07d *105/00, 105/06, 107/00*

Unsaturated dithiol compounds of the formula:



wherein M is a polyvalent metal selected from the group consisting of antimony, arsenic and tin; R is a monovalent hydrocarbyl radical selected from the group consisting of lower alkyl, monocyclic and bicyclic aromatic, and monocyclic ar(lower alkyl); *n* is the valence of M; A is a monovalent radical selected from the group consisting of CN, COOR, $CONH_2$, CONHR, $CONR_2$, COR and NO_2; and A′ is a member selected from the group consisting of hydrogen and A. These compounds are prepared by reaction of the corresponding alkali metal 1,1-ethylenedithiolate with a metal dihalide in an inert medium. The compounds are useful as fungicides, herbicides and bacteriocides.

3,429,906
METAL CHELATES OF BICYCLONONANEDIONE

Andrew A. Swigar, Nesquehoning, and Robert A. Walde, Emmaus, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
No Drawing. Filed July 9, 1965, Ser. No. 470,882
U.S. Cl. 260—438 **7 Claims**
Int. Cl. C07f *7/24, 7/22;* **A01n** *9/00*

Metal chelates of bicyclononanedione tetracarboxyesters are prepared by reaction of the ester in non-aqueous organic solvent under acid to neutral conditions with a metal salt of a chelate-forming metal and adjusting to higher pH for precipitation of the chelate. These new chelate compounds are indicated to be useful among other things in catalysts, algaecides in paint formulations, and certain of the compounds are also useful as bactericides and fungicides.

3,429,907
AMINE CYANOFERRATES AND METHODS FOR PREPARING SAME

Grace Peters Papp, Stamford, Conn., and James Wellington Clapp, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,181
U.S. Cl. 260—439 **16 Claims**
Int. Cl. A01n *23/00;* **C07f** *15/02*

There is provided amine cyanoferrates of the formula:

$$(R{-}NH_2)_m \cdot H_mFe(CN)_6$$

or

$$(R'{-}X{-}R''{-}NH_2)_m \cdot H_mFe(CN)_6$$

where R is an acyclic alkyl radical, R′ is an acyclic alkyl radical or an acyclic alkoxyalkoxyalkyl radical, R″ is an acyclic alkylene bridge, X is oxygen or sulfur and *m* is an integer from 3 to 4. The compounds have particular utility as algicides.

3,429,908
FLUORENE NUCLEUS DERIVATIVES OF POLYPHENYL COMPOUNDS

John J. van Venrooy, Wyncroft, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Feb. 24, 1966, Ser. No. 529,630
U.S. Cl. 260—448 **15 Claims**
Int. Cl. C07f *5/06;* **C07c** *15/00, 37/00*

Aluminum tetrahalide complexes of 9-biphenylfluorene compounds are prepared by reacting (1) an unsubstituted polyphenyl with (2) a halogenated methane having at least three chlorine and/or bromine atoms and (3) $AlCl_3$ or $AlBr_3$. The complexes are useful as pH indicators and as intermediates in the preparation of 9-biphenylfluorene and derivatives thereof.

3,429,909
SECONDARY AMINOALCOHOL-BORIC ACID REACTION PRODUCT AND PRODUCTION THEREOF

Dietrich Schuster, 160 Am Bergborn, 6741 Frankweiler, Pfalz, Germany
Continuation-in-part of application Ser. No. 413,366, Nov. 23, 1964. This application Apr. 25, 1966, Ser. No. 545,127
U.S. Cl. 260—462 **2 Claims**
Int. Cl. C07f *5/02;* **C07d** *51/62, 107/02*

Boron- and nitrogen-containing reaction product is obtained by reacting boric acid and a secondary aminoalcohol, and then reacting the resulting product with a carboxylic acid, under specified conditions. Products are bacteriocidal, non-corrosive and biodegradable, and can be dissolved, dispersed or emulsified in water.

3,429,910
MANUFACTURE OF PEROXYDICARBONATES

Michael Lederer, Frankfurt am Main, Heinrich Lenzmann, Kelkheim, Taunus, and Siegfried Wagener, Sulzbach, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
Filed Nov. 7, 1966, Ser. No. 592,449
Claims priority, application Germany, Nov. 15, 1965, F 47,677
U.S. Cl. 260—463 **1 Claim**
Int. Cl. C07c *69/00*

1. In a process for the continuous manufacture of solutions of peroxydicarbonates of the general formula RO—CO—OO—CO—OR in which R is an alkyl, chloroalkyl, alkenyl or chloroalkenyl group with 1 to 9 carbon atoms, a chlorocarbonic acid ester of the general formula Cl—CO—OR in which R has the meaning given above is reacted with hydrogen peroxide and an alkali metal hydroxide solution at a temperature in the range of −10 to +30° C., the major part of the reactants is reacted in a first reaction zone at a pH ranging from 8 to 14 with intimate mixing, the dispersion obtained is transferred into an after-reaction zone in which the reaction is terminated and the peroxydicarbonate obtained is taken up in a hydrogen-free, halogen-containing organic solvent or a halogen-free hydrocarbon that is liquid under normal conditions, the improvement of performing the purification and isolation of the peroxide solution in a column with vibratory plates, said plates being maintained in vertical upward and downward motion.

3,429,911
1-BIS(CYANOMETHYL)-3-PHENYLUREAS

Frederick K. Kirchner, Bethlehem, and Andrew W. Zalay, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 3, 1966, Ser. No. 524,829
U.S. Cl. 260—465 **3 Claims**
Int. Cl. C07c *127/18*

1-bis(cyanomethyl)-3-phenylureas obtained by interacting iminodiacetonitrile with phenyl isocyanates are useful as intermediates to 4-imino-2-oxo-3-phenyl-imidazolidine-1-acetonitriles which have utility as anti-inflammatory agents.

3,429,912
STRAINED RING CENTRAL NERVOUS SYSTEM DEPRESSANTS

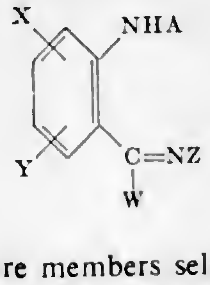
Charles H. Jarboe and Robert Thomas Buckler, Louisville, Ky., assignors to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare
No Drawing. Filed Apr. 6, 1966, Ser. No. 540,491
U.S. Cl. 260—468 **6 Claims**
Int. Cl. C07c *125/06, 103/88;* **A61k** *27/00*

Compounds such as N-acetyl cyclobutanecarboxamide; N-cyclobutyryl cyclobutanecarboxamide; N-butyryl cyclobutanecarboxamide; N-cyclobutyryl ethyl urethane; and γ-cyclobutyryloxy-N-cyclobutyrybutyramide are found to be useful as anesthetics, sedatives, tranquilizers and anticonvulsants.

3,429,913
2-AMINO-α-SUBSTITUTED-BENZYLIDENEAMINES

Stanley C. Bell, Penn Valley, Pa., assignor to The Anchor Chemical Company Limited, Manchester, England, a British company
No Drawing. Original application July 25, 1963, Ser. No. 297,705. Divided and this application Aug. 8, 1966, Ser. No. 570,766
U.S. Cl. 260—490 **3 Claims**
Int. Cl. A61k *27/00;* **C07c** *119/00*

1. A compound of the group consisting of a benzylideneamine having the formula:

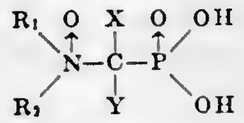


in which X and Y are members selected from the group consisting of hydrogen, halogen, nitro, lower alkyl and trifluoromethyl, A is a member of the group consisting of hydrogen, lower alkyl, lower alkanoyl and benzyl, W is a member of the group consisting of phenyl, halophenyl, methoxyphenyl, methylphenyl and trifluorophenyl while Z represents an acetoxyalkyl having up to 5 carbon atoms; and the geometric isomers.

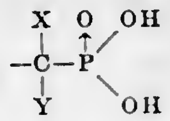
3,429,914
ORGANO-PHOSPHONO-AMINE OXIDES

Marvin M. Crutchfield and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 3, 1964, Ser. No. 394,350
U.S. Cl. 260—502.5 **4 Claims**
Int. Cl. C07f *9/38*

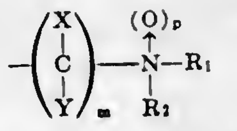
Organo-phosphono-amine oxide compounds are described including acids having the formula



wherein R_1 and R_2 are each selected from the group consisting of alkyl, aryl, alkaryl, aralkyl, alicyclic, hydroxy-substituted derivatives of the foregoing,



and



$$-\left(\begin{matrix}X\\ |\\ C\\ |\\ Y\end{matrix}\right)_m-\underset{\displaystyle R_2}{\underset{|}{\overset{\displaystyle (O)_p}{\overset{\uparrow}{N}}}}-R_1$$

wherein X and Y are each selected from the group consisting of hydrogen and lower alkyl, *m* is an integer from 1 to 10, *p* is an integer 0 to 1, and R_1 and R_2 each do not contain over 6 nitrogen atoms; and salts thereof such as salts of alkali metals, alkaline earth metals, aluminum, ammonium and amines.

3,429,915
CYANAMIDE AMINO ACID CHELATING AGENTS

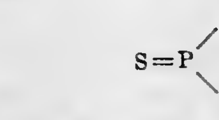
Frederick C. Bersworth, 120 Washington St., East Orange, N.J. 07017
No Drawing. Continuation-in-part of application Ser. No. 580,829, Sept. 20, 1966. This application Oct. 10, 1967, Ser. No. 674,125
U.S. Cl. 260—534 **6 Claims**
Int. Cl. C07c *101/26, 103/18*

Products formed by reacting cyanamide, dicyandiamide and its hydrolysis products, with carboxymethylated amino acids, such as imino diacetic acids and those imino diacetic acids and variants thereof known as polyamino polycarboxylic amino acids chelating agents, are found to be exceptionally good chelating agents for heavy and transition metals.

3,429,916
PREPARATION OF PHOSPHORUS HALIDES

Joseph W. Baker, Kirkwood, and Raymond E. Stenseth, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 22, 1965, Ser. No. 515,754
U.S. Cl. 260—543 **15 Claims**
Int. Cl. C07f *9/52;* **C09k** *3/28;* **C10m** *1/48*

1. Process for the preparation of phosphorus compounds selected from the group consisting of compounds of the formula



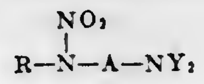
wherein R is hydrocarbyl of not more than 18 carbon atoms selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, aralkyl and alkaryl, X is selected from the group consisting of Cl, Br, F and I and *n* is an integer from 0 to 1, and mixtures thereof which comprise reacting an organic disulfide of the formula RSSR with a phosphorus trihalide of the formula PX_3 at a temperature from about 100° C. to about 600° C. wherein R and X are as defined above.

9. The process of claim **1** carried out in the presence of a halide catalyst selected from the group consisting of (a) organic halides of the formula $(R' \rightarrow X_m$ wherein R′ is hydrocarbyl of not more than 18 carbon atoms selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl and aralkyl, X is halogen and *m* is an integer from 1 to 3, and (b) inorganic halides of the formula MeX_v wherein Me is selected from the group consisting of metal and NH_4, X is halogen, and *v* is the valence of Me and is an integer from 1 to 6, and (c) halogens selected from the group consisting of Cl_2, Br_2 and I_2.

3,429,917
PROCESS FOR PREPARING NITRAZA AMINES

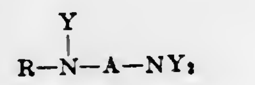
Milton B. Frankel, Portola Valley, and Charles H. Tieman, Modesto, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
No Drawing. Original application Apr. 27, 1961, Ser. No. 105,877, now Patent No. 3,234,282, dated Feb. 8, 1967. Divided and this application Mar. 23, 1965, Ser. No. 442,153
U.S. Cl. 260—556 **5 Claims**
Int. Cl. C07c *111/00*

1. The process for producing a compound having the formula



$$R-\overset{\displaystyle NO_2}{\overset{|}{N}}-A-NY_2$$

which process consists essentially of reacting, an acylamino compound having the formula:


$$R{-}N(Y){-}A{-}NY_2$$

wherein R can be any of alkyl, nitroalkyl, haloalkyl, and halonitroalkyl; A is selected from the group consisting of lower alkylene and lower haloalkylene radicals; and Y is an acyl radical, with a nitrolyzing agent selected from the group consisting of nitric acid and nitrogen pentoxide in a liquid selected from the group consisting of organic halo acid, halogenated organic solvent, oxide of sulfur, and organic halo acid anhydride, said reaction being further characterized in that an excess of the nitrolyzing agent is employed.

3,429,918

N,N'-ALKYLENEBIS[2-NITRO-(LOWER-ALKANAMIDES)]

Philip M. Carabateas, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 2, 1966, Ser. No. 598,630

U.S. Cl. 260—561 **8 Claims**

Int. Cl. C07c *103/44;* **A61k** *27/00*

N,N'-alkylenebis[2-nitro(lower-alkanamides)], having anthelmintic and hormonal activities, are prepared by reacting an alkylenediamine with two molar equivalents of a lower-alkyl 2-nitro(lower-alkanoate) or 2-nitro(lower-alkanoyl) halide.

3,429,919

O-(2-GUANIDINO-ETHYL)-OXIMES AND THE SALTS THEREOF

Harmannus Koopman, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

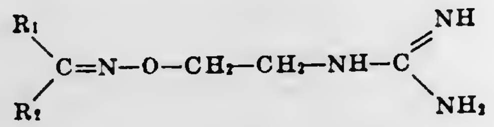
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,575

Claims priority, application Netherlands, Mar. 10, 1965, 6503019

U.S. Cl. 260—564 **14 Claims**

Int. Cl. C07c *129/12, 131/02;* **A61k** *27/00*

(2-guanidino-ethyl)-oximes of the formula


$$(R_1)(R_2)C{=}N{-}O{-}CH_2{-}CH_2{-}NH{-}C({=}NH)NH_2$$

Examples are O-(2-guanidino-ethyl)-cyclohexanonoxime and O-(2-guanidino-ethyl)-phenoxyacetone-oxime-nitrate. The compounds have blood pressure reducing activities.

3,429,920

PREPARATION OF OXIME

Abraham H. de Rooij, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands

Filed Nov. 23, 1964, Ser. No. 413,134

Claims priority, application Netherlands, Nov. 27, 1963, 301,053

U.S. Cl. 260—566 **6 Claims**

Int. Cl. C07c *131/00;* **B01d** *11/00;* **C01b** *25/26*

A process for producing an oxime by reacting a hydroxylamine with an aldehyde or ketone in the presence of a buffering agent which is a mixture of a weak acid having a dissociation constant of 2×10^{-1} to 10^{-6} and a soluble salt of said weak acid. The resulting oxime is separated from the reaction product and the dissolved weak acid salt is separated from the weak acid, the latter being recycled to the reaction zone. The reaction can be conducted in a plurality of stages, the first being maintained at a pH ranging between 1–2, the final at no greater than 5.

3,429,921

PREPARATION OF 5-HYDROXY-5, AMINOALKYL-10,11 - DIHYDRO - 5H - DIBENZO-[a,d] - CYCLOHEPTENES

Nils Sixten Hjelte, Storvreta, and Ragnvald Erik Lindblom, Uppsala, Sweden, assignors to Aktiebolaget Pharmacia, a company of Sweden

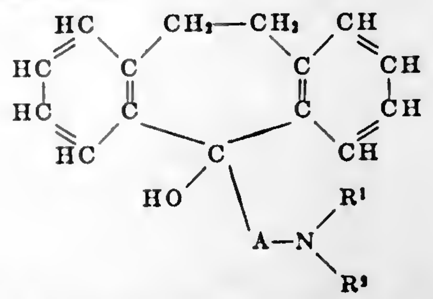
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,196

Claims priority, application Sweden, Nov. 29, 1962, 12,841; July 23, 1963, 8,124; Nov. 19, 1963, 12,756

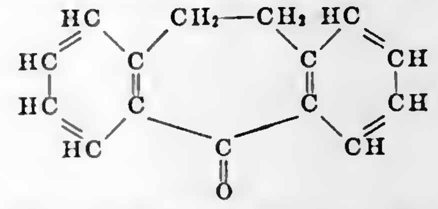
U.S. Cl. 260—570.8 **3 Claims**

Int. Cl. C07c *85/00;* **C07d** *29/10*

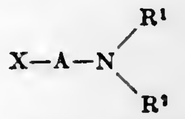
1. A method for the preparation of a compound of the general formula



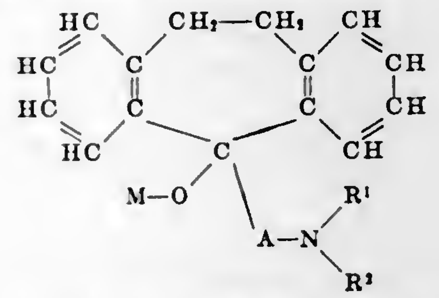
wherein A is a 1,3-alkylene, containing no more than 5 carbon atoms, at least one of R^1 and R^2 is hydrogen and the other is a member selected from the group consisting of lower alkyl, lower cycloalkyl and benzyl, and R^1 and R^2 together contain no more than 6 carbon atoms, which comprises reacting 10,11-dihydro-5H-dibenzo-[a,d]-cycloheptene-5-one of the formula



with an alkali metal selected from the group consisting of sodium and potassium of the formula M and with a compound of the formula


$$X{-}A{-}N(R^1)R^2$$

wherein A, R^1 and R^2 have the above significance and X is a halogen to form a compound of the formula



wherein A, R^1 and R^2 have the above significance and M has the above significance, and hydrolyzing the compound thus formed.

3,429,922

PHENYLISOPROPYLAMINES AND THE SALTS THEREOF

Laszlo Beregi, Boulogne-sur-Seine, Pierre Hugon, Rueil-Malmaison, and Jean-Claude Le Douarec, Suresnes, France, assignors to Science Union et cie, Societe Francaise de Recherche Medicale, Suresnes, France, a French society

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,226

Claims priority, application Great Britain, Jan. 5, 1965, 459/65

U.S. Cl. 260—570.8 **16 Claims**

Int. Cl. C07c *87/28;* **A61k** *27/00*

Phenylisopropylamines wherein the phenyl group contains a halogen or trifluoromethyl substituent and wherein

the amine group has the formula —NHR, wherein R is an unsaturated hydrocarbon radical containing three to eight carbon atoms, inclusive, and acid addition salts thereof. Useful as analgesics, anorexigenics, hypotensives, and metabolism and central nervous system activity regulators.

3,429,923

BORON-NITROGEN COMPOUNDS AND PROCESS FOR THE PREPARATION THEREOF

Walter R. Hertler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 11, 1965, Ser. No. 463,335

U.S. Cl. 260—570.9 **9 Claims**

Int. Cl. C07c *87/28, 85/00, 87/04*

Boron compounds which contain the anion

$$RR'NCB_{10}H_{12}^{-}$$

wherein R and R' are organic groups and the charge is satisfied by quaternization of the nitrogen atom to form an inner salt, or by a cation, can be made by reacting $B_{10}H_{14}$ with an isocyanide and further reacting the product $RNH_2CB_{10}H_{12}$ with an hydroxide or with a hydrocarbylating agent. The compounds can be used to prepare electrical resistors, and as reducing agents in preparing printed electrical circuits.

3,429,924

PROCESS FOR THE MANUFACTURE OF C-NITROSOARYLAMINES

Harry L. Ellerbrook and Morley Morgana, Baton Rouge, La., assignors to Gramor Chemicals, Inc., Baton Rouge, La., a corporation of Louisiana

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,075

U.S. Cl. 260—576 **5 Claims**

Int. Cl. C07c *111/00, 87/60*

A process for rearranging N-nitrosodiarylamines to the corresponding p-nitrosodiarylamines to produce a product of extremely high purity and in substantially quantitative yield which comprises dispersing the starting material in a lower aliphatic alcohol and adding to this dispersion a solution of hydrogen chloride in the alcohol under carefully controlled conditions of temperature, i.e., 50° C. to 55° C., for a period between 0.5 and 7.5 hours and employing said hydrogen chloride in the molar proportions of between about 1:1 and 4:1 with respect to the nitrosodiarylamine being rearranged.

3,429,925

MANUFACTURE OF DIMETHYLETHANOLAMINE

Thomas H. Cour, 1808 Vallejo, Austin, Tex. 78757

Filed Nov. 3, 1965, Ser. No. 506,208

U.S. Cl. 260—584 **4 Claims**

Int. Cl. C07c *91/08, 85/08*

An improvement for the preparation of dimethylethanolamine—wherein a two-mol formaldehyde adduct of monoethanolamine is reacted with hydrogen—is obtained by carrying out the reaction in a non-tertiary butanol solvent and distilling the reaction mixture.

3,429,926

7-HALO AND 6-HALO, 6-DEHYDRO A-NORPROGESTERONES

Patrick A. Diassi, Westfield, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 25, 1964, Ser. No. 370,114

U.S. Cl. 260—586 **6 Claims**

Int. Cl. C07c *171/06;* **A61k** *17/06*

The subject invention relates to A-norprogesterone steroids which are useful as intermediates and possess antiandrogenic activity.

3,429,927

PROCESS FOR THE PRODUCTION OF CYCLODECANOL-(6)-ONE(1)

Albert E. Schnider, Domat, Ems, Switzerland, assignor to Inventa A.G. fur Forschung und Patentverwertung, Zurich, Switzerland

Continuation-in-part of application Ser. No. 262,247, Mar. 1, 1963. This application Mar. 2, 1966, Ser. No. 531,115

U.S. Cl. 260—586 **2 Claims**

Int. Cl. C07c *45/02, 49/27*

A process for the manufacture of cyclodecanol-(6)-one(1) from partly oxidized and neutralized decahydronaphthalene, directly from the crude product and without isolation of transdecalyl-9-hydroperoxide obtained in the oxidation from its byproducts. The end product is manufactured by treatment of the crude in a heterogeneous phase with acid catalysts plus 2–15 percent acetone, calculated on the volume of the acid phase present in the reaction.

3,429,928

POLYENE COMPOUNDS AND PROCESSES

Joseph Donald Surmatis, West Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 28, 1966, Ser. No. 537,653

U.S. Cl. 260—586 **9 Claims**

Int. Cl. C07c *49/44;* **C07f** *9/28*

Hydroxenin is oxidized to 3,7-dimethyl-6-oxo-9-(2,6,6-trimethyl - 1 - cyclohexen - 1 - yl) - 2,4,7 - nonatrienal, which undergoes a Wittig condensation to produce the 3,7,12,16 - tetramethyl - 1,18 - bis(2,6,6 - trimethyl - 1-cyclohexen - 1 - yl)octadeca - 2,5,7,9,11,13,15,17 - octaene-4-one. This 4-one is then reduced to the corresponding 4-ol. The 4-ol is dehydrated to form a mixture of cis- and trans-β-carotene, which is isomerized to all trans-β-carotene.

3,429,929

PRODUCTION OF GLYOXAL

Erich Nebe, Heidelberg, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,543

Claims priority, application Germany, Jan. 8, 1966, B 85,330

U.S. Cl. 260—601 **4 Claims**

Int. Cl. C07c *45/00, 47/12*

1. A process for the manufacture of glyoxal which comprises reacting acetaldehyde or paraldehyde with nitric acid in the presence of 0.01 to 1% by weight of copper, based on nitric acid calculated as 100%, in the form of copper compounds.

3,429,930

PROCESS FOR THE OXIDATION OF OLEFINES

Emile Heslan, Pau, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,050

Claims priority, application France, Sept. 14, 1964, 988,011

U.S. Cl. 260—604 **6 Claims**

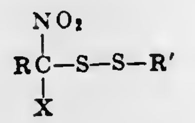
Int. Cl. C07c *45/02;* **B01j** *11/06*

The present invention is directed to a process for the oxidation of olefines into unsaturated aldehydes which comprises contacting a gaseous mixture of an olefine, oxygen and nitrogen at a temperature of from 300° to about 500° C. with a catalyst comprising P_2O_5, from 10 to 40 moles of MoO_3 per mole of P_2O_5 and from 2 to about 50 moles of TeO_3 per P_2O_5, wherein the molar ratio of MoO_3 to TeO_3 is from about 0.8 to about 6.

3,429,931
1-HALO-1-NITRO DISULFIDES

Joseph G. E. Fenyes and Gustave K. Kohn, Berkeley, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,613
U.S. Cl. 260—608 **6 Claims**
Int. Cl. A01n *149/16;* **C07c** *149/16, 149/30*

Disulfides of the formula



$$R\overset{NO_2}{\underset{X}{C}}-S-S-R'$$

wherein X is halogen of atomic number 17 to 35, R is alkyl of 1 to 5 carbon atoms and R' is an organic radical derived from a sulfhydryl-containing compound. For instance, R' may be alkyl, cycloalkyl, haloalkyl, aryl, carboxyacyl, carboxyalkyl, carboxyaryl or alkoxycarbonylalkyl. These disulfides are useful as fungicides.

3,429,932
METHOD FOR MAKING HALOGENATED BIS(PHENYLTHIO)BENZENES

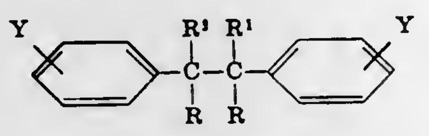
Elizabeth G. Horvath, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 5, 1966, Ser. No. 518,770
U.S. Cl. 260—609 **7 Claims**
Int. Cl. C07c *149/34*

Halogenated bis(phenylthio)benzenes are formed by contacting at least one polyhalobenzene with at least one alkali metal sulfide in the presence of a polar organic solvent at an elevated temperature that does not exceed 115° C.

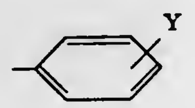
3,429,933
FREE RADICAL ADDITION OF NON-TERTIARY ALKANOLS TO ALPHA OLEFINS

Earl S. Huyser, Lawrence, Kans., and Gordon E. Hartzell, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application Mar. 28, 1963, Ser. No. 268,597, now Patent No. 3,278,502, dated Oct. 11, 1966. Divided and this application May 2, 1966, Ser. No. 571,661
U.S. Cl. 260—642 **3 Claims**
Int. Cl. C07b *29/04;* **C07c** *43/02;* **C08f** *1/74*

Compounds of the formula



wherein *y* is hydrogen, alkyl of one to about six carbon atoms, halogen, phenyl, methoxy, or ethoxy, R is hydrogen, methyl, ethyl or



R' is methoxy, ethoxy, or acetoxy, and R^2 is hydrogen, methoxy, ethoxy or acetoxy, decompose at about 100° to about 400° C. liberating free radicals useful in polymerization and addition of materials of olefinic and carbonylic bonds.

3,429,934
TELOMERIZATION PROCESS FOR THE PREPARATION OF HALOGENATED HYDROCARBONS

Kunio Nakagawa, Hyogo Prefecture, and Tadashi Nakata, Osaka Prefecture, Japan, assignors to Shionogi & Co. Ltd., Osaka, Japan
No Drawing. Original application Jan. 21, 1963, Ser. No. 252,554, now Patent No. 3,309,393, dated Mar. 14, 1967. Divided and this application Mar. 7, 1967, Ser. No. 621,151
Claims priority, application Japan, Jan. 25, 1962, 37/2,749
U.S. Cl. 260—649 **3 Claims**
Int. Cl. C08f *1/60;* **C07b** *29/04;* **B01j** *11/32*

Styrene, a taxogen, is telomerized with a telogen selected from the group consisting of halogeno(lower)alkanes, and hydrochloric acid with production of addition product thereof in the form of a halogenated hydrocarbon, by reacting the telogen with the taxogen in the presence of nickel peroxide at a temperature from ambient temperature to the decomposition temperature of one of the telogen, the taxogen and their addition product, the said nickel peroxide being the product of the treatment of a salt of nickel selected from the group consisting of nickel chloride, nickel bromide, nickel sulfate, nickel carbonate and nickel nitrate with an oxidizing agent selected from the group consisting of alkali hypohalite and alkali persulfate in aqueous alkaline medium at a temperature between 10° and 25° C., and containing about 0.3 to 0.4×10^{-2} gram-atom of active oxygen per gram.

3,429,935
HIGH TEMPERATURE SUBSTITUTION REACTIONS OF HEXAFLUOROBENZENE

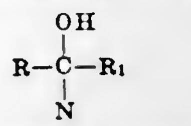
Leo A. Wall, Washington, D.C., and Joseph M. Antonucci, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,447
U.S. Cl. 260—650 **6 Claims**
Int. Cl. C07c *17/20, 25/14;* **C07b** *29/04*

1. A process consisting essentially of reacting hexafluorobenzene and a halogen selected from the group consisting of bromine, chlorine and iodine under a stream of nitrogen, in a hot tube containing a packing material selected from the group consisting of Pyrex glass helices, glass wool, carbon pellets, nickel turnings and platinum gauze at a temperature between 300° and 1000° C.

3,429,936
NOVEL POLYALKYL ALCOHOLS

Henry C. Godt, Jr., St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,452
U.S. Cl. 260—632 **6 Claims**
Int. Cl. C07c *31/02*

Polyalkyl alcohols represented by the structure



$$R-\overset{OH}{\underset{N}{C}}-R_1$$

wherein R is a hydrocarbon polymer of a lower olefin or mixtures of lower olefins, said polymer having a molecular weight of about 300 to about 3000 and R_1 is hydrogen or alkyl.

3,429,937
FLUOROCARBON DERIVATIVES OF PARAFFIN WAX

William D. Blackley, Wappingers Falls, and William R. Siegart and Harry Chafetz, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 15, 1965, Ser. No. 464,187
U.S. Cl. 260—653.8 **4 Claims**
Int. Cl. C08h *9/06;* **C07c** *19/08;* **C07b** *9/00*

A fluorinated macrocrystalline paraffin wax for coating solid surfaces of a molecular weight between 1000–3000, an elemental content of between 25–30 wt. percent C, between 65–75 wt. percent F, less than 1 wt. percent H and a melting point between 50–150° C., prepared by contacting macrocrystalline paraffin wax with fluorine in the presence of alkali metal fluoride and subjecting the resultant product to a specific sequential extraction.

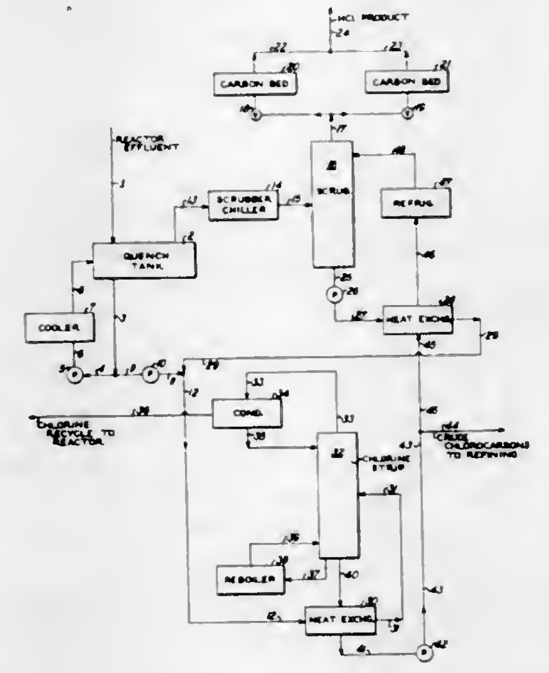
3,429,938
PROCESS FOR THE PRODUCTION OF IODOFLUOROALKANES

Louis Foulletier, Lyon, France, assignor to Ugine Kuhlmann, Paris, France, a French company
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,393
Claims priority, application France, Mar. 29, 1966, 55,307
U.S. Cl. 260—653.9 **10 Claims**
Int. Cl. C07c *19/08, 21/18*

An iodofluoroalkane is prepared by introducing about equal molar amounts of elemental iodine and fluorine into a reaction vessel to form a halogenating agent and thereafter reacting with a halogenated alkene containing 2 or 3 carbon atoms in the presence of arsenic or an arsenic halide. The amount of arsenic catalyst used is equivalent to at least 0.001 mole of arsenic per mole of elemental fluorine introduced into the vessel. The iodofluoroalkane thus produced is characterized by having equal molar amounts of iodine and fluorine added to the alpha and beta positions of its unsaturated precursor.

3,429,939
PROCESS FOR PRODUCING CARBON TETRACHLORIDE AND PERCHLOROETHYLENE

Uyanik Yildirim, Jackson Heights, Monroe Malow, Westbury, Cary H. Lourie, Long Island City, and Barry Evans, New York, N.Y., assignors to Halcon International, Inc., a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,463
U.S. Cl. 260—654 **8 Claims**
Int. Cl. C07c *17/24;* **C07b** *9/00*



1. In a process for the production of carbon tetrachloride, perchloroethylene or mixtures thereof comprising thermally chlorinating in the vapor phase at least one member selected from the group consisting of lower aliphatic hydrocarbons and partially chlorinated derivatives thereof in a reaction zone to produce an effluent containing chlorocarbons, hydrogen chloride and chlorine, and quenching said effluent in a quench zone containing a quech medium consisting essentially of carbon tetrachloride and perchloroethylene, the improvement comprising maintaining conditions of said quench zone to effect substantially complete condensation of all the chlorocarbons of said effluent, scrubbing uncondensed vapor comprising hydrogen chloride and chlorine from said quench zone with refrigerated absorbent consisting essentially of carbon tetrachloride and perchloroethylene to absorb said chlorine from said hydrogen chloride and form chlorine-rich scrubber liquor, removing condensate-containing quench medium from said quench zone, combining said removed condensate-containing quench medium with said chlorine-rich scrubber liquor and subjecting the resultant mixture to a stripping step to separate chlorine as overhead and scrubber liquor as stripper bottoms, recycling separated chlorine to said reaction zone and recovering product chlorocarbons from a portion of the stripper bottoms, the remainder of the stripper bottoms being recycled to said scrubbing step after refrigerating as said absorbent.

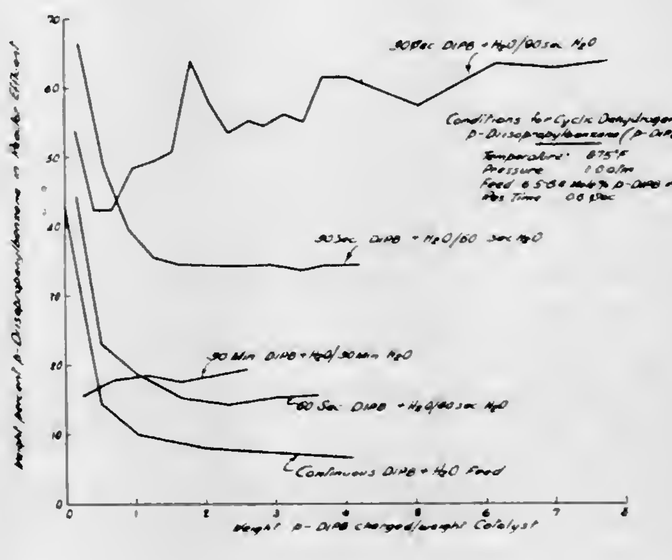
3,429,940
TRIMETHYL CYCLODODECATRIENE PROCESS

Francis T. Wadsworth, Trenton, N.J., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 556,571, June 10, 1966, now Patent No. 3,336,701. This application Aug. 28, 1967, Ser. No. 663,554
U.S. Cl. 260—666 **15 Claims**
Int. Cl. C07c *3/10, 3/60, 3/12*

Processes are described for the polymerization or oligomerization of ethylenically unsaturated monomers at moderate temperatures and pressures in the presence of novel coordination catalysts derived from a chromium compound, such as chromic acetylacetonate; a reducing agent, such as triethyl aluminum; and an aliphatic halide, such as t-butyl chloride. The preparation of such catalysts and their use to convert alpha-monolefins, such as ethylene, to high molecular weights solid polymers and to convert open chain conjugated aliphatic dienes, such as 1,3-butadiene, isoprene and piperylene, to large ring cyclic trimers is illustrated.

3,429,941
SHORT CYCLE CATALYTIC CONVERSION OF HYDROCARBONS

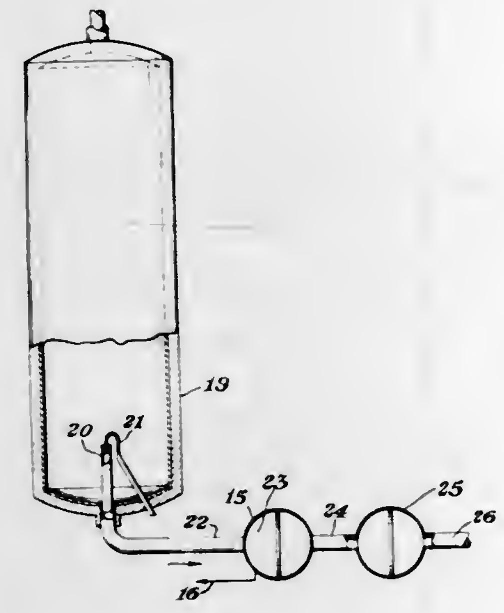
Edwin R. Kerr, Wappingers Falls, Charles H. Ware, Jr., Poughkeepsie, and William D. Stepanek, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 671,066
U.S. Cl. 260—669 **5 Claims**
Int. Cl. C07c *5/18, 15/02*



Hydrocarbons are catalytically dehydrogenated in a two period cyclic operation alternating between a reaction period of less than 60 seconds and a regeneration period 1.25 to 5 times longer than the process period.

3,429,942
QUENCHING TECHNIQUE FOR HYDRODEALKYLATION OF ALKYL AROMATIC HYDROCARBON

Kenneth E. Nelson, Midland, Billy G. Kipfmiller, Bay City, and Earl Parizek, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,456
U.S. Cl. 260—672 **14 Claims**
Int. Cl. C07c *3/58, 3/40*



Carbon or coke formation in a hydrotreating or hydrodealkylation reactor is reduced markedly by feeding quench liquid in the direction of flow of hot reactor gases. The quench liquid is fed directly into the base of the reactor, either into the outlet or a stand-pipe attached to the outlet.

3,429,943
OLEFINS FROM PARAFFINS AND CARBONYL SULFIDE

Alvin E. Trevillyan, Glenwood, and Robert A. Sanford, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 19, 1967, Ser. No. 631,856
U.S. Cl. 260—683.3 **5 Claims**
Int. Cl. C07c *5/18*

Paraffinic hydrocarbons are converted to olefins by reacting the paraffin with carbonyl sulfide in the absence of molecular oxygen and at a temperature of from about 1000° to 1300° F. Olefins are obtained selectively and may be separated from other products by conventional means.

3,429,944
PREPARATION OF NORMAL MONO-OLEFINS

Paul Joseph Kuchar, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 27, 1967, Ser. No. 693,731
U.S. Cl. 260—683.3 **10 Claims**
Int. Cl. C07c *5/18;* **B01j** *11/16*

A process for the preparation of normal mono-olefins having about 6 to about 20 carbon atoms from the corresponding normal paraffin hydrocarbon, involving the contacting of the normal paraffin hydrocarbon with a non-acid, alumina-supported, platinum metal-containing catalyst at dehydrogenation conditions, is improved by using the catalyst in a particle size having a maximum dimension not greater than 1/32 inch.

3,429,945
COMPOSITION AND METHOD OF COATING WITH A MIXTURE OF STYRENE-ALLYL ALCOHOL COPOLYMER, EPOXY RESIN AND PHOSPHORIC ACID

John W. Forsberg and Richard W. Jahnke, Mentor-on-the-Lake, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,485
U.S. Cl. 260—836 **15 Claims**
Int. Cl. C08g *45/04, 51/74*

The combination of (A) a mixture of a copolymer of allyl alcohol and a styrene, an epoxy aryl ether, and phosphoric acid, and (B) a metal salt of the reaction product of phosphoric acid and an organic epoxide, provides an effective coating for metal surfaces.

3,429,946
THERMOSETTING RESINS CONTAINING ALLYLIC ESTERS OF STYRENE-MALEIC ANHYDRIDE COPOLYMERS

Joseph A. Verdol, Dolton, and Bob G. Gower, Park Forest, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,213
U.S. Cl. 260—836 **5 Claims**
Int. Cl. C08g *45/10, 37/30;* **C08f** *21/00*

Thermosetting compositions may be prepared from allylic esters of styrene-maleic anhydride copolymers, a vinyl monomer and a cross-linking agent selected from epoxide resins, amine-aldehyde resins and unsaturated polyesters. In an example 15 g. of a phenyl-allyl ester of a styrene-maleic anhydride copolymer were combined with 10 g. of styrene and 10 g. Epon 820, and cured at 100° for 16 hrs. with benzoyl peroxide.

3,429,947
THERMO-SETTING RESINOUS COMPOSITIONS CONSISTING OF A COPOLYMER OF AN ETHYLENICALLY UNSATURATED DICARBOXYLIC ACID IMIDE AND A CROSS-LINKING AGENT

Cyrille Van Eygen and Arthur Weerens, Watermael-Boitsfort, Belgium, assignors to UCB (Union Chimique-Chemische Bedrijven) S.A.
No Drawing. Filed Feb. 2, 1966, Ser. No. 524,485
Claims priority, application Great Britain, Feb. 4, 1965, 4,899/65
U.S. Cl. 260—836 **11 Claims**
Int. Cl. C08f *19/00, 33/08*

The thermosetting compositions consisting of (I) a copolymer A of at least one ethylenically unsaturated compound (for example, an ester of (meth)acrylic acid) with an ethylenically unsaturated substance containing an imide group which is unsubstituted at the nitrogen atom (for example, maleimide), and (II) at least one cross-linking agent B selected from among

(a) a compound containing at least two epoxide groups (for example, an epoxy resin);
(b) a compound containing an epoxide group and an ethylenic double bond (for example, glycidyl methacrylate) or a copolymer of such compound with an ethylenically unsaturated compound;
(c) divinylsulfone or precursors of this compound;
(d) a compound containing two aldehyde groups (e.g. glyoxal), and
(e) a compound containing at least two N-alkoxymethyl groups (e.g. hexabutoxymethylmelamine)

are excellently suited for use in the field of paints, varnishes, enamels, textile dressing, and coatings of all kinds which have to withstand chemical agents and heat.

3,429,948
POLYESTERURETHANE ELASTOMERS VULCANIZABLE IN LIVE STEAM

Jean-Marie Massoubre, Clermont-Ferrand, France, assignor to Compagnie General des Etablissements Michelin Raison Sociale Michelin & Cie, Clermont-Ferrand, France
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,196
Claims priority, application France, Dec. 22, 1964, 1,816
U.S. Cl. 260—859 **5 Claims**
Int. Cl. C08g *41/04, 53/00*

A process for preparing an open steam-cured polyesterurethane vulcanizate without substantial hydrolytic degradation which comprises heating a vulcanizable polyesterurethane elastomer composition containing a polyesterurethane elastomer vulcanizable by an organic peroxide, a polymer compatible therewith which is cross-linkable by an organic peroxide and an organic peroxide vulcanizing agent by direct contact with live steam.

3,429,949
UNSATURATED POLYESTERS PREPARED FROM α,α'-DIMETHYL MUCONIC ACIDS

Gary L. Driscoll, Boothwyn, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 565,103, July 14, 1966. This application Aug. 25, 1966, Ser. No. 574,939
U.S. Cl. 260—861 **14 Claims**
Int. Cl. C08f *21/00;* **C08g** *17/10;* **C07c** *69/52*

Curable polyesters of relatively low mold shrinkage when crosslinked with an ethylenically unsaturated monomer are prepared using α,α'-dimethyl muconic acids or dibasic materials derived therefrom as the unsaturated acid component of the polyester.

3,429,950
B-STAGE UNSATURATED POLYESTER RESINS AND PREPREGS USING 2-5 DIALKYL BENZOQUINONE

Phillip H. Parker, Jr., San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 214,856, Aug. 6, 1962. This application Aug. 8, 1966, Ser. No. 570,746
U.S. Cl. 260—866 **10 Claims**
Int. Cl. C08f *21/00, 45/10*

Stable B-stage polyester resins are produced by copolymerizing ethylenically unsaturated monomers with unsaturated polyesters in the presence of a critical amount of dialkyl p-benzoquinone in which the alkyl radicals are secondary or tertiary and contain a total of from 6 to 20 carbon atoms and from about 0.01 to 5.0 percent by weight of an organic peroxide free-radical polymerization initiator wherein the mol ratio of quinone to initiator ranges from 1:0.5 to 1:4.

3,429,951
REACTION OF PEROXIDES WITH BLENDS OF POLYSTYRENE AND RUBBERY BLOCK COPOLYMER

Clifford W. Childers, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,625
U.S. Cl. 260—876 **12 Claims**
Int. Cl. C08f *33/08*

A method of making polystyrene compositions comprising blending polystyrene, at least one solution polymerized block copolymer, and a peroxy oxygen containing material, and subjecting the blend to temperatures sufficient to decompose the peroxy oxygen containing material.

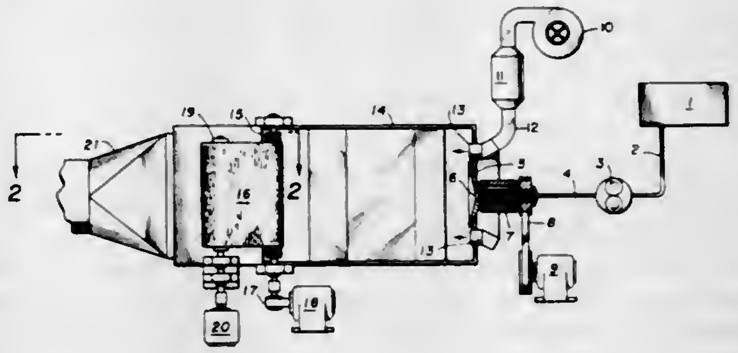
3,429,952
HIGH TEAR STRENGTH POLYBUTADIENE VULCANIZATES

Karl-Heinz Nordsiek and Horst Brinkmann, Marl, Germany, assignors to Chemische Werke Huls A.G., Marl, Germany
No Drawing. Filed Aug. 18, 1966, Ser. No. 573,202
Claims priority, application Germany, Sept. 1, 1965, C 36,782
U.S. Cl. 260—894 **10 Claims**
Int. Cl. C08d *9/00, 9/08*

Tear resistance of cis polybutadiene is improved by blending therewith a salt of a copolymer of butadiene or isoprene and an unsaturated carboxylic acid.

3,429,953
METHOD FOR PRODUCING FIBERS

Thomas E. Crompton, Cary, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 16, 1965, Ser. No. 464,477
U.S. Cl. 264—8 **5 Claims**
Int. Cl. B22d *13/00, 23/08*



Fine fibers having diameters in the range of about 5 microns to about 0.1 micron are produced by feeding a solution of fiber-forming polymer onto the internal face of the rotating cone. Elongated droplets of polymer in solution are discharged from the periphery of the rotating cone and are picked up by a high velocity air stream surrounding the cone and carried downstream onto a collection surface. During the passage from the cone to the collection surface the solvent is removed from the droplets thus forming fine fibers of the polymer material.

3,429,954
METHOD OF MAKING A POLYMER-LINED PIPE

Bobby L. Atkins and Billy G. Harper, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,837
U.S. Cl. 264—22 **8 Claims**
Int. Cl. B32b *1/08, 31/12*

A tubular article such as a pipe is provided with a strongly adhering liner of a thermoplastic material such as a copolymer of ethylene and acrylic acid by irradiating a tube of said thermoplastic material to crosslink the thermoplastic polymer material, heating the irradiated tube to soften the thermoplastic material, stretching the softened tube longitudinally to reduce the diameter thereof to a size less than the inner diameter of the tubular article, cooling the stretched tube while it is maintained in its stretched condition to preserve the size and shape thereof, placing the stretched tube inside of the tubular article, and applying sufficient heat to the tube to allow it to expand and thereby form a tightly adhering bond with the interior surface of the article. In one embodiment, the tube of thermoplastic is provided with a coating of an adhesive material such as a copolymer of ethylene and acrylic acid to further improve the bond with the tubular article.

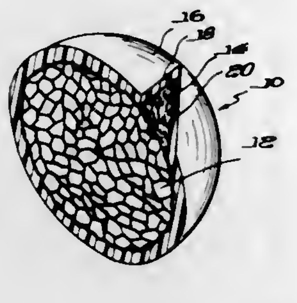
3,429,955
METHOD OF MAKING A SHAPED ARTICLE FROM COATED MULTICELLULAR GLASS NODULES

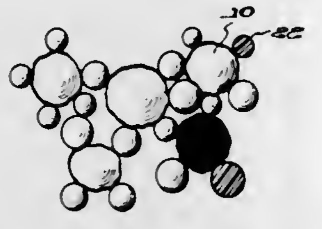
Howard E. Johnson, Trafford, and Dominic D'Eustachio, Pittsburgh, Pa., assignors to Pittsburgh Corning Corporation, Port Allegany, Pa., a corporation of Pennsylvania

Filed Sept. 23, 1965, Ser. No. 489,659

U.S. Cl. 264—45 **4 Claims**

Int. Cl. B29d *27/04*





A method of forming a shaped article from multicellular glass nodules and an expanded thermoplastic resin. The cellular glass nodules are first coated with either a monomer of a thermoplastic resin or a relatively thin layer of the thermoplastic resin. The coated nodules are thereafter mixed with pellets of unexpanded or partially expanded thermoplastic resin. The granules have an affinity for the coated cellular glass nodules and adhere to the surface of the nodules so that the thermoplastic resin pellets and the nodules are uniformly distributed in the admixture. A mold cavity is filled with the admixture and the mold is heated to a temperature above the softening point of the thermoplastic resin and the pellets of thermoplastic resin expand or cellulate and encapsulate the cellular glass nodules to form a shaped article having a continuous matrix of expanded thermoplastic resin encapsulating the cellular glass nodules.

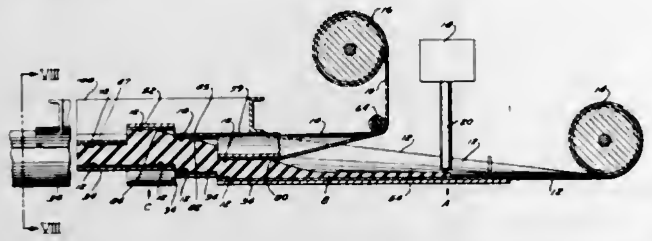
3,429,956
METHOD AND APPARATUS FOR CONTINUOUSLY CASTING ELONGATED FOAM-CORED LAMINATES

Lawrence Christie Porter, Palos Verdes Peninsula, Calif., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Sept. 14, 1964, Ser. No. 396,018

U.S. Cl. 264—47 **5 Claims**

Int. Cl. B29d *9/00*



Elongated foam-cored laminates are cast in a horizontally disposed, tubular mold lined with paper or like flexible substantially non-stretchable sheet material. A foam-forming liquid, which in the process of foaming rises to a self-supporting cellular structure, is deposited on the sheet material and allowed to rise to fill the mold. The sheet material, which is initially flat as it comes off rolls, is distorted to conform it to the inner surfaces of the mold and is pulled through the mold by tractor elements engaging opposite sides of the foam-cored laminate at a rate to keep the rise front within the mold.

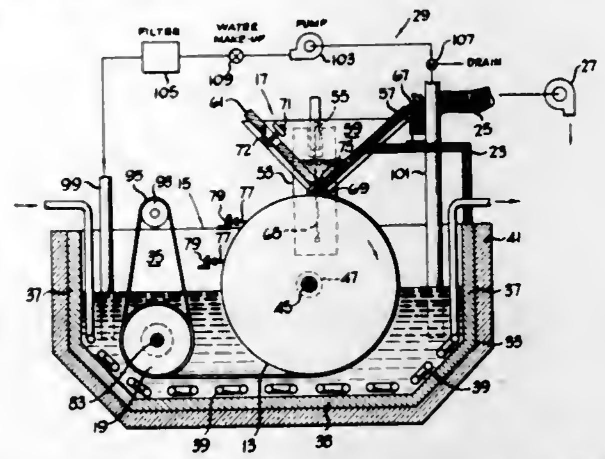
3,429,957
PROCESS FOR CONTINUOUSLY CASTING A SEMI-PERMEABLE MEMBRANE

Ulrich Merten, Solana Beach, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed July 6, 1965, Ser. No. 469,619

U.S. Cl. 264—49 **4 Claims**

Int. Cl. B29d *7/20, 27/04*



1. A process for making a nonuniform semipermeable membrane, which process comprises continuously casting a film of a fluid membrane-forming solution cooled to a temperature of about −8° C. upon a moving endless flat smooth surface having a higher temperature, said solution containing cellulose acetate and acetone, evaporating acetone from one surface of said cast film by exposing said surface of said film to a forced circulation of air for about a minute, immersing said film after said evaporation in water at a temperature of about 1° C. to set-up said cast film into a nonuniform semipermeable membrane, and removing said set-up membrane from the endless surface while said membrane is immersed in water.

3,429,958
METHOD OF PREPARING CARBON BLACK-WAX PELLETS

Van R. Walcott, Jr., Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

No Drawing. Filed July 28, 1966, Ser. No. 568,392

U.S. Cl. 264—117 **3 Claims**

Int. Cl. C09c *1/58*

1. A process for forming small generally spherical pellets of a mixture of impalpable carbon black and paraffin wax which comprises violently agitating the carbon black in an enclosed pin-type pelletizer while introducing thereinto molten paraffin wax in an amount sufficient to provide pellets having a weight ratio of carbon black to wax of from about 50:50 to 30:70, respectively.

3,429,959
METHOD OF MAKING FOILS OF THERMOPLASTIC SYNTHETIC MATERIALS

Josef Ferdinand Salhofer, Krefeld, Germany, assignor to Joh. Kleinewefers Sohne, Krefeld, Germany

Continuation-in-part of application Ser. No. 208,374, July 9, 1962. This application Oct. 24, 1965, Ser. No. 504,659

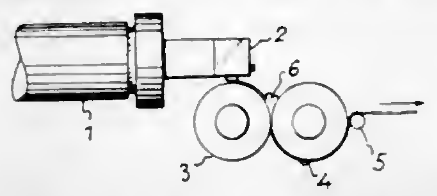
Claims priority, application Germany, July 11, 1961, K 44,219

U.S. Cl. 264—175 **3 Claims**

Int. Cl. B29d *7/14*

A method of making homogeneous stretchable foils of hard macro-molecular synthetic materials, which includes the steps of: continuously extruding a wide web of said synthetic material, passing the thus obtained foil over

the shortest distance to and between drawing rollers for further rolling out said foil while adjusting the working speed of said rollers in such a way that a kneading mass



of the synthetic material continuously forms in the space between said rollers.

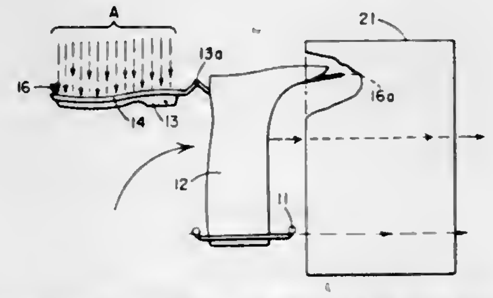
3,429,960
METHOD OF TWO-SECTION SLUSH MOLDING

Alec Feather, Derry, N.H., assignor to Tech Consolidated Inc., Derry, N.H., a corporation of New Hampshire

Filed Mar. 4, 1966, Ser. No. 531,889

U.S. Cl. 264—245 **4 Claims**

Int. Cl. B29c *9/00*



An integral molded boot is formed by slush molding where the sole section is of different material or color than the upper section. A hollow mold is used comprising an upper section hinged to a bottom section. The bottom section is filled first with a plastisol then gelled. A second plastisol is poured into the top section and gelled. The layers are then fused.

3,429,961
PROCESS FOR MAKING UNIFORM ORIENTATED FILM

Arthur William Spencer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 26, 1965, Ser. No. 451,003

U.S. Cl. 264—289 **10 Claims**

Int. Cl. B29c *17/02*

Process for making film of uniform properties by starting with a substantially flat film with beaded edges, then establishing and maintaining a temperature differential across the width thereof, subsequently stretching the film so that the film has a geometrically uniform convex thickness profile, thereafter stretching the film in a direction perpendicular to the prior stretching so that the film having the convex thickness profile becomes rectangular except for the beaded edges and then optionally heat setting the film.

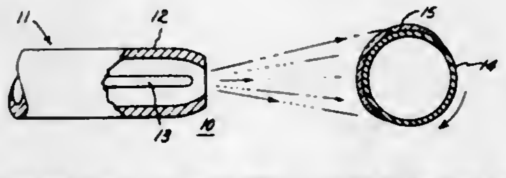
3,429,962
METHOD OF FORMING A METALLIC OXIDE ARTICLE

Casimir W. Krystyniak, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 1, 1965, Ser. No. 510,931

U.S. Cl. 264—309 **1 Claim**

Int. Cl. B32b *1/14*



The preparation of metallic oxide layers and bodies consisting thereof by the plasma spray deposition of substantially spherically-shaped agglomerate particles of metal oxides, the particles being substantially uniform in composition and having as at least one of the metal oxides an oxide of a refractory metal, is described. Specific examples include a free-flowing powder of such spherical particles containing in physical combination (a) a metal oxide selected from the group consisting of unstabilized zirconia and undoped thoria and (b) a metal oxide selected from the group consisting of CaO, a mixture of rare earth oxides, Y_2O_3 and Yb_2O_3 and the deposition of such a powder by plasma arc spraying. As the result of this method of deposition the unstabilized ZrO_2 becomes stabilized or the undoped ThO_2 becomes doped.

3,429,963
DENTAL PREPARATION CONTAINING POLYMERIC POLYELECTROLYTE

Leo Shedlovsky, New York, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1964, Ser. No. 373,867

U.S. Cl. 424—56 **5 Claims**

Int. Cl. A61c *15/00;* **A61k** *7/16*

1. A dental preparation comprising a water-insoluble polishing agent and from about 1% to about 8% by weight of said dental preparation of an agent capable of countering oral calculus, said agent being substantially linear, polymeric, water-soluble polyelectrolyte selected from the group consisting of a hydrolyzed copolymer of ethylene and maleic acid having an average molecular weight of about 1,500 and greater and a polyethylene sulfonate having an average molecular weight of about 10,000 and greater; said agent being characterized by an apparent dissociation constant upon complexing with calcium (pK_{Ca}) where $-\log K_{Ca}$ is from about 2.2 to about 4.5.

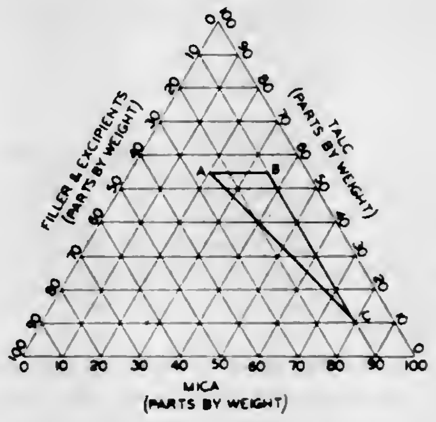
3,429,964
COSMETIC STICK COMPOSITION

Martin M. Rieger, 135 Van Buskirk Road,
West Englewood, N.J. 07666

Filed July 13, 1965, Ser. No. 471,528

U.S. Cl. 424—73 **3 Claims**

Int. Cl. A61k *7/14;* **C10m** *7/02*



This invention relates to a pre-shaving cosmetic composition in molded or stick form containing mica and talc.

3,429,965
AVIAN POX VIRUS VACCINE AND PROCESS OF PREPARING SAME

Emil F. Gelenczei, Salisbury, Md., and Hiram N. Lasher, Millsboro, Del., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,049

U.S. Cl. 424—89 **10 Claims**

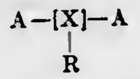
Int. Cl. A61k *23/02;* **C12k** *9/00*

1. In a process of preparing an avian pox virus vaccine, the improvement which comprises propagating an avian pox virus in a tissue culture medium of duck embryo cells.

3,429,966
VACCINES AND ADJUVANTS THEREFOR

David Gall, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,207
Claims priority, application Great Britain, Oct. 1, 1963, 38,694/63
U.S. Cl. 424—92 **9 Claims**
Int. Cl. A61k *23/00*

This invention is directed to a vaccine comprising a virus, or a protozoa, or a metazora, or a rickettsiae, or a bacteria, or a toxoid, and an adjuvant. In particular, the invention is directed to a vaccine comprising a nonpathogenic antigenic material selected from the class consisting of a virus, bacteria, protozoa, metazoa, rickettsiae, and toxoid, together with a nontoxic effective amount of an adjuvant selected from the class consisting of an organic base of the general Formula I



$$A-[X]-A \text{ with } R \text{ on } X$$

(I

and a salt of the corresponding quaternized cation formed with a group selected from the class consisting of a hydrogen atom, one lower alkyl group and two lower alkyl groups, each of said alkyl groups having from 1 to 3 carbon atoms, wherein A is a higher aliphatic radical having from 12 to 22 carbon atoms, the residue [X] is selected from the class consisting of a nitrogen atom, a residue of the formula

$$[-NH-C(-Y)-NH-]$$

a residue of the formula

$$[-N{=}C(-Y)-N-]$$

and a residue of the formula

$$[-N-C(:Q)-NH-]$$

in which Y is selected from the class consisting of a hydrogen atom, NRR, OR′, SR′ and R′, wherein R is selected from the class consisting of a hydrogen atom and lower alkyl of 1 to 3 carbon atoms, R′ being a lower alkyl of 1 to 3 carbon atoms and Q is selected from the class consisting of an oxygen atom, a sulphur atom, an imido and lower alkyl-imido having from 1 to 3 carbon atoms.

3,429,967
STABLE NEOMYCIN SOLUTION

Patrick Philip De Luca, Morris Plains, and Leon Lachman, Millburn, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 17, 1965, Ser. No. 456,534
U.S. Cl. 424—175 **14 Claims**
Int. Cl. A61k *15/00*

An injectable solution of a neomycin salt is stabilized by 0.1 to 10% (relative to the neomycin base) each of an ascorbic acid and a soluble metabisulfite.

3,429,968
PHARMACEUTICAL COMPOSITIONS AND METHODS OF CONTROLLING CARDIAC ARRHYTHMIAS WITH N-SUBSTITUTED PHTHALIMIDE COMPOUNDS

Grover C. Helsley, Richmond, Va., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia
No Drawing. Original application Oct. 6, 1965, Ser. No. 494,304, now Patent No. 3,316,276, dated Apr. 25, 1967. Divided and this application Dec. 23, 1966, Ser. No. 605,150
U.S. Cl. 424—274 **8 Claims**
Int. Cl. A61 *27/00;* **C07d** *27/52*

N-substituted phthalimide compounds, compositions, and methods are disclosed which have been shown to have antiarrhythmic activity in standard laboratory animals. Arrhythmia were produced by mechanical and chemical means and normal sinus rhythm was restored by administering compounds of the present invention.

3,429,969
COMPOSITIONS AND METHODS FOR CONTROLLING COCCIDIOSIS IN POULTRY WITH 2,4-DISUBSTITUTED BENZAMIDE

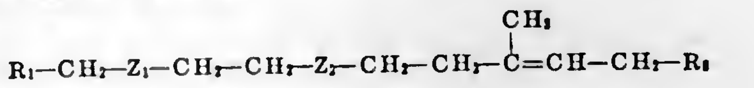
Edward F. Rogers, Middletown, and Robert L. Clark, Woodbridge, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 241,038, Nov. 29, 1962. This application Dec. 28, 1964, Ser. No. 421,593
U.S. Cl. 424—230 **6 Claims**
Int. Cl. A61k *27/00;* **C07c** *103/76*

Orally administered compositions for control of coccidiosis in poultry are described wherein the active anticoccidial ingredient is a 2,4-disubstituted benzamide having at the 2-position a loweralkyloxy or a loweralkenyloxy group and at the 4-position nitro, amino, alkanoylamino or benzoylamino.

3,429,970
METHOD OF HINDERING THE METAMORPHOSIS AND REPRODUCTION OF ARTHROPODES

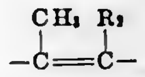
Rudolf Rüegg, Bottmingen, Switzerland, and Peter Schmialek, Berlin-Dahlem, Germany, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of applications Ser. No. 168,834, Jan. 25, 1962, Ser. No. 196,521, May 21, 1962. This application Aug. 14, 1963, Ser. No. 301,968
Claims priority, application Germany, Feb. 2, 1961, Sch 29,159; Switzerland, May 24, 1961, 6,019/61
U.S. Cl. 424—333 **6 Claims**
Int. Cl. A01n *9/12, 9/20, 9/24*

1. A process for hindering the metamorphosis of arthropodes which comprises treating said arthropodes at any stage of their development with an effective pesticidal amount of a composition comprising (a) a compound having the formula



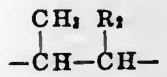
$$R_1-CH_2-Z_1-CH_2-CH_2-Z_2-CH_2-CH_2-\overset{CH_3}{\overset{|}{C}}{=}CH-CH_2-R_6$$

in which Z_1 represents a member selected from the group consisting of



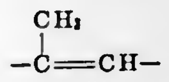
$$-\overset{CH_3}{\overset{|}{C}}{=}\overset{R_2}{\overset{|}{C}}-$$

and



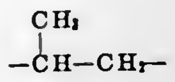
$$-\overset{CH_3}{\overset{|}{C}}H-\overset{R_2}{\overset{|}{C}}H-$$

Z_2 represents a member selected from the group consisting of



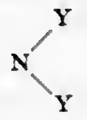
$$-\overset{CH_3}{\overset{|}{C}}{=}CH-$$

and



$$-\overset{CH_3}{\overset{|}{C}}H-CH_2-$$

R_1 represents a member selected from the group consisting of hydrogen and lower alkyl; R_2 represents a member selected from the group consisting of hydrogen and lower alkyl; and R_6 represents a member selected from the group consisting of $-NH_2$, $NH-Y$



O—Y and S—Y wherein the symbol Y represents a member selected from the group consisting of lower alkyl and lower alkenyl radicals and (b) a pesticidal adjuvant therefore, there being present in said composition up to about 10% by weight of said component (a).

3,429,971
METHOD OF TREATING AVIAN LYMPHOMATOSIS INDUCED BY ES$_4$ STRAIN OF LYMPHOMATOSIS VIRUS

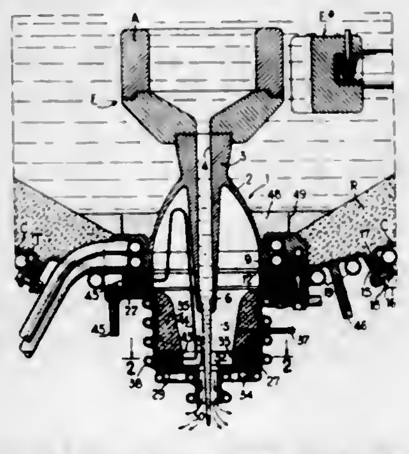
Pierre Baranger, 6 Rue de Seine, Paris, France
No Drawing. Filed Feb. 28, 1967, Ser. No. 619,145
Claims priority, application France, Mar. 10, 1966, 52,820
U.S. Cl. 424—343 **3 Claims**
Int. Cl. A61k *27/00*

A pharmaceutical composition comprising cis-2,6-dimethyl-Δ-^{2,6}-octadiene-8-ol as the active ingredient. This medicament is effective to treat avian lymphomatosis virus strain ES$_4$.

ELECTRICAL

3,429,972
VERY HIGH TEMPERATURE ELECTRIC MELTING FURNACE

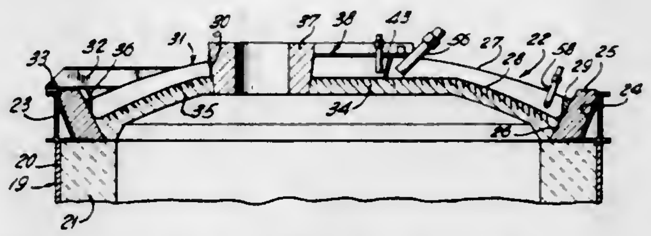
Jacques Marie Yves le Clerc de Bussy, Paris, France, assignor to Verreries Pochet et du Courval, Paris, France
Filed Mar. 20, 1967, Ser. No. 624,252
Claims priority, application France, Mar. 25, 1966, 54,965
U.S. Cl. 13—6 **9 Claims**
Int. Cl. C03b *5/00, 5/02*



Melting furnace employing very high temperatures in which the extracting means in the lower part of the vessel of the furnace comprises a centre electrode bearing on an element in the form of a cylindrical skirt including a flow passageway, said elements being of molybdenum protected from oxidation by reducing gas filling a cavity and by the molten product in the vessel of the furnace.

3,429,973
FURNACE CONSTRUCTION

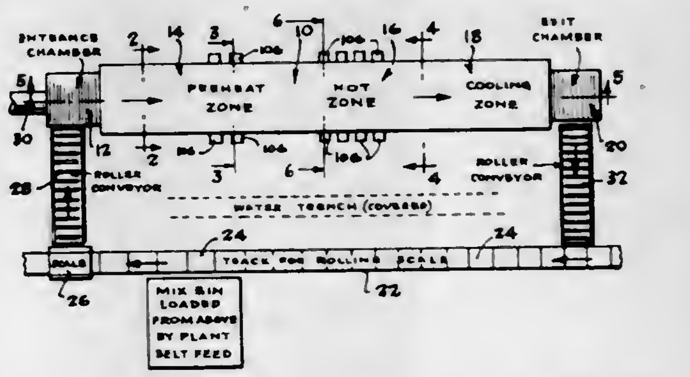
Frederick H. N. Carter, 135 E. 54th St., New York, N.Y. 10022; William V. Martinson, 22 Russell Road, Dobbs Ferry, N.Y. 10522; and Sven M. J. Olsson, 18 Manor Road, Old Greenwich, Conn. 06870
Filed Sept. 2, 1965, Ser. No. 484,661
U.S. Cl. 13—9 **21 Claims**
Int. Cl. H05b *7/18;* **F23m** *5/02, 5/08*



A water-cooled roof structure for furnaces, such as electric arc furnaces, in which a refractory layer is suspended beneath a hollow, domed, circular metal shield and fluid inlets and outlets are located to form within the shield a relatively thin, wide annular body of cooling fluid rotating in vortex fashion about the center of the shield.

3,429,974
HIGH TEMPERATURE TUNNEL KILN FOR PRODUCTION OF CRYSTALLINE REFRACTORY AND ABRASIVE MATERIALS

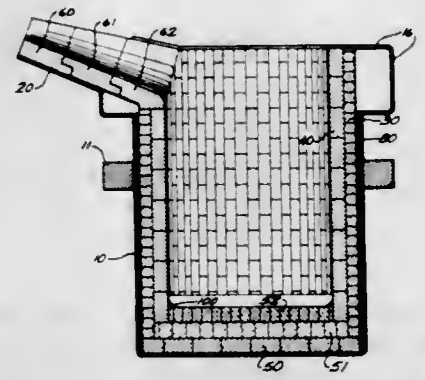
George Robert Watson, Chippawa, Ontario, and Ben Matchen, Niagara Falls, Ontario, Canada, assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
Original application Nov. 7, 1961, Ser. No. 152,125, now Patent No. 3,348,915, dated Oct. 24, 1967. Divided and this application July 5, 1967, Ser. No. 662,231
U.S. Cl. 13—20 **21 Claims**
Int. Cl. H05b *3/64*



The invention relates to an electrically heated tunnel kiln structure capable of operating at high temperatures for prolonged periods of time, for the purpose of continuously making refractory and abrasive materials such as high grade carbides and borides. In the kiln the speed of feed and firing are variable and well controlled.

3,429,975
INDUCTION FURNACE CONSTRUCTION

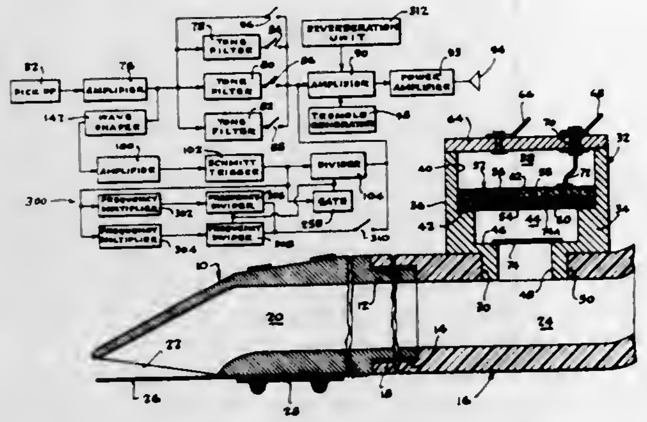
Albert L. Renkey, Pittsburgh, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,714
U.S. Cl. 13—35 **5 Claims**
Int. Cl. H05b *5/14*



The present disclosure relates to an improved induction furnace construction in which the refractory working lining is composed of a magnesium aluminate spinel bonded periclase brick and the backup lining is composed of high alumina brick.

3,429,976
ELECTRICAL WOODWIND MUSICAL INSTRUMENT HAVING ELECTRONICALLY PRODUCED SOUNDS FOR ACCOMPANIMENT

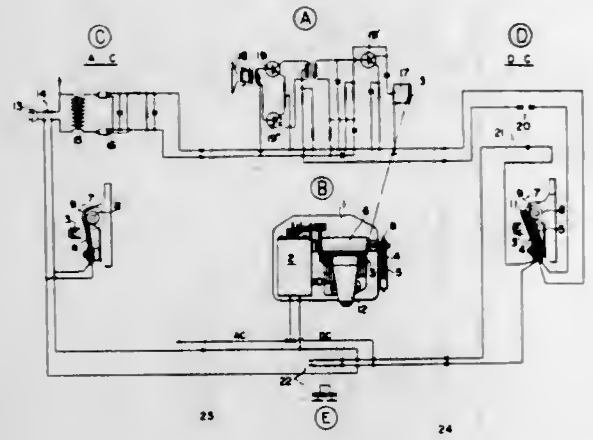
Daniel J. Tomcik, Buchanan, Mich., assignor, by mesne assignments, to Electro-Voice Incorporated, Buchanan, Mich., a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,397
U.S. Cl. 84—1.12 **19 Claims**
Int. Cl. G10d *5/00;* **G10h,** *1/02, 3/00*



A monophonic wind type instrument is disclosed employing a piezoelectric pickup communicating with the air column of the instrument. The piezoelectric pickup is utilized to generate electrical signals which are amplified, filtered as to tone, and reproduced by a loudspeaker. The electrical signals are also shaped and utilized to drive a pulse generator to produce multiples and submultiples of the frequency of the tone produced by the woodwind instrument. The output of the divider is tone filtered to produce a voice independent of the wind instrument. A gate circuit is provided between the trigger circuit and divider to delay in actuation of the divider following initial production of a tone by the instrument in order to avoid spurious mechanically excited electrical outputs.

3,429,977
DEVICE OF CHIME COMMUNICATION BY AMPLIFYING THE SOUND OF A MUSIC BOX

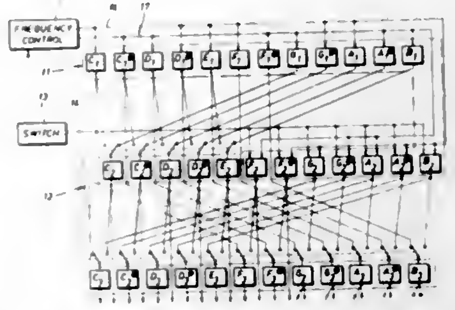
Ying-Tsai Juan, 460, 1-chome, Nakayama-cho, Ichikawa, Chiba Prefecture, Japan
Filed Dec. 13, 1965, Ser. No. 513,188
Claims priority, application Japan, Feb. 24, 1965, 40/10,191
U.S. Cl. 84—1.14 **1 Claim**
Int. Cl. G10b *3/02*



A chime device comprising a music box, switch means for playing the music for any duration of time or for one cycle, amplifier means for amplifying and adjusting the volume thereof, the music box including a motor operatively connected to a drum and pick-up coils for feeding sound to the amplifier, the amplifier including transistorized construction, and contacts operated by a cam operatively connected to the motor.

3,429,978
ENSEMBLE EFFECTS SYSTEMS

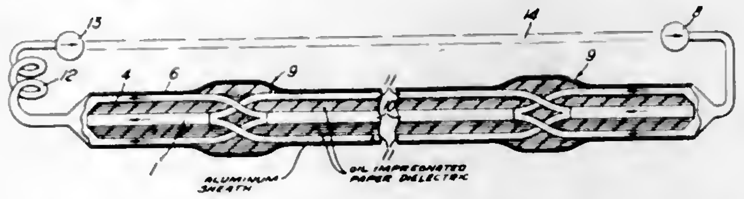
Alfred B. Freeman, Kitchener, Ontario, Canada (20418 Seaboard Road, Malibu, Calif. 90265)
Filed Dec. 6, 1965, Ser. No. 511,805
U.S. Cl. 84—1.24 **10 Claims**
Int. Cl. G10h *1/02*



1. In a tone generator for an electronic musical instrument, a plurality of oscillators tuned in accordance with a musical scale, and means for detuning said oscillators under control of the player in accordance with patterns which change the magnitude of musical fifths intervals within the scale.

3,429,979
INSULATED ELECTRIC POWER CABLES

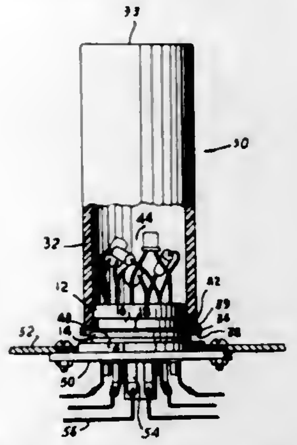
Edward Leslie Davey, Bexhill-on-Sea, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed May 2, 1967, Ser. No. 635,618
Claims priority, application Great Britain, May 2, 1966, 19,217/66
U.S. Cl. 174—15 **19 Claims**
Int. Cl. H01b *7/34, 9/06*



A high voltage high power cable installation cooled by a forced flow of cooling liquid, which may be the dielectric impregnating oil of an oil-filled cable. One stream of the cooling liquid flows through a hollow conductor of the cable and another stream flows in the same direction along the cable through a passage between the screened cable core and sheath, the two streams being transposed at intervals, usually within the joint enclosures.

3,429,980
ELECTRONIC COMPONENT PACKAGE AND COVER

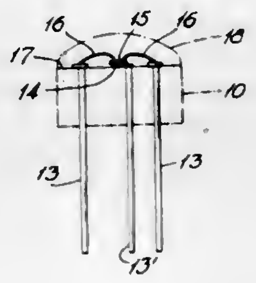
Wolf Guttmann, 711 W. 7th St., Austin, Tex. 78701
Filed Feb. 17, 1966, Ser. No. 528,186
U.S. Cl. 174—52 **4 Claims**
Int. Cl. H05k *5/00, 5/03;* **B65d** *43/10*



A resilient protective cover for enclosing a module of a circuit. The cover snaps onto the top of a pin-type tube plug. A plurality of interior surface portions are provided on the cover which engage the surfaces of the plug.

3,429,981
SUPPORTING AND INSULATING MEANS FOR JUNCTURED ELEMENTS OF SMALL ELECTRICAL COMPONENTS

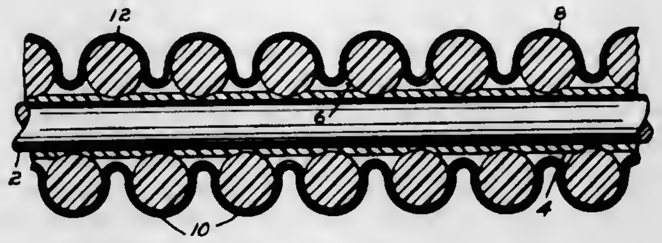
Roy A. Shallahamer, Arcadia, Frank Y. Naito, Pasadena, and Donald B. Bernes, Sunnyvale, Calif., assignors to The Dexter Corporation, a corporation of Connecticut
Filed Apr. 12, 1967, Ser. No. 630,369
U.S. Cl. 174—52 **12 Claims**
Int. Cl. H05k *5/06*



Improved supporting and insulating means for junctured elements of transistors and other small electrical components comprising a header in the form of a cold pressed body of powdered epoxy resin composition having a plurality of apertures for slidably receiving element leads and communicating with a surface of said body providing the locus of junctures between said elements, particles of said resin composition, by reason of momentary exposure to pressure of the order of 30,000 p.s.i., being bonded sufficiently to impart substantial strength to the uncured body, and said resin composition being characterized as sintering and fusing slightly on curing and thus wets and bonds to leads arranged in said apertures. The curing is preferably deferred until a mass of compatible liquid epoxy resin is applied to the surface of the header which is the locus of the junctures between said elements to completely envelop the same whereby the header and liquid resin can be simultaneously cured to a virtually inseparable assemblage. Alternatively, the header can be at least partly cured immediately after positioning of the elements, to thereby form a subassemblage of the header with the elements firmly bonded therein, but not yet insulated.

3,429,982
SINTERED COAXIAL CABLE

Walter R. J. Brown, Lexington, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 449,741, Apr. 21, 1965. This application Mar. 2, 1967, Ser. No. 620,089
U.S. Cl. 174—102 **2 Claims**
Int. Cl. H01b *7/18, 7/00*



This is a coaxial cable and a method of forming same which utilizes a sintered or unsintered thread wrapped about the inner conductor. The thread then has an unsintered tape wrapped about it and the whole assembly is then sintered to form a convoluted external surface.

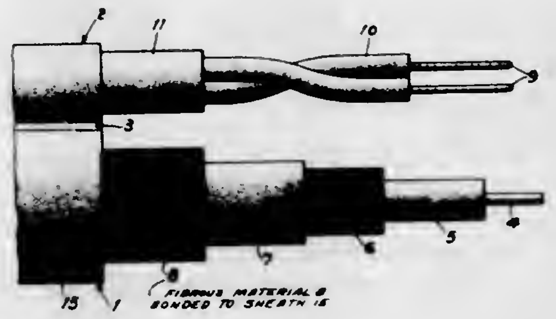
3,429,983
INSULATED POWER CABLES

Hermann Hofmeier, Dormagen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Nov. 23, 1964, Ser. No. 413,325
Claims priority, application Germany, Nov. 27, 1963, F 41,382
U.S. Cl. 174—110 **4 Claims**
Int. Cl. H01b *3/42*

1. An electric power cable comprising a conductor surrounded by a dielectric coating of a partially crystallized polycarbonate film, said partially crystallized polycarbonate film having a crystalline content of at least 20 percent.

3,429,984
SELF-SUPPORTING COAXIAL CABLE

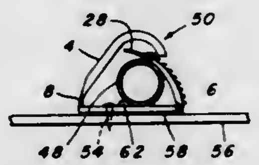
Donald C. Alexander, Paxton, Mass., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 20, 1967, Ser. No. 633,354
U.S. Cl. 174—115 **8 Claims**
Int. Cl. H01b *7/18, 11/18*



A coaxial cable includes an inner conductor surrounded by a first dielectric layer, a metallic shield around the first dielectric, a second dielectric layer around the shield, a permeable material around the second dielectric and an outer dielectric layer around the permeable material. An adhesive is applied to the permeable material to provide a bond to the outer dielectric but does not prevent movement of the permeable material with respect to the second dielectric and other inner layers. The bond strengthens the outer layer to provide a self-supporting structure while maintaining flexibility of the full cable. Another pair of conductors parallel to the coaxial cable may be included within an adjoining portion of the outer dielectric with a web therebetween.

3,429,985
ADJUSTABLE CLAMP FOR ELONGATED ARTICLES

Steven R. Czigler, Trenton, N.J., assignor to Robroy Industries, Verona, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1967, Ser. No. 682,952
U.S. Cl. 174—164 **10 Claims**
Int. Cl. H01b *17/16;* **F16l** *3/08;* **B65d** *63/00*



A releasable clamp for securing elongated articles to a supporting structure. A substantially rigid base member, a substantially rigid inverted J-shaped locking member extending upwardly from the base member and a deformable tab which may be flexible extending upwardly from the base member. Cooperating locking means on the locking member and flexible tab adapted to inter-engage and releasably lock the clamp. The cooperating locking means are adapted to lock in different positions in order to secure articles of different sizes. The base member may be substantially rectangular in plan, with the locking member and flexible tab secured to opposed sides thereof.

The locking means may have a transversely disposed projection on the locking member adapted to engage a similar projection on the flexible tab. The tab may have a number of such projections in order to provide for adjustment of clamp size. Each projection may be generally triangular in cross-section and have a vertical locking shoulder and an adjacent inclined face. The inclined face of the locking member projection is adapted to cooperate with like inclined faces of the flexible tab projections in order to permit relative sliding movement between said faces. The locking shoulder of the locking member is adapted to be releasably secured in locking engagement with a corresponding shoulder on the flexible tab.

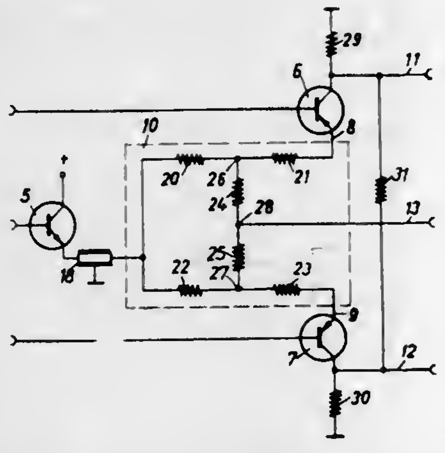
3,429,986
PRINT ELEMENT PROCESS FOR MULTILINGUAL COMMUNICATIONS

Robert A. Rahenkamp, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,343
U.S. Cl. 178—2 **2 Claims**
Int. Cl. H04l *23/00, 21/04*

A process is disclosed for providing a receiving printer with the correct removable and interchangeable type carrying unit of element to print text in the same language and compatible with the text transmitted from a remotely located keyboard device. Prior to transmitting text, the transmitting station sends a code corresponding to the type font required at a receiving station. This code is selected so that it is made up of characters and/or functions which are the same for all type elements and/or all receivers. The type element corresponding to the transmitted code is placed on the receiving printer so that the received text is exactly the same as the transmitted text.

3,429,987
MATRIX CIRCUIT FOR A COLOR TELEVISION RECEIVER

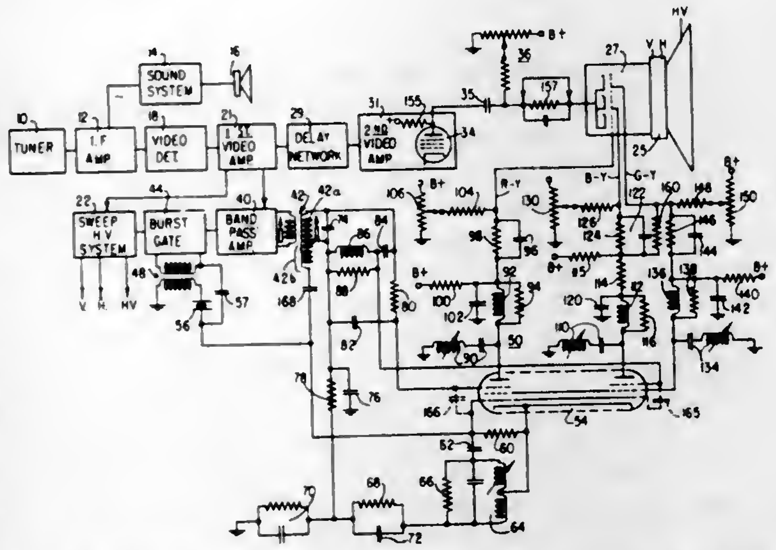
Albrecht Altmann, Hildesheim, Germany, assignor to Blaupunkt-Werke, G.m.b.H., Hildesheim, Germany
Filed Sept. 16, 1965, Ser. No. 487,882
Claims priority, application Germany, Sept. 19, 1964, B 78,604
U.S. Cl. 178—5.4 **32 Claims**
Int. Cl. H04n *9/32, 9/54*



Basic colors signals R, G, B for controlling the corresponding control grids of a three beam color television tube are provided from the R—Y and B—Y signals and the luminance signal. The latter signals are each fed to the base of a corresponding transistor. A bridge circuit has one terminal connected to the emitter of the R—Y transistor, a second terminal connected to the emitter of the B—Y transistor, a third terminal connected via a timing device to the emitter of the luminance transistor and a fourth terminal for furnishing the G signal. The R—Y and B—Y transistor collectors are each connected via a corresponding load resistance to ground. The voltage at each of these collectors corresponds to the R and B signal respectively. Different compensating means for compensating for extraneous color signals coupled between the R and B stages are also shown.

3,429,988
DUAL PENTODE DEMODULATOR FOR THREE COLOR TELEVISION SIGNALS

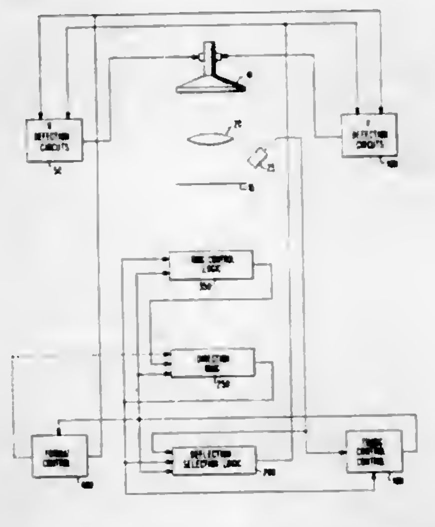
Robert B. Hansen, Arlington Heights, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 323,976, Nov. 15, 1963. This application Oct. 10, 1966, Ser. No. 585,700
U.S. Cl. 178—5.4 **3 Claims**
Int. Cl. H04n *5/44*



1. A demodulator system for a color television signal comprising chroma modulation components representing color difference signals in predetermined phase relation with respect to one another and associated respectively with red, blue and green in a television image, and a color reference burst signal representing the carrier for the modulation components, said demodulator system being operative to directly demodulate each of the color difference signals representing the red, blue and green information for direct application to a cathode ray tube and including in combination, a demodulator tube having a cathode, a common control grid, a common screen grid, first and second further control grids, and first and second anodes, said first further control grid and said first anode establishing a first electron current path from said cathode and through said common control and common screen grids exclusive of a second electron current path from said cathode and through said common control and common screen grids in which said second further control grids and said second anode are operative, said screen grid being at the same direct current and signal potential in both of said current paths, oscillator circuit means including means turned to provide demodulating oscillations phase locked to the color reference burst signal, band pass circuit means for selecting the chroma modulation components, coupling circuit means connected from said band pass circuit means and said oscillator circuit means to said common control grid and said first and second further control grids for supplying the chroma modulation components and the demodulating oscillations at selected phases and amplitudes in said first and second current paths, first, second and third detector loads circuits individually coupling said anodes and said common screen grid to the cathode ray tube and each including bypass means for the edmodulating oscillations so that said load circuits respectively develop color difference signals representing red, blue and green colors of the image, said load circuit coupled to said common screen grid having substantially no series impedance thereby applying unattenuated signals therefrom to the cathode ray tube, said coupling circuit means including a phase shifting circuit at at least one of said first and second further control grids for establishing the phase and amplitude of signals on such grids for directly demodulating the red and blue representative signals individually at said anodes and the green representative signal at said screen grid.

3,429,989
ELECTRONIC CURVE FOLLOWER

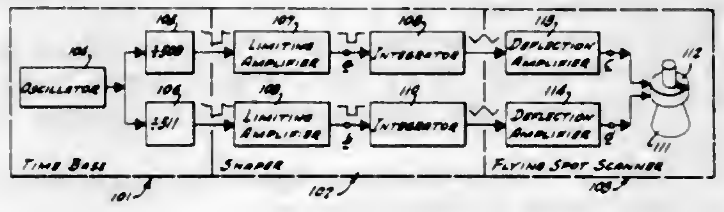
Norman S. Stockdale, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 4, 1964, Ser. No. 372,497
U.S. Cl. 178—6.8 **9 Claims**
Int. Cl. H04n *3/00;* **G01j** *1/20;* **G05b** *1/00*



An electronic curve follower is provided which utilizes the beam of a cathode ray tube for following a curve. The beam is under control of a direction ring which provides input controls to deflection selection logic. The latter controls the horizontal and vertical deflection circuits of the cathode ray tube. The direction ring is bi-directional and it operates under control of ring control logic circuitry. The ring control logic circuitry receives inputs from timing control circuits. The timing control circuit provides indications as to when the beam has made a transition from black to white and vice versa and when the beam has been too long in the background area or in the curve area.

3,429,990
SCANNING RASTER GENERATOR

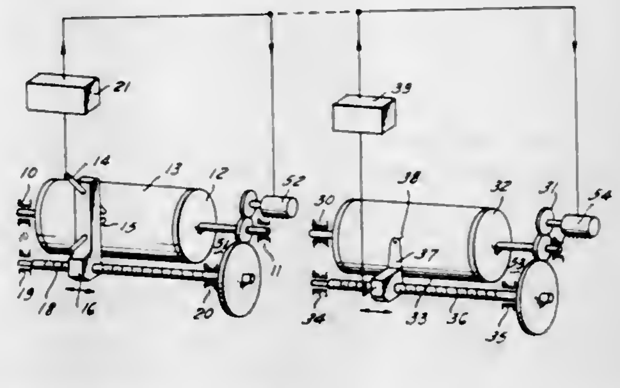
Gilbert L. Hobrough, Los Altos, Calif., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,424
U.S. Cl. 178—6.8 **2 Claims**
Int. Cl. H04n *3/00, 3/12, 3/16*



This disclosure relates to a flying spot scanner for scanning an optical image upon a transparency or the like wherein a photocell optically co-acting with the transparency produces a video signal indicative of the image. This video signal is amplified and is applied to the intensity control element of a viewing cathode ray tube which in turn electronically reproduces the image scanned, usually in magnified form.

3,429,991
FACSIMILE SYSTEM FOR REPRODUCING A PICTURE OR THE LIKE ON A METAL LAYER

Alfred Ortlieb, Stuttgart-Vaihingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Jan. 14, 1965, Ser. No. 425,576
Claims priority, application Germany, Jan. 17, 1964, B 75,040
U.S. Cl. 178—6.6 **12 Claims**
Int. Cl. H04n *5/76;* **G01d** *15/10*

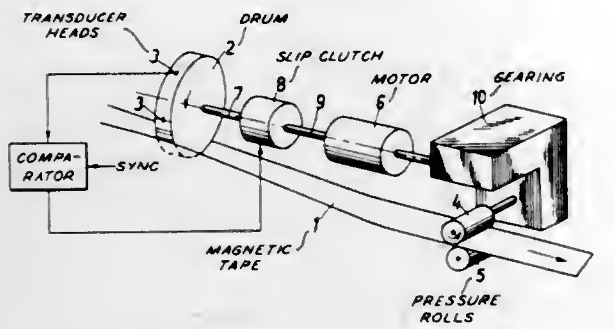


A facsimile arrangement for remotely reproducing a picture or similar information on a metallic layer. The picture ito be reproduced is mounted on a rotating drum and scanned by a photosensitive source. The source is movable in an axial direction with respect to the drum, for the purpose of scanning the entire area of the picture or recorded material on the surface of the drum. The photosensitive source converts the light signal from the scanned picture, into an electrical signal which, after suitable amplification, is transmitted to a receiving drum upon which is mounted the metallic layer. The latter may be vapor-deposited onto an insulating base or carrier which, in turn, is wrapped around the cylindrical surface of the receiving drum. An electrode is in contact with the surface of the metallic layer, and the electrical signal transmitted from the photosensitive source, is used to burn an impression into the metallic layer which corresponds to the picture scanned. The electrode is also movable axially along the receiving drum, in a manner similar to that prevailing for the drum holding the picture to be scanned. The receiving drum has cleaning apparatus for periodically wiping the electrode and thus providing a cleaning effect to it.

3,429,992
APPARATUS FOR THE RECORDING OR PLAYBACK OF ELECTRICAL SIGNALS

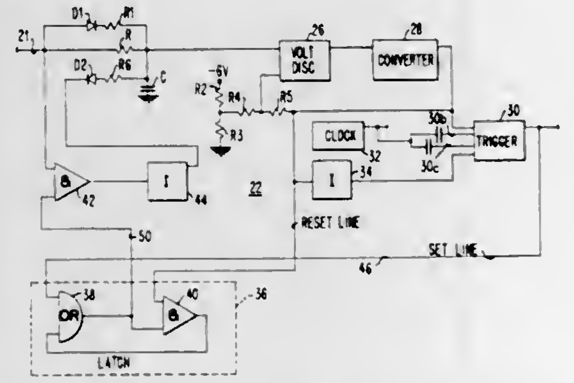
Rudolf Prochnow, Darmstadt-Eberstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed June 2, 1965, Ser. No. 460,743
Claims priority, application Germany, June 6, 1964, F 43,113
U.S. Cl. 178—6.6 **13 Claims**
Int. Cl. H04n *5/78;* **G11b** *5/52*

A magnetic tape scanning arrangement for use in television apparatus. The magnetic tape has recorded signals in tracks transverse to its longitudinal direction of motion. The tape is moved past a drum upon which a plurality of transducer heads are mounted. A guide member brings the tape in close proximity to the transducer heads on the rotatable drum. An electric motor drives the drum by way of a slip clutch. The slip clutch is electromagnetically actuated and the amount of slip can be controlled by varying the current applied to the coil of the clutch. The tape transport mechanism which moves the magnetic tape along its longitudinal direction and against the transducer heads on the rotating drum is also driven by the same electric motor. A mechanical gear train may be interposed between the electric motor and the tape transport mechanism to provide for the proper speed at which the tape is moved longitudinally. The slippage of the clutch is controlled so that the angular speed of the drum is in predetermined relationship to the longitudinal speed of the moving magnetic tape.



3,429,993
VIDEO DIGITIZING SYSTEM

Maurice R. Bartz, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,411
U.S. Cl. 178—7.1 **10 Claims**
Int. Cl. *3/00, 3/16*

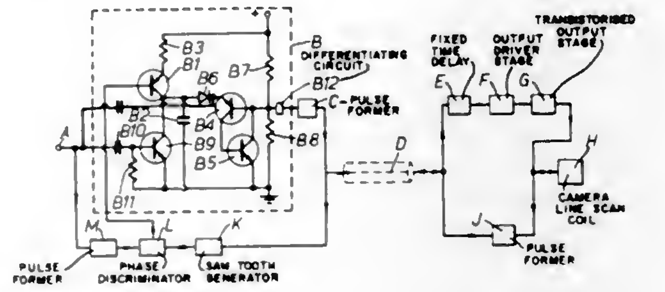


A digitizing circuit for a video quantizing system applies a quantized signal to a discriminator. A trigger controlled by the discriminator and a clock sets a latch which controls the discharge time of an RC circuit to establish a minimum signal width whereby all quantizer signals must remain in a given state for a predetermined time before changing.

3,429,994
SYNCHRONISING APPARATUS FOR REMOTE TELEVISION CAMERAS

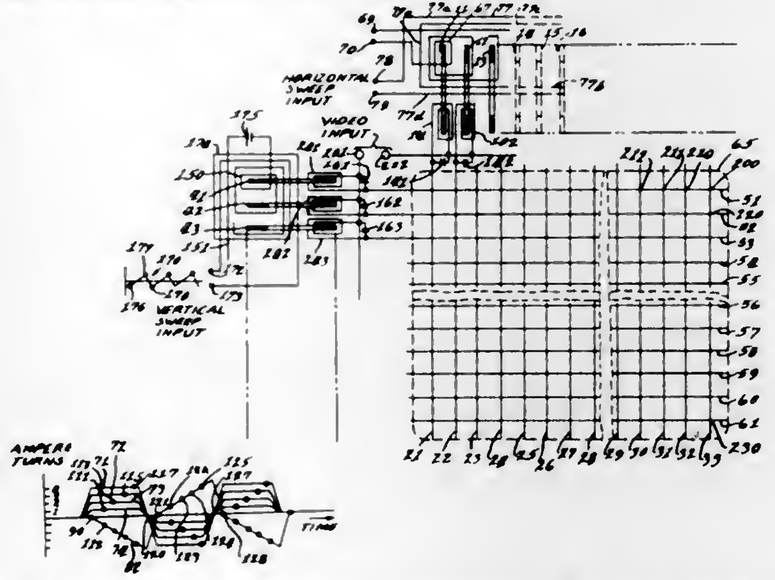
Donald Alexander Pay, West Hanningfield, Essex, Anthony John Butt, Writtle, Essex, and John Harwood Deveson, Chelmsford, Essex, England, assignors to The Marconi Company Limited, London, England, a British company
Filed Oct. 18, 1965, Ser. No. 497,334
Claims priority, application Great Britain, Nov. 11, 1964, 45,970/64
U.S. Cl. 178—7.2 **10 Claims**
Int. Cl. H04n *5/38;* **H04l** *7/08, 7/06*

A television camera installation including a camera unit at a remote point linked by a cable to a control unit to which line synchronising pulses are applied; a delay device of controlled variable delay situated in the control unit; a deflection unit at the camera fed with pulses from the delay unit via a conductor of the cable to effect line deflection and a phase comparator at the control unit arranged to compare the phase of pulses received, via the same conductor, at the control unit from the camera with the phase of the incoming line synchronising pulses, the output from the phase comparator being used as an error signal to control the delay provided by the delay unit so as to maintain the deflection in the camera in phase.



3,429,995
VIDEO DISPLAY SYSTEM

Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, a corporation of Illinois
Original application Aug. 5, 1960, Ser. No. 47,741. Divided and this application Oct. 13, 1965, Ser. No. 495,495
U.S. Cl. 178—7.3 **8 Claims**
Int. Cl. H04n *3/00, 3/16, 5/38*



An area scanning system comprising first and second series of cores which are sequentially switched by means of alternating polarity magnetomotive forces of cooperating waveform exerted on each core to eliminate retrace switching. Capacitance associated with the core output windings produces an oscillatory wave train for exiting luminescent material.

3,429,996
DEFORMABLE MEDIUM COLOR PROJECTION APPARATUS

Michael Graser, Jr., Fayetteville, and Thomas T. True, Camillus, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,248
U.S. Cl. 178—7.5 **6 Claims**
Int. Cl. H04n *5/48, 3/16*

1. A system for controlling point by point the intensity of a beam of light for projecting an image in response to an electrical signal correspondnig to said image comprising:

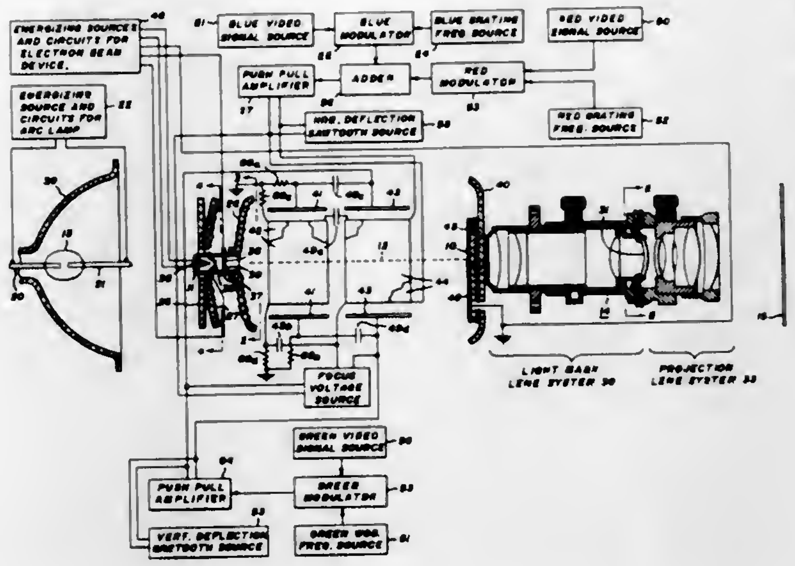
a layer of light modulating fluid deformable by electric charges deposited thereon,

means for directing said beam of light on said layer,

means for directing a beam of electrons upon said layer to deposit such charges on said layer,

means to deflect said electron beam over said layer in one direction in successive lines at an intermediate frequency rate and in another direction perpendicularly to said one direction at a low frequency rate to form a raster thereon consisting of a frame of two fields, the lines of one field of which are interlaced with the lines of the other thereof,

said electron beam having two components displaced from one another in said one direction and conjointly controlled whereby each line of scan in said one direction provides a pair of lines of charge on said medium, corresponding lines in successive pairs of lines of charge being displaced by twice the separation of lines of charge in a pair, whereby a diffraction grating is formed on said layer having lines of deformation directed in said one direction twice the density of a diffraction grating formed by the lines of scan of a field, said lines of charge in each field being substantially superimposed,



means for modulating said beam of electrons in said other direction by a fixed high frequency carrier wave modulated inversely in amplitude by said electrical signal corresponding to the intensity of light in an image to be projected to modulate the amplitude of the diffraction grating in accordance with the amplitude of said signal.

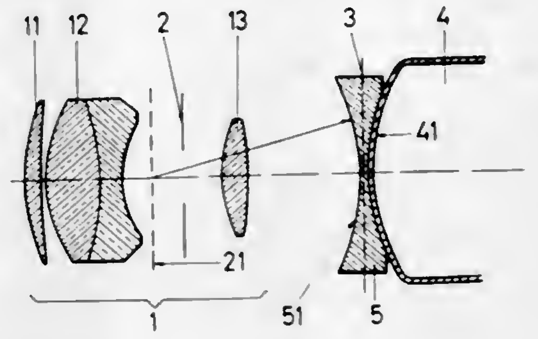
the properties of the fluid being such that the rise and fall of deformations due to the differential charge on said media is comparable to a field of scan,

a light and optical system for projecting light as a function of the deformations in said fluid layer including a mask having a set of parallel slots and bars parallel to said direction of line scan, said slots and bars being positioned and of lateral extent in an image surface to pass first and second order light diffracted by said diffraction grating of twice field scan line density and to block first order light diffracted by any grating of field scan line density.

3,429,997
IMAGE FLATTENING OPTICAL SYSTEM FOR ELECTRONIC IMAGE CONVERTING TUBE

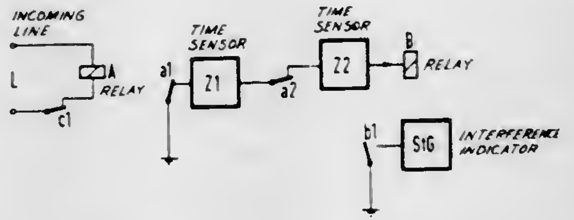
Ortwin Rösner and Franz Schlegel, Munich, and Nikolaus Sebestyen, Uberlingen (Bodensee), Germany, assignors to Optische Werke G. Rodenstock, Munich, Germany
Filed Aug. 18, 1965, Ser. No. 480,582
U.S. Cl. 178—7.86 **7 Claims**
Int. Cl. H01j *29/89;* **G02b** *3/00, 9/34*

An electronic image converting tube, of the type generally known as iconoscopes, is associated with a geometrical-optical system for directing light rays into a convex cathode surface of the tube. A Smyth lens is positioned in the path of light rays entering the tube and is either cemented on the outwardly convex cathode surface or is integral with the latter. The Smyth lens may be a two part lens with a color filter sandwiched between the two parts thereof.



3,429,998
METHOD AND ARRANGEMENT FOR CHECKING OF LINES IN TELEGRAPH INSTALLATIONS

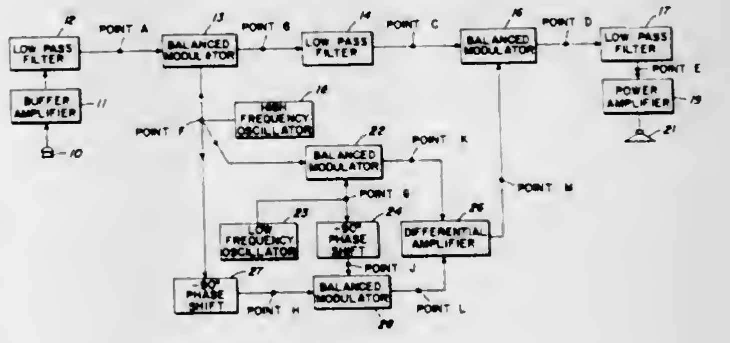
Charles J. Colombo, Dorval, Montreal, Quebec, Canada, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 16, 1965, Ser. No. 479,950
Claims priority, application Germany, Aug. 18, 1964, S 92,697
U.S. Cl. 178—69 **10 Claims**
Int. Cl. H04l *25/02, 15/24, 15/34*



A method and apparatus to check the transmission capacity of telegraph circuits to determine, by each received signal, whether the appertaining stop signal occurs at the prescribed time and with the correct polarity. If the appertained stop signal is absent, an interference indicator is rendered operative.

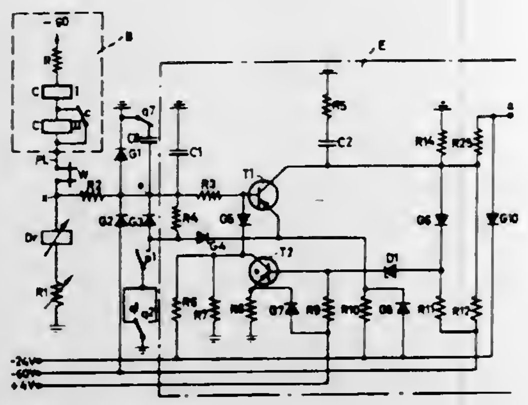
3,429,999
CIRCUIT FOR PREVENTING SINGING IN AUDIO SYSTEMS

Harris A. Stover, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Sept. 6, 1966, Ser. No. 577,469
U.S. Cl. 179—1 **9 Claims**
Int. Cl. H04m *1/20;* **H03f** *1/00*



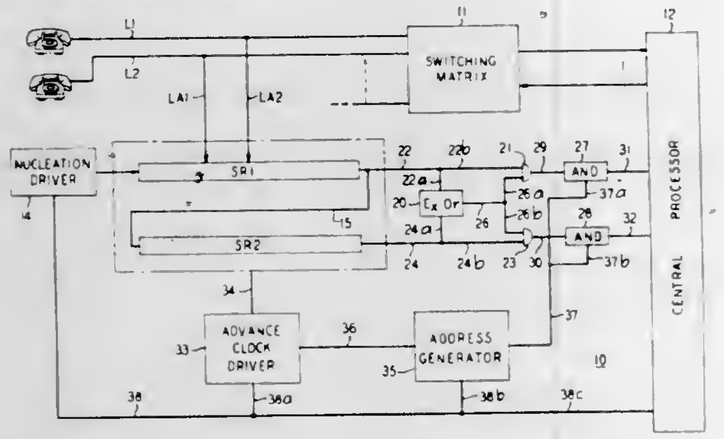
An audio amplifying system which offsets the frequency from the loudspeaker so as to prevent oscillation caused by the loudspeaker output feeding into the microphone.

3,430,000
CIRCUIT ARRANGEMENT FOR TESTING LINES IN COMMUNICATION SYSTEMS
Josef Röhrig, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Nov. 26, 1963, Ser. No. 325,967
Claims priority, application Germany, Apr. 11, 1963, S 84,673
U.S. Cl. 179—18 **23 Claims**
Int. Cl. H04m *1/24*



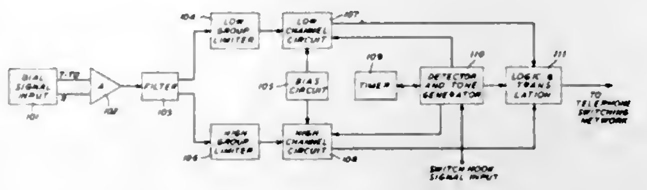
In a communication system wherein the idle condition of test lines therein is indicated by a first potential and the occupied condition by a second potential, a circuit arrangement formed of a test circuit which includes the particular test line, a potential sensing circuit connected to the test circuit, a first switching device for rendering the sensing circuit inoperative in response to the presence of the first potential therein, a second switching device for de-actuating the first switching device after a predetermined period of time to restore the sensing circuit to operative condition for another period of time thereafter.

3,430,001
SCANNING CIRCUIT EMPLOYING SHIFT REGISTERS
Umberto F. Gianola, Florham Park, Reginald A. Kaenel, Chatham, and Henry E. D. Scovil, New Vernon, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 15, 1965, Ser. No. 464,066
U.S. Cl. 179—18 **19 Claims**
Int. Cl. H04m *3/00*



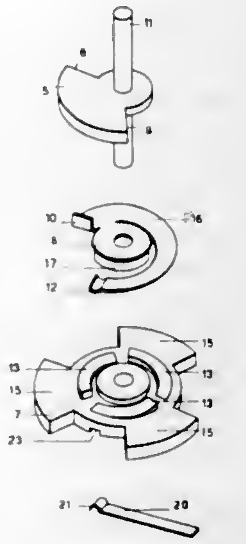
A telephone scanning circuit is described where only differences between binary indications of substation line conditions in consecutive scan periods are supplied to a central processor for controlling service to the substations. All lines of a set are scanned simultaneously in a first scan cycle. The resulting first indications are stored in a shift register and advanced to later stages. A next consecutive scan cycle results in the storage of second indications in the shift register. Logic circuitry provides first and second signals indicative of first and second differences in the indications for consecutive cycles for each line as information is advanced in the register. The difference signals are supplied to the central processor along with synchronized sequentially generated line address information for controlling service.

3,430,002
COMPATIBLE MULTIFREQUENCY DIRECT CURRENT TELEPHONE SIGNAL RECEIVER
Lawrence C. J. Roscoe, North Brunswick, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed June 15, 1965, Ser. No. 464,177
U.S. Cl. 179—84 **10 Claims**
Int. Cl. H04m *1/00, 1/50, 3/06*



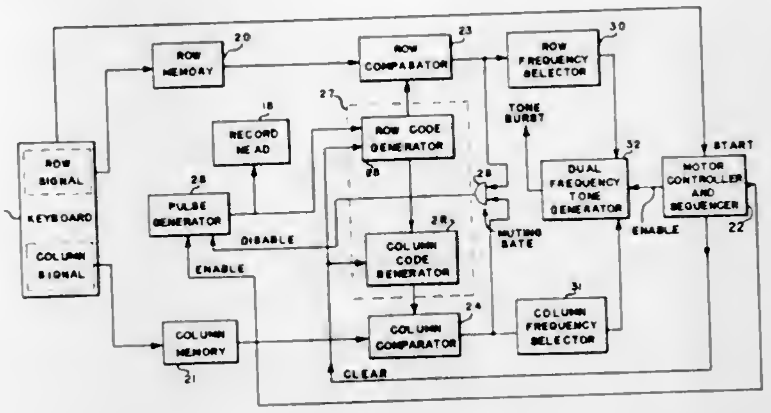
In a key telephone system which includes both multifrequency signaling and D-C signaling telephone subsets, an off-hook condition detector circuit is made to serve a dual function in that in response to the performance of the detecting function the circuit is converted into an oscillator that generates a time-out warning signal under the control of an associated timing circuit.

3,430,003
CALLING DIAL OF THE DEAD-ANGLE TYPE
Giorgio Dal Monte and Luciano Callegari, Milan, Italy, assignors to Societá Italiana Telecomunicazioni Siemens S.p.A.
Filed Oct. 21, 1965, Ser. No. 500,070
Claims priority, application Italy, Oct. 28, 1964, 23,132/64
U.S. Cl. 179—90 **4 Claims**
Int. Cl. H04m *1/34, 1/23*



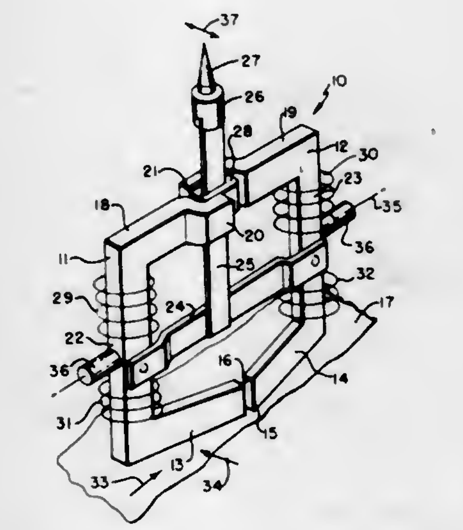
A calling dial has a finger plate that turns a rotor bearing two abutments spaced apart by a dead angle. A one-way clutch turns an impulse rotor in one direction only. The one-way clutch does not move the impulse rotor when the number is dialed; but when the dial is released, the abutments on the rotor move through their dead angle before one of them contacts the one-way clutch to rotate the impulse rotor.

3,430,004
TONE SIGNAL REPERTORY DIALER
Edwin K. Shenk, Littleton, Mass., assignor, by mesne assignments, to DASA Corporation, Andover, Mass., a corporation of Massachusetts
Filed Dec. 28, 1965, Ser. No. 517,056
U.S. Cl. 179—90 **10 Claims**
Int. Cl. H04m *1/50*



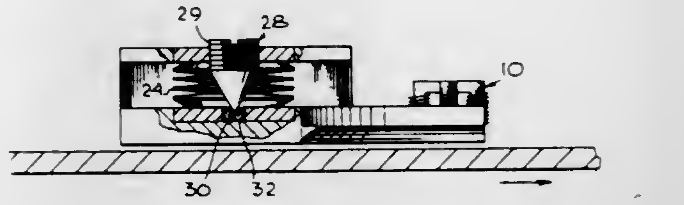
A repertory dialer recording pulses on a magnetic medium that are converted into tone bursts used in a multi-frequency system. The signal output of the keyboard is converted by a memory device into binary code signals. Every key on the board is associated with a unique four bit code. Each key on the board is also represented by a unique series of pulses. The pulses recorded on the tape representing a pressed key are generated by a pulse generator that has its generating time span controlled by a feedback system which uses a binary code comparator. The time span determines the number of pulses recorded which in turn determine, by way of a pulse to binary code conversion, the multi-frequency tone sent out over the telephone line.

3,430,005
RECORDING AND REPRODUCING HEADS WITH MEANS FOR RECORDING BOTH MAGNETICALLY AND MECHANICALLY
James M. Huckabee, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,404
U.S. Cl. 179—100.1 **17 Claims**
Int. Cl. G11b *5/00;* **H04r** *23/02*



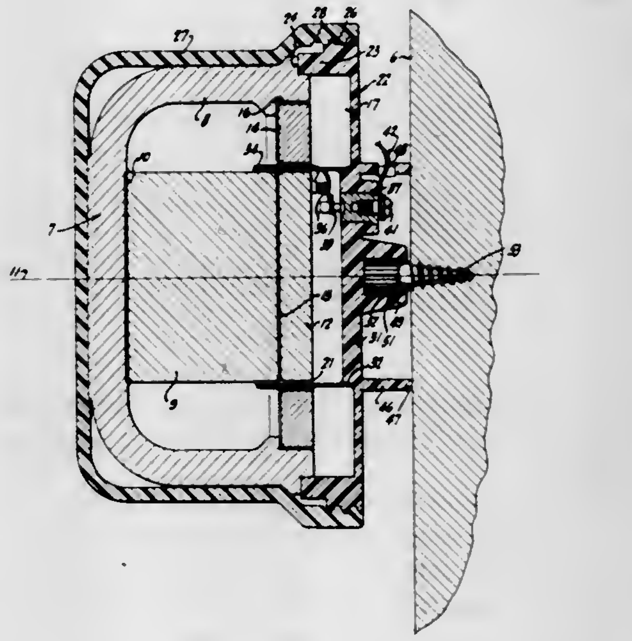
Recording and reproducing heads are provided which are capable of selectively recording or reproducing information on record media using different recording and reproducing techniques. A recording and reproducing head comprises a magnetic transducing gap and a separate mechanical transducing stylus. The recording head is mounted to permit either the magnetic gap or the stylus to be positioned in operative transducing relation with a record medium depending on whether the medium is of the mechanical groove or magnetic type.

3,430,006
AIR LUBRICATED MAGNETIC HEAD PAD AND MOUNTING SYSTEM THEREFOR
Geoffrey N. Taylor, Santa Monica, and Leonard S. Bleininger, Northridge, Calif., assignors to Data Products Corporation, Culver City, Calif., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,542
U.S. Cl. 179—100.2 **13 Claims**
Int. Cl. G11b *5/40*



A system for mounting a magnetic head pad for use in a disc memory system. The mounting system includes a bellows secured between a support arm and the pad. The bellows permits torsional freedom about first and second orthogonal axes respectively extending in a plane parallel to the disc surface. The bellows exhibits torsional rigidity about a third orthogonal axis extending perpendicular to the disc surface. Translation between the support arm and pad is prevented by a locating pin extending therebetween coincident with the bellows axis. The pad is comprised of a main pad portion and trailing boom carrying the head so as to position the head close to the disc surface.

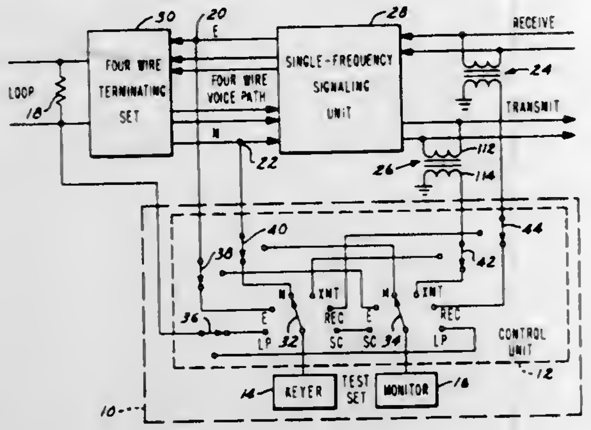
3,430,007
DYNAMIC TRANSDUCER WITH WALL MOUNTED DIAPHRAGM
David E. Thielen, Sacramento, Calif., assignor to Rolen Diversified Investors, Inc., a corporation of Nevada
Filed Mar. 16, 1966, Ser. No. 539,250
U.S. Cl. 179—115.5 **10 Claims**
Int. Cl. H04r *9/06, 9/02*



A dynamic sound transducer with the sole means of support being the center of the diaphragm fastened to the wall by a screw-threaded device.

3,430,008
APPARATUS FOR TESTING A TELEPHONE CIRCUIT

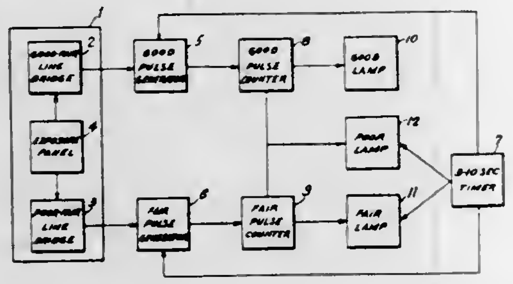
James E. Britt, Fairfax County, Va., assignor to The Susquehanna Corporation, a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,439
U.S. Cl. 179—175.1 **6 Claims**
Int. Cl. H04m *5/00*



This apparatus monitors and indicates the make ratio and break ratio of pulses, either AC or DC, sent to or generated by telephone signaling equipment, such as a single-frequency (SF) unit. During AC operation the input to the monitoring circuit is by means of a transformer, the primary side of which is patched across the line undergoing test, enabling the monitoring of lines while they are in service. During DC operation, a high impedance load is placed in parallel with the telephone circuit and the voltage across the load provides the input. A keying circuit, isolated from the monitoring circuit, generates signal pulses which can be sent into the SF unit. By connecting the keying circuit to an input of the SF unit and the monitoring circuit into an output, the signal degradation due to the SF unit itself can be determined. Other combinations of connections of the keying circuit and the monitoring circuit with the SF unit permit testing of other isolated parts of the telephone trunk.

3,430,009
SERVICE OBSERVING SYSTEM

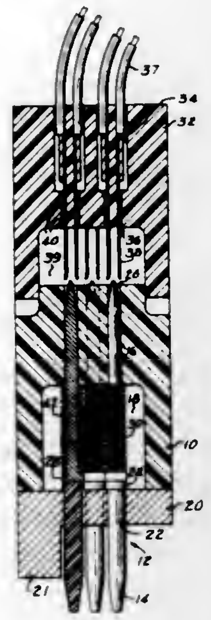
Laurent J. Fontaine, Pierrefonds, Quebec, Canada, assignor to Bell Telephone Company of Canada, Montreal, Quebec, Canada, a corporation of Canada
Continuation of application Ser. No. 268,160, Mar. 26, 1963. This application Oct. 22, 1965, Ser. No. 507,615
U.S. Cl. 179—175.1 **22 Claims**
Int. Cl. H04m *5/00;* **H01j** *39/12*



1. A telephone service observing system for indicating the quality of transmission over a telephone line comprising:
   - (a) a meter having a needle movable in response to transmission over the telephone line;
   - (b) light sensitive means positioned in the path of said needle at a point corresponding to a particular quality of transmission; and
   - (c) means responsive to a predetermined number of passages of said needle by said light sensitive means during a predetermined period of time for indicating said particular quality of transmission.

3,430,010
SELECTOR SWITCH MECHANISM

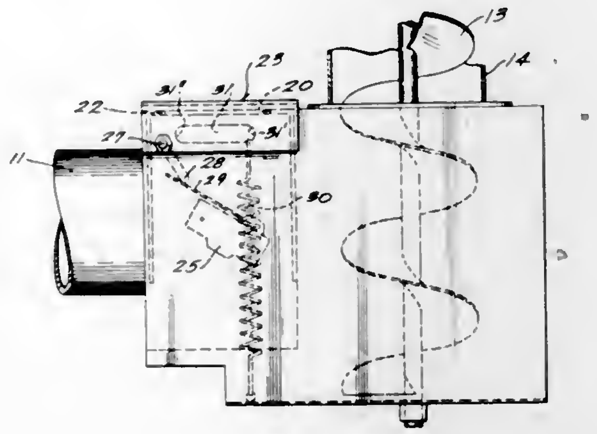
Charles F. Rudd, Willoughby Hills, and Ronald F. Obergefell, Cleveland, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,092
U.S. Cl. 200—46 **4 Claims**
Int. Cl. H01h *43/08, 15/10*



The disclosure of this application is of the mechanical structure of an electrical switch wherein a mechanical feeler rod **12** is driven into a cluster of switch contacts **38** in order to provide a sure contact and a continual wiping action to provide self-cleaning of the contact, all contained within a longitudinal area having a cross section not greater than an aliquot part of the total space of a tab on a printing device, divided by the number of probe rods used to contact that tab, which is generally five in number.

3,430,011
AUGER CORNER WITH RELIEF AND SHUTOFF SWITCH

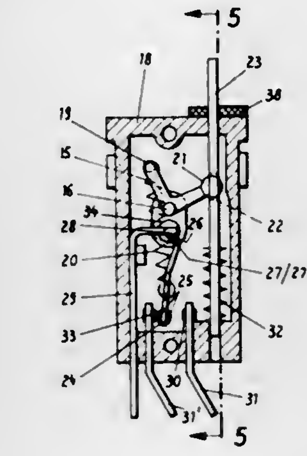
Robert F. Skelton, Bluffton, Ind., assignor to Mix-Mill, Inc., Bluffton, Ind., a corporation of Indiana
Filed Jan. 3, 1967, Ser. No. 606,655
U.S. Cl. 200—61.21 **5 Claims**
Int. Cl. H01h *35/00, 3/16*



A safety device for a location where two enclosed conveyors, such as augers, meet at an angle. The corner has a hinged cover, closed by a spring arranged to provide more force to hold the cover closed than to reclose it after opening. The cover hinge pin is bent to form a switch actuator for a motor switch. If material is not removed by the outgoing conveyor as fast as it is fed in by the incoming conveyor the pressure raises the cover. The hinge pin actuates the switch to shut down at least the incoming conveyor, and the cover remains open.

3,430,012
ELECTRIC SNAP KEY SWITCH ASSEMBLY

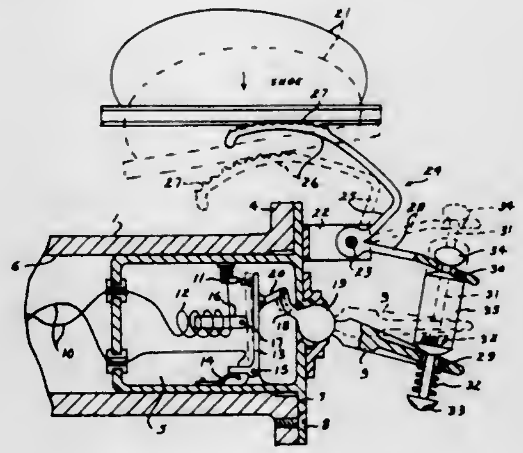
Helmut Langenberger and Hans Kruse, Niederstotzingen, Germany, assignors to Walther-Buromaschinen G.m.b.H., Gerstetten-Wurttemberg, Germany, a limited-liability company of Germany
Filed Dec. 12, 1966, Ser. No. 600,969
Claims priority, application Germany, Dec. 27, 1965, W 40,597
U.S. Cl. 200—67 **5 Claims**
Int. Cl. H01h *21/04*



A spring switch key assembly for the keyboard of an electric calculating machine having a key shaft slidably mounted in an elongated housing. Contacts are disposed in the bottom of the housing. A snap spring mechanism is arranged to engage a contact arm with the contacts. An angular lever is pivotally mounted in the housing and connected to the lever and mechanism wherein depression of the key closes a circuit and the return of the key to its normal position closes a second circuit. In addition, there are cooperating notches and ribs on the switch key housing and keyboard opening for mounting of the housing in the keyboard.

3,430,013
RUDDER PEDAL SWITCH

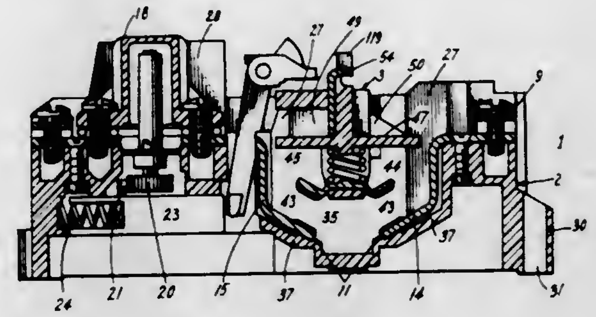
Richard V. Wible, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 15, 1967, Ser. No. 683,767
U.S. Cl. 200—86.5 **6 Claims**
Int. Cl. H01h *3/14*



A foot operated switch incorporated in a yaw axis rudder pedal control member for a helicopter which is moved to a circuit closing position for a yaw axis automatic pilot by depression of the pilot's foot toward the pedal member and movable to its circuit opening position by lateral movement of the operator's foot along the pedal member toward the outer end thereof.

3,430,014
MODULAR ELECTRIC SWITCH

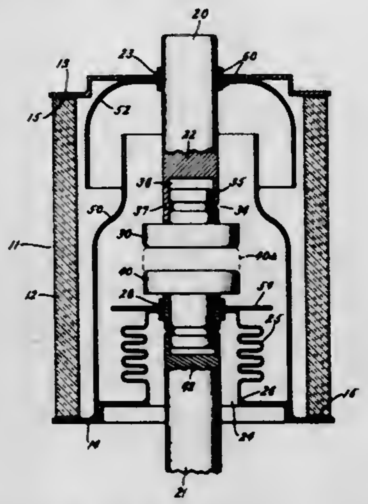
Robert E. Walters, Bayside, and Gerd C. Boysen, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 20, 1965, Ser. No. 488,548
U.S. Cl. 200—144 **7 Claims**
Int. Cl. H01h *9/30*



The modular electric switch construction includes a base module with a substantially open top for the arc chamber. A contact carrier module is movable located with respect to the arc chamber and carries movable contacts in the chamber; the contact carrier module, with its contacts, being removable and separable from the base module as the contacts pass through the open top of the arc chamber. An arc shield may also form a part of the contact carrier module and pass through the open top of the arc chamber upon carrier module separation from the base module. An integral operator unit module may be located in the base module for operating the contact carrier module; said operator unit module being removable and separable from the base module with or without the contact carrier module.

3,430,015
VACUUM-TYPE CIRCUIT INTERRUPTER HAVING BRAZED JOINTS PROTECTED FROM WELD-INHIBITING CONSTITUENT IN CONTACT STRUCTURE

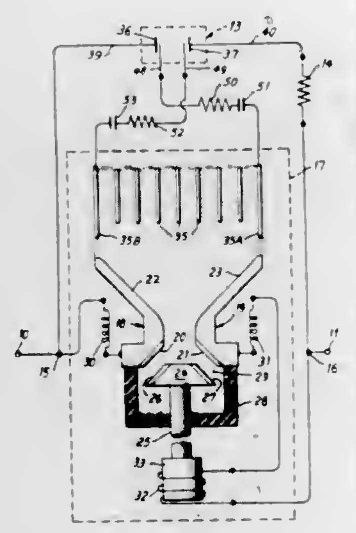
Donald W. Crouch, Newtown Square, and Robert Crowell, Morton, Pa., assignors to General Electric Company, a corporation of New York
Filed Mar. 28, 1966, Ser. No. 537,979
U.S. Cl. 200—144 **6 Claims**
Int. Cl. H01h *9/30, 33/00*



A vacuum-type circuit interrupter comprising a brazed joint in its envelope located immediately adjacent one of the contacts of the interrupter and remote from the other contact. A weld-inhibiting constituent for preventing contact welding is incorporated in the metal of the contacts but is confined to the contact remote from said brazed joint. The contact immediately adjacent the brazed joint is essentially free of the weld-inhibiting constituent.

3,430,016
ELECTRIC CURRENT INTERRUPTING DEVICE

Ralph L. Hurtle, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed Apr. 15, 1966, Ser. No. 542,806
U.S. Cl. 200—144 **16 Claims**
Int. Cl. H01h *9/30, 33/00, 9/38*

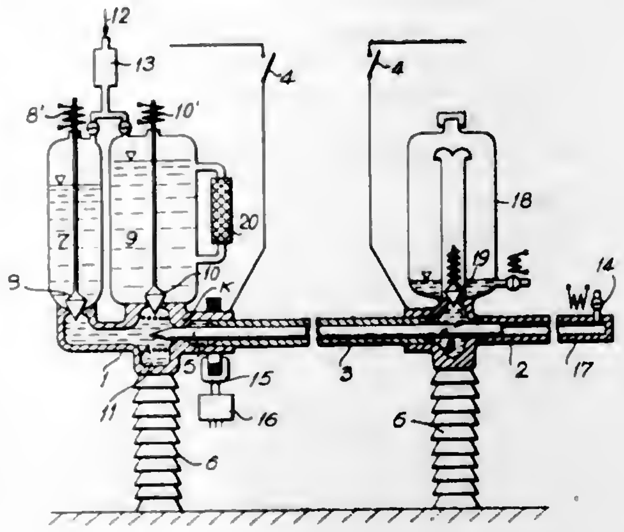


1. An electric circuit interrupter comprising:
(a) an electric circuit breaker including means for generating an arc along a predetermined path;
(b) an interruption-assisting device including at least one input terminal, at least one output terminal, and at least one control terminal;
(c) means connecting said interruption-assisting device electrically in parallel with said circuit breaker;
(d) at least one metallic member carried by said circuit breaker and positioned in said predetermined path to be struck by said arc;
(e) means connecting said control terminal of said interruption-assisting device to said metallic member so that when an arc is generated by said arc generating means, at least a portion of the voltage across said arc is impressed between said control terminal and at least one of said device input and output terminals;
(f) said interruption-assisting device being normally in a substantially nonconducting condition and being changed to conducting condition upon the impression of said voltage between said control terminal and said one of said input and output terminals;
(g) said interruption-assisting device returning to its said nonconducting condition upon cessation of current therethrough.

3,430,017
ARRANGEMENT FOR THE INTERRUPTION OF HIGH CURRENTS AT HIGH VOLTAGES

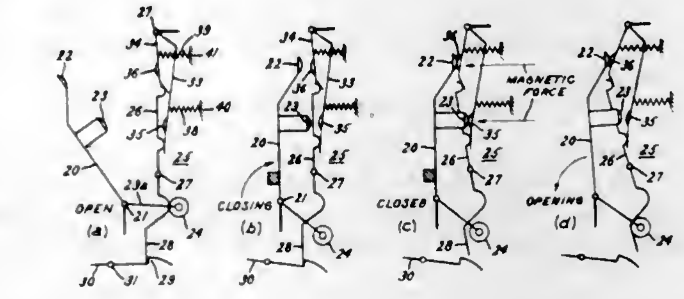
Bjarne Storsand, Watt, Switzerland, assignor to Oerlikon Engineering Company, a corporation of Switzerland
Filed Aug. 15, 1966, Ser. No. 572,586
Claims priority, application Switzerland, Aug. 17, 1965, 11,578/65
U.S. Cl. 200—144 **13 Claims**
Int. Cl. H01h *33/84;* **H01c** *11/00*

1. An arrangement for interrupting high currents at high voltages by means of an electrolytic resistor, said resistor comprising two spaced-apart pole electrodes, a tube joining said pole electrodes, and at least one movable electrode arranged for axial movement within said tube between a closed position in which it electrically connects said pole electrodes and an open position in which it is out of engagement with at least one of said pole electrodes, means for introducing into said tube an electrolyte of relatively high conductivity during the initial movement of said movable electrode from its closed toward its open position, and means for gradually introducing into said tube an electrolyte of relatively poor conductivity after said movable electrode moves out of its closed position.



3,430,018
CIRCUIT BREAKER CONTACT STRUCTURE WITH RELEASABLY LATCHED "STATIONARY" CONTACT FOR MAKING CIRCUIT

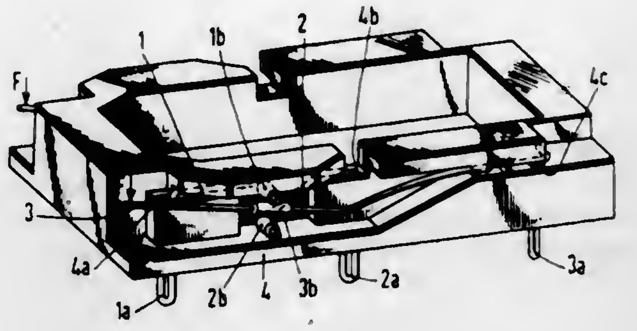
Leslie L. Baird, Swarthmore, Pa., assignor to General Electric Company, a corporation of New York
Filed June 22, 1966, Ser. No. 559,573
U.S. Cl. 200—146 **8 Claims**
Int. Cl. H01h *9/38, 33/12*



1. A circuit breaker including both arcing and main contacts, said circuit breaker comprising first and second cooperating contact members, each member having main and arcing contact surfaces, said circuit breaker operating such that when said first member is moved away from said second member said arcing contact surfaces remain in contact slightly longer than said main contact surfaces, said circuit breaker including in combination:
(a) means for moving said first member between predetermined open and closed positions,
(b) means cooperating with said first member for moving said second member from a normal operating position to a reset position during movement of said first member from its closed position to its open position,
(c) means for latching said second member in said reset position when said first member is in its open position,
(d) means for releasing said latching means when said first member approaches its closed position, and
(e) means for biasing said second member into contact with said first member when said latching means is released.

3,430,019
RELAY CONTACT ARRANGEMENTS WITH CONNECTIONS FOR PRINTED CIRCUIT BOARDS

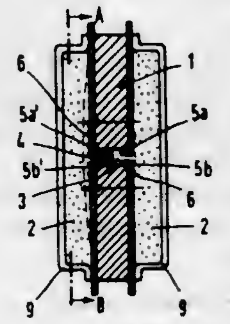
Herbert Krautwald and Harry Schröder, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed June 22, 1967, Ser. No. 648,024
Claims priority, application Germany, June 30, 1966, S 104,543
U.S. Cl. 200—166 **6 Claims**
Int. Cl. H01h *3/00*



A contact arrangement, particularly for miniature relays connectable with printed circuit boards, in which the contact springs, which may carry individual contact members, are formed from thin wire spring stock, and mounted on a retaining body of insulating material having openings therein in which terminal portions of the springs are disposed, each body being provided with fixed abutments forming supporting and positioning elements engageable with the contact springs whereby the contact springs are properly positioned without special adjustment operations and replacement may readily be effected, and in which the electrical contact connection terminals are in the form of loops, of generally hairpin configuration, providing increased mechanical rigidity in such connections as well as producing a capillary action during a flood bath soldering operation, to provide an improved soldered connection.

3,430,020
PIEZOELECTRIC RELAY

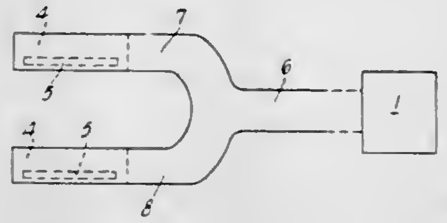
Romuald von Tomkewitsch, Ebenhausen, and Werner Bosch, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 17, 1966, Ser. No. 573,072
Claims priority, application Germany, Sept. 20, 1965, S 98,948
U.S. Cl. 200—181 **10 Claims**
Int. Cl. H01h *57/00*



A piezoelectric relay, employing a bending vibrator member of solid piezoelectric material which forms a dividing wall between two pressure chambers disposed at opposite sides thereof, and which is provided with a passageway therethrough which connects the respective chambers and which contains a drop of mercury, such mercury drop being cooperable with contact means disposed in the passageway, and an inert fluid disposed in both of the chambers operable to transmit pressure changes therein, responsive to alterations in the volumes of said chambers as a result of excitation of said vibrator member.

3,430,021
METHODS OF CRACKING STRUCTURES AND APPARATUS FOR CRACKING STRUCTURES

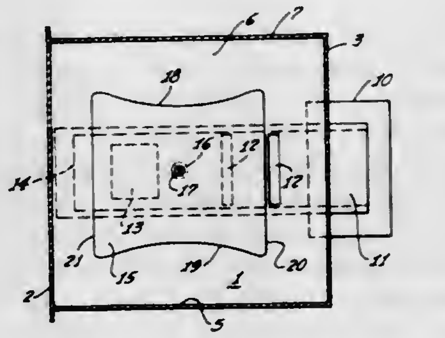
Alexander Watson, St. Albans, England, assignor to Minister of Public Building and Works in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed May 2, 1966, Ser. No. 547,023
Claims priority, application Great Britain, May 5, 1965, 18,958/65
U.S. Cl. 219—10.55 **1 Claim**
Int. Cl. B28d *1/00;* **H05b** *9/06*



The method of cracking a structure such as concrete, brick or the like by generating microwave energy and passing part of the energy along each of two wave guides thereby forming two narrow beams of energy which emerge from both wave guides through openings each having a width substantially less than that of any part of the wave guides so that the beams are directed at small areas spaced apart on the surface of the structure to cause local heating which then results in cracking the structure.

3,430,022
MICROWAVE OVEN

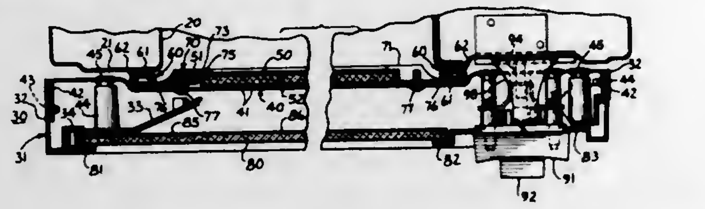
Robert L. Cougoule, San Carlos, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,684
U.S. Cl. 219—10.55 **2 Claims**
Int. Cl. H05b *9/06*



A microwave oven is provided which includes a source of microwaves coupled to the microwave heating cavity by means of a waveguide. The waveguide is short circuited at a position remote from the microwave source and includes a pair of microwave passages or feed means for passing microwave energy from the waveguide into the heating cavity. The first microwave passage means contains a pair of parallel spaced narrow slots elongated in the width direction of the waveguide for favoring the introduction of E-field from said waveguide into the cavity. The second microwave passage means is located between the first microwave passage means and the short circuited position of the waveguide and contains a large iris or opening, substantially larger in area than either of said narrow slots, for favoring the introduction of H-field from the waveguide into the cavity.

3,430,023
DOOR CONSTRUCTION AND VENTILATING SYSTEM FOR MICROWAVE OVEN

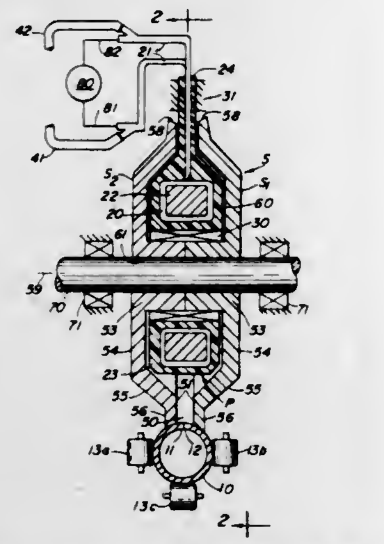
Egbert M. Tingley, Kankakee, Ill., assignor to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,805
U.S. Cl. 219—10.55 **6 Claims**
Int. Cl. H05b *9/06*



A door construction for a microwave oven providing both a vapor seal and a seal against the escape of microwave energy from the oven cavity and a modified ventilating system for use therewith.

3,430,024
ROTARY WELDING TRANSFORMER

Walter F. Praeg, Palos Park, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,162
U.S. Cl. 219—63 **7 Claims**
Int. Cl. B23k *1/16, 11/30*

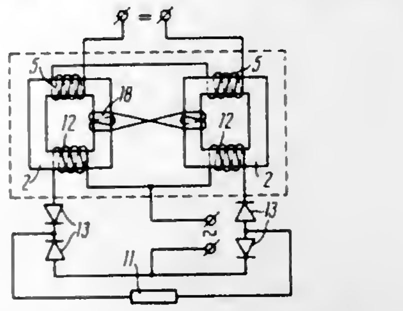


A welding transformer comprises a stationary toroidal shaped primary housed in a toroidal shaped one-turn rotatable secondary, the peripheral edges of which are spaced electrodes which are surfaces of revolution centered on the axis of rotation of the secondary. To circulate coolant through the transformer, a tube is wrapped around the primary core or the primary winding itself may be tubular. Rollers may be used with the transformer to apply pressure to the heated weld joint independently of the contact pressure of the electrodes.

3,430,025
METHOD OF LOW FREQUENCY ELECTRIC IMPULSE METAL WORKING AND GENERATORS FOR PRODUCING IMPULSES NEEDED TO ACCOMPLISH THE SAME METHOD

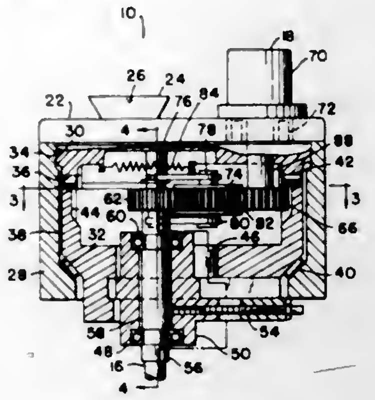
Abram Lazarevich Livshits, Moscow, Ivan Sergeevich Rogachev, Kharkov, Alexandr Borisovich Sosenko, Moscow, and Vladimir Lvovich Benin, Kharkov, U.S.S.R., assignors to Experimentalny Nauchno-Issledovatelsky Institute Metallarezhushchikh Stankor
Filed Sept. 25, 1963, Ser. No. 311,382
U.S. Cl. 219—69 **2 Claims**
Int. Cl. B23k *15/00;* **H02p** *13/12;* **H01f** *21/08*

A method of working metals by arc pulses having energies of 50 to 1000 joules and durations of 5,000 to 20,000 microseconds, respectively, with the lower pulse energies for the shorter durations and vice versa. The duty ratio for this range of energies decreasing correspondingly from 5 to 1, while maintaining pulse frequency. Tool electrode wear is controlled by the superposition on the main pulses of alternating pulses of lower energy and shorter duration than the main pulses. A special generator for the system comprises a self-saturating one-way choke magnetic amplifier mounted on two cores with alternating current power windings and control windings energized by a D.C. source, and a full-wave rectifier in series with the power windings.



3,430,026
QUICK-CHANGE TOOL FOR ELECTRICAL MACHINING INCLUDING STRUCTURE FOR SIMULTANEOUSLY ECCENTRICALLY ROTATING AND REVOLVING AN ELECTRODE

Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104
Application Oct. 24, 1965, Ser. No. 504,971, which is a continuation-in-part of application Ser. No. 250,321, Jan. 9, 1963. Divided and this application Jan. 8, 1968, Ser. No. 696,281
U.S. Cl. 219—69 **10 Claims**
Int. Cl. B23k *9/16*

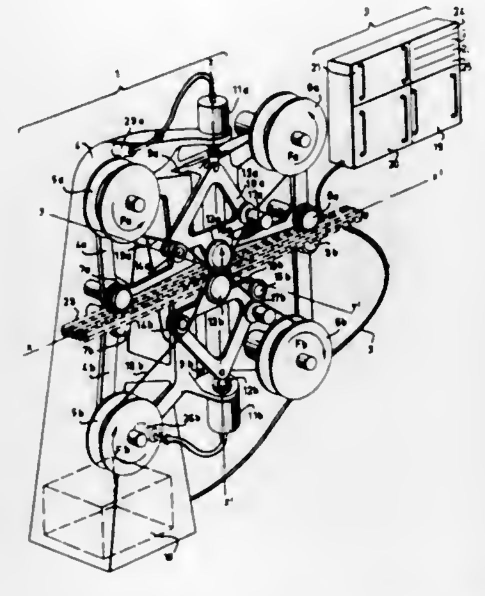


A tool for use with electrical machining apparatus to cut an opening having an area larger than the cross section of the electrode used to cut the opening. The tool includes a dovetail base plate portion for rapid, accurate securing of the tool to electrical machining apparatus. Servo-motor driven means is provided for moving an electrode connected to the tool in a circular path having a center eccentric to the axis of the electrode. Structure is also provided for adjusting the position of the longitudinal axis of the electrode with respect to the center of the path about which the electrode is rotated and for simultaneously revolving the electrode about its own longitudinal axis while moving the electrode in a circular path to equalize electrode wear.

3,430,027
RESISTANCE WELDING MACHINE

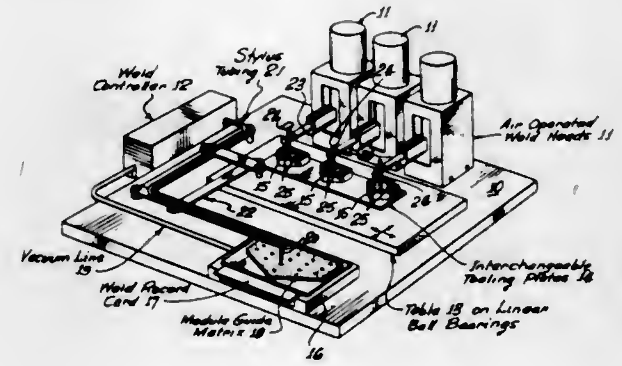
Jean Denis, Antony, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Apr. 5, 1966, Ser. No. 540,281
Claims priority, application France, May 21, 1965, 18,026
U.S. Cl. 219—81 **8 Claims**
Int. Cl. B23k *11/06, 9/12*

A welding machine is provided of the general type which utilizes deformable intermediate wire electrodes which pass about wheels between which the elements to be welded move, the wheels exerting pressure maintaining the elements together for welding. Means are provided which enables the two wires passing over the welding wheels, disposed on opposite sides respectively of the elements to be welded, to be driven at a speed less than the speed of the elements during a non-welding period of time. This reduces the utilization of the wire electrode.



3,430,028
WELDING STATION

John L. Goforth, Brea, and Andrew E. Flanders, Pomona, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Dec. 8, 1965, Ser. No. 512,396
U.S. Cl. 219—87 **10 Claims**
Int. Cl. B23k *9/28, 29/00, 37/02*

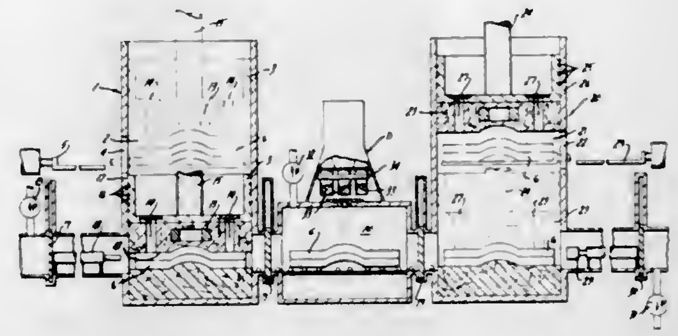

Weld Controller 12
Stylus Tubing 21
Air Operated Weld Heads 11
Vacuum Line 29
Weld Record Card 17
Module Guide Matrix 18
Interchangeable Tooling Plates 16
Table 18 on Linear Ball Bearings

A vacuum operated, stylus-controlled welding apparatus which utilizes a guide matrix assembly to actuate the welding apparatus while additionally providing a visual indication to verify that the desired welds have been made.

3,430,029
RAPID LOAD SYSTEM FOR ELECTRON BEAM WELDER

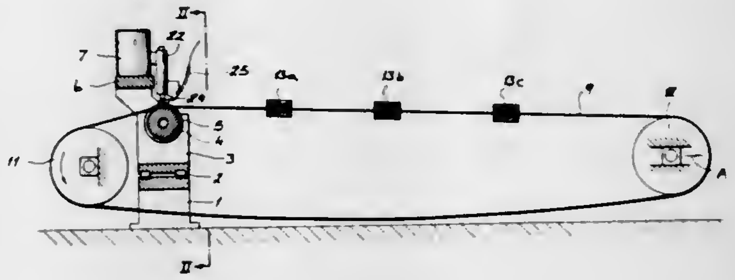
John F. Hinrichs, Menomonee Falls, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 6, 1967, Ser. No. 607,777
U.S. Cl. 219—121 **10 Claims**
Int. Cl. B23k *35/38, 15/00, 9/16*

A rapid cycling load-unload system for automated electron beam welding is disclosed. The system includes a loading cylinder, electron beam welding chamber, and unloading cylinder in alignment with valve means interconnecting the welding chamber with the respective loading and unloading cylinders. Both of the loading and unloading cylinders have an atmospheric access and exit opening respectively and a reciprocating position disposed therein which provides closure means for the respective openings. During operation of the system, both loading and unloading cylinders are evacuated when the openings are closed such that a workpiece is transferred into the welding chamber from the loading cylinder while a welded workpiece is simultaneously being transferred out of the welding chamber into the unloading chamber under vacuum conditions.



3,430,030
PROCESS AND APPARATUS FOR THE LONGITUDINAL SEAM WELDING OF METAL BANDS

Josef Mittermuller, Berndorf, Austria, assignor to Vereinigte Metallwerke Ranshofen-Berndorf Aktiengesellschaft, Berndorf, Austria, a corporation of Austria
Filed Jan. 4, 1967, Ser. No. 607,209
Claims priority, application Austria, Jan. 5, 1966, A 83/66
U.S. Cl. 219—124 **9 Claims**
Int. Cl. B23k *9/12;* **B23q** *1/06*

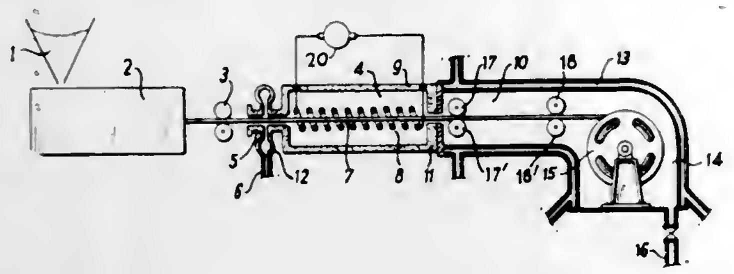


A longitudinal seam is formed between a pair of metal webs (e.g. endless steel bands) which are progressively advanced past a welding torch trained upon their junction, the two webs being interconnected ahead of the welding point by a plurality of longitudinally spaced releasable light-weight clamps which move forwardly with the webs and are periodically released, one at a time, to be moved back along the webs and retightened thereon; thus the webs remain clamped to each other at one or more locations even during the periodic relocation of the several fasteners.

3,430,031
ELECTRODE AND PROCESS FOR MAKING SAME

Jean Albert Francois Sunnen, Uccle, Belgium, assignor to La Soudure Electrique Autogene, Procedes Arcos, Brussels, Belgium, a corporation of Belgium
Filed Nov. 8, 1965, Ser. No. 506,795
Claims priority, application France, Nov. 17, 1964, 995,161
U.S. Cl. 219—146 **9 Claims**
Int. Cl. B23k *35/40;* **B22f** *7/00*

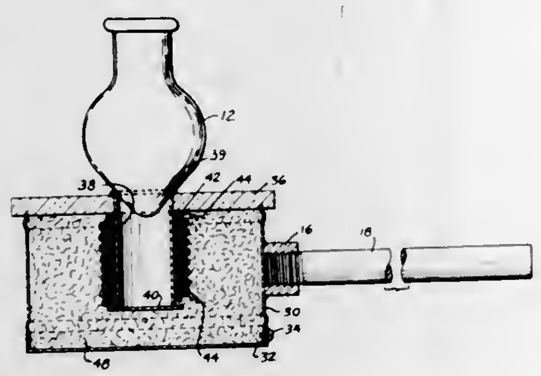
A process of manufacturing a filler product for surfacing, overlaying or welding metals by continuously for-



wardly feeding a mixture of powders, continuously introducing longitudinally arranged fibers, metallic wires or metallic ribbons into the mixture of powders, continuously compressing the mixture of powders with the longitudinal fibers, wires or ribbons into a strip and sintering the compressed strip. Optionally the sintered strip is continuously enclosed in a sheet metal sheath. Optionally also a layer of ionizing elements is applied to the periphery of the compressed strip.

3,430,032
MICROFLASK HEATING DEVICE

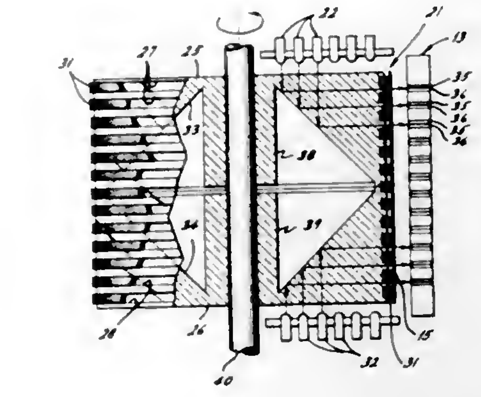
Glen H. Morey, Terre Haute, Ind., assignor to Templeton Coal Company, Terre Haute, Ind., a corporation of Indiana
Filed Nov. 10, 1965, Ser. No. 507,177
U.S. Cl. 219—433 2 Claims
Int. Cl. F27d *11/02;* **H05b** *3/06, 3/68*



A heating device for microflasks includes a metallic well member seated in an aperture in the refractory top wall of a cup-like body member. An electric heating element comprising wires encased in refractory textile tubes with high temperature insulation therein is wound around the exterior of the well member together with a refractory cord which spaces the adjacent element convolutions and holds the element in place. The upper end of the well is flared outwardly to form a seat on which the bottom of a flask can rest. The well member is surrounded by thermal insulation material contained in the body member.

3,430,033
CARD READING APPARATUS

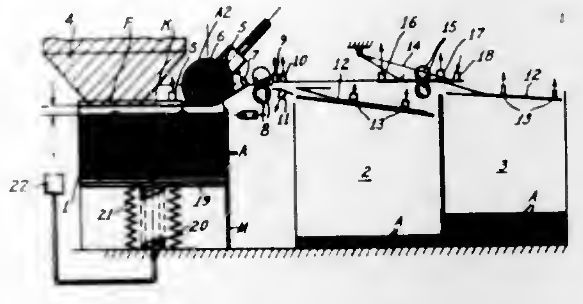
Frank J. Reed, Philadelphia, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,367
U.S. Cl. 235—61.11 13 Claims
Int. Cl. G06k *7/14*



1. In card reading apparatus, drum means comprising optically transparent material in which is formed a circular prism coaxial with said drum means, means for directing light toward the end of said drum means for impingement upon a reflective face of said prism, light sensitive means for receiving said light as it is reflected by sad face of said prism generally radially of said drum means and through peripheral, curved surface portions thereof, means for rotating said drum means about its central axis, and means for holding a card in such position with respect to said drum means that data bearing portions of the card are aligned with said light sensitive means and modulate the transmission of said reflected light onto the latter.

3,430,034
ARRANGEMENT FOR THE READING OF SHEET-SHAPED RECORD CARRIERS

Jong-Dok Kim, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed July 25, 1966, Ser. No. 567,678
Claims priority, application Germany, July 26, 1965, S 98,424
U.S. Cl. 235—61.11 4 Claims
Int. Cl. G06k *7/015;* **B65h** *3/08*

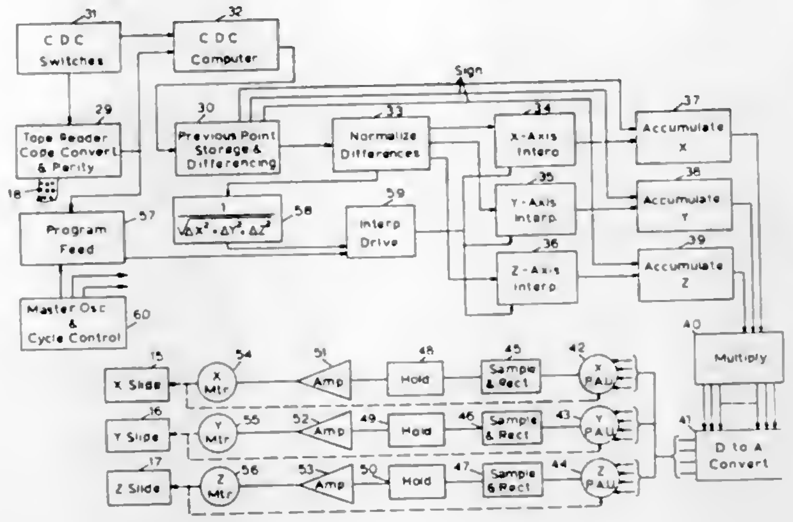


An arrangement for reading sheet-like record carriers of a record carrier stack where the record carrier on top of the stack is aspirated by a suction means having a recess or window to accommodate a reader unit. The suction means holds the record carrier in the proper location with respect to the reader while the information is being read.

3,430,035
MACHINE TOOL CONTROL WITH CUTTER DIAMETER COMPENSATION

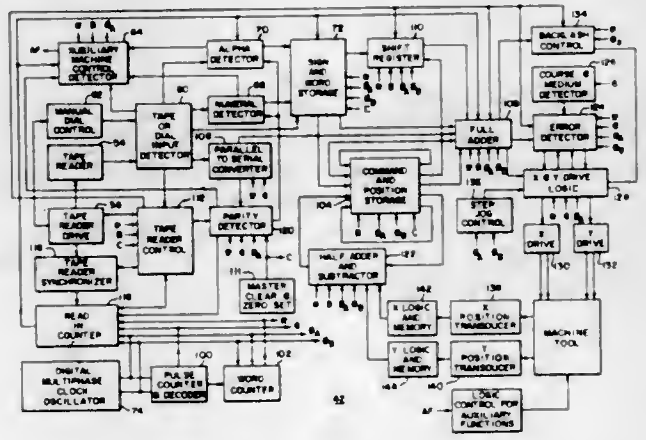
Richard E. Read, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 17, 1966, Ser. No. 521,023
U.S. Cl. 235—151.11 6 Claims
Int. Cl. G06f *15/46;* **G06g** *7/66*

An automatic control apparatus useful for directing a machine tool in the reproduction of a continuous contour path of movement of a tool with respect to a workpiece. The control apparatus includes a portion devoted to the production of corrective factors to be combined with the reference data defining points along the contour, so that the contour can be reproduced with a cutter having a size differing from the nominal size cutter to which the reference data is related. These corrective factors are derived and combined with the reference data prior to interpolation from one point on the contour to the next point. The derivation and combination is performed by a digital computing portion of the control which in addition to the reference data has input thereto a cutter size correction factor and data defining the bisector of the angle formed at this intersection of adjacent spans of the programmed contour. The bisector data is scaled by the correction factor and the scaled data resulting is added directly to the reference data to provide compensated reference data to the contour generating portion of the control apparatus.



3,430,036
MULTIPHASE CLOCK CONTROL SYSTEM FOR MACHINE TOOLS

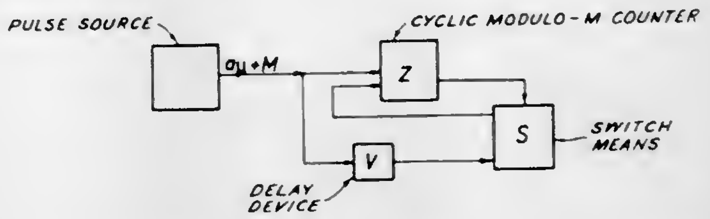
John L. Patrick, Laurel, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 7, 1965, Ser. No. 485,373
U.S. Cl. 235—151.11 19 Claims
Int. Cl. G06f *15/46;* **G06g** *7/64*



1. A numerical machine tool control system comprising a dynamic binary serial storage register, a multiphase iterative clock system having at least two pulse outputs in separate phases, means for generating binary position command data in binary word form for at least one position axis in response to successive pulses of one of the clock phases, means for writing the command word bits in said register during successive pulses of another clock phase and during an iteration, means for recirculating the command word in said register during successive iterations, means for generating feedback position data for the position axis in algebraically updated word form and in response to successive pulses of one of the clock phases, means for repeatedly writing the feedback position word bits in said register within successive iterations and during successive pulses of a clock phase different from said other clock phase and different from the clock phase used for said feedback generating means, and means for comparing corresponding bits of the command and feedback position words in a common phase time.

3,430,037
APPARATUS FOR CHECKING CODE-GROUP TRANSMISSION

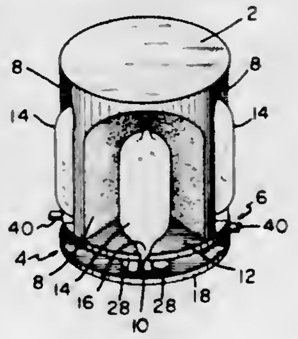
Gerhard Renelt, Hamburg, Eidelstedt, Germany, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,513
Claims priority, application Germany, June 30, 1964, P 34,602
U.S. Cl. 235—153 1 Claim
Int. Cl. G06f *11/00, 11/04*



A system for forming a check symbol of a code group in which each element is added, modulo M, to the result of the previously treated element. Each calculation is multiplied by a factor N either before or after the addition of hte given element. (M and N are integers.) The system may comprise a single cyclic modulo M counter to which the code elements are applied in the form of pulses, and to which M pulses are also applied. When the counter passes its zero state, it energizes a switch to apply input pulses to its input also by way of a delay circuit.

3,430,038
PHOTOFLASH ADAPTER

Lester F. Anderson, Williamsport, George W. Parsons, Hughesville, and Ronald G. Petts, Williamsport, Pa., assignors to Sylvania Electric Products, Inc., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,511
U.S. Cl. 240—1.3 2 Claims
Int. Cl. G03b *15/06, 15/035*



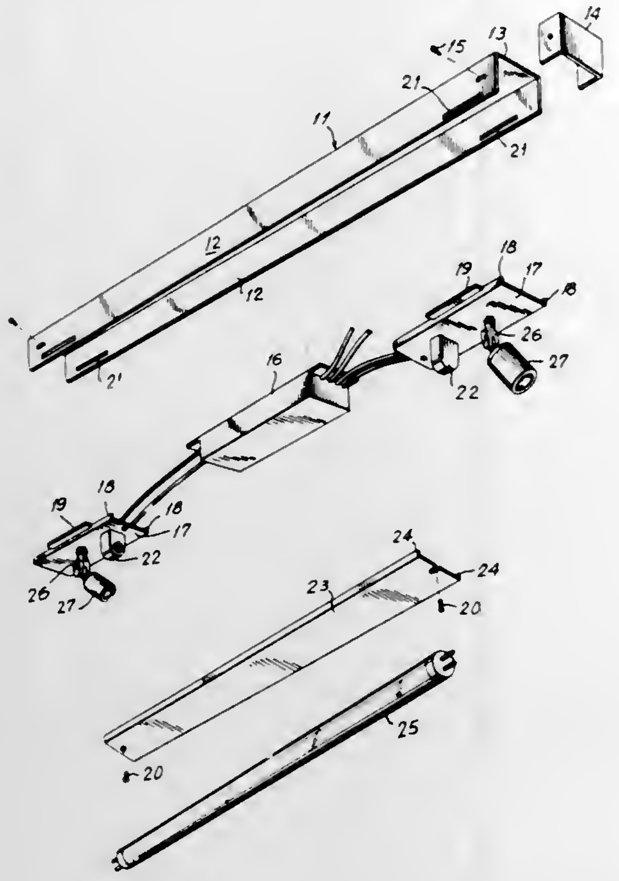
A multilamp photographic flashlamp unit, usable with cameras designed to receive a flashcube. The lamps are inserted individually and manually into receiving sockets in the flashlamp unit which also has a means for simultaneously ejecting all of the flashlamps after they have been spent.

3,430,039
COMBINATION STRIP LIGHT

Richard C. Piccola, Hawthorne, N.J., assignor to Silvray Litecraft Corporation, Passaic, N.J., a corporation of New York
Filed Aug. 2, 1966, Ser. No. 569,650
U.S. Cl. 240—51.11 7 Claims
Int. Cl. H05b *33/02*

1. A combination strip light for general area and accent illumination comprising a housing, at least two face plates mounted in spaced relation on said housing, at

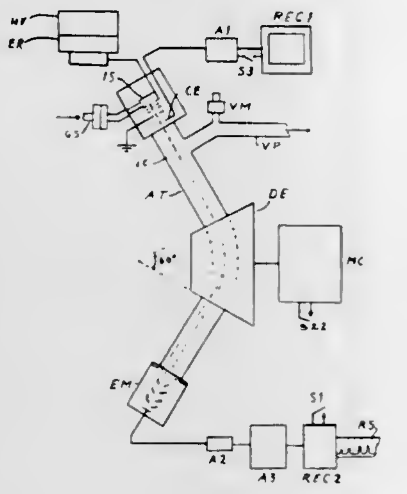
least one harness mounted on each of said face plates in facing relation having means providing at least one mechanical support and electrical connection for a fluores-



cent tube, at least one support mounted on one of said face plates beyond a facing pair of said harnesses, and a lamp socket carried by said support having means for supporting an incandescent light source.

3,430,040
APPARATUS FOR RECORDING MASS SPECTRA WITHOUT IONIZING A CARRIER GAS

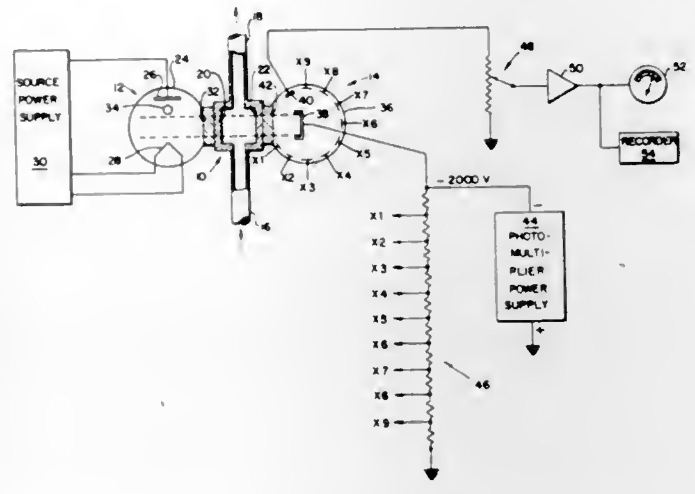
Ragnar Erik Ryhage, Stockholm, Sweden, assignor to LKB-Produkter AB, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 11, 1966, Ser. No. 519,875
Claims priority, application Sweden, Jan. 18, 1965, 638/65
U.S. Cl. 250—41.9 **2 Claims**
Int. Cl. H01j *39/36;* **B01d** *59/44*



Apparatus for recording mass spectra of gases such as organic gases, using but a single spectrometer having a magnetic analyzer and mass spectra indicator, by initially introducing the gas into the ionization chamber along with a carrier gas, and passing an electron beam, set at a suitable low voltage by use of a voltage divider means, through the gases so as to ionize the organic gas but not the carrier gas, an ion collector being positioned in advance of the analyser to determine the total ion current, and thereafter resetting the voltage divider means to raise the electron beam energy to a higher value for ionizing both gases, to determine the mass spectrum.

3,430,041
FAR ULTRAVIOLET NON-DISPERSIVE ANALYZER UTILIZING RESONANT RADIANT ENERGY FROM THE PERIPHERY OF THE VAPOR CLOUD OF THE SOURCE

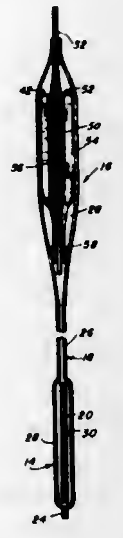
Wilbur I. Kaye, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 17, 1965, Ser. No. 440,536
U.S. Cl. 250—43.5 **9 Claims**
Int. Cl. G01n *21/26*



A far ultraviolet nondispersive analyzer is disclosed utilizing a source lamp and photomultiplier detector which are provided with flat windows transparent to the radiant energy region of interest. A sample cell, also having flat windows, is interposed between the source and detector in air tight relationship. The source and detector are arranged in such a way that only radiation from the periphery of the vapor cloud formed in the source lamp is focused upon the detector. The sample cell may be interchanged with similar sample cells having different lengths.

3,430,042
DENTAL X-RAY FILM PACK HAVING AN INDEPENDENT DEVELOPER MEANS THEREIN

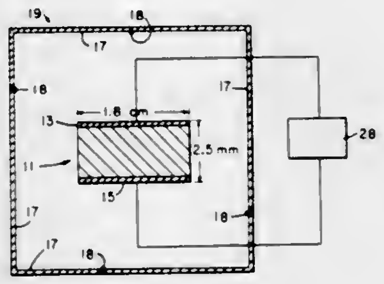
Vincenzo Neri, Turin, Italy, assignor to Phil-X, Turin, Italy, a corporation of Italy
Filed Oct. 10, 1966, Ser. No. 585,476
U.S. Cl. 250—65 **9 Claims**
Int. Cl. G01n *23/04;* **G03d** *5/02*



An elongated opaque envelop encloses a pair of flexible packets containing developer and fixer solutions. Pull tabs integral with the packets project from the envelop to permit sequential tearing of the packets. The packets are held in the envelop by a rigid element to discharge their contents into a film chamber also enclosed within the envelop when each packet is torn by its pull tab. The film chamber is held in the mouth of a dental patient while exposed to X-rays after which the film is developed and fixed by pulling of the pull tabs.

3,430,043
MINIMUM IONIZATION PARTICLE DETECTOR PRODUCED BY GAMMA RAY IRRADIATION

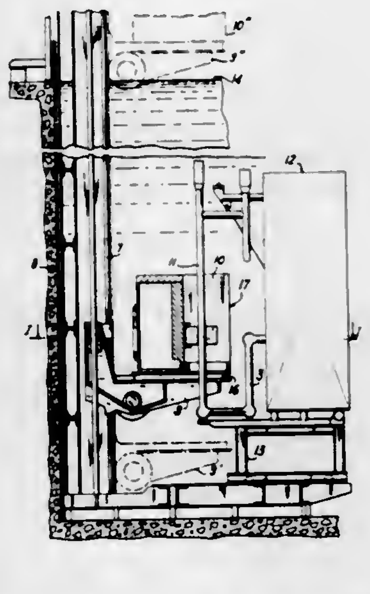
Henry A. Blumenfeld, Princeton, N.J., Francis P. Pandolfi, Boston, Mass., and Chih-Ree Sun, Bayside, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 8, 1965, Ser. No. 494,281
U.S. Cl. 250—83.3 **7 Claims**
Int. Cl. H01j *39/00;* **G01t** *1/16;* **H01l** *7/46*



Method of producing minimum ionizing charged particle detectors by irradiation in which the detector is biased while the detector is being irradiated by gamma rays. By measuring the rise in resistivity and determining the irradiation dosage, a critical exposure level is determined to produce peak resistivity for efficiently producing a homogeneous detector.

3,430,044
METHOD AND APPARATUS FOR UNDERWATER RADIOLOGICAL INSPECTION, ESPECIALLY IN THE WATER-TANK OF A SWIMMING POOL REACTOR

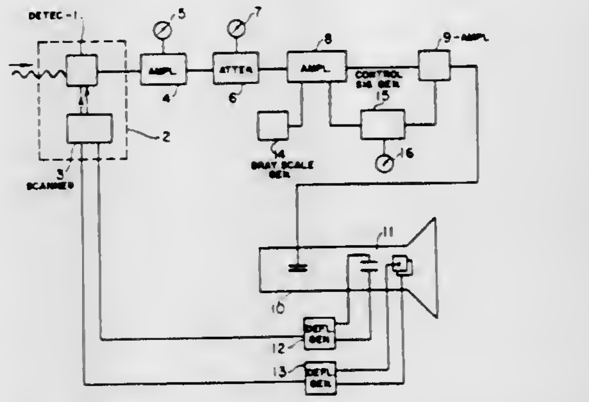
Georges Briffaud, Versailles, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Apr. 25, 1966, Ser. No. 544,930
Claims priority, application France, May 6, 1965, 16,145
U.S. Cl. 250—83.3 **8 Claims**
Int. Cl. G01t *1/16;* **H01j** *5/02*



Radiological inspection of a prototype fuel element in a tubular container immersed in the tank of a swimming pool reactor is carried out by apparatus in an impervious casing surrounding the tubular container and moving along and around the container. A radiological transmitter and receiver are in the casing with the radiation passing through the fuel element. The pool water is excluded along the path of radiation without hindering movement of the casing.

3,430,045
OPTICAL SCANNING BY MEANS OF INFRA-RED RADIATION

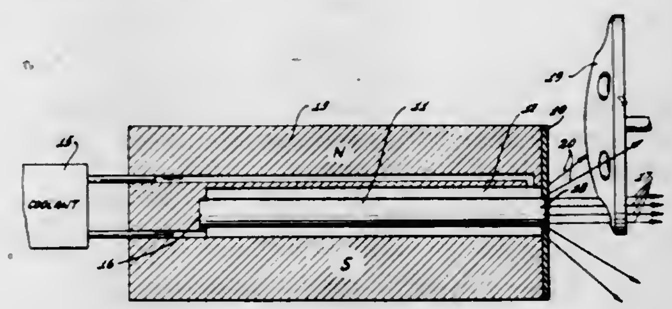
Nils Arvid Norman Björk, Enebyberg, and Sven-Bertil Borg, Rydbo, Sweden, assignors to AGA Aktiebolag
Filed June 13, 1966, Ser. No. 557,193
Claims Priority, application Sweden, June 16, 1965, 7,909/65
U.S. Cl. 250—83.3 **11 Claims**
Int. Cl. G01t *1/16;* **G01b** *15/04;* **H01j** *29/52*



An apparatus and a method for optical scanning with infra-red radiation. The system includes a detector which scans a field of view, a luminosity image producing device, a mechanism for selecting a desired voltage range representing a selected temperature range of the view to be displayed and a series of amplifying stages connecting the detector and the image producing device. A voltage level responsive device is connected to a first point in the series of amplifying stages and is responsive to a narrow voltage range around a selected voltage level at the said first point. A control signal is thus generated and applied to a later point in the series of amplifying pages to momentarily increase the brightness at a corresponding point in the image.

3,430,046
COHERENT GAMMA RAY EMITTER

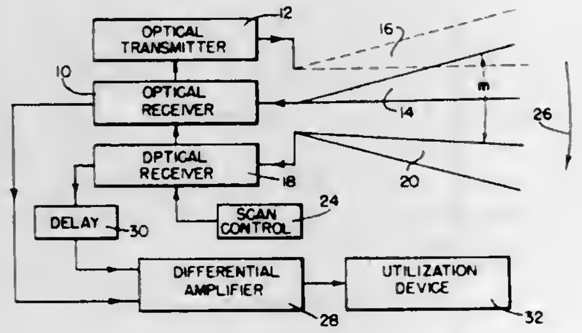
Jozef W. Eerkens, Los Angeles, Calif., assignor to Terra Nova Incorporated, Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 196,282, May 21, 1962. This application June 23, 1966, Ser. No. 559,802
U.S. Cl. 250—84 **15 Claims**
Int. Cl. H01j *39/12*



An emitter for coherent gamma rays comprising an elongated rod of a length-to-diameter ratio in excess of five and preferably between ten and twenty, containing a radioactive isotope of the Mossbauer type. The rod is cooled below the temperature above which the Mossbauer effect therein is substantially suppressed to secure a stimulated emission of gamma rays within the rod and progressive multiplication of gamma rays along the axis of the rod to emit substantially superradiant, directionally coherent gamma rays from an end of the rod. An oscillating magnetic field may be applied axially of the rod at a radio frequency to bring the interaction between an excited nucleus and a conversion electron into substantial resonance to enhance the deexcitation rate between energy states of the excited nucleus and to introduce at least radio frequency time coherence into the emitted gamma ray beam. Means is disclosed to apply a steady magnetic field transversely to the axis of the rod to orient the nuclei of the radioisotope and cause the gamma rays to be emitted in preferred directions perpendicular to the direction of the field thereby securing a gain in directional coherence of the emission along the axis of the rod. Instead of the oscillating magnetic field the decay rate of the radioisotope may be controlled by the application of monochromatic ultrasonic waves or an electromagnetic beam of a wavelength to bring the internal conversion process of excited nuclei into a resonant condition, the electromagnetic beam being generated by a laser or a microwave generator. Modulation of the various control means for the decay rate of the radioisotope effects modulation of the emitted gamma ray beam.

3,430,047
BACKGROUND CANCELLING OPTICAL DETECTION SYSTEM

Alan C. Hurkamp, Brookline, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,282
U.S. Cl. 250—199 **11 Claims**
Int. Cl. H04b *9/00, 1/10;* **H01j** *39/12*

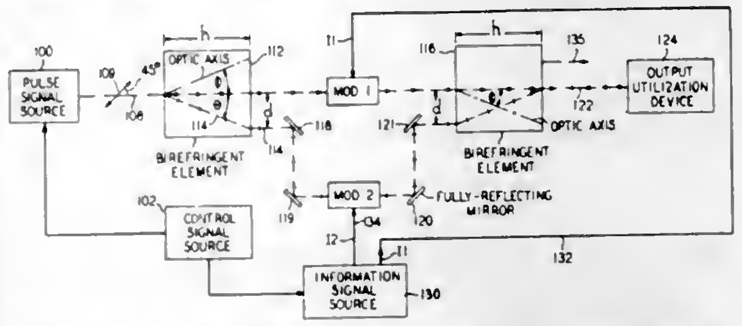


A background cancelling optical detection system is provided wherein a first optical detector intercepts a target signal together with whatever background radiation is present and a second optical detector intercepts only the background radiation. The output signal of the second detector is subtracted from that of the first detector to thereby effectively cancel out the background radiation signal.

3,430,048
OPTICAL PULSE GENERATOR

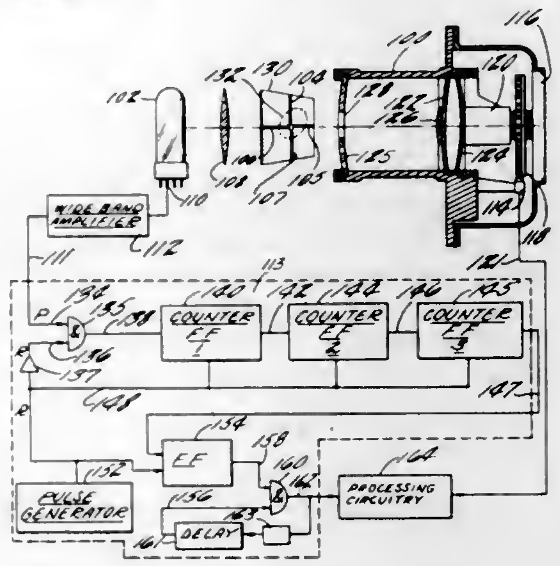
Charles B. Rubinstein, Morristown, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 17, 1965, Ser. No. 514,628
U.S. Cl. 250—199 **8 Claims**
Int. Cl. H04b *9/00*

A laser pulse generator for increasing the information-handling capacity of pulsed systems having wide interpulse intervals is disclosed. A single pulse from a laser source is directed to a pulse-splitting device where the pulse is split into two pulses, each of which traverses a different optical-length path to a pulse-recombining device. The pulses are then recombined to form a multiple sequential output signal. The output from the recombining device is thus formed by the pulse traversing the shorter length path followed by the pulse traversing the longer length path. Modulators interposed in the individual paths before recombination of the pulses impose information on the pulses as they traverse those paths.



3,430,049
PRECISE TIME CONTROL FOR A STAR ANGLE SENSOR

John V. Hughes, Ansdell, England, assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,447
U.S. Cl. 250—203 **4 Claims**
Int. Cl. G01j *1/24*



1. A start angle sensor comprising:

electro-optical means for producing a series of measurable pulse groups occurring at spaced intervals, the intervals between pulse groups defining the star angle;

timing means responsive to each of said pulse groups in turn to generate a timing signal at a time for each one of said pulse groups which bears the same relation to the start of pulses in said one pulse group as for groups adjacent to said one pulse group in said series;

and processing circuitry responsive to said timing signals to measure the angle between the optical axis of the sensor and the line of sight of the star.

3,430,050
JUNCTION PHOTOCELL HAVING INTERMEDIATE LEVEL AND AUXILIARY LIGHT SOURCE TO EXCITE INTERMEDIATE LEVEL

Hermann Georg Grimmeiss, Aachen, Germany, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,457
U.S. Cl. 250—211 **7 Claims**
Int. Cl. H01l *15/06;* **H01j** *39/12*

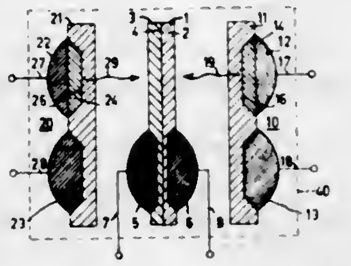
1. An opto-electronic electric circuit element comprising:

(a) a photosensitive semiconductor body and a pair of electrodes coupled to said photosensitive body,

(b) an output circuit including means for establishing a potential across said electrodes whereby the current flow in said output circuit depends upon the irradiation of said body,

(c) a first voltage-responsive radiation source optically coupled to said photosensitive body and including a first input circuit for applying a first signal voltage to said radiation source to cause radiation having a first energy content to be generated thereby to irradiate said photosensitive body.

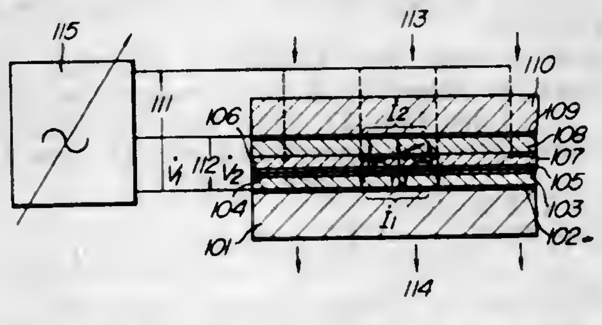
(d) and a second voltage-responsive radiation source also optically coupled to said photosensitive body and includnig a second input circuit for applying a second signal voltage to said second radiation source to cause radiation having a second energy content to be generated thereby also to irradiate said photosensitive body.



(e) said photosensitive semiconductor being of a material having a forbidden gap between its valence and conduction bands and possessing a deep-lying impurity level in the forbidden gap defining a first transition step between the valence band and the impurity level and a second transition step between the impurity level and the conduction band, the radiation generated by said first radiation source having an energy content capable of causing the first transition step, the radiation generated by said second radiation source having an energy content capable of causing the second transition step, whereby the current flow in the output circuit depends upon electrons brought from the valence to the conduction band by two optically-excited transitions, one produced by the first radiation source in response to the first signal and the other produced by the second radiation source in response to the second signal.

3,430,051
PHOTOCONDUCTIVE - ELECTROLUMINESCENT DEVICE HAVING SPECIAL PHASE OR FREQUENCY RELATIONSHIP BETWEEN THE INCIDENT LIGHT SIGNAL AND THE ELECTRICAL EXCITING SIGNAL

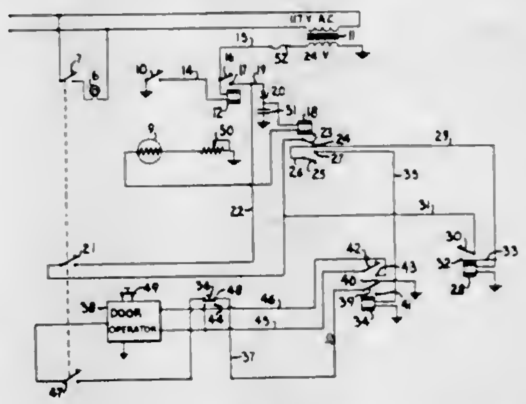
Tadao Kohashi, Yokohama, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 20, 1965, Ser. No. 515,081
Claims priority, application Japan, Dec. 23, 1964, 39/74,082
U.S. Cl. 250—213 **31 Claims**
Int. Cl. H01j *31/50*



A solid state energy, responsive luminescent device comprising an energy responsive element such as a photoconductive element and a luminescent element such as an electroluminescent element, the operational characteristic of which is made variable by making the relation between an intensity modulated energy signal incident upon the device and an operational voltage which is a pulsing or A.C. voltage, such as phase difference, waveform or frequency adjustable and variable under a synchronized condition of the incident signal and the operating voltage.

3,430,052
PHOTOELECTRIC GARAGE DOOR CLOSER SERVING TO CLOSE DOOR ONLY AFTER LIGHT BEAM HAS BEEN BROKEN AND REESTABLISHED

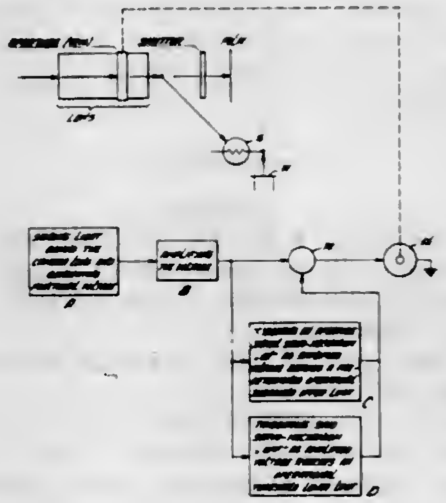
Robert E. Stephan, 5824 Michigan,
Kansas City, Mo. 64130
Filed Aug. 23, 1967, Ser. No. 662,771
U.S. Cl. 250—214 **10 Claims**
Int. Cl. H01j *39/12*



A control circuit produces a signal to close and open power operated door, the signal being sent only upon interrupting and remaking a light beam. Interlocking relays control the sending of the signal. The circuit includes a first loop connected to a down actuator and a safety loop connected to an up actuator, whereby the door can only be closed when the first loop is completed and the safety loop is broken.

3,430,053
METHOD FOR APERTURE CONTROL IN WHICH THE LOOP GAIN IS CAUSED TO VANISH WHEN THE ABSOLUTE VALUE OF THE ERROR IS LESS THAN A GIVEN VALUE AND IS CAUSED TO ASSUME ITS NOMINAL VALUE WHEN THE ABSOLUTE VALUE OF THE ERROR IS GREATER THAN A SECOND GIVEN VALUE

Lawrence A. Westhaver, Laurel, Md., assignor of one-half to W. Tuckerman Biays, Annapolis, Md.
Filed Aug. 24, 1967, Ser. No. 663,085
U.S. Cl. 250—214 **4 Claims**
Int. Cl. H01j *39/12*

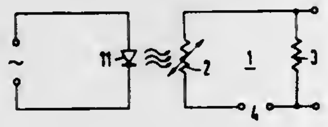


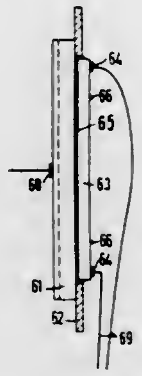
Method for controlling the camera diaphragm or aperture to permit correct film exposure. An operational amplifier configuration is used both to sense whether the exposure error is great enough to require correction and to correct by opening or closing the aperture.

A photo resistive cell or a photo sensitive field effect transistor may be employed both to sense light level variations behind the camera lens and, with associated circuitry, to generate operational voltage as a function of sensed light. The spectral response of the photo sensitive field effect transistor extends from within the infra-red region to the ultra violet region, and, consequently, for ordinary photographic use may be limited by suitable filtering to the visible region.

3,430,054
APPARATUS FOR MODULATING DIRECT VOLTAGES AND CURRENTS

Erwin Klein, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany
Filed Oct. 22, 1965, Ser. No. 500,934
Claims priority, application Germany, Jan. 15, 1965, S 95,064
U.S. Cl. 250—217 **6 Claims**
Int. Cl. G02f *1/28;* **H01l** *15/06;* **H01c** *7/08*



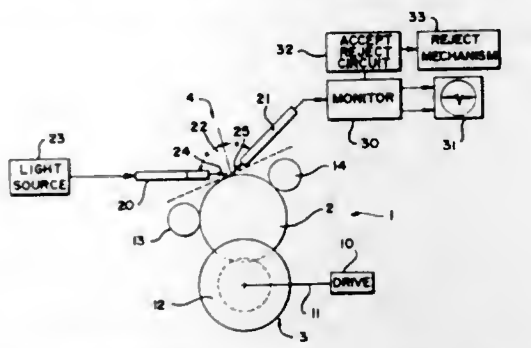


A photoresistor in a signal receiving circuit is mounted in an opening of a carrier plate of sheet metal and modulates the signals by radiation-responsive resistance variations. The photoresistor comprises a resistor member joined in face-to-face relation with the diode member of a luminescence diode. The luminescence diode and the photoresistor are mechanically joined in a single structural unit and are in optical connection. A periodic-current supply to the luminescence diode periodically varies the radiation issuing therefrom to the photoresistor. An electrical insulating layer interposed between, and separating, the luminescence diode and the carrier plate and photoresistor, comprises material permeable to radiation from the diode member.

3,430,055
SURFACE FLAW DETECTOR

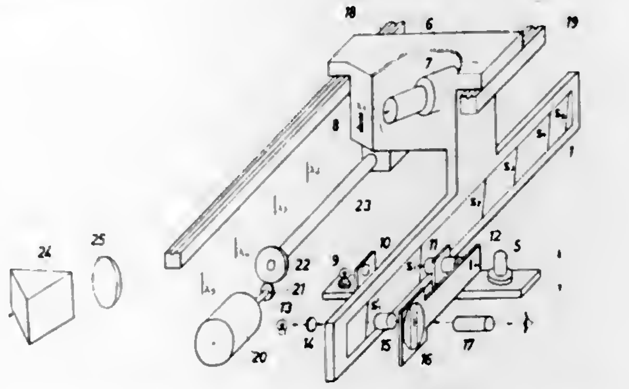
Eric E. Metzger, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Apr. 2, 1965, Ser. No. 445,082
U.S. Cl. 250—219 **14 Claims**
Int. Cl. G01n *21/32, 21/48;* **G02b** *5/14*

A surface flaw detector wherein a fiber optic element is positioned adjacent a moving surface being inspected to receive reflected light therefrom and transmit the received light to a photosensitive device. A source of light in the form of a collimated light beam is directed to impinge upon the moving surface. The field of view of the fiber optic receiver element is approximately the size of the smallest surface flaw to be examined and, in a preferred embodiment, the receiver is disposed so as to normally receive a portion of the light reflected from the examined surface. When a flaw in a moving surface traverses the impinging collimated beam the receiving fiber experiences first a reduction in the intensity of received light followed immediately by a relatively large increase and finally another reduction in the intensity of received light.



3,430,056
DEVICES FOR COMPENSATING TEMPERATURE-DEPENDENT TRAVELING OF SPECTRUM LINES IN DIRECT-READING SPECTROSCOPES

Karl Pfeifer, Jena, Germany, assignor to VEB Carl Zeiss Jena, Jena, Gera, Germany
Filed Sept. 12, 1966, Ser. No. 579,457
U.S. Cl. 250—226 **4 Claims**
Int. Cl. G01j *3/34*



In a direct reading spectroscope a line-mark carrier is secured to a slide which bears a plate containing the exit slit. Each mark of this carrier is inclined to correspond to the temperature gradient of a respective spectrum line. Photoelectric sensing means bring the exit slit into alignment with the spectrum lines to be analyzed and are so adjustable relatively to the carrier as to sense the line marks at a location corresponding to a definite temperature. A temperature datum line determines the temperature-dependent deviations of the sensing means from an adjusted reference position.

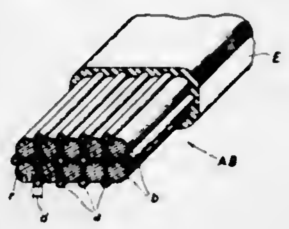
3,430,057
EPISCOPIC SCANNING HEAD HAVING SMALLER OPTICAL FIBERS INTERLEAVED IN INTERSTICES FORMED BY CONTIGUOUS LARGER FIBERS

Rudolf Genähr, Bad Kreuznach, Germany, assignor to Firma Jos. Schneider & Co., a corporation of Germany
Filed June 17, 1966, Ser. No. 558,323
Claims priority, application Germany, June 22, 1965, Sch 37,263
U.S. Cl. 250—227 **4 Claims**
Int. Cl. H01j *5/16, 39/12;* **G02b** *5/14*

1. In combination with a surface carrying a message to be scanned, an optical scanner comprising:

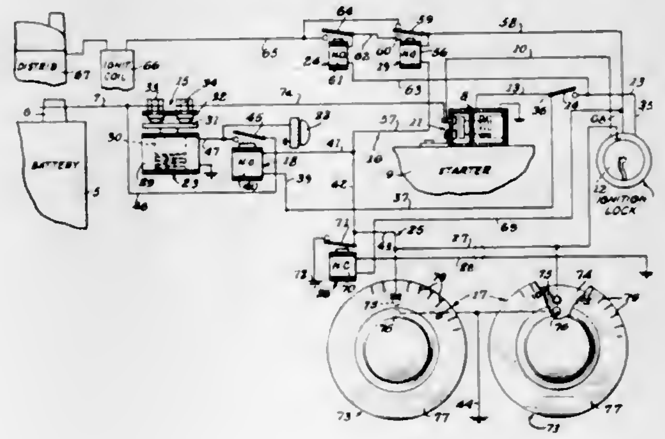
- a first array of light-conducting fibers of circular cross-section having closely spaced exposed first ends and second ends remote from said first ends;

- a second array of light-conducting fibers of circular cross-section having exposed first ends contiguously disposed in a flat bank of parallel filaments divided into a plurality of tiers, the fibers of said first array being smaller than those of said second array and having their first ends individually disposed in respective longitudinal interstices between the contiguous first ends of said second array;
- light-source means positioned to irradiate said second ends of said first array of fibers;
- and a plurality of photosensitive receiving means disposed adjacent said second ends of said second array of fibers for illumination thereby, said first ends of said first array and said first ends of said second array interleaved therewith being positioned next to said surface for joint displacement relative thereto.



3,430,058
ANTITHEFT MECHANISM FOR AUTOS

George S. Yoshida, 8417 E. Clanton St., San Gabriel, Calif. 91776
Filed June 7, 1965, Ser. No. 461,726
U.S. Cl. 307—10 **6 Claims**
Int. Cl. B60r *25/00*

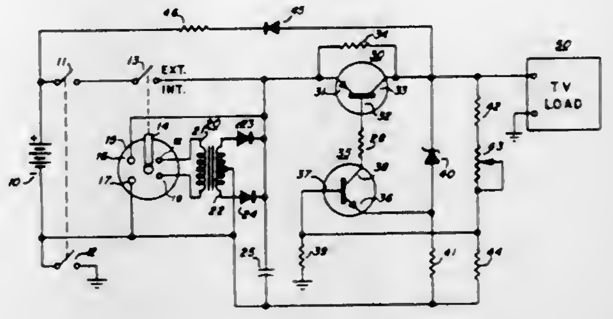


Antitheft mechanism for autos having a current-conducting connection between the battery and the starter switch of an auto and having a current-interrupting gap therein, an electric circuit including electromagnetic means to close said gap upon key-operation of the ignition switch of said auto, and manually settable switch means for grounding said electric circuit, thereby retaining said gap open and the starter switch inoperative.

3,430,059
VOLTAGE REGULATOR CIRCUIT

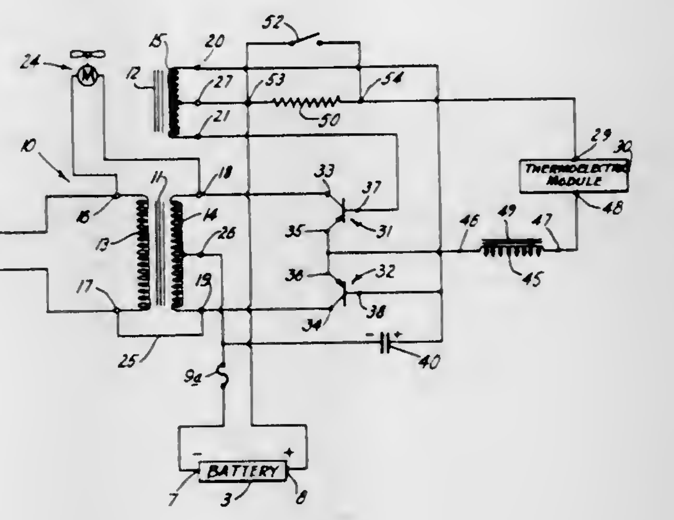
Robert A. Wolff, Lombard, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 502,131
U.S. Cl. 307—66 **8 Claims**
Int. Cl. H02j *7/00, 9/00;* **H01m** *45/04*

A power supply with a rechargeable battery for delivering regulated power to a load and including an auxiliary power supply for energization of said load from an outside alternating current source. An interlocked plug arrangement is used to automatically disconnect the battery when operating from the external AC source. The voltage regulator automatically operates at two different voltage levels for supplying energy to the load and for recharging the battery from the AC source when the load is disconnected.



3,430,060
POWER SUPPLY FOR THERMOELECTRIC APPARATUS

Nicholas D. Glyptis, 16 W. 148 Timberview Drive, Elmhurst, Ill. 60126
Filed Oct. 22, 1965, Ser. No. 502,240
U.S. Cl. 307—66 **12 Claims**
Int. Cl. H02j *7/02*



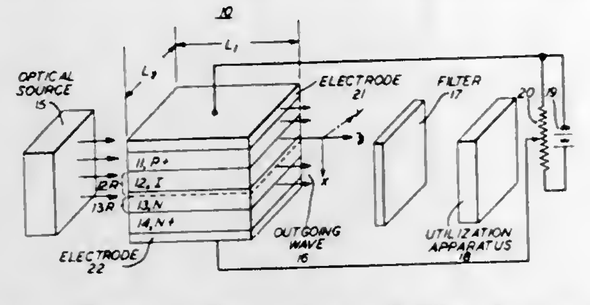
A power supply for thermoelectric apparatus such as a portable refrigerator, the power supply energized either by commercial alternating current or by direct current such as derived from a battery of, for example, 12 volts. The power supply output is in the voltage range of 3½–7 volts and in the current range of 8–15 amperes. The circuit, which is transistorized, includes a power transformer having a plurality of secondary windings, some of which preferably are of conducting foil, such as aluminum, which serves as a heat sink.

3,430,061
SOLID STATE WAVEGUIDE OPTICAL SECOND HARMONIC GENERATOR

George E. Smith, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Nov. 24, 1967, Ser. No. 685,639
U.S. Cl. 307—88.3 **13 Claims**
Int. Cl. H03k *3/42*

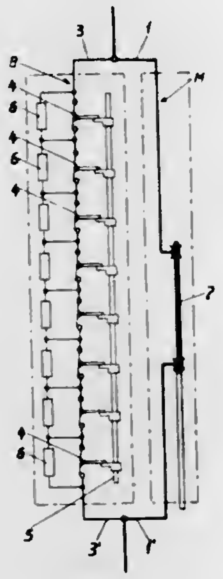
Optical second harmonic generation with phase matching is achieved in a four layer optically nonlinear solid state waveguide structure, with variable voltage bias, upon which the fundamental is incident.

The materials for, and widths of, the layers are selected such that the waveguide effect compensates the natural dispersion of the fundamental and second harmonic wave, thereby achieving velocity-matching (equalization) with resulting optimization of second harmonic wave energy output. The materials for the waveguide are also selected so that an applied direct current electric voltage bias, or mechanical stress may afford fine tuning of this velocity-matching.



3,430,062
SWITCHING CIRCUIT FOR HIGH-VOLTAGE DIRECT-CURRENT

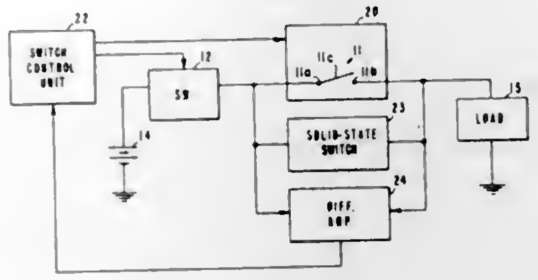
Adrian Werner Roth, Aarau, Aargau, Switzerland, assignor to Fabrik Elektrischer Apparate Sprecher & Schuh A.G., Aarau, Aargau, Switzerland
Filed Mar. 19, 1965, Ser. No. 441,220
Claims priority, application Switzerland, Mar. 26, 1964, 3,908/64
U.S. Cl. 307—136 **5 Claims**
Int. Cl. H01h *9/40*



A switching apparatus for the interruption of high voltage direct current loads having a main current circuit including at least one disconnector to continuously conduct the operating current. A branch current circuit is connected in parallel with the main support including a plurality of series connected partial interrupter switches. Each of said switches is associated with an impedance connected in parallel thereto for controlling the voltage. Actuating means are associated with the contact member of each partial interrupter switch to open each partial interrupter switch with a time lag relative to the opening of the disconnector to cause extinction of the arc forming when opening the disconnector. The invention involves forming the contact members of each partial interrupter switch from two flat, elongate oppositely curved elements of electrically conductive material. Such elements in the position of closure of the partial interrupter switch being in peripheral contact with each other and determining two curved current paths originating at the point of contact of such elements and diverging away from each other. The plurality of partial interrupter switches from a pile extending in parallel relationship with the disconnector and are operatively connected to a common actuating mechanism.

3,430,063
SOLID STATE SWITCH

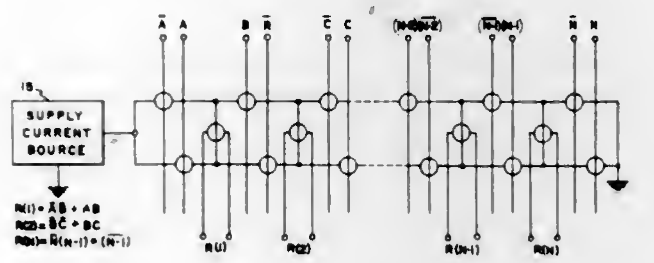
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Alden L. Schloss, North Hollywood, and Robert A. Booth, Sunland, Calif.
Filed Sept. 30, 1966, Ser. No. 584,070
U.S. Cl. 307—136 **8 Claims**
Int. Cl. H01h *9/30, 33/00;* **H02h** *3/00*



A solid state switching circuit is disclosed in which the switching of a normally open contact to a closed position is controlled, by sensing the potential thereacross with a difference amplifier, to permit the closing of the contact only when the potential difference across the contact does not exceed a preselected value.

3,430,064
CRYOTRON LOGIC CIRCUIT

John D. Meng, Walnut Creek, Calif., assignor to General Electric Company, a corporation of New York
Filed Nov. 22, 1965, Ser. No. 509,022
U.S. Cl. 307—212 **3 Claims**
Int. Cl. H03k *3/38, 19/30*



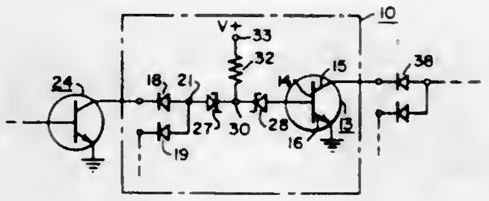
This invention relates to a circuit formed by a plurality of cryotron switches disposed in parallel lines fed from a common source and including a plurality of cross-paths between corresponding adjacent pairs of said cryotrons, the cross-paths each including means for detecting the flow of supply current therein under modifiable conditions of the cryotrons in the parallel lines.

3,430,065
LOGIC CIRCUIT UTILIZING BREAKDOWN DIODES WITH DIFFERENT BREAKDOWN VOLTAGES

James R. Cricchi, Catonsville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1965, Ser. No. 478,320
U.S. Cl. 307—215 **5 Claims**
Int. Cl. H03k *19/34, 19/36*

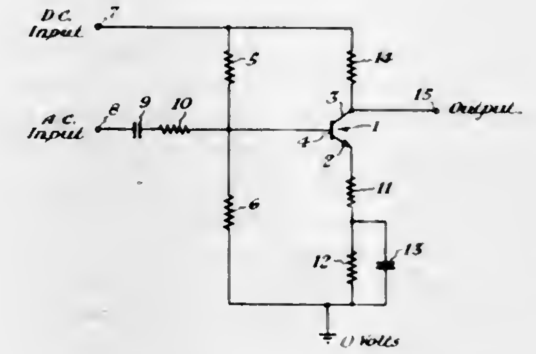
A logic circuit which includes an input which receives one or more input logic signals for controlling the conducting or non-conducting state of an output transistor.

Connected between the input and the base of the transistor is a first Zener diode connected to the input and a second Zener diode connected to the base of the transistor with the cathodes of the Zener diodes being connected together and through a resistor to a source of operating potential. The second Zener diode has a higher breakdown voltage than the first Zener diode, the difference in breakdown voltages providing the isolation necessary for such circuits.



3,430,066
UNIT GAIN FAIL-SAFE "AND" LOGIC CIRCUIT

Donald B. Marsh, Wilkinsburg, and Walter W. Sanville, Eastmont, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1965, Ser. No. 483,953
U.S. Cl. 307—218 **12 Claims**
Int. Cl. H03k *19/22, 19/30*

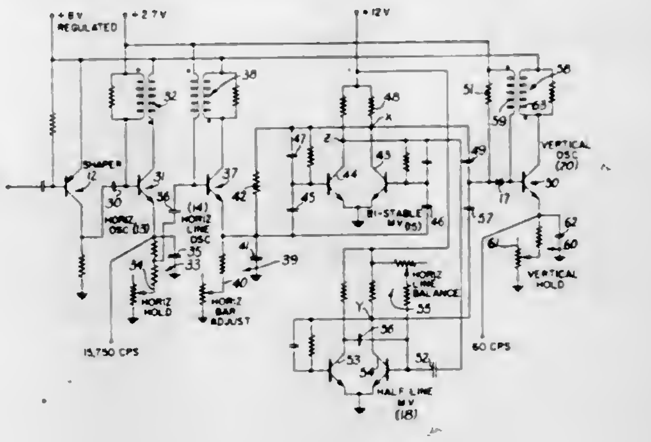


This disclosure relates to a fail-safe logic circuit which includes an A.C. amplifier having a predetermined gain factor. A biasing network interconnects a D.C. input to the amplifier and biases the amplifier for linear operation. An attenuating network interconnects an A.C. input to the amplifier and reduces the A.C. input by an amount equal to the amplifier gain factor so that the circuit operates as a unity gain device with both inputs present. Accordingly, an A.C. output is produced by the circuit and this output is designated as a logical assertion. During the absence of either input or during a period of malfunction no output is produced by the circuit and this is designated as a logical negation. The circuit is fail-safe in that an assertion can only be produced by the presence of both inputs and in the absence of a malfunction.

3,430,067
FREQUENCY DIVIDER SYSTEM

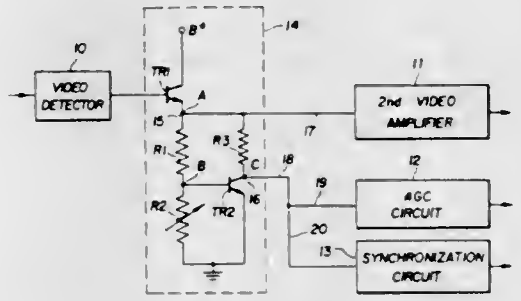
Robert E. Baum, Wheaton, Ill., assignor to Sencore, Inc., Addison, Ill., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,561
U.S. Cl. 307—225 **10 Claims**
Int. Cl. H03k *21/00, 23/22, 23/30*

An apparatus for driving in synchronism the horizontal and vertical sweep circuits of a television receiver. The apparatus includes a generator for generating a 15,750 cycles per second signal and a frequency divider arrangement for dividing the signal by 262½ to generate a 60 cycles per second signal. To divide by 262½, the arrangement includes a frequency divider that divides by 17 and then by 18 in response to a bi-stable multivibrator. A monostable multivibrator and a differentiator respond to the output of the frequency divider to provide a pulse train having a series of equally-spaced pulses which have a frequency of 15,750 divided by 17½. This pulse train is then divided by 15 to produce the desired 60 cycles per second signal.



3,430,068
TRANSISTOR NOISE SUPPRESSION NETWORK PARTICULARLY FOR TELEVISION RECEIVERS

James E. McTaggart, Waterloo, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada
Filed Jan. 10, 1966, Ser. No. 519,682
U.S. Cl. 307—237 **6 Claims**
Int. Cl. H03k *5/08, 5/20*



1. A network adapted for suppressing noise pulses superimposed on an input signal comprising: signal combining means from which an output signal may be taken; means providing a first signal path to said signal combining means comprising a first transistor having base, collector and emitter electrode, an input termnial connected to said base electrode, an output terminal connected to said emitter electrode, and means connecting said output terminal and said signal combining means for supplying the output signal developed at said output terminal to said signal combining means; means for supplying said input signal to said input terminal; and means including a second transistor connected in phase inverting configuration providing a second signal path to said signal combining means, said second transistor also having base, collector and emitter electrodes, said last-mentioned means also including a resistive voltage divider network, means directly connecting said resistive voltage divider network and said emitter electrode of said first transistor, means directly connecting said resistive voltage divider network and said base electrode of said second transistor for supplying a part of the signal developed across said resistive voltage divider network to said base electrode of said second transistor, and means connecting said collector electrode of said second transistor and said signal combining means to add algebraically signals amplified by said second transistor and signals supplied to said signal combining means from said output terminal.

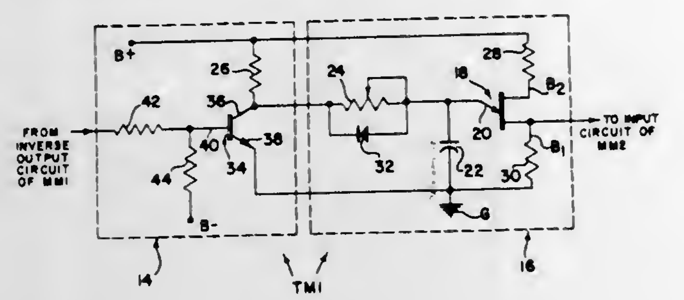
3,430,069
TRAFFIC CONTROLLER TIMING CIRCUIT

George Donald Hendricks, Campbell Island, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,062

U.S. Cl. 307—246 **11 Claims**

Int. Cl. H03k *19/34;* **G08g** *1/095*



A solid state timing circuit adapted to be employed in traffic controllers, wherein the timing circuit includes a timing capacitor which during each timing cycle of operation is charged with energy for a predetermined time, and is then partially discharged through an electronic control device, such as a unijunction transistor. This circuit further includes a switching circuit connected across the capacitor to completely discharge the capacitor, thereby resetting the timing circuit for a succeeding timing cycle of operation.

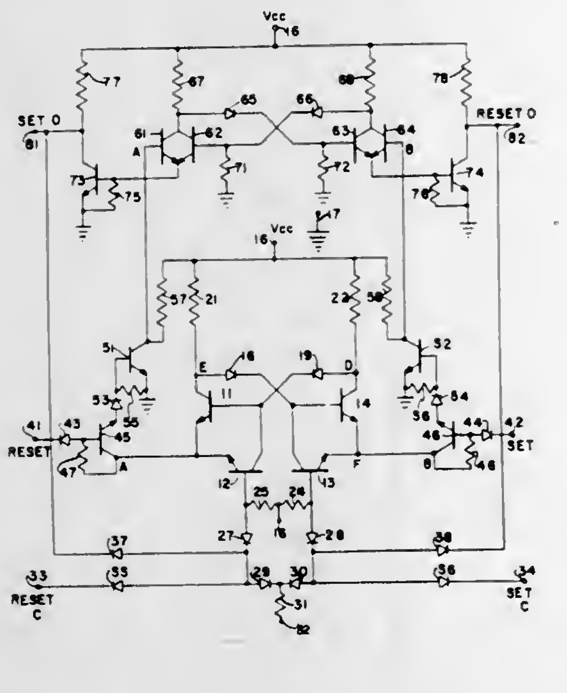
3,430,070
FLIP-FLOP CIRCUIT

Donald E. Marshall, Jr., Framingham, and Albert T. Piccirilli, Medfield, Mass., assignors by mesne assignments, to Honeywell Inc., a corporation of Delaware

Filed Feb. 17, 1965, Ser. No. 433,339

U.S. Cl. 307—247 **18 Claims**

Int. Cl. H03k *17/60*



The provision in a flip-flop of two additional transistors, each arranged with its collector-emitter path in parallel with a junction of a different one of the two cross-coupled transistors forming the flip-flop, enables a pulse applied to the base of either additional transistor to switch the flip-flop and still maintain the same output signal from it until the pulse terminates. A dual rank flip-flop employing this arrangement in its master flip-flop has a short setup time, making possible switching with short pulses. Further, a single transistor in each of the two interconnections between the main and slave flip-flops in a dual rank flip-flop both couples the state of the main flip-flop to control the slave flip-flop and constrains both flip-flops to a desired state in response to external signals.

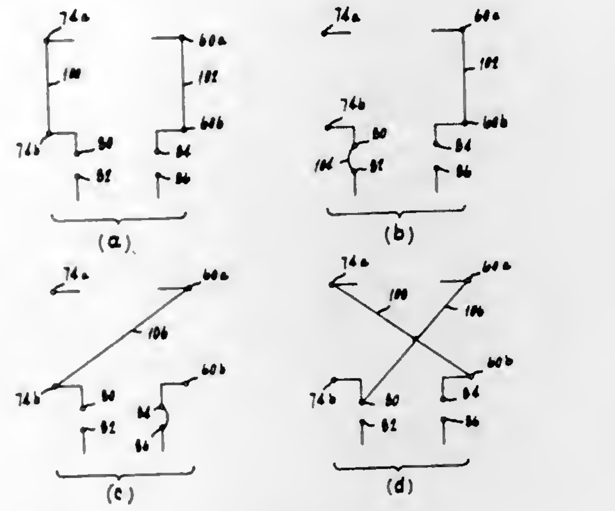
3,430,071
LOGIC CIRCUIT

Alfredo S. Sheng, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 5, 1965, Ser. No. 445,482

U.S. Cl. 307—247 **9 Claims**

Int. Cl. H03k *17/00, 19/02, 19/34*



1. The combination comprising:

a first current steering logic gate including at least first, second and third amplifying devices each having an input electrode, an output electrode and a common electrode; a resistor having one terminal connected in common to each said common electrode; means for connecting the input electrode of the first amplifying device to a point of fixed potential; a first impedance element having one terminal connected to the output electrode of the first amplifying device; and a second impedance element having one terminal connected in common to the output electrodes of the second and third amplifying devices;

a second current steering logic gate similar to said first current steering logic gate;

a pair of amplifying deivces having their common electrodes connected together and having their output electrodes connected together;

a resistor connected in common to the common electrodes of said pair of amplifying devices;

means coupling the input electrode of one of said pair of amplifying devices to the output electrode of one of the first and second amplifying devices in the first current steering logic gate; and

means coupling the input electrode of the other of said pair of amplifying devices to the output electrode of one of said first and second amplifying devices in the second current steering logic gate.

3,430,072
SAMPLE AND HOLD CIRCUIT

Daniel A. Stevens, Severn, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 11, 1966, Ser. No. 520,312

U.S. Cl. 307—250 **3 Claims**

Int. Cl. H03k *17/30, 5/20*

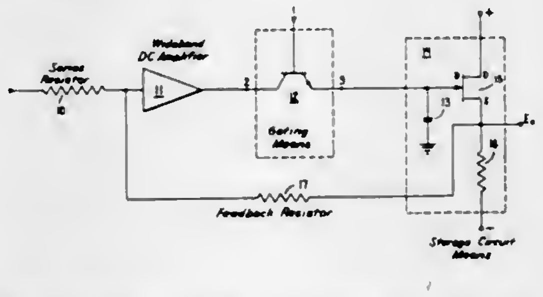
1. An electronic sample and hold circuit which samples a voltage waveform for a short period of time and stores a proportional direct current (DC) voltage for a much longer time, comprising:

a series resistor having one lead adapted to be coupled to a voltage waveform source;

a wideband DC amplifying means having input and output means, said input means coupled to the other lead of said series resistor;

a gating means, which functions as an electronic switch, having three terminals, the first said terminal is an input terminal which receives gating pulses and controls said electronic switch to its open and closed conditions, and the second said terminal is coupled to said output means of said DC amplifying means;

a storage circuit means, having a capacitor, a load resistor, and a field effect transistor having a source electrode, a drain electrode, and a gate electrode, said gate electrode being coupled to one lead of said capacitor and to the third of said three gating means terminals, the opposite lead of said capacitor being coupled to a point of ground potential, said drain electrode being coupled to a first voltage source, said source electrode being coupled to one lead of said load resistor and constituting an output of said sample and hold circuit, and the opposite lead of said load resistor being coupled to a second voltage source of opposite polarity to said first voltage source; and



a feedback resistor being coupled between said source electrode and said input means of said DC amplifying means, whereby the voltage waveform is amplified and sampled for a period of time determined by the gating pulse, during which time said capacitor is charged and after which time said electronic switch is opened thereby locking the voltage at said gate of said field effect transistor at a constant value for a long time, and whereby said feedback resistor enables the circuit to stabilize during the closed period of said electronic switch.

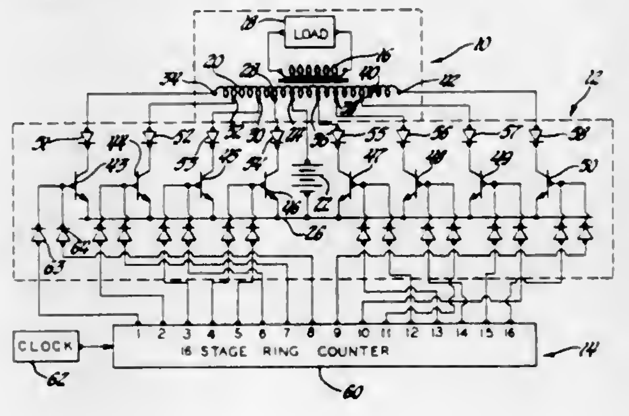
3,430,073
WAVEFORM GENERATOR

Paul L. Leonard, Muskego, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 2, 1967, Ser. No. 620,062

U.S. Cl. 307—260 **6 Claims**

Int. Cl. H03k *3/57*



Apparatus for generating a waveform having a sequence of distinct voltage levels including a transformer having a center-tapped primary, a source connected to the center tap and a plurality of transistor switches connected to increasingly larger numbers of primary turns on either side of the center tap. By connecting the outputs of a ring counter to close the transistor switches in a particular order, the desired sequence of voltage level changes in the secondary is produced. Additional phases of the waveform may be generated by connecting the counter to additional transformer and switch units in an order comparable to the first but delayed in time.

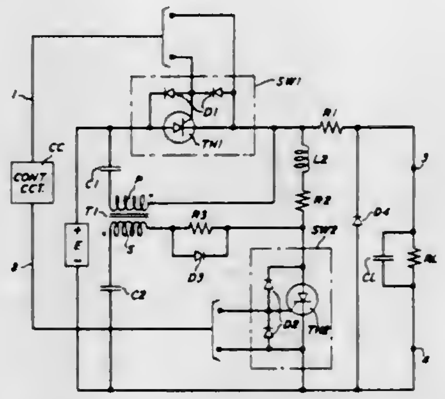
3,430,074
VARIABLE WIDTH PULSE CIRCUIT

William B. Harris, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Mar. 22, 1967, Ser. No. 625,225

U.S. Cl. 307—265 **8 Claims**

Int. Cl. H03k *1/18, 3/28*



A variable width pulse circuit employing only two thyristor switch circuits, one for turning the pulse ON and a second one for turning the pulse OFF. A single resonant turn-off circuit, including two capacitors and a transformer, is used for automatically opening both switch circuits after the second switch circuit has turned the pulse OFF.

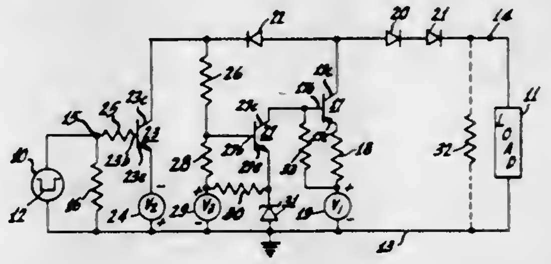
3,430,075
HIGHLY STABLE PULSE GENERATOR

Robert A. Gange, Belle Mead, and John F. Thompson, Hopewell, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,076

U.S. Cl. 307—268 **6 Claims**

Int. Cl. H03k *3/02*



1. A pulse generator arrangement for providing highly stable pulses to a load in response to a source of control signals, said arrangement comprising:

a series switching circuit including the collector-emitter path of a first transistor for connecting a source of energy to said load,

disconnect means responsive to said control signals to substantially isolate the turn on and turn off transients of said first transistor from said load, said disconnect means including:

control signal responsive switching means for providing a shunt path for collector current of said first transistor prior to turn off of said first transistor,

means for preventing any substantial current drain from said load to said shunt path and for isolating said load from said first transistor during turn on thereof, and

circuit means responsive to said switching means for turning said first transistor on and off.

3,430,076

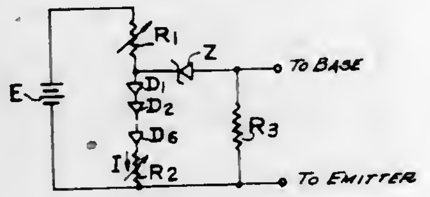
TEMPERATURE COMPENSATED BIAS CIRCUIT

Gilles J. Overtveld, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed May 27, 1966, Ser. No. 553,498

U.S. Cl. 307—297 **9 Claims**

Int. Cl. H03k *1/12;* **H03f** *3/04*



1. A biasing circuit for stabilizing the operation of a transistor having a base, an emitter and a collector electrode with variations in temperature effecting the base-emitter junction voltage thereof comprising:

a first circuit including a number of semiconductor devices connected in series with a first resistor, said circuit being adapted to be connected to a source of D-C voltage for biasing said semiconductor devices in the forward direction, the voltage across said semiconductor devices having a fixed portion, and a temperature dependent portion;

a second circuit including a reference diode and a second resistor connected in parallel with said first circuit, the polarity of said reference diode with respect to the polarity of the voltage applied across said semiconductor devices being reversed, and the voltage across said reference diode having a fixed portion and a negligible temperature dependent portion; and

means for applying the voltage across the second resistor between the base and emitter electrodes of said transistor to apply forward bias thereto, the temperature dependent voltage provided by the semiconductor devices being determined by the relative value of the first and second transistor, the fixed voltage provided for the base and emitter electrodes being equal to the fixed voltage across the semiconductor devices minus the fixed voltage across the reference diode plus the voltage drop across the first resistor, said fixed voltage being adjustable by varying the current flow through the first resistor.

3,430,077

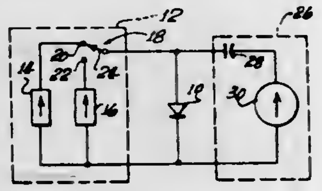
SEMICONDUCTOR TEMPERATURE TRANSDUCER

David W. Bargen, Pasadena, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif.

Filed Sept. 13, 1965, Ser. No. 486,629

U.S. Cl. 307—310 **15 Claims**

Int. Cl. G01k *5/52, 7/00*



1. A temperature sensor comprising:

a solid state junction means for supplying an output signal related to temperature when energized;

an energizing means for applying a signal to said junction means, said signal having at least two levels, each of said levels forward biasing said junction means; and,

means for sensing the output signal from said junction means resulting from said energizing signal, whereby the output signal has a characteristic related to temperature and substantially independent of the specific characteristics of the junction means.

3,430,078

TUNNEL DIODE CIRCUIT

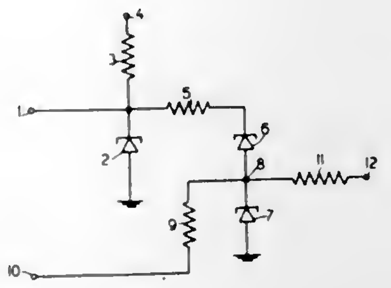
Ladislav Beneš, Nove Mesto nad Vahom, Czechoslovakia, assignor to Vyskumny ustav mechanizacie a automatizacie, Nove Mesto nad Vahom, Czechoslovakia

Filed Sept. 21, 1965, Ser. No. 488,864

Claims priority, application Czechoslovakia, Sept. 21, 1964, 5,233/64

U.S. Cl. 307—322 **16 Claims**

Int. Cl. H03k *23/36*



A first resistor and a first tunnel diode are connected in series circuit arrangement between a current supply source and a reference potential. Second and third tunnel diodes are connected in a bias-free series circuit arrangement between the junction of the first resistor and the first tunnel diode and the reference potential. A first and circuit triggering signal is applied to the junction. A second signal is applied to the junction of the second and third diodes and an output is provided at such junction.

3,430,079

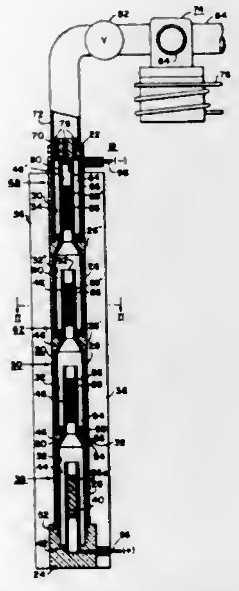
CASCADED THERMIONIC CONVERTER

Joseph S. Danko, Pitcairn, Pa., and Peter J. McCoy, Danbury, Conn., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 12, 1961, Ser. No. 158,736

U.S. Cl. 310—4 **10 Claims**

Int. Cl. H02n *3/00;* **H01j** *45/00*



1. A thermionic converter comprising an elongated insulating casing, a plurality of supporting members within said casing and spaced along the length thereof, a plurality of conductive generally tubular one-piece anode-cathode members mounted on said supports respectively, each of said anode-cathode members including an enlarged tubular anode portion and a reduced integral tubular cathode portion mounted in tandem thereto, said supports being spaced such that the cathode portion of at least one of said anode-cathode members is positioned within the anode portion of an adjacent anode-cathode member to form a plurality of series connected thermionic cells along the interior length of said casing, heat emitting means juxtaposed to said cathode portions in heat transfer relationship therewith, and circuit means for connecting said series connected cells to external electric circuitry.

3,430,080

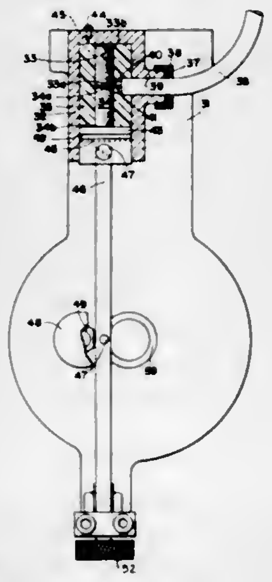
PIEZO-ELECTRIC HIGH-VOLTAGE ALTERNATORS AND GENERATORS

John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090

Filed Oct. 20, 1965, Ser. No. 498,549

U.S. Cl. 310—8.7 **20 Claims**

Int. Cl. H02n *1/00, 11/00*



High-voltage and very high-voltage piezo-electric alternators having elastic structure and intended for use in internal-combustion-engine ignition systems and elsewhere, together with direct current generators employing similar structure.

3,430,081

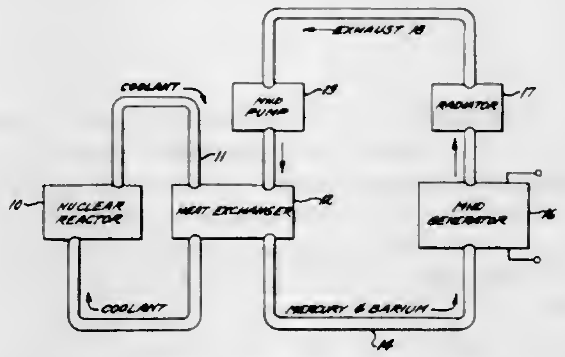
MERCURY VAPOR FOR MAGNETOHYDRODYNAMIC GENERATORS

Bert Zauderer, Bala, Pa., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Dec. 2, 1964, Ser. No. 415,521

U.S. Cl. 310—11 **3 Claims**

Int. Cl. G21d *7/02;* **H02k** *45/00;* **G21c** *15/00*



A system for generating electrical power including a closed loop nuclear reactor heating system; a closed loop MHD generator utilizing mercury vapor seeded with barium and a heat exchanger connecting the two loops, whereby the nuclear reactor heats the mercury vapor working fluid of the generator.

3,430,082

COMPOSITE-STRUCTURE ELECTRODE FOR OPEN-CYCLE MAGNETOHYDRODYNAMIC GENERATOR

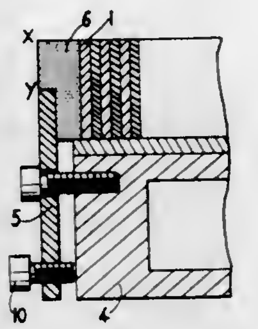
David Yerouchalmi, Issy-les-Moulineaux, France, assignor to Commissariat à l'Energie Atomique, Paris, France

Filed May 18, 1966, Ser. No. 551,151

Claims priority, application France, May 25, 1965, 18,235

U.S. Cl. 310—11 **9 Claims**

Int. Cl. G21d *7/02*



An electrode for an MHD generator is made of an assembly of plates. Each plate is made of a simple or mixed refractory oxides coated with layers of either inert or noble refractory metals over the faces of the electrode plates not subjected to the action of hot gases and the coated surfaces are covered with a thin metal foil. The assembly of plates are mounted on a water cooled metal box with the surface of the box engaged by the plates clad with a stainless refractory alloy. The thickness of the plates are adjustable after optimum operating temperatures have been obtained.

3,430,083

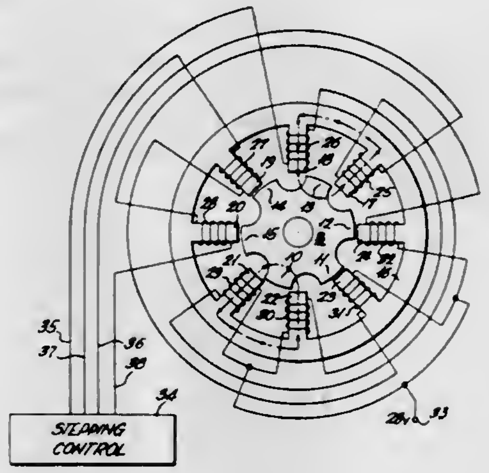
VARIABLE RELUCTANCE STEPPER MOTOR

Charles P. O'Regan, Bronx, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware

Filed Dec. 7, 1966, Ser. No. 599,832

U.S. Cl. 310—49 **9 Claims**

Int. Cl. H02k *37/00*



A two-phase, center tap winding stepper motor which provides non-resonant stepping movement of the rotor by means of a magnetic damping effect caused by a particular sequence of energization of the stator coils. Adjacent pairs of oppositely wound stator coils are sequentially energized to produce a magnetic field. The rotor seeks to provide a low-reluctance path between each pair of energized coils in a sequential manner to produce a stepping operation.

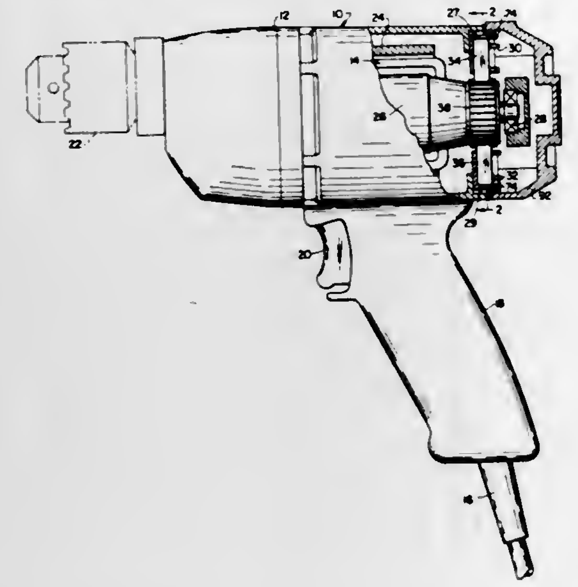
3,430,084
ELECTRIC MOTOR AND BRUSH ASSEMBLY FOR A PORTABLE TOOL

George D. Hall, Verona, and Robert H. Huber, Pittsburgh, Pa., and Robert W. Wagner, Jackson, Tenn., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 6, 1966, Ser. No. 563,204

U.S. Cl. 310—50 **18 Claims**

Int. Cl. H02k *7/14*



An electric motor and brush mounting structure for a portable tool having a brush holder with convergent seating surfaces fitting into a complementary convergent recess in an electric motor housing in a portable power tool. Within the brush holder a stepped recess receives two spaced apart coils of a constant force spring, the two coiled portions being joined by a bridging spring strip which embraces the rear end of a brush. The rear end of the brush, in abutment with and carrying the bridging portion of the spring with it, is forced into a recess in the brush holder whereupon the constant force spring coils provide a balanced force biasing the brush toward the motor commutator.

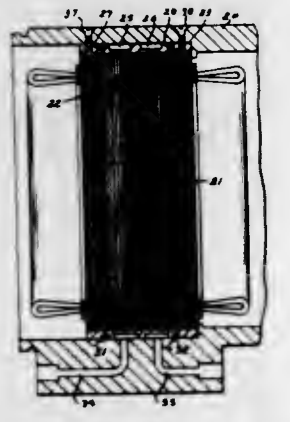
3,430,085
STATOR COOLING SYSTEM FOR A.C. GENERATOR

David K. Mains, Lima, Ohio, assignor by mesne assignments to the United States of America as represented by the Secretary of the Air Force

Filed Mar. 10, 1966, Ser. No. 534,992

U.S. Cl. 310—54 **3 Claims**

Int. Cl. H02k *9/19*



An oil cooling system for the stator of an A.C. generator has a ring, shrunk onto the prewound A.C. stack with circumferential grooves machined in the outer surface of the ring. The assembly is fitted into a casting with O-ring seals for the grooves provided between the ring and the casting. Oil-in and oil-out passages are provided in the casting.

3,430,086
GEIGER-MÜLLER TUBE WITH WINDOW AND INTERNAL HELIX

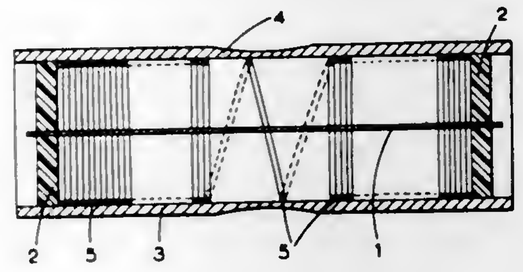
Ian William Mackintosh, Epsom, Surrey, England, assignor to North American Philips Company, Inc., New York, N.Y.

Filed Feb. 24, 1965, Ser. No. 434,786

Claims priority, application Great Britain, Feb. 28, 1964, 8,407/64

U.S. Cl. 313—93 **4 Claims**

Int. Cl. H01j *39/26, 39/30;* **G01t** *1/18*



A Geiger-Müller tube having a cylindrical metal envelope provided with a thinner wall portion serving as a window to enhance the detection of low-energy radiation. The tube contains on its interior a wire helix of a high atomic number to increase the electron emission efficiency to high-energy radiation to enhance the response thereto.

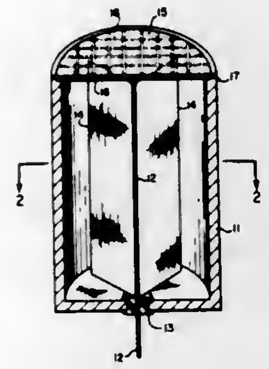
3,430,087
SENSITIVE, QUICK RESPONSE IONIZATION CHAMBER

Randolph G. Taylor, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 4, 1966, Ser. No. 592,690

U.S. Cl. 313—93 **1 Claim**

Int. Cl. H01j *39/26, 17/20, 61/12*



This invention is directed to an ionization chamber having a cylindrical anode with an axially disposed wire electrode operable for detection of ionizing radiation in a range of from about 0.5 to about 8.0 angstrom units with a fast recovery. Fast response is brought about by modification of the cathode to include vane-like screen structures secured thereto by brazing, welding, or any other suitable manner. The vane-like structures extend radially out from the cathode with their outer edges spaced from the anode. The tube is provided with a gas filling of krypton or argon with a beryllium window through which the ionizing radiation enters the chamber.

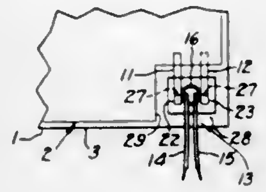
3,430,088
WIRE TERMINAL ELECTROLUMINESCENT DEVICE AND MANUFACTURE

Vernon L. Beswick, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Sept. 30, 1966, Ser. No. 583,324

U.S. Cl. 313—108 **6 Claims**

Int. Cl. H01j *1/62, 63/04;* **H05k** *3/30*



1. An electroluminescent device comprising an electroluminescent cell assembly sealed between a pair of thermoplastic encapsulating sheets, said cell assembly comprising an electroluminescent phosphor layer sandwiched between a pair of electrically conducting electrode layers, and a wire termination for said device comprising a pair of electrical conductors electrically connected to respective ones of said electrode layers and projecting from the edge of the said cell assembly in substantially side-by-side spaced relation, the projecting portions of said conductors being sealed between said plastic encapsulating sheets and having outer end portions extending through the thickness of one of said encapsulating sheets to the outer face thereof and lying flat thereagainst, and a thermoplastic stud having a flanged end laminated to the outer face of said one encapsulating sheet over the said outer end portions of said conductors and having a pair of wire leads embedded therein, said wire leads having bare wire portions projecting from and bent over the flanged end of said plastic stud and engaging the said outer end portions of respective ones of said conductors, the said bent-over bare wire ends of said wire leads being sealed between the flanged end of said plastic stud and the said outer face of said one encapsulating sheet and thereby held in firm pressure contact with the outer ends of said conductors so as to be electrically connected thereto.

3,430,089
CALCIUM HALOPHOSPHATE PHOSPHORS

James F. Sarver, Cleveland, and Eugene F. Apple, Highland Heights, Ohio, assignors to General Electric Company, a corporation of New York

Filed Sept. 16, 1965, Ser. No. 487,845

U.S. Cl. 313—109 **10 Claims**

Int. Cl. C09k *1/36;* **H01j** *61/44*

Improved calcium halophosphate phosphors, processes of making them, and lamps utilizing the phosphors, wherein small amounts of divalent zinc up to about 0.35 mole percent relative to the total divalent ion content of the phosphor are added to the phosphor to improve light-output maintenance. About from 0.01 to 0.5 mole percent divalent cadmium may also be present. Maintenance improvement appears to result both from a decrease in color-center formation and a decrease in oxidation of manganese from the divalent state to the trivalent state.

3,430,090
ANTIMONY ACTIVATED HALOPHOSPHATE PHOSPHOR WITH RARE EARTH ADDITIVE

Frank M. Vodoklys, Wayne, and Richard C. Ropp, North Caldwell, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 24, 1965, Ser. No. 466,785

U.S. Cl. 313—109 **15 Claims**

Int. Cl. H01j *63/04;* **C09k** *1/36*

Halophosphate phosphor has added thereto a small amount of one or more of lutetium, terbium, gadolinium, thulium, yttrium, lanthanum, indium, scandium or gallium, preferably with a small amount of added cadmium. In the preferred method of addition, the cadium and other added additive metal is co-precipitated as oxalate, prior to incorporation into the phosphor by firing.

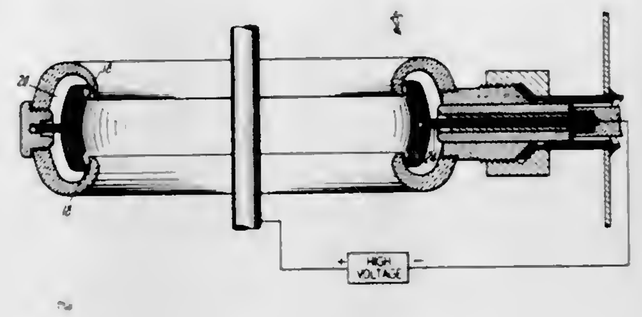
3,430,091
CONTOURED GLOW DISCHARGE CATHODE PRODUCING FOCUSED ELECTRON BEAMS

Jack W. Davis, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Continuation-in-part of application Ser. No. 508,314, Nov. 17, 1965. This application Aug. 21, 1967, Ser. No. 666,230

U.S. Cl. 313—210 **20 Claims**

Int. Cl. H01j *17/06, 61/64*



A contoured cathode operating in a glow discharge for producing a beam of electrons is described. Improved efficiency, as well as better control of power and depth of field of the cathode is obtained with a shield selectively spaced from the cathode and provided with a controllable aperture. Shaping of the beam in a nondissipative manner is shown.

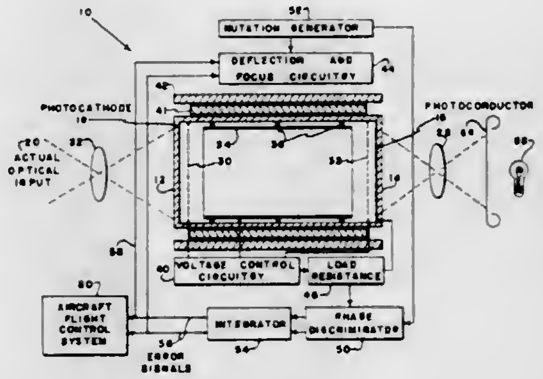
3,430,092
ELECTRONIC AREA CORRELATOR TUBE

Wilford L. Steiner, Akron, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed July 26, 1966, Ser. No. 568,015

U.S. Cl. 315—10 **4 Claims**

Int. Cl. H01j *31/26*



An electronic area correlator tube which electronically correlates two images on a simultaneous area basis without the necessity of using storage grids or meshes. The tube comprises a photocathode at one end and a photoconductor at the other end. The photocathode converts an optical image to an electronic image which is accelerated and focused onto the inside surface of the photoconductor. The photoconductor acts as a plurality of resistance elements, and in effect the resistance is changed by the presence of an optical signal on the outside surface thereof in combination with the electronic image on the inside surface. A voltage impressed across the photoconductor is measured in accordance with the resistance value thereacross as a current, with the amount of current indicating correlation on an instantaneous area basis.

3,430,093

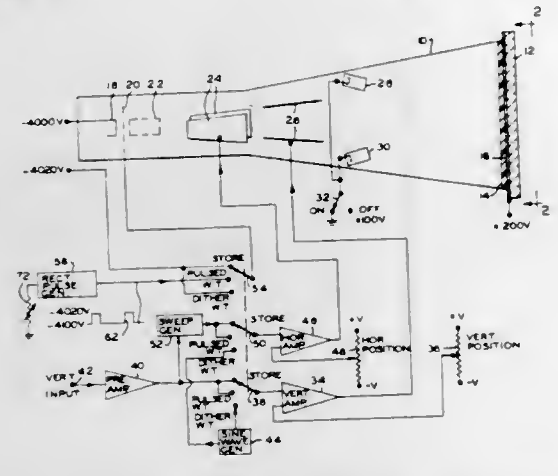
METHOD OF WRITE-THROUGH OPERATION OF DIRECT VIEWING BISTABLE STORAGE TUBE TO PRODUCE NONSTORED IMAGE OF HIGH BRIGHTNESS DURING SHORTAGE OF ANOTHER IMAGE

Chester N. Winningstad, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Oct. 16, 1967, Ser. No. 675,583

U.S. Cl. 315—10 **10 Claims**

Int. Cl. H01j *29/41*



A method of operating a direct viewing bistable storage tube is described involving "write-through," which is the display of a nonstored charge image during bistable storage of another charge image on the same storage dielectric. The write-through light image of the nonstored charge image is provided with high brightness by interrupting bombardment by the writing beam of the storage dielectric portions corresponding to such nonstored charge image during writing. Interruption of the writing beam to reduce the bombardment time per unit area is achieved either by pulsing such beam on and off or by causing a dithering movement of the beam in a closed path on the storage dielectric which enables the current of the writing beam to be of a high value for greater stability.

3,430,094

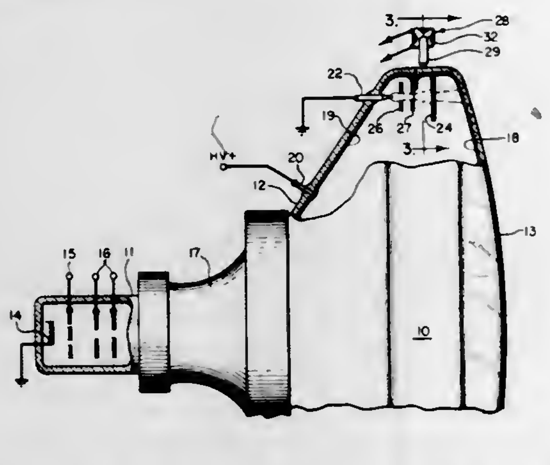
DISPLAY DEVICES

Leigh Curtis Foster, Atherton, Calif., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 27, 1966, Ser. No. 604,899

U.S. Cl. 315—13 **8 Claims**

Int. Cl. H01j *29/50, 31/00*



A channel indicator for a television receiver is constructed within the picture tube and comprises a needle-shaped electrode in the field of the final anode of the tube to serve as a cold emitter of electrons. An electron lens focuses the emitted electrons to a mask which has opaque portions and electron transparent portions, the latter having the configuration of channel numerals. A deflection field deflects the focused electrons to the appropriate channel indicator and, therefore, the channel numeric is projected on the screen of the picture tube.

3,430,095

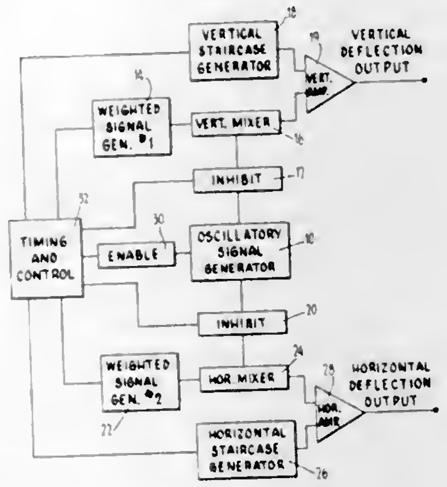
CATHODE RAY TUBE BEAM POSITIONING SYSTEM EMPLOYING COMPOSITE SIGNALS

Jack J. Bialik, Saint Germain-en-Laye, France, and Dale P. Masher, Menlo Park, and William W. Stevens, Palo Alto, Calif., assignors to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Filed July 8, 1965, Ser. No. 470,370

U.S. Cl. 315—18 **16 Claims**

Int. Cl. H01j *29/72*


VERTICAL STAIRCASE GENERATOR
VERTICAL DEFLECTION OUTPUT
VERT. AMP.
WEIGHTED SIGNAL GEN. #1
VERT. MIXER
INHIBIT
TIMING AND CONTROL
ENABLE
OSCILLATORY SIGNAL GENERATOR
INHIBIT
WEIGHTED SIGNAL GEN. #2
HOR MIXER
HORIZONTAL DEFLECTION OUTPUT
HOR. AMP.
HORIZONTAL STAIRCASE GENERATOR

There is disclosed an apparatus for and method of controlling the position of a cathode ray tube beam used in character display systems. The beam position is controlled by producing both horizontal and vertical deflection signals, each deflection signal being produced by mixing a beam position signal and a stroke position signal. Provision is made for adding an oscillatory signal to each stroke position signal and for inhibiting the oscillatory signal in response to the condition of a bistable device.

3,430,096

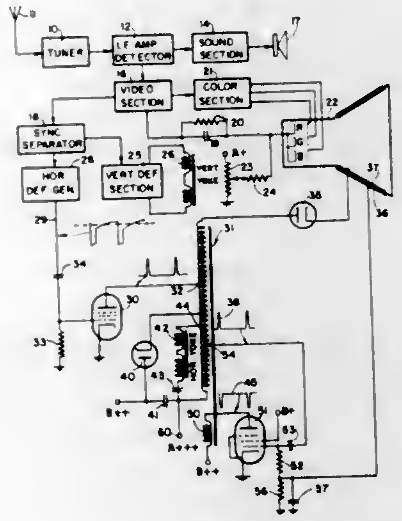
HORIZONTAL FLYBACK SWEEP SYSTEM

Robert B. Hansen, Arlington Heights, and Don A. Kramer, Rolling Meadows, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Nov. 14, 1966, Ser. No. 593,860

U.S. Cl. 315—22 **7 Claims**

Int. Cl. H01j *29/72*



A flyback transformer of a television receiver includes an auxiliary winding. The voltage pulse developed in the flyback transformer during retrace time is coupled through an amplifier to the auxiliary winding to add to the high voltage developed in the flyback transformer. The gain of the amplifier is controlled by the magnitude of the picture tube beam intensity to provide a relative constant high voltage for the picture tube.

3,430,097

DYNAMIC PINCUSHION CORRECTION WITH ONE TRANSDUCTOR

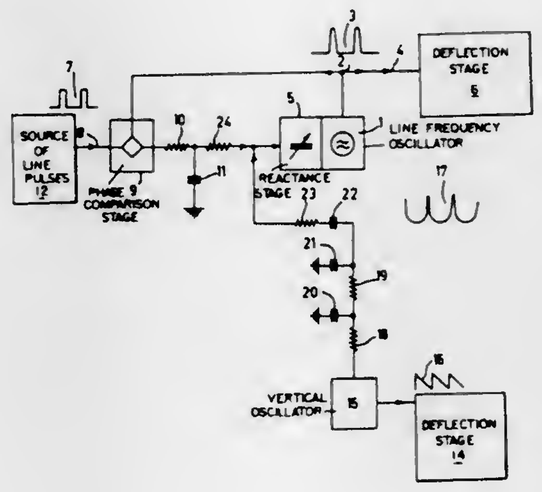
Jörg Wölber, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,607

Claims priority, application Germany, Sept. 26, 1964, P 35,153

U.S. Cl. 315—24 **6 Claims**

Int. Cl. H01j *29/70*



A system for correcting for arc shaped distortion in the raster of a display screen, for example in a television system, in which a parabolic voltage at the vertical deflection frequency is employed to modulate the phase of the line frequency deflection oscillator.

3,430,098

ARRANGEMENT FOR TESTING INFORMATION IN A PLURALITY OF TELEVISION SIGNALS

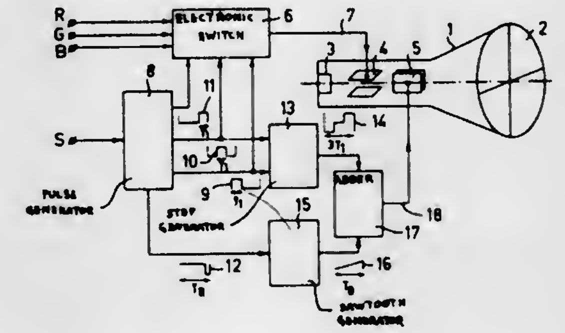
Filippus Leon Stok, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 14, 1966, Ser. No. 601,687

Claims priority, application Netherlands, Dec. 18, 1965, 6516536

U.S. Cl. 315—24 **3 Claims**

Int. Cl. H01j *29/70;* **H04n** *5/44, 5/14*



A monitor system for television signals, especially color television signals, in which the signal components are applied to a display device, such as a cathode ray tube, so that signals corresponding to different colors appear as bars in adjacent zones of the display screen. The different color signals are gated to the display device at line frequency, and a stepwave having steps of line duration is added to the time base deflection of the display device.

3,430,099

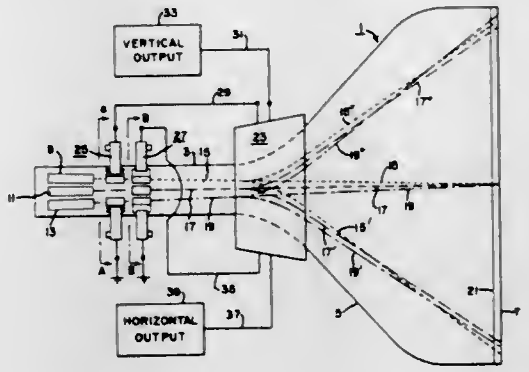
SIMPLIFIED DEFLECTION SYSTEM FOR PLURAL IN-LINE BEAM CATHODE RAY TUBE

Robert B. Ashley, Chesapeake, Va., assignor to General Electric Company, a corporation of New York

Filed Aug. 23, 1966, Ser. No. 574,411

U.S. Cl. 315—27 **13 Claims**

Int. Cl. H01j *29/72*



In a plural, in-line beam color cathode ray tube, convergence of the beams is achieved by means of optimally non-uniform fields in the deflection yoke which produces parallel-sided beam rasters. For this purpose, toroidal horizontal and vertical deflection windings are used, the turns distribution being different as between the two windings, the vertical winding having a greater number of turns than the horizontal. Any resulting difference in raster sizes is compensated for by size correction windings responsive to the linear deflection currents of the deflection yoke to provide linearly varying predeflection fields operative on the outermost beams of the illustrated three beam arrangement.

3,430,100

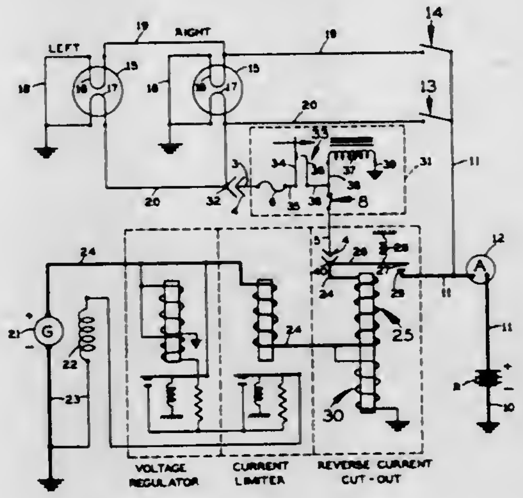
AUXILIARY SAFETY MAGNETIC LIGHTING CIRCUIT FOR VEHICLES

Charles L. Dill, Jr., Miami, Fla., assignor to Edward M. Long, Miami, Fla.

Filed Dec. 13, 1966, Ser. No. 601,358

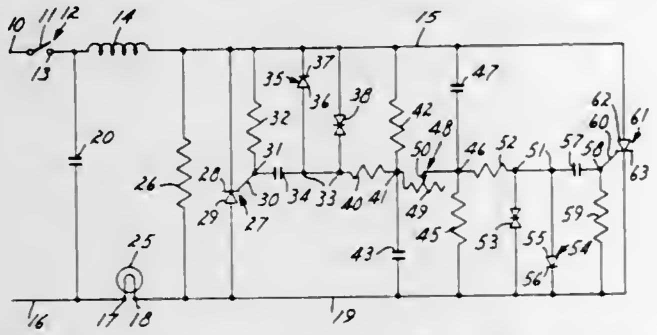
U.S. Cl. 315—78 **2 Claims**

Int. Cl. B60q *1/26, 1/02*



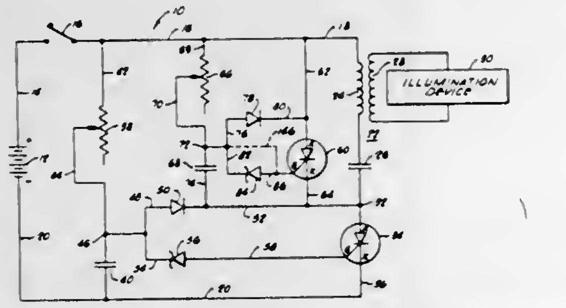
An auxiliary lighting control circuit for vehicles including a relay means responsive to and energized by the operation of the generator regulator when the engine in the vehicle is running for automatically energizing the low beam headlights of the vehicle.

3,430,101
VOLTAGE CONVERTER UTILIZING A LEADING CONTROL VOLTAGE
Francis J. Biltz, 5638 Glen Ave.,
Minnetonka, Minn. 55343
Filed Jan. 27, 1966, Ser. No. 523,456
U.S. Cl. 315—194 **10 Claims**
Int. Cl. G05f *1/12;* **H05b** *37/02*



Electronic apparatus including an input having an input signal applied thereto, a phase shifting network receiving the input signal and producing a control voltage with a phase leading the input signal, and a silicon controlled rectifier connecting the input signal to an output circuit only during the periods when the input signal and the control signal are of opposite polarity and the control signal is above a predetermined magnitude required to activate the SCR.

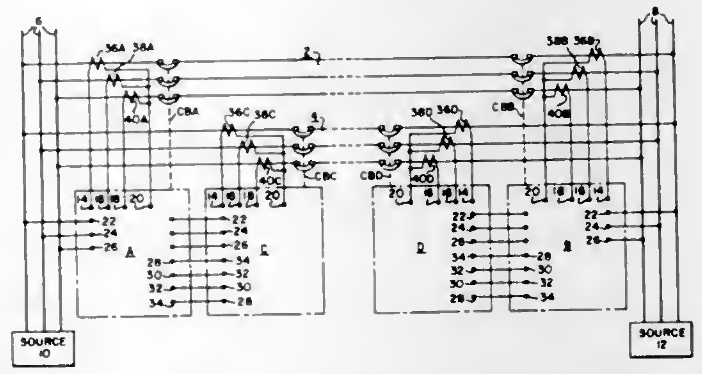
3,430,102
FLASHING LIGHT DEVICE
Robert A. Sidur, 16 Clinton Ave.,
Maplewood, N.J. 07040
Filed Oct. 14, 1965, Ser. No. 496,108
U.S. Cl. 315—239 **13 Claims**
Int. Cl. H05b *41/14*



Electrical apparatus for providing periodic energization at controlled rate and highly efficient utilization of current, the apparatus consisting of circuitry for controlling application of a D-C power source through a load by means of plural resistance-capacitance timing circuits which control respective semi-conductive controlled rectifiers to enable alternate bursts of oppositely flowing current through the load in such manner as to effect great economy in expenditure of power from the power source.

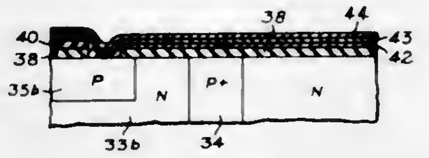
3,430,103
MUTUAL IMPEDANCE COMPENSATION FOR DISTANCE RELAYING
George D. Rockefeller, Jr., Morris Plains, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1966, Ser. No. 589,985
U.S. Cl. 317—36 **8 Claims**
Int. Cl. H02h *1/04, 3/00, 5/00*

1. In a relaying network for parallely arranged polyphase electrical transmission networks, first and second sets of current input terminals adapted for connection to a first and a second one of said networks, each said set comprising a plurality of terminals, said terminals of said first set being operatively connected to the phases of said first network, said terminals of said second set being operatively connected to the phases of said second network, a zero sequence current responsive relay having input and output connections, means connecting said input connections of said relay to said second network to respond to the flow of zero sequence current therein, said relay being operable in response to the flow of a zero sequence current through its said input connections of a magnitude in excess of a predetermined minimum magnitude to place its said output connections in a first condition, a magnitude comparison network having first and second pairs of input terminals and a pair of output terminals, said comparison network being characterized by the ability to provide a first output signal at its said output terminals when the magnitude of a first electrical signal applied to its said first pair of input terminals has a predetermined relation to the magnitude of a second electrical signal applied to its said second pair of input terminals, first and second signal generating devices, each said signal device having input means and output means, a first circuit connecting said terminals of said first set to said input means of said first signal device to energize said first device with an electrical quantity proportional to the zero sequence quantity flowing in said first set of terminals, a second circuit connecting said terminals of said second set to said input means of said first and said second signal devices to energize said signal devices with an electrical quantity proportional to the zero sequence quantity flowing in said second set of terminals, said first signal device being effective to energize its said output means in response to the combined magnitude of the zero sequence quantities supplied to its said input means, said second signal device being effective to energize its said output means in response to the magnitude of the zero sequence quantity supplied to its said input means, third circuit means individually connecting said output means of said first and second signal devices to said first and second pairs of input terminals of said comparison network respectively, said comparison network being characterized by the fact that its said pair of output terminals are rendered in a first condition when the magnitudes of the energization of said output means of said signal devices have a predetermined relationship, a circuit opening device, and a fourth circuit means connecting said output connections of said relay and said pair of output terminals of said comparison network to said circuit opening device, said fourth circuit means being effective to actuate said circuit opening device solely when said output connections of said relay are in their said first condition and said pair of output terminals of said comparison network is in its said first condition.

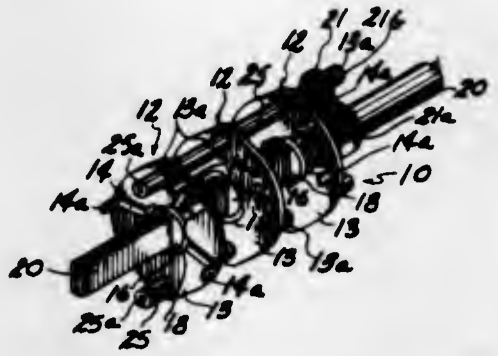


3,430,104
CONDUCTIVE INTERCONNECTIONS AND CONTACTS ON SEMICONDUCTOR DEVICES
John R. Burgess, Ellicott City, and Peter E. Pflaumer, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1964, Ser. No. 400,504
U.S. Cl. 317—101 **6 Claims**
Int. Cl. H01l *5/00, 3/00*

Semiconductor device structures, and methods for their fabrication, are disclosed having thereon a contact and conductive interconnection combination including an intermediate layer, such as one of at least 10% chromium, between the ohmic contact metal, such as aluminum, and the conductive lead, such as gold, to avoid undesirable metallurgical reactions.

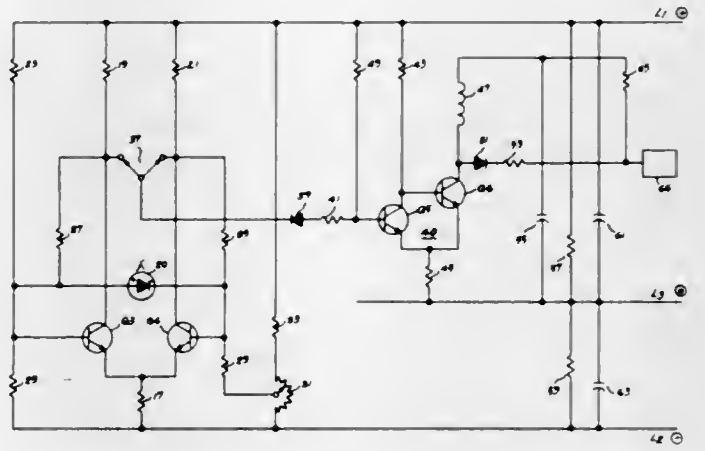


3,430,105
ELECTRICAL COMPONENT ASSEMBLY WITH IMPROVED STRUT FASTENING MEANS
Hilbert Stanley Marx, Menomonee Falls, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,079
U.S. Cl. 317—112 **2 Claims**
Int. Cl. H02b *1/04*



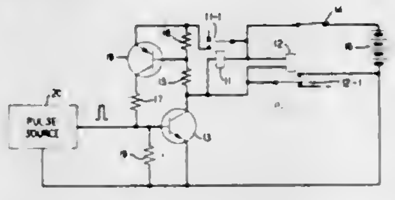
An electrical switch apparatus with a plurality of spaced wafers and a shaft connecting the wafers. Nonconducting cylindrical struts extend through apertures in the wafers and compressively engage the walls of the apertures to support the wafers in spaced relationship.

3,430,106
DIFFERENTIAL LIGHT RESPONSIVE CIRCUITS WITH A SOLAR CELL CONNECTED BETWEEN THE INPUTS OF THE AMPLIFIERS
Earle B. McDowell, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed June 16, 1965, Ser. No. 464,290
U.S. Cl. 317—130 **11 Claims**
Int. Cl. H01h *47/24, 47/32*



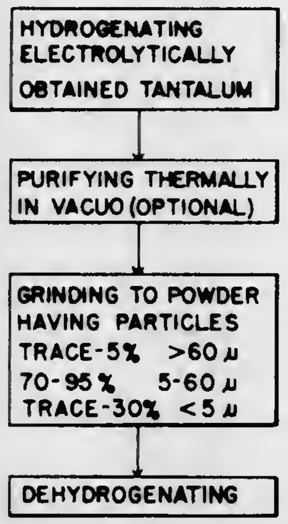
A differential amplifier with zero output adjustment substantially eliminates leakage current problems normally encountered with single ended amplifiers used for photoelectric cell amplification. The cell is connected between the base electrodes of the two transistors of the differential amplifier.

3,430,107
RELAY LATCHING CIRCUIT
Edwin T. Calkin, Parsippany, and Joseph W. Ianniello, Morristown, N.J., assignors to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Filed Sept. 21, 1966, Ser. No. 581,098
U.S. Cl. 317—137 **5 Claims**
Int. Cl. H01b *47/04*



1. A relay latching circuit comprising a first fast acting relay having an operating coil and at least one set of normally open contacts, a second relay having a response time slower than that of said first relay and having an operating coil and at least one set of normally open contacts, a source of driving current, a relay drive transistor having its emitter-collector path connected in parallel with the normally open contacts of said second relay and connected in series with said source and the operating coils of said first and second relays in parallel, the emitter-collector path of said transistor being poled to pass current from said source in the forward direction when the base-emitter junction of said transistor has a sufficient forward bias, means for applying a forward biasing control pulse to the base-emitter junction of said relay drive transistor to switch the emitter-collector path of said transistor into conduction, and means associated with said transistor to retain the forward bias on the base-emitter junction of said transistor even after said control pulse has been removed, whereby the emitter-collector path of said transistor is maintained in a conducting state until said second relay energizes.

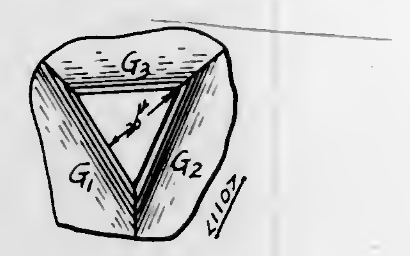
3,430,108
METHOD FOR THE MANUFACTURE OF TANTALUM POWDER FOR CONDENSER PURPOSES
Gustav Daendliker, Birsfelden, and Heini Fuerer, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
Filed Mar. 29, 1966, Ser. No. 538,194
Claims priority, application Switzerland, May 26, 1965, 7,404/65
U.S. Cl. 317—230 **4 Claims**
Int. Cl. H01g *9/02*


HYDROGENATING ELECTROLYTICALLY OBTAINED TANTALUM
PURIFYING THERMALLY IN VACUO (OPTIONAL)
GRINDING TO POWDER HAVING PARTICLES TRACE-5% >60 μ 70-95% 5-60 μ TRACE-30% <5 μ
DEHYDROGENATING

A new method is provided for manufacturing tantalum powders which are especially valuable for forming sintered anodes for electrolytic capacitors. In the method of this invention electrolytically obtained tantalum is hydrogenated, and the tantalum hydride obtained is ground into a powder containing a trace to 5% of particles of greater than 60 microns in diameter, 70–95% of the particles being 5–60 microns in diameter, and a trace to 30% of particles being less than 5 microns in diameter. The powder thus obtained is dehydrogenated to provide the tantalum powder of this invention.

3,430,109
SOLID-STATE DEVICE WITH DIFFERENTIALLY EXPANDED JUNCTION SURFACE

Chou H. Li, 379 Elm Drive, Roslyn, N.Y. 11576
Filed Sept. 28, 1965, Ser. No. 490,955
U.S. Cl. 317—234 **20 Claims**
Int. Cl. H01l *5/02, 3/00*

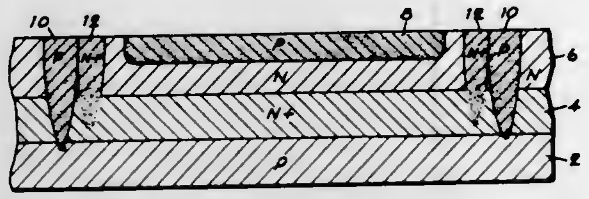


The novel solid-state devices disclosed herein are made with special attention to the configuration of the exposed junction or active region surface whereby this surface is differentially expanded into a prescribed geometrical shape, such as a cylindrically concave surface into a prescribed geometrical shape, another surface of revolution or, in general, a surface of oriented arcuate cross-section.

The invention is useful not only in diodes or transistors, but also in many other types of existing or new solid-state devices, which will be optimized thereby in respect to breakdown voltage, leakage current, efficiency in signal translation, stability in contaminating ambients, and other performance characteristics.

3,430,110
MONOLITHIC INTEGRATED CIRCUITS WITH A PLURALITY OF ISOLATION ZONES

Haig Goshgarian, Fords, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,197
U.S. Cl. 317—234 **5 Claims**
Int. Cl. H01l *5/02*

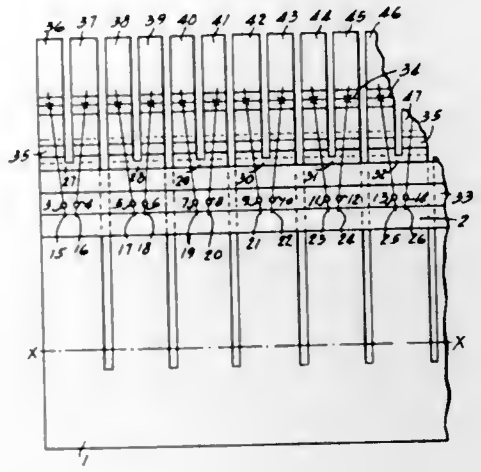


In an integrated circuit that includes a single crystal semiconductor body with a resistor comprising a diffused region of one conductivity type in a body portion of opposite type and wherein the body portion containing the resistor is isolated by a surrounding highly doped isolation zone of one conductivity type, the improvement comprising interposing another zone, highly doped and of opposite conductivity type, between the resistor and the isolation zone, for preventing current leakage due to spurious transistor action.

3,430,111
TRANSISTOR DEVICE

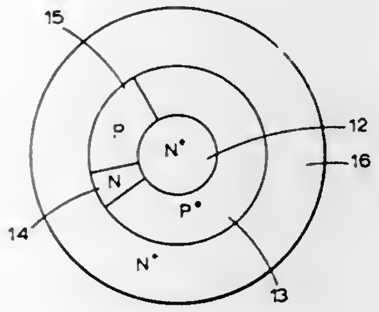
Karl Siebertz, Munich-Obermenzing, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Original application June 28, 1962, Ser. No. 206,557, now Patent No. 3,264,715, dated Aug. 9, 1966. Divided and this application Apr. 22, 1966, Ser. No. 555,640
U.S. Cl. 317—234 **1 Claim**
Int. Cl. H01l *3/10*

A transistor having a base plate forming part of a housing, a first conductor extending through said base plate, a pair of second conductors laterally spaced from said first conductor extending through said base plate parallel to said first conductor, a component rectilinearly attached to said first conductor extending therefrom, parallel thereto, having a semiconductor element secured to it and carrying two electrodes facing the said second conductors, prongs extending from the said second conductors, means for connecting the prongs with the said second conductors and means for connecting the said electrodes to the said prongs.



3,430,112
INSULATED GATE FIELD EFFECT TRANSISTOR WITH CHANNEL PORTIONS OF DIFFERENT CONDUCTIVITY

Robert Arthur Hilbourne, Harrow, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,614
Claims priority, application Great Britain, July 13, 1964, 28,757/64
U.S. Cl. 317—235 **5 Claims**
Int. Cl. H01l *11/00, 15/00*

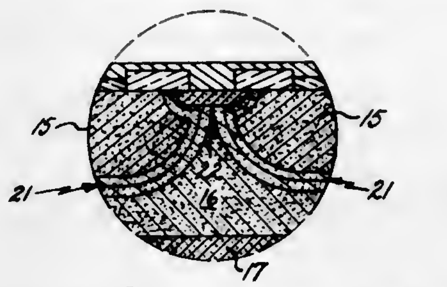


An insulated gate field effect transistor having a first channel portion extending from source to drain of one surface resistivity and at least one other channel portion of different surface resistivity. The transistor will exhibit a resultant g_m-Vg characteristic which can be tailored as desired, for example, to produce a remote cut-off characteristic.

3,430,113
CURRENT MODULATED FIELD EFFECT TRANSISTOR

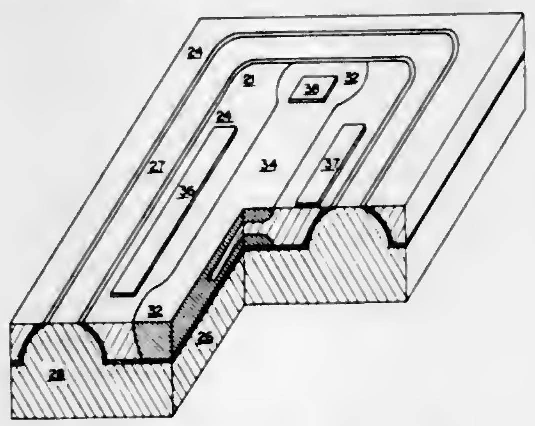
Sven A. Roosild, Billerica, Bobby L. Buchanan, Carlisle, and Russell P. Dolan, Jr., Concord, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 4, 1965, Ser. No. 492,954
U.S. Cl. 317—235 **5 Claims**
Int. Cl. H01l *11/00, 15/00*

A unipolar transistor having a channel approximately pinched off at zero bias and having an increasing channel current with a forward gate bias with a portion of the source to drain semiconductor material in an extended volcano-shaped configuration.



3,430,114
FIELD EFFECT TRANSISTOR IN AN INTEGRATED CIRCUIT HAVING AN EMBEDDED GRID

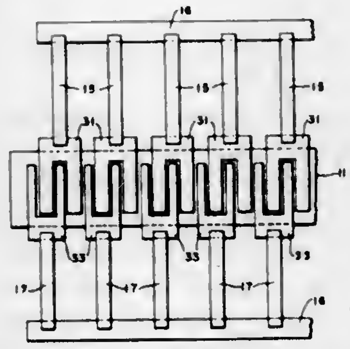
Philippe H. Morel, Paris, France, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 14, 1966, Ser. No. 528,006
Claims priority, application France, Feb. 16, 1965, 5,749
U.S. Cl. 317—235 **2 Claims**
Int. Cl. H01l *11/14*



The transistor is produced from an n-type silicon monolithic wafer having slots etched therein and subsequently coated with an oxide and filled with a polycrystalline silicon which is then ground to surface the polycrystalline silicon and oxide. By successive steps of masking and diffusion a p-type strip is diffused on the surface in the mid-section of the wafer to form an embedded grid with a drain (anode) and source (cathode) electrode on either side of the p-type strip. Contacts are attached to complete the transistor.

3,430,115
APPARATUS FOR BALLASTING HIGH FREQUENCY TRANSISTORS

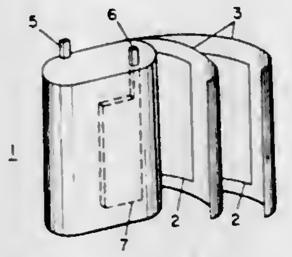
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of George J. Gilbert, Hunterdon, N.J.
Filed Aug. 31, 1966, Ser. No. 576,797
U.S. Cl. 317—235 **2 Claims**
Int. Cl. H01l *1/14*



A contract and lead arrangement for multiple junction planar transistors comprising a plurality of separate leads connected one for one to each U-shaped contact member of each of a plurality of pairs of interleaved U-shaped contact members, wherein the length of each separate lead is predetermined to provide a desired value of inductance at the operation frequency.

3,430,116
ELECTRICAL CAPACITORS

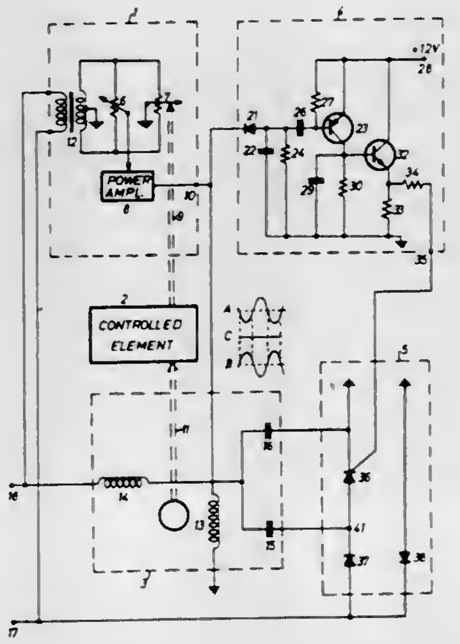
Paul L. Johnstone, Greenville, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Dec. 6, 1967, Ser. No. 688,603
U.S. Cl. 317—258 **4 Claims**
Int. Cl. H01g *3/17*



Liquid impregnated electrical capacitors having high corona starting voltage and capacitance contain, as the dielectric spacer, non-porous oriented thermoplastic film, and particularly biaxially oriented polypropylene film, which has been shrunken in selected areas to give surface irregularities.

3,430,117
TWO-PHASE SERVOMOTOR CONTROL INCLUDING MEANS TO DEENERGIZE THE REFERENCE WINDING AT NULL TO CONSERVE POWER

Emil Sennhenn, Darmstadt-Arheilgen, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed May 7, 1965, Ser. No. 453,995
Claims priority, application Germany, May 16, 1964, F 42,901, F 42,902
U.S. Cl. 318—18 **6 Claims**
Int. Cl. G05b *11/14;* **H02p** *7/74*



A servocontrol system in which both windings of a two-phase motor are controlled by the error signal. The error signal developed by a bridge circuit is applied to a signal converter which determines whether the signal is above or below predetermined threshold levels. The output of this conversion stage is, in turn, applied to a switching stage in discriminated form. The switching stage controls the current flow through one phase for winding of the motor depending upon the level of the error signal. The other winding of the motor has the error signal directly applied to it. The arrangement is such that when the error signal is below a predetermined threshold value, the motor winding connected to the switching stage is deenergized.

3,430,118

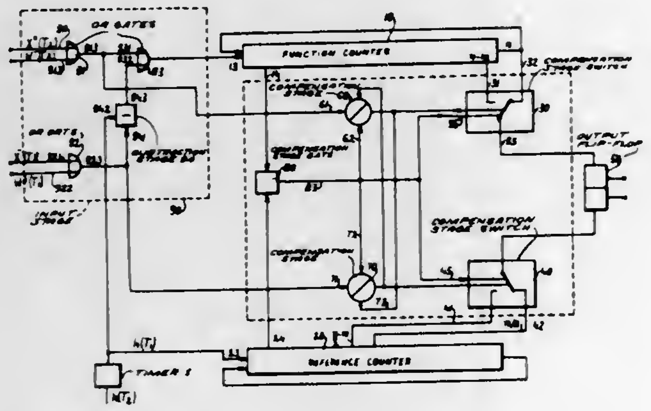
APPARATUS INCLUDING FERROTRANSISTOR SWITCHES FOR MINIMIZING DEAD ZONES IN A SERVOMECHANISM

Jaroslav Toifl, Prague, Czechoslovakia, assignor to Vyzkumny ustav matematickych stroju, Prague, Czechoslovakia

Filed Oct. 20, 1965, Ser. No. 498,858

U.S. Cl. 318—18 **7 Claims**

Int. Cl. G05b *11/01;* **H02p** *7/74, 5/46*



Two counters each capable of containing a count of *n* operate in synchronism and at the same frequency. Movement of an output element of a digital servomechanism results from a difference in the contents of one of the counters with respect to the other in response to the application of command pulses to the servomechanism. Apparatus for minimizing dead zones in the servomechanism comprises a coincidence circuit connected to selected outputs of the counters. The output of the coincidence circuit is applied as input to first and second gate circuits. A first two-position switch interposed between one of the counters and the set input of a flip-flop normally connects the *n*th count output of the one of the counters to the set input when the first switch is in a first selected position. A second two-position switch interposed between the other of the counters and the reset input of the flip-flop normally connects the $n/2$th count output of the other of the counters to the reset input when the second switch is in a first selected position. The output of the coincidence circuit is applied via the gate circuits to both switches to change the switches to a second selected position. In its second position, the first switch connects the n-m mount output of the one of the counters as a set input to the flip-flop, and in its second position, the second switch connects the

$$\frac{n}{2}-m$$

count output of the other of the counters as a reset input to the flip-flop. The flip-flop produces at its output an output square wave in which the duration of the complementary portions of a cycle of the square wave vary in accordance with the outputs of the counters. The *m* quantity caused a corresponding variation in duration and is selected to represent a specific duration increment.

3,430,119

OSCILLATING MOTOR FOR HOROLOGICAL INSTRUMENTS

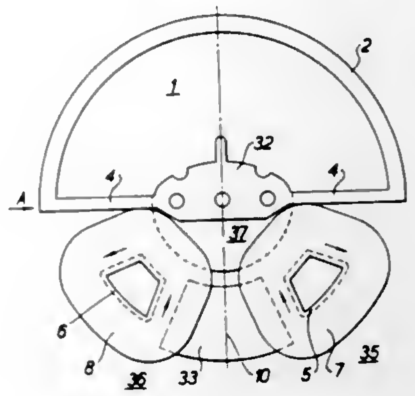
John Henry Shelley, Edismore, Eastcombe, near Stroud, England, assignor to Smiths Industries Limited, London, England

Filed July 19, 1966, Ser. No. 566,274

Claims priority, application Great Britain, July 22, 1965, 31,342/65

U.S. Cl. 318—128 **8 Claims**

Int. Cl. H02p *5/16;* **H02k** *33/14;* **G04c** *3/04*



1. An electrically maintained balance comprising a balance mounted for rotation about an axis and spring restrained towards a datum position so that it may oscillate about the datum position, two flat coils similarly mounted apart on the balance so that as the balance oscillates the two coils have a common path of movement which substantially lies in a surface of revolution about the said axis, fixed magnetic means establishing a region of magnetic flux in which the flux intersects the said path of movement, the position of the coils on the balance being such that when the balance is in its datum position the coils lie respectively on either side of the said region, electric pulse generating means connected to the coils, and means responsive to the angular position of the balance acting on the pulse generating means to cause it to pass current pulses through the coils when they are passing through the said region so as to maintain the oscillations, the balance thereby receiving for each direction of swing two distinct maintaining impulses at equal time intervals before and after the balance passes through the datum position.

3,430,120

ELECTROMAGNETIC POSITIONING MECHANISM

Yasukuni Kotaka, Takeshi Arakawa, and Takemi Kamata, Tokyo-to, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan

Filed July 18, 1966, Ser. No. 565,999

Claims priority, application Japan, July 24, 1965, 40/44,665

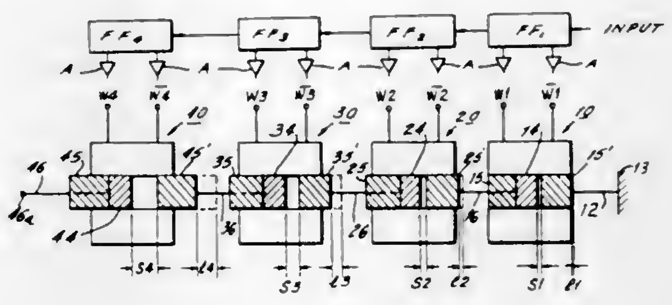
U.S. Cl. 318—135 **12 Claims**

Int. Cl. H02p *1/40;* **H02k** *41/02*

1. A positioning mechanism for substantially instantaneously converting binary input signals into a physical displacement comprising:

- a dual electromagnet structure including a stator having an opening at each end;
- a pair of excitation windings being arranged at spaced intervals within said stator;
- a pair of armatures being positioned at opposite ends of said stator and being free to experience reciprocal motion within an associated opening;
- rigid rod means coupled between said armatures;
- a plunger member positioned in axial alignment with said armatures and being free to undergo reciprocal movement within said stator under selective control of said excitation windings;

- second rigid rod means being coupled to said plunger; the distance between said armatures being greater than the length of said plunger thereby providing a predetermined displacement distance for said plunger.



3,430,121

DIGITAL CONTROL SYSTEM FOR MACHINE TOOLS INCLUDING TOOL RADIUS OFFSET AND STEPPING MOTOR DRIVE

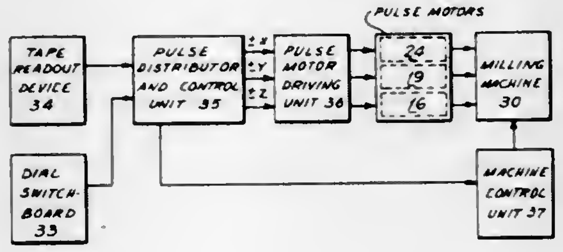
Norito Yoshitake, Yoshihiro Hashimoto, and Kengo Kobayashi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 179,162, Mar. 12, 1962. This application June 15, 1966, Ser. No. 557,741

Claims priority, application Japan, Mar. 13, 1961, 36/8,869

U.S. Cl. 318—162 **3 Claims**

Int. Cl. H02p *7/18, 7/38, 7/52*



Numerical data of a determined cutting pattern is supplied to one input of a pulse distributor and control circuit of a digital control system for machine tools and cutter offset magnitude data and cutter offset direction data of a cutter for a workpiece is supplied to another input of the pulse distributor and control circuit. The pulse distributor and control circuit includes a computer for making predetermined calculations with data supplied thereto, which calculations include a required cutting pattern based upon the determined cutting pattern but corrected for the magnitude and direction of offset of the cutter relative to the axis of rotation of such cutter.

3,430,122

DRIVE SYSTEM FOR AN ASYNCHRONOUS ELECTRIC MOTOR

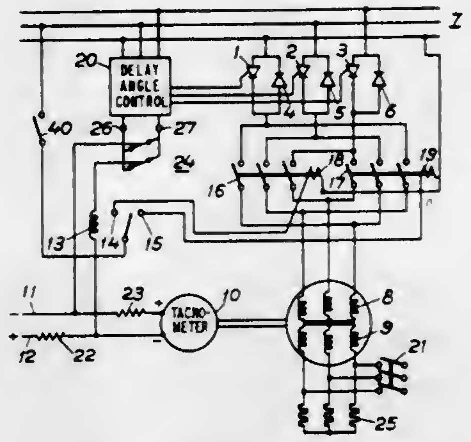
Ulrik Krabbe, Helsingor, Denmark, and Hans Hedstrom, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Apr. 15, 1966, Ser. No. 542,782

U.S. Cl. 318—203 **1 Claim**

Int. Cl. H02p *1/40, 3/20, 5/28*

A three-phase asynchronous motor speed control system comprises an arrangement for expressing the difference between the motor speed and a reference magnitude, and controlled rectifiers for controlling the stator voltage depending on the numerical value of such magnitude. The phase sequence of the primary voltage is determined by a reversing switch dependent on the sign of such magnitude.



3,430,123

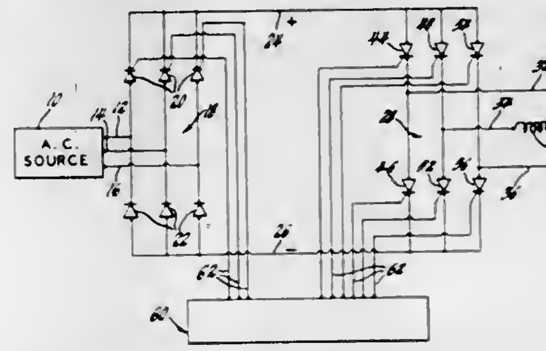
RECTIFIER-INVERTER MOTOR POWER SUPPLY

Thomas M. Corry, Goleta, and George J. Spix, Santa Barbara, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 3, 1966, Ser. No. 591,768

U.S. Cl. 318—227 **5 Claims**

Int. Cl. H02p *1/26, 5/40, 7/00*



1. A power supply for a three-phase motor comprising; a three-phase self-commutating rectifier bridge means having three controlled rectifiers and three diodes with the input of said rectifier means connected to receive a three-phase current, an inverter means connected to the output of said rectifier means, said inverter means having three parallel circuits each including a pair of series connected controlled rectifiers providing a frequency controlled three-phase output current, and a control means operatively connected to both said rectifier bridge means and said inverter means providing first control signals to said controlled rectifiers of said rectifier bridge means, said first control signals from said control means to said controlled rectifiers of said rectifier bridge means rendering said rectifier bridge means operative following an inoperative time interval wherein current is removed from the rectifier bridge means output, said control means providing second control signals following each time interval wherein said rectifier bridge means is inoperative, said second control signals being periodically applied to different preselected pairs of controlled rectifiers in said inverter means for supplying periodically interrupted pulses of three-phase alternating current from said inverter means.

3,430,124

BATTERY CHARGING SYSTEMS

Roger William Nolan, Redditch, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

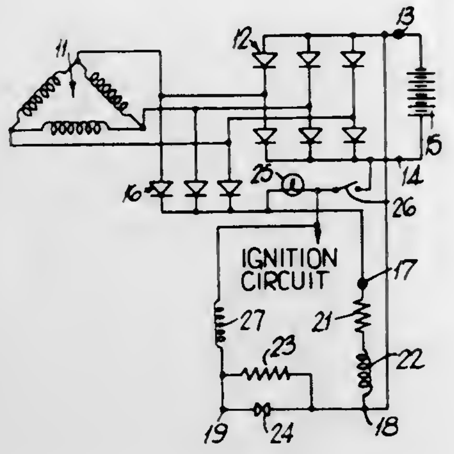
Filed Aug. 17, 1966, Ser. No. 572,989

Claims priority, application Great Britain, Sept. 29, 1965, 41,311/65

U.S. Cl. 320—48 **1 Claim**

Int. Cl. H02j *7/18, 7/10*

In a battery charging system for use in a road vehicle, an alternator charges a battery through a full wave rectifier and a voltage regulator is provided having an input terminal, an output terminal connected to one battery terminal, and a field terminal. The voltage sensing coil is connected between the input and output terminals, and a pair of contacts is connected between the output and field terminals. The system further includes one or more diodes providing an input from the alternator to the input terminal of the voltage regulator, and an ignition warning lamp is used having one side connected to the input terminal, and the field winding of the alternator has one side connected to the input terminal, and the field winding of the alternator has one side connected to the field terminal, the other side of both the field winding and the warning lamp being connected to the other battery terminal through the ignition switch.

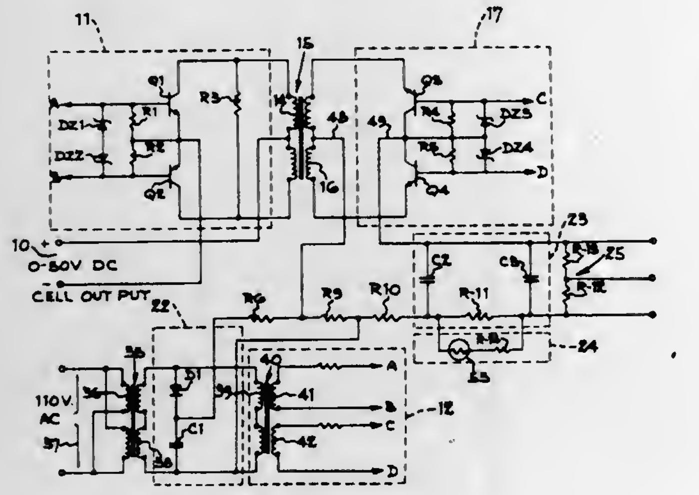


3,430,125
ISOLATING CIRCUIT FOR MAKING ELECTRICAL MEASUREMENTS

Kenneth M. Povenmire and Marshall D. Clanin, Columbus, Ohio, assignors to Halmar Electronics, Incorporated, Columbus, Ohio, a corporation of Ohio

Filed Nov. 4, 1966, Ser. No. 592,153

U.S. Cl. 321—2 **2 Claims**
Int. Cl. H02m *3/32*



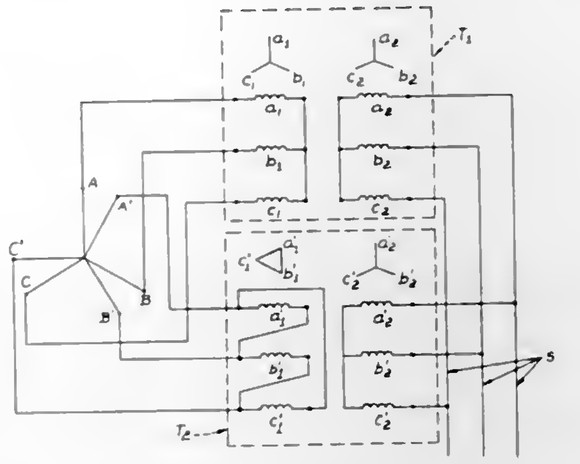
A circuit located between electro-chemical cells and electrical measuring apparatus for providing conductive isolation between the electrical measuring apparatus and the electro-chemical cells while permitting the transmission of electrical signals between the cells and the electrical measuring apparatus through isolating transformers.

3,430,126
MULTI-PHASE ALTERNATING CURRENT GENERATOR HAVING OUTPUT WINDING PHASE DISPLACEMENT AND COMPENSATING TRANSFORMERS

Philip Richardson and Norman Young, Newcastle-upon-Tyne, England, assignors to C. A. Parsons & Company Limited, Newcastle-upon-Tyne, England, a corporation of Great Britain

Filed Aug. 24, 1966, Ser. No. 574,584
Claims priority, application Great Britain, Aug. 25, 1965, 36,453/65

U.S. Cl. 322—90 **6 Claims**
Int. Cl. H02p *9/02*



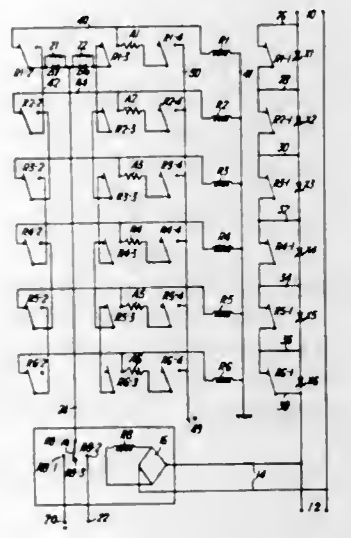
1. Multi-phase alternating current electrical apparatus comprising a multi-phase alternating current dynamo-electric machine, said machine having a stator winding comprising a plurality of separate three-phase windings in which the phase voltages of the three-phase windings are equal in magnitude but each phase voltage of one three-phase winding has a phase displacement with respect to its corresponding phase voltage in each other three-phase winding, the phase displacements between the phase voltages of any one three-phase winding and the respective corresponding phase voltages of another three-phase winding being equal; and multi-phase transformer means having one set of windings connected to the windings of the machine and another set for connection to a three-phase supply.

3,430,127
VOLTAGE REGULATOR AND SWITCHING SYSTEM

Joseph Otto Weiss, Jerusalem, Israel, assignor to State of Israel

Filed Mar. 28, 1966, Ser. No. 537,771

U.S. Cl. 323—66 **7 Claims**
Int. Cl. H01h *47/16;* **G01r** *17/06*



A switching system, particularly useful for a voltage regulator, comprises a sequential arrangement of relays, or other signal sensitive devices adapted to assume an

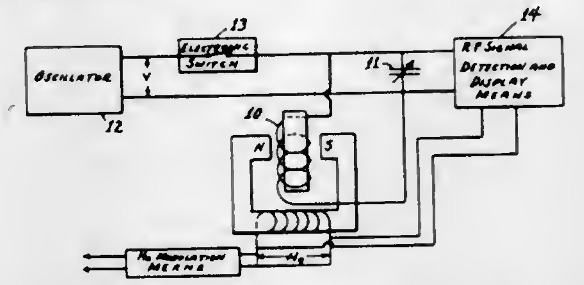
actuated or a released condition. The system is adapted to receive an actuating or a releasing control signal, and includes means for directing the actuating control signal to the first released relay in the sequence and then sequentially to the remaining released ones while skipping over any actuated ones in between, and means for directing the releasing control signal to the first actuated relay in the sequence and then sequentially to the remaining actuated ones, while skipping over any released ones in between.

3,430,128
METHOD AND MEANS FOR OBSERVING NUCLEAR MAGNETIC RESONANCES

Amory B. Lovins, Mill Lane, Amherst, Mass. 01002

Filed Mar. 26, 1965, Ser. No. 442,901

U.S. Cl. 324—.5 **24 Claims**
Int. Cl. G01r *33/08*



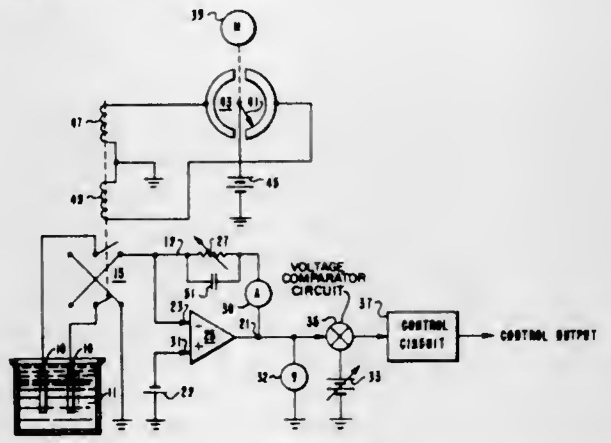
A method and means for observing NMR absorptions with very high sensitivity and over a wide range of R-F field amplitudes. Its principle is to detect absorptions from an exciting field that is not in steady-state oscillation but in a prolonged decay; in this way the exciting field, and hence $1/T_1$ for usable samples, may be made arbitrarily small by exciting and detecting absorptions arbitrarily late in the decay. In a typical embodiment, the ringing oscillation occurs in a resonant circuit Q-multiplied by insertion in an autodyne marginal oscillator, and the usable portion of the decay lasts for tens or hundreds of μsec. Many variations on and refinements of this arrangement are described, including methods of adjusting the apparatus by using the interaction between the tuning and gain controls; use of a high-gain, low-noise oscillator tube whose mode of operation changes during the ringing from that of a conventional pentode to that of a cold-cathode gas triode; means for optimizing the performance of practical oscillators; and means for displaying and measuring the absorptions.

3,430,129
LOW LEVEL SENSING AND CONTROL CIRCUIT

Charles P. Cardelro, Santa Ana, Calif., assignor, by mesne assignments, to Universal Interloc, Inc., Trevose, Pa., a corporation of Pennsylvania

Filed Jan. 4, 1966, Ser. No. 518,588

U.S. Cl. 324—30 **24 Claims**
Int. Cl. G05d *11/13*



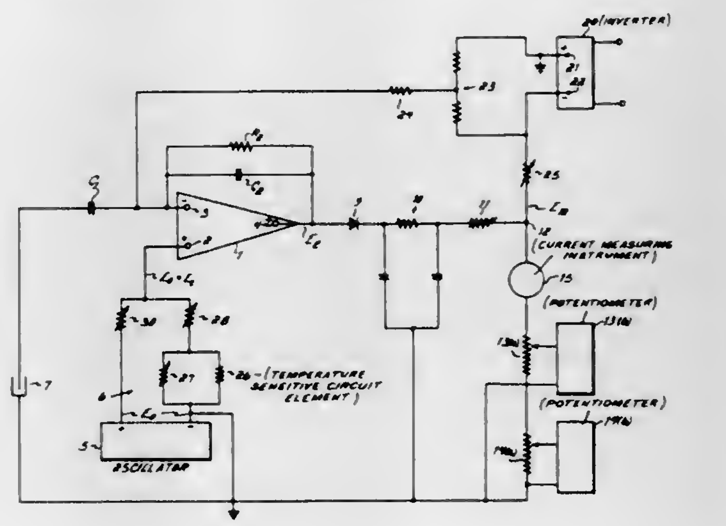
An operational amplifier circuit employs a feedback arrangement having a voltage divider arrangement consisting of a variable impedance element for sensing low power current-potential relationships connecting in series with a fixed impedance to feedback only a small portion of the amplifier output signal for comparison at the amplifier input with a fixed reference voltage, so that a fixed small voltage or current is maintained at the sensing element and the output voltage is varied at a high level to remain directly proportional to the resulting current or voltage produced by the fixed value being maintained.

3,430,130
CONDUCTIVITY MEASURING CIRCUIT UTILIZING CONDUCTIVITY CELL AS INPUT RESISTANCE OF AN OPERATIONAL AMPLIFIER

Carl A. Schneider, 7229 Jethve Lane, Cincinnati, Ohio 45243

Filed May 20, 1966, Ser. No. 551,736

U.S. Cl. 324—30 **17 Claims**
Int. Cl. G01r *11/44*


(INVERTER)
(CURRENT MEASURING INSTRUMENT)
(POTENTIOMETER)
(POTENTIOMETER)
(TEMPERATURE SENSITIVE CIRCUIT ELEMENT)
OSCILLATOR

A conductivity measuring circuit including an operational amplifier, a conductivity cell having one terminal connected to the summing point input of the operational amplifier via a D.C. current blocking capacitor and another terminal connected to a reference potential, and a source of alternating current potential connected between the reference potential and the other input of the operational amplifier. Also, included is a diode connected in the output circuit of the operational amplifier and a source of direct current bias potential connected to the input of the operational amplifier for establishing amplifier output to the diode sufficient to forward bias it into its low resistance operating range to avoid errors due to threshold effects in the diode resistance characteristic which exist at low voltage levels. A source of opposition potential is applied to the amplified signal for cancelling the components thereof introduced by both the direct current bias potential and the alternating current electrode potential, thereby eliminating measurement errors introduced by the bias potential and the alternating current electrode potential. Automatic temperature compensating circuitry is also provided by means of a temperature sensitive element connected between the alternating current source and the operational amplifier. This is effective to decrease the operational amplifier input, and hence the potential across the cell electrode, in response to an increase in fluid temperature thereby producing a correspondingly low amplifier output signal, the amount the output signal is lowered being proportionate to temperature change. The temperature sensitive element produces a similar result, but in the opposite direction if the fluid temperature decreases. Also included are suitable circuit means in the output circuit of the operational amplifier for accomplishing zero adjust in the output level and/or facilitating calibration of the conductivity indicating instrument.

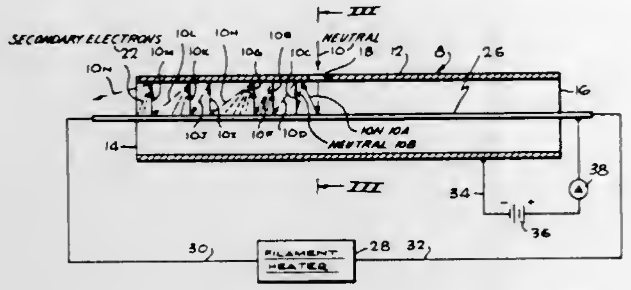
3,430,131
SYSTEM FOR MONITORING THE PRESENCE OF NEUTRALS IN A STREAM OF IONS

Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Kenneth R. Pinckney, Long Beach, and Brian Del Curto, Santa Monica, Calif.

Filed Sept. 1, 1965, Ser. No. 484,490

U.S. Cl. 324—33 **7 Claims**

Int. Cl. G01n *27/62*



This device can be used to detect the number of neutrals or atoms in an ion stream. It produces much larger signals than could be previously obtained. A hollow cylindrical collector is provided that is made of a material providing high secondary electron emission. It contains an entrance aperture in its surface, and carries a heated filament generally along its longitudinal axis. The collector is biased negative relative to the filament. An atom enters through the aperture, strikes the filament and is ionized. The ion is then repelled by the positive bias on the filament and impinges on the collector, knocking off electrons. It then becomes a neutral. The collector is heated so as to boil off the neutrals, which drift until they once again hit the filament to repeat the process.

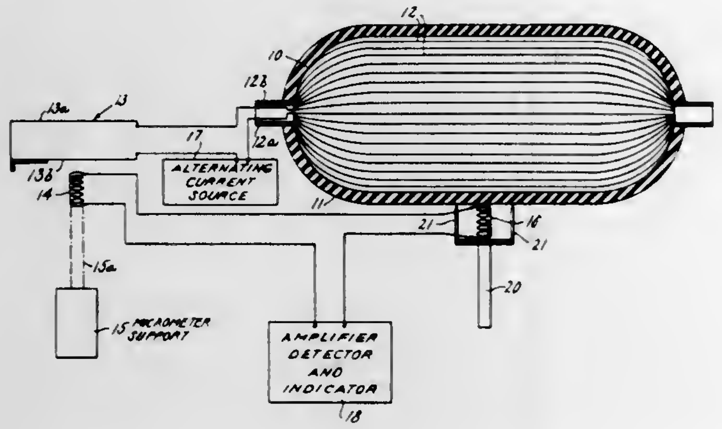
3,430,132
MAGNETIC THICKNESS MEASURING APPARATUS UTILIZING ONE FIXED AND ONE MOVABLE MEASURING COIL

Daniel R. Elliott, Ridgewood, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

Filed Feb. 28, 1964, Ser. No. 348,093

U.S. Cl. 324—34 **4 Claims**

Int. Cl. G01r *33/00*



An apparatus for measuring the thickness of a nonmagnetic, electrically nonconductive article wherein a nonmagnetic, electrically nonconductive base, having an electrical conductor wound over its surface, supports the article to be measured. A supply of alternating current is coupled to the conductor and an electrical pick-up winding is positioned in fixed proximity from and movable over the surface of the article. The conductor and the pick-up winding are so magnetically intercoupled that the output signal at the pick-up winding is proportional to the wall thickness of the article.

3,430,133
METHOD OF MAGNETIC FLAW DETECTION USING A RECORDING LAYER THAT IS HEATED AND COOLED IN THE LEAKAGE FIELD OF THE TESTPIECE

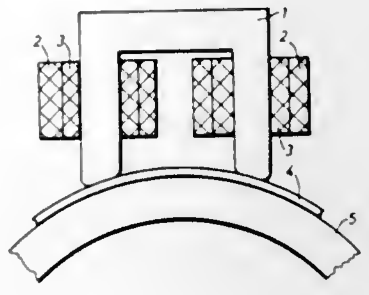
Joachim Greiner and Friedrich Krones, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Nov. 3, 1965, Ser. No. 506,203

Claims priority, application Germany, Dec. 8, 1964, A 47,813

U.S. Cl. 324—37 **2 Claims**

Int. Cl. G01r *33/12*



Testing of magnetizable objects for flaws with magnetic recording layer, gives better results when recording layer has a coercive force about equal to the field strength at the magnetic saturation knee of the object tested. Recording layer coercive force can be larger in which case alternating magnetic field is used to reduce that force to desired value. Testing can also be carried out by heating recording layer above Curie temperature, applying it to the object to be tested, and then cooling the layer to below Curie temperature.

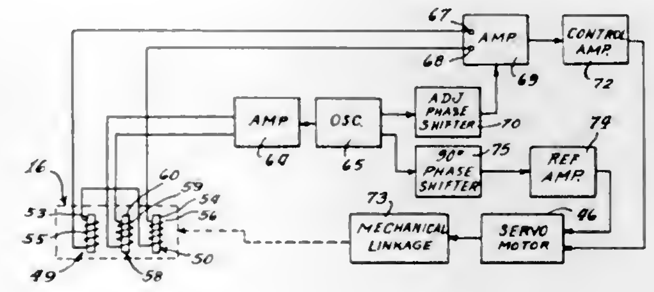
3,430,134
WELD TRACKER SYSTEM HAVING MAGNETICALLY ISOLATED PICKUP COILS

John J. Flaherty and Richard M. Soble, Elk Grove Village, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 26, 1966, Ser. No. 575,316

U.S. Cl. 324—40 **15 Claims**

Int. Cl. G01r *33/14;* **B23k** *9/12*



System particularly designed for testing a pipe having a welded seam in which a pair of eddy current coils are spaced apart a distance sufficient to provide a high degree of magnetic isolation but with an overlap in the areas of sensitivity thereof only in the region of an intermediate reference plane. An AC current is applied to both coils or to an intermediate existing coil and the pair of coils are connected to develop an AC signal having a phase and amplitude corresponding to the direction and magnitude of displacement of a welded seam from the reference plane. The signal is amplified and applied to one winding of a two phase electric motor which operates to rotate the coils about the pipe axis to automatically track the weld. Eddy current and leakage field means are provided to test the weld.

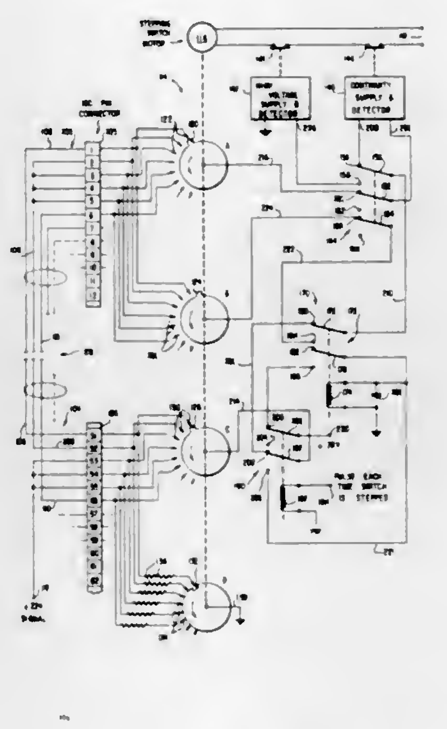
3,430,135
AUTOMATIC CIRCUIT FAULT TESTER FOR MULTIPLE CIRCUITS INCLUDING MEANS RESPONSIVE TO BLANK TERMINALS AT ENDS OF THE CIRCUITS UNDER TEST

Robert D. Mullen, 7534 Wilbur Ave., Reseda, Calif. 91335

Filed Mar. 5, 1964, Ser. No. 349,611

U.S. Cl. 324—51 **22 Claims**

Int. Cl. G01r *31/02*



20. An automatic circuit tester, comprising switch means for connecting a detector successively to corresponding terminals at opposite ends of the circuit being tested and control means responsive to connection of said switch means to a blank terminal at one end of said circuit, corresponding to a multiple circuit leg at the opposite end, for connecting said detector between said multiple circuit leg and an additional multiple circuit leg at said opposite end.

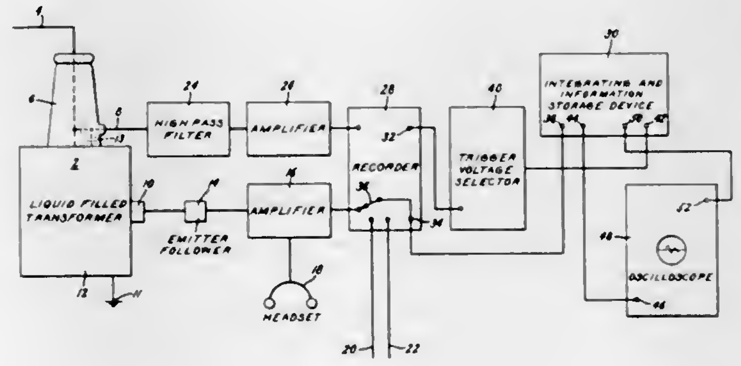
3,430,136
TEST EQUIPMENT FOR IDENTIFICATION AND LOCATION OF ELECTRICAL FAULTS IN FLUID-FILLED ELECTRIC APPARATUS

Heinz H. Brustle, Cheshire, and Franklin A. Fisher, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed Dec. 21, 1965, Ser. No. 515,373

U.S. Cl. 324—52 **8 Claims**

Int. Cl. G01r *31/08, 11/00, 31/12*



An insulation testing and electrical fault locating apparatus, particularly for the location of corona in fluid-filled electric apparatus such as transformers, comprising a sonic signal generating means responsive to fault-initiated vibrations in the fluid, digital integrating means for amplifying a repetitive component and eliminating random components of the signal, and means for determining the delay interval between initiation of such repetitive signal component and initiation of the associated electrical fault.

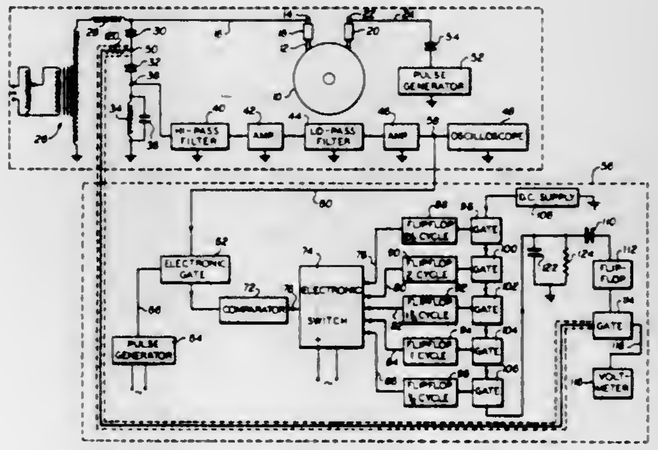
3,430,137
METHOD AND APPARATUS FOR AUTOMATIC MEASUREMENTS OF CORONA INCEPTION AND EXTINCTION VOLTAGES

George S. Eager, Jr., Upper Montclair, and George Bader, Edison, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed July 10, 1967, Ser. No. 652,105

U.S. Cl. 324—54 **8 Claims**

Int. Cl. G01r *31/14*



The method and apparatus is set forth for measuring discharges within voids in the insulation of power cable. A test voltage is applied to the cable and the amplitude thereof increased in predetermined manner. As the test voltage reaches the amplitude to initiate corona discharge in the cable voids, corona signals are detected. If and only if the corona signals appear on N consecutive ½ cycles of the applied test voltage, is the amplitude of the test voltage measured.

3,430,138
AUTOMATIC GUARD BALANCE

Edmund H. Povey, Medford, Mass., assignor to Doble Engineering Company, Belmont, Mass., a corporation of Massachusetts

Filed Sept. 20, 1966, Ser. No. 580,713

U.S. Cl. 324—57 **5 Claims**

Int. Cl. G01r *27/02*

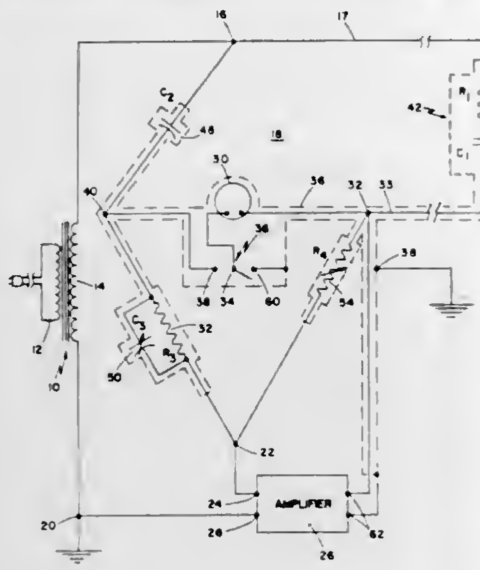
1. Apparatus for testing electrical components including a guard balance system comprising:

an alternating current bridge having four arms connected to define two pairs of terminals, one of said arms having leads adapted to connect to a component to be tested,

a detector connected between a first pair of said terminals, one of said second pair of said terminals being connected to a power supply having one output terminal grounded.

said guard balance system including a grounded guard for shielding said bridge and said detector, and

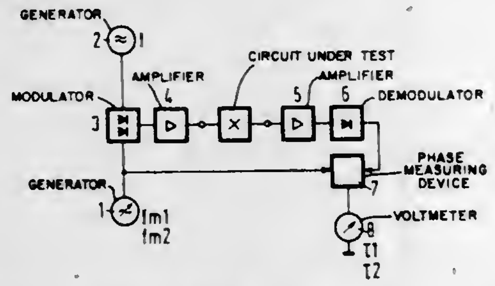
a negative feed back amplifier having its input circuit connected between said guard and one of said first pair of said terminals, and having its output circuit connected between the other of said second pair of said terminals and said grounded terminal of said power supply, said amplifier generating a correction voltage of inverted phase to maintain the voltage balance between the lead connecting the component to



be tested to one of said first pair of terminals and said guard at ground.

3,430,139
CIRCUIT ARRANGEMENT FOR THE MEASUREMENT OF THE ABSOLUTE DELAY OF A QUADRUPOLE ESPECIALLY OF A TRANSMISSION LINE

Klaus Schlüter, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed June 9, 1964, Ser. No. 373,725
U.S. Cl. 324—58.5 **3 Claims**
Int. Cl. G01r *27/04*



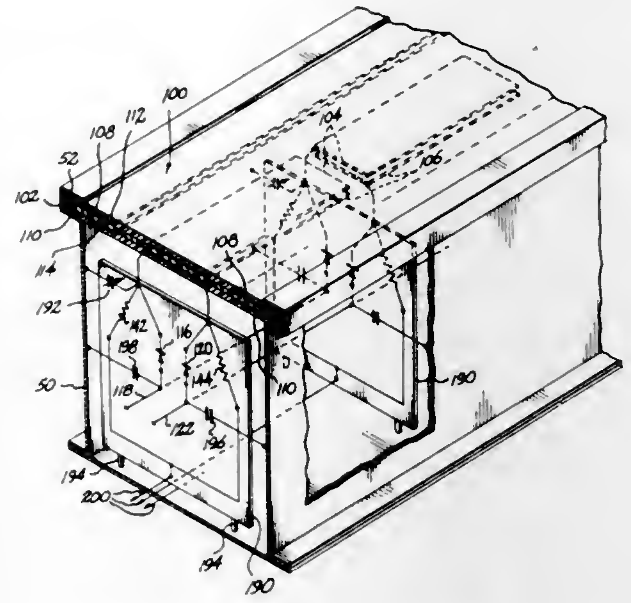
1. A circuit arrangement for the measurement of the absolutely delay of a quadrupole, comprising a first adjustable signal generator which generates a first, fixed signal frequency, a second signal generator which alternately generates a considerably lower second signal frequency from said first frequency and a third signal frequency which deviates slightly from said second signal frequency, a modulator having inputs, to which said signal generators are respectively connected, and an output, a demodulator, the quadrupole to be measured having its input connected with the output of the modulator and its output connected with the input of said demodulator, a phase measurement device having inputs which are connected respectively to the output of said demodulator and to said second signal generator, which device generates an output voltage whose amplitude is proportional to the phase difference of the voltage at the two inputs, and visual indicating means which indicates the amplitude of said output voltages, which indicating means is calibrated in values of the group delay for at least one of the second signal frequency and the third signal frequency and from which can be read off, the difference $\Delta\tau=\tau_1-\tau_2$ of the indicated value τ_1 for the second signal frequency, and of the indicated value τ_2 for the third signal frequency, whereby the expression

$$\Delta\tau\cdot\frac{f_{m1}}{f_{m2}-f_{m1}}$$

is proportional to the absolute delay, wherein f_{m1} represents the second frequency, and f_{m2} the third frequency.

3,430,140
MOISTURE DETECTION WITH SEQUENTIALLY SWITCHED BALANCED ELECTRODE PAIRS

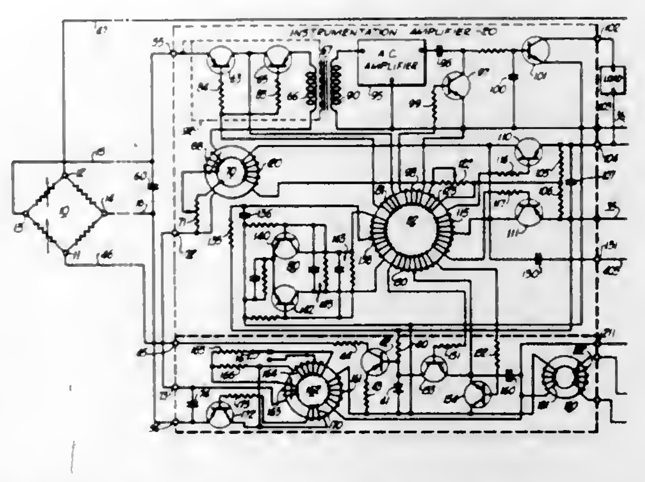
Fritz K. Preikschat, Bellevue, and Howard W. West, Kirkland, Wash., assignors to Laucks Laboratories, Inc., Overlake Park, Wash., a corporation of Washington
Filed Mar. 2, 1966, Ser. No. 531,207
U.S. Cl. 324—61 **8 Claims**
Int. Cl. G01r *27/24, 27/26*



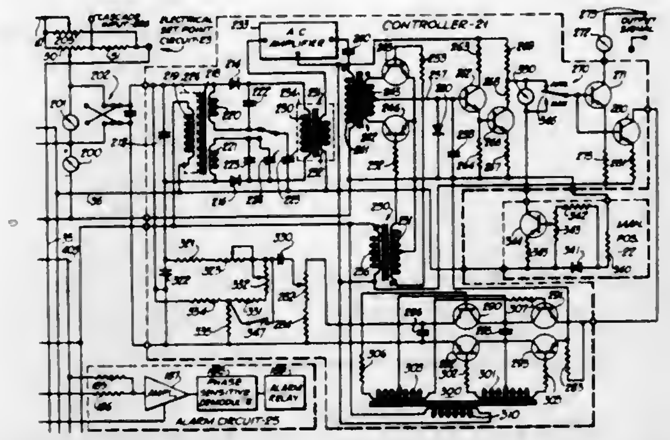
Temperature insensitive moisture detection in a succession of zones across a workpiece is detected by sequentially sampling in-line balanced pairs of normally balanced active and dummy electrode strips mounted in superposed registry on respectively opposite faces of an insulative support panel of a thermal conductivity which is materially higher than applied sheets of thermal insulation material sandwiching the electrode-panel assembly between them so as to create essentially a similar thermal environment for the electrodes of each pair. Sequential sampling is performed by a counter type circuit which forward-biases pairs of gating diodes associated with the electrode pairs in successive order.

3,430,141
SET-POINT APPARATUS POWERED IN SERIES WITH A SENSOR ELEMENT

Edgar S. Gilchrist, Fairfield, Conn., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Original application Sept. 18, 1961, Ser. No. 138,779, now Patent No. 3,197,780, dated July 27, 1965. Divided and this application Sept. 27, 1963, Ser. No. 312,132
U.S. Cl. 324—99 **8 Claims**
Int. Cl. G01r *17/06*

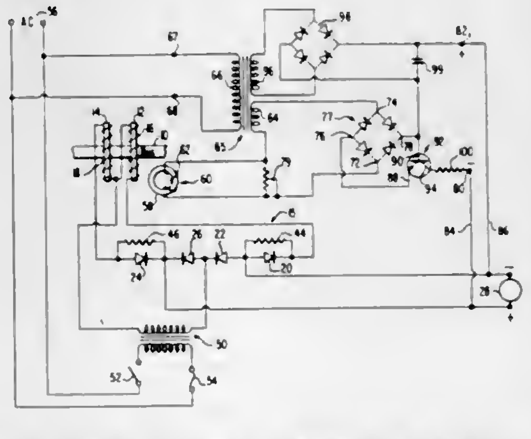


A set-point signal is obtained from a potentiometer in series with a power supply and a sensor element. The set-point signal is bucked against the output of the sensor to obtain a difference voltage and compensate for errors introduced by power line fluctuations and environmental conditions.



3,430,142
DIRECT CURRENT MEASUREMENT APPARATUS

Paul W. Covert, Valencia, Pa., assignor to Magnetics, Inc., a corporation of Pennsylvania
Filed Nov. 25, 1964, Ser. No. 413,897
U.S. Cl. 324—117 **4 Claims**
Int. Cl. G01r *33/02*

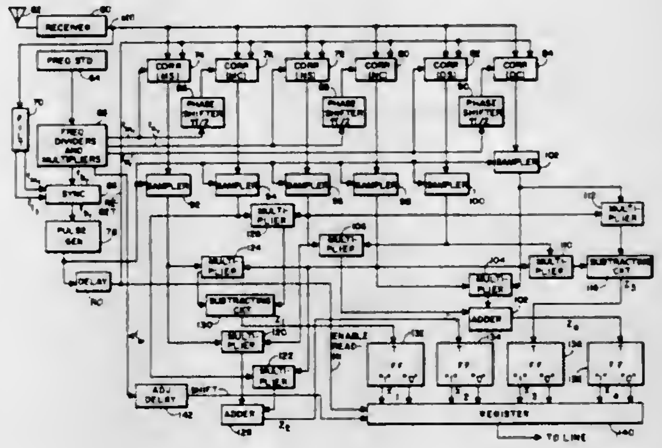


Improved direct current measuring device providing precision current measuring capability. A reactor-rectifier circuit is magnetically linked by saturable cores to a DC power conductor in which current is to be measured. Leakage current means shunt rectifiers in the reactor-rectifier circuit to reset flux levels in the saturable cores such that output of the reactor-rectifier current measuring circuit is at a minimum when current in the DC conductor is zero. This permits continuity in current measurement as current in the DC conductor approaches zero. Also the effect of the magnetizing current of the reactor-rectifier current measuring circuit, which varies with variations in temperature and AC voltage supply thereby introducing a variable error in the direct current measurement, is offset with saturable reactor compensating circuit means which generate a signal equal and opposite to the magnetizing current of the reactor-rectifier to provide accurate readings of plus or minus .01% at full scale rating.

3,430,143
COMMUNICATIONS SYSTEM WHEREIN INFORMATION IS REPRESENTED BY THE PHASE DIFFERENCE BETWEEN ADJACENT TONES

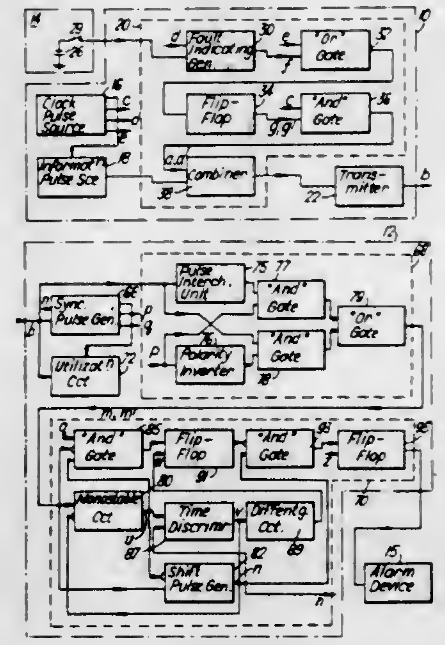
Watson F. Walker, Pittsford, and Thijs de Haas, Rochester, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,594
U.S. Cl. 325—30 **14 Claims**
Int. Cl. H03k *9/06;* **H04b** *7/00;* **H04l** *27/18*

A system for communicating digital information is described. Two bits of information are represented by the difference in phase between two adjacent tones in a group of tones. Since two bits offer four possible combinations, four phase differences in 90° increments are used. The phase differences are coded into four positions 45°, 135°, 225° and 315° corresponding to 00, 01, 11 and 10 respectively. The phase shifted signals are transmitted during a symbol interval and the signal is detected during the symbol interval synchronized with the symbol interval during which the data is transmitted. The detection takes place at the receiving point where a pair of correlators operates on each transmitted tone and the correlator outputs are compared with each other to derive outputs representing the phase difference between adjacent tones. These outputs are decoded into the digital information which is transmitted by the group of tones during the symbol interval.



3,430,144
FAULT ALARM SYSTEM FOR TWO-WAY PULSE COMMUNICATION SYSTEMS

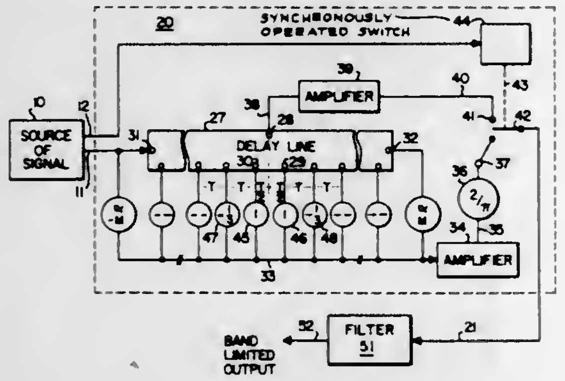
Ryuichi Murakami and Minoru Kishigami, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 21, 1965, Ser. No. 500,014
Claims priority, application Japan, Oct. 24, 1964, 39/60,379
U.S. Cl. 325—41 **7 Claims**
Int. Cl. H04b *7/00*



An economical fault detection system for a two-way pulse communication system in which frame synchronism is maintained between the transmitter side and the receiver side by a framing-pulse train composed of framing pulses whose states alternatingly vary between a first and a second pulse state at a predetermined time interval. The system produces an alarm in each terminal station when a fault has occurred in one of the transmission lines and will disrupt synchronism between the stations through the undamaged transmission line. The transmission line containing the fault is identified by the alarm signal.

3,430,145
SEPARATION OF HARMONIC BANDS OF A SIGNAL BY INSERTING AMPLITUDE RELATED PULSES BETWEEN SAMPLING PULSES

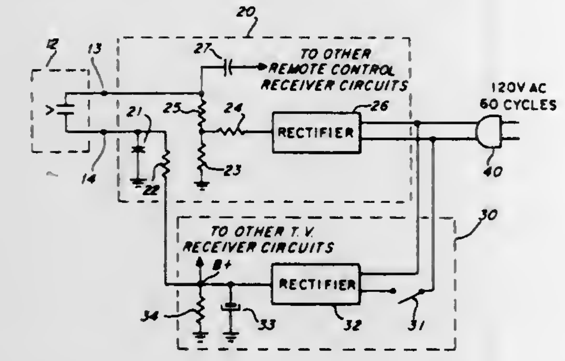
John B. Lord, Edmonds, Wash., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,618
U.S. Cl. 325—42 **3 Claims**
Int. Cl. H04b *1/66;* **H03k** *5/08*



Apparatus for inserting pulses between sampled data pulses to create separate aliases in the frequency spectrum of the data signal to simplify the filtering of the principal alias from the harmonic aliases and thus lower the band width necessary to transmit the sampled data signal.

3,430,146
REMOTE CONTROL MICROPHONE BIASING CIRCUIT

James G. S. Chua, Roselle, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,594
U.S. Cl. 325—392 **5 Claims**
Int. Cl. H04b *1/20*

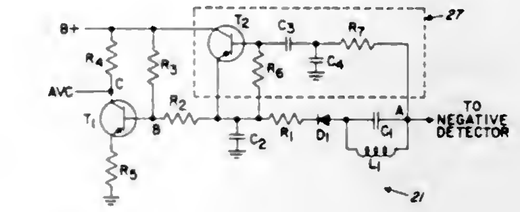

TO OTHER REMOTE CONTROL RECEIVER CIRCUITS
120V AC 60 CYCLES
RECTIFIER
TO OTHER T.V. RECEIVER CIRCUITS
RECTIFIER

A biasing circuit for a capacitor microphone in the receiver of a remote control television system which reverses the polarity of the D.C. biasing voltage on the capacitor microphone each time the receiver is turned on and off, thereby preventing permanent polarization and resultant decrease in sensitivity of the capacitor microphone.

3,430,147
SQUELCH TAIL PREVENTING CIRCUIT

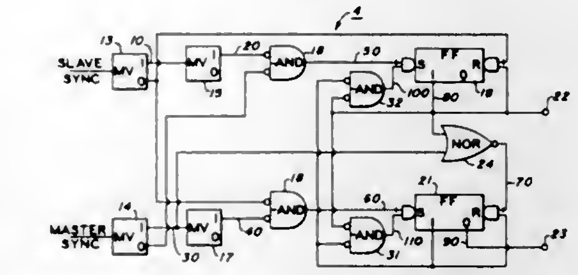
Darrell F. Hennessey and Howard B. Rooks, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 19, 1966, Ser. No. 521,744
U.S. Cl. 325—402 **4 Claims**
Int. Cl. H04b *1/10, 1/16*

A squelch tail preventing circuit for radio receivers with a loss of signal detecting, fast acting, and integrating circuit connected to an AVC circuit and giving rapid quench of AVC for maximum receiver gain to prevent squelch tail action in a squelch circuit equipped receiver.



3,430,148
PHASE COMPARATOR CIRCUIT FOR PROVIDING VARYING WIDTH SIGNAL WHICH IS A FUNCTION OF PHASE DIFFERENCE AND ANGLE OF TWO INPUT SIGNALS

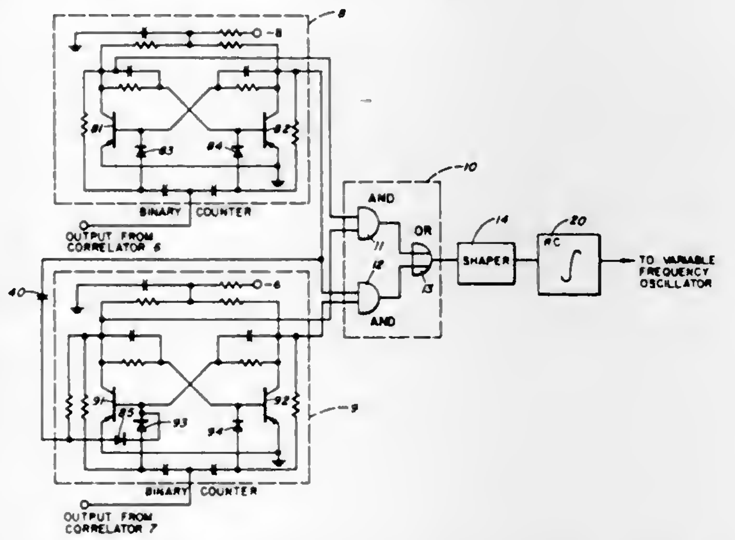
Eiji Miki, Webster, N.Y., assignor to Xerox Corporation. Rochester, N.Y., a corporation of New York
Filed Mar. 14, 1966, Ser. No. 533,903
U.S. Cl. 328—133 **8 Claims**
Int. Cl. H03k *1/16;* **H02p** *5/50*



A synchronizing system which generates a varying width signal as a function of phase difference and angle between two input signals including logic circuitry for resolving a 180 degree out-of-phase condition.

3,430,149
FREQUENCY CONTROL SYSTEM

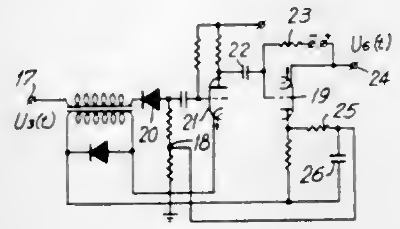
Kenneth G. Williams, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 22, 1965, Ser. No. 515,680
U.S. Cl. 328—134 **6 Claims**
Int. Cl. H03k *1/10, 3/26;* **H03b** *3/04*



A frequency control system with automatic slope control utilizes the binary outputs of two digital correlators to generate an analog voltage for operating a voltage-controlled variable frequency oscillator acting as a clock in a closed-loop servosystem. Coherent noise signals appearing at the two correlator inputs produce at the systems output a corrective voltage for the clock oscillator, while the incoherent noise signals existing at the systems input maintains an output memory voltage until a correction is needed. An automatic slope control feature of the system supplies a negative feedback in the control loop regardless of the phase relationship of the systems input signals.

3,430,150
PULSE WIDTH CONTROL SYSTEM WITH N-STABLE STATES OF DYNAMIC EQUILIBRIUM

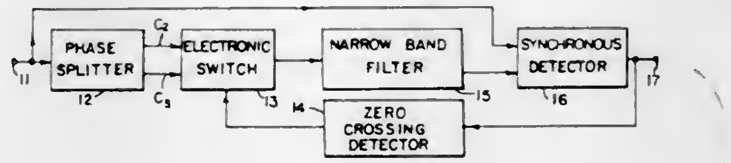
Vitaly Petrovich Sigorsky, Leonid Semenovich Sitnikov, Lev Lazarevich Utjakov, Anatoly Nickolaevich Boiko, Alexandr Artemjevich Molchanov, and Jury Semenovich Osjagin, Novosibirsk, U.S.S.R., assignors to Institute Matematiki Sibirskogo Otdelenia Akademii, Nauk, U.S.S.R.
Filed Aug. 19, 1964, Ser. No. 390,690
U.S. Cl. 328—205 **6 Claims**
Int. Cl. H03k *3/14, 3/26, 5/20*



A device having many stable states of dynamic equilibrium, which differ in the output pulse duration, in which the number of active and passive elements used does not depend on the number of stable states, in the form of a nonlinear four-pole network with a nonmonotonic amplitude characteristic, comprising a D.C. voltage-to-time parameter converter and a time parameter-to-D.C. voltage converter connected in series, with feedback.

3,430,151
AMPLITUDE MODULATION DETECTOR FOR SINGLE SIDEBAND OR SUPPRESSED CARRIER INPUT

Rosario S. Badessa, West Roxbury, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 7, 1966, Ser. No. 577,763
U.S. Cl. 329—50 **8 Claims**
Int. Cl. H03d *5/00;* **H03k** *9/06*

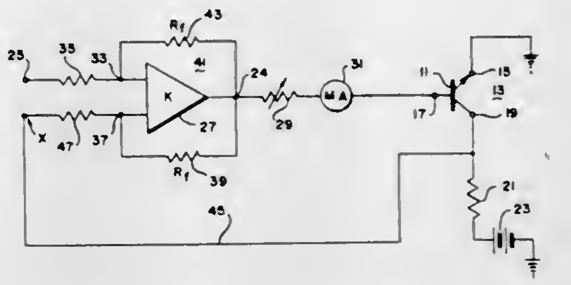


1. A demodulator circuit for any amplitude modulation system of electrical communication in which the electrical wave to be demodulated is formed by the amplitude modulation of a carrier frequency wave with a signal frequency wave comprising:

(a) a source of electrical amplitude modulation input waves,
(b) a pair of channels responsive to said input wave source to provide a pair of output waves differing in phase by 180 degrees,
(c) electronic switching means for selecting the channel output wave having a given phase of said pair of output waves,
(d) a narrow pass band filter having the center frequency of its pass band at the frequency of said carrier wave and responsive to said selected output wave to synthesize a local reference carrier wave,
(e) a synchronous detector responsive to said local reference carrier wave and said input wave to recover said modulating signal wave, and
(f) means for biasing said electronic switching means to apply said selected phase of input wave to said filter for the time interval during which said input wave possesses said given phase and upon phase reversal of said input wave to select the output of said second channel for application to said filter to maintain said local reference carrier wave in phase with the carrier frequency used in forming the input wave.

3,430,152
DUAL-FEEDBACK STABILIZED DIFFERENTIAL FOLLOWER AMPLIFIER

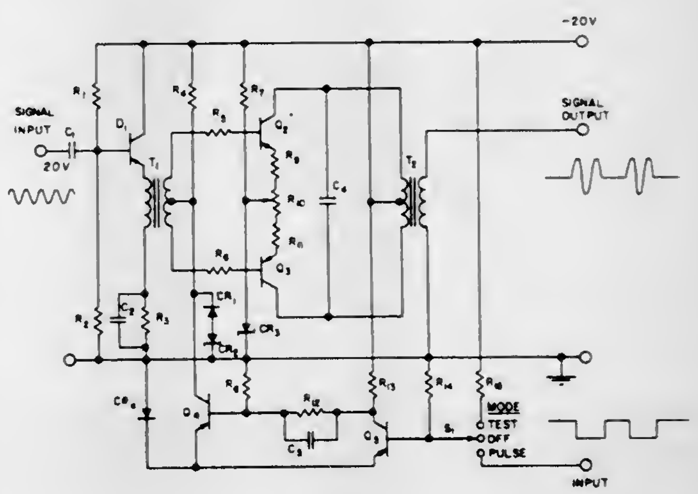
William J. Walsh, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 10, 1965, Ser. No. 462,934
U.S. Cl. 330—2 **8 Claims**
Int. Cl. H03f *1/34;* **G01r** *19/10*



A differential follower amplifier and a test circuit actuated thereby which is responsive to a single input for establishing a plurality of test conditions at the electrodes of a transistor under test. The differential follower amplifier is a type of operational amplifier which is used as part of the test circuit for determining the forward gain of a transistor in the grounded emitter configuration.

3,430,153
BALANCED AMPLIFIER BURST SIGNAL GATE

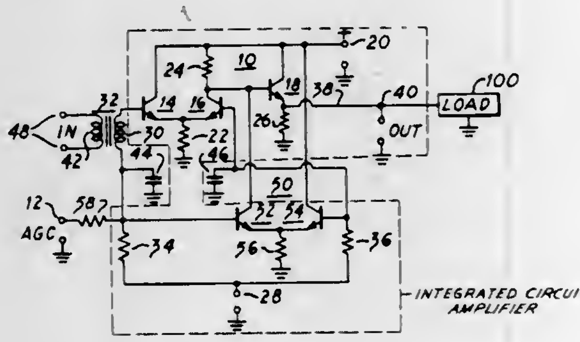
Thomas H. Bladen, Adelphi, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 26, 1965, Ser. No. 428,267
U.S. Cl. 330—15 **8 Claims**
Int. Cl. H03f *3/00, 3/26*



A balanced amplifier burst signal gate which comprises a push-pull transistorized class B amplifier stage having a pair of interconnected transistors. A monostable gating circuit which includes a pair of transistors provides a bias for the transistors in the push-pull stage. By applying a gating signal to one of the transistors in the gating circuit, the conductive states of the cascaded transistors therein can be changed and, accordingly, the push-pull stage can be switched from cut off to class B operation.

3,430,154
CIRCUIT FOR STABILIZING THE DC OUTPUT VOLTAGE OF A GAIN CONTROLLED AMPLIFIER STAGE IN A DIRECT COUPLED INTEGRATED CIRCUIT SIGNAL TRANSLATING SYSTEM

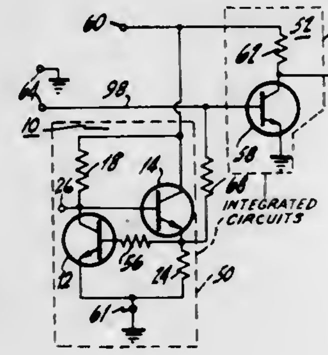
Leopold A. Harwood, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,226
U.S. Cl. 330—19 **9 Claims**
Int. Cl. H03f *3/42, 3/04, 3/14*



Stabilization of the DC output voltage of a gain controlled amplifier stage in a direct coupled integrated circuit signal translating system by means of a control circuit which supplies a direct current through the amplifier load resistance that varies, in response to the gain control signal, in the same amount as does the amplifier supplied current in response to that signal, but in an opposite direction.

3,430,155
INTEGRATED CIRCUIT BIASING ARRANGEMENT FOR SUPPLYING V_{be} BIAS VOLTAGES

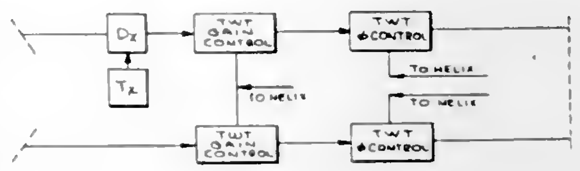
Leopold A. Harwood, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,180
U.S. Cl. 330—22 **11 Claims**
Int. Cl. H03f *3/04, 3/68;* **H03g** *3/30*



A low output impedance bias circuit particularly useful in maintaining operating point stability of integrated circuit amplifiers in the presence of temperature and power supply variations, including a first transistor connected in a common emitter configuration and a second transistor connected in a common collector configuration. The output electrode of each transistor is connected to the input electrode of the other, and a stabilized biasing voltage is developed between the emitter electrode of the first transistor and one of the base and emitter electrodes of the second transistor.

3,430,156
POLARIZATION DIVERSITY SYSTEM

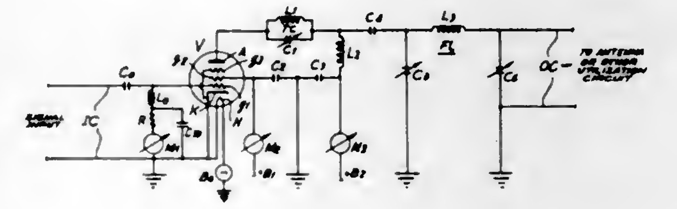
Martin Katzin, 154 Fleetwood Terrace, Silver Spring, Md. 20910
Original application July 10, 1962, Ser. No. 208,878, now Patent No. 3,234,547, dated Feb. 8, 1966. Divided and this application June 17, 1965, Ser. No. 482,647
U.S. Cl. 330—43 **1 Claim**
Int. Cl. H03f *3/58, 3/68;* **H01j** *25/34*



A radar system in which gain and phase shift is controlled by controlling helix voltages of four TWT's, two in cascade in one channel and two in cascade in another channel, parallel with the first. In each channel one TWT is arranged to control gain and other control phase, and control is inverse in the separate channels. Both phase and gain, or either phase or gain alone, can be controlled relative to one another in the channels.

3,430,157
HIGH EFFICIENCY CLASS C AMPLIFIER

John W. Wood, 2433 University Drive, Valdosta, Ga. 31601
Filed Nov. 10, 1966, Ser. No. 593,417
U.S. Cl. 330—192 **3 Claims**
Int. Cl. H03f *1/02*

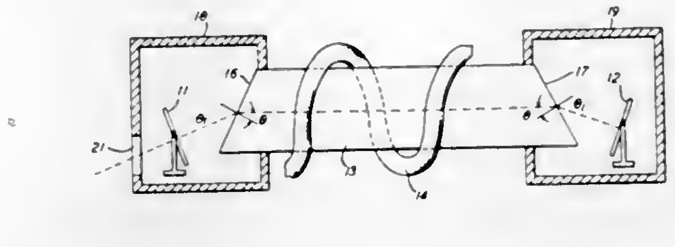


A radio frequency amplifier circuit is described wherein a pentode tube is operated in Class C and through a parallel resonance circuit is coupled to a tank circuit and a frequency-selective network. The parallel resonance network is tuned to a preselected frequency of substantially 1.5 times the carrier frequency of the input signal applied to the pentode tube.

3,430,158
OPTICAL MASER HAVING NON-PARALLEL BREWSTER SURFACES

Arthur G. Fox, Rumson, and Lynden U. Kibler, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 137,260, Sept. 11, 1961. This application Aug. 21, 1963, Ser. No. 304,300
U.S. Cl. 331—94.5 **3 Claims**
Int. Cl. H01s *3/06;* **G02b** *5/30, 27/28*

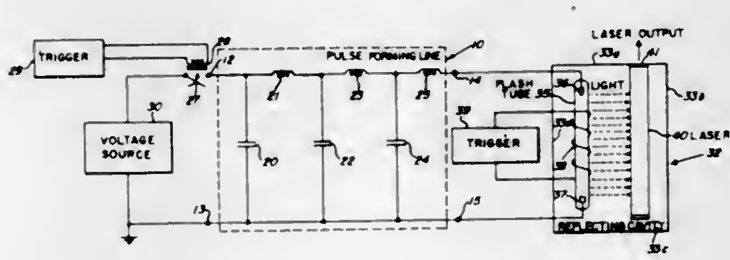
1. A negative temperature device for use in an optical maser comprising a sample of an active material, said sample having first and second transparent non-parallel surfaces defining an elongated light beam path there-



through, said surfaces being inclined substantially at Brewster's angle to said path.

3,430,159
FLASHTUBE TRIGGERING CIRCUITS

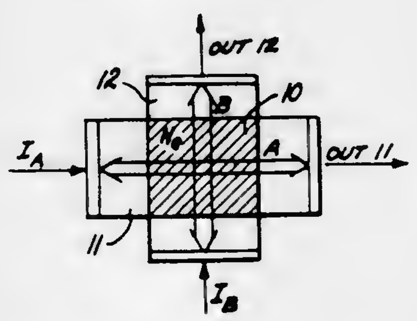
Fred W. Roeber, Southboro, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Nov. 14, 1963, Ser. No. 323,666
U.S. Cl. 331—94.5 **8 Claims**
Int. Cl. H01s *3/09;* **H05b** *41/14*



A flashtube triggering circuit for providing light energy comprising a voltage source, a pulse forming line comprising a plurality of L-C sections coupled to the voltage source, and one or more flashtubes coupled to the pulse forming line.

3,430,160
LASER DIGITAL DEVICE

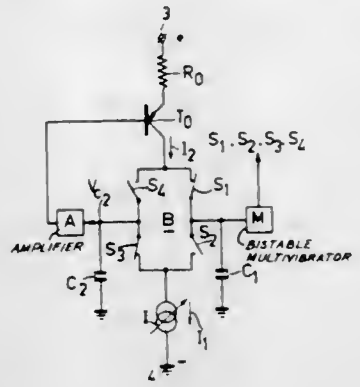
Walter F. Kosonocky, Iselin, N.J., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 11, 1965, Ser. No. 463,411
U.S. Cl. 331—94.5 **4 Claims**
Int. Cl. H01s *3/11*



A laser digital device in which a laser material is shared by two separate resonant structures wherein one input signal will excite resonant modes only in one resonant structure and another input signal will only excite resonant modes in the other resonant structure. With one of the signals being a clock pulse, the device can act either as an OR circuit or as a NOR circuit.

3,430,161
DELTA VOLTAGE GENERATORS

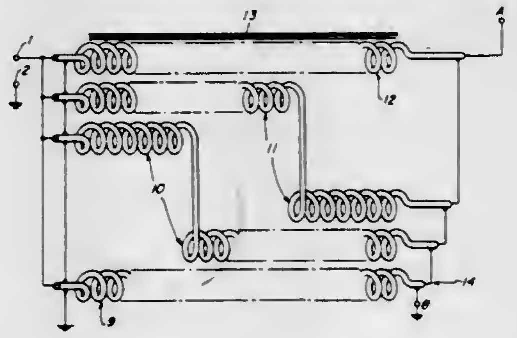
Gerrit Klein, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1967, Ser. No. 623,085
Claims priority, application Netherlands, Mar. 29, 1966, 6604086
U.S. Cl. 331—111 **8 Claims**
Int. Cl. H03k *3/286*



A triangle voltage generator circuit includes first and second capacitors, first, second, third and fourth switches interconnecting said first and second capacitors with an electric supply source, a bistable multivibrator that controls the four switches, and a control device. In the first state of the multivibrator, the first switch is closed to charge the first capacitor and the third switch is also closed to discharge the second capacitor. The second and fourth switches are then open. In the second state of the multivibrator, the first and third switches are open and the second and fourth switches are closed thereby discharging the first capacitor and charging the second capacitor, respectively. The voltage across the second capacitor is used to control the charge current of the first capacitor via said control device.

3,430,162
BROAD BAND HIGH POWER PULSE TRANSFORMER

Harold W. Lord, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,172
U.S. Cl. 333—33 **3 Claims**
Int. Cl. H03h *7/38*

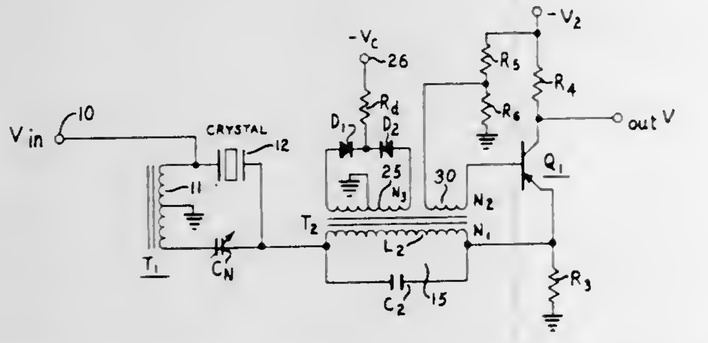


A high power pulse transformer with improved low frequency response is formed by connecting the input ends of a plurality of equal length transmission lines in parallel across a signal source with the output ends of the transmission lines being connected in series to provide a voltage step-up. The sheath of one transmission line is grounded at both the input and the output terminals of the transformer and serves as the principal source of excitation for a single ferromagnetic core upon which core the remaining transmission lines are wound in a number of turns to provide a reactance proportional to the square of the voltage present at the end of the line by virtue of the series connection. For high current pulse transformations, the transmission lines preferably are formed of three equally spaced flat conductors coiled in a pie configuration with one turn per layer arranged to form a spiral.

3,430,163
BANDPASS FILTER HAVING VARIABLE BANDWIDTH BUT CONSTANT MIDBAND RESPONSE AND VARIABLE LOADING CIRCUIT FOR THE SAME

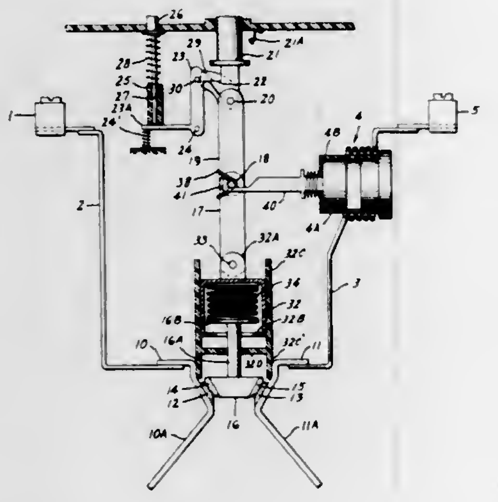
Joel E. Schindall, Mount Vernon, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 17, 1963, Ser. No. 309,528
U.S. Cl. 333—72 **22 Claims**
Int. Cl. H01p *7/00;* **H03h** *7/12*

A bandpass filter is provided with a control circuit by which the filter bandwidth is electronically varied while maintaining a constant midband response. For a crystal filter, the load in series with the filter is a parallel RLC network tuned to the crystal frequency, and the control circuit is inductively coupled to the load to vary the effective load resistance at resonance, and hence filter selectivity. Load voltage and current vary in opposite directions and are sensed, the sensed current converted to a voltage and combined with the load voltage as an output of the circuit, in accordance with a function of the effective resistance of the crystal in series resonant mode, to provide the desired substantially constant midband gain as filter selectivity is varied.



3,430,164
CIRCUIT BREAKER MECHANISM

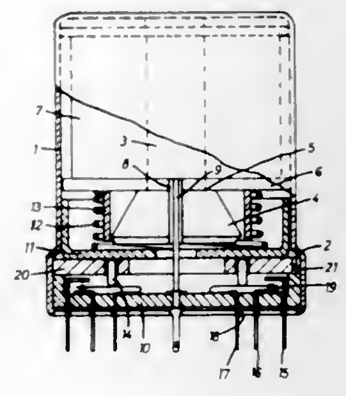
Ralph L. Hurtle, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed Sept. 15, 1967, Ser. No. 668,088
U.S. Cl. 335—22 **5 Claims**
Int. Cl. H01h *73/36, 77/06*



An electric circuit breaker operating mechanism including a single operating spring which, in the closed condition of the circuit breaker acts between a support member and a movable contact member to urge the movable contact to closed circuit position; upon the occurrence of overcurrent, the support member for the spring is released, permitting the spring to accelerate the support member in a direction away from the movable contact member; the inertia thus built up in the support member and associated parts is utilized by means of a lost-motion connection to the movable contact member, to cause opening movement of the movable contact.

3,430,165
ELECTROMAGNETIC CYLINDRICAL MINIATURE RELAY

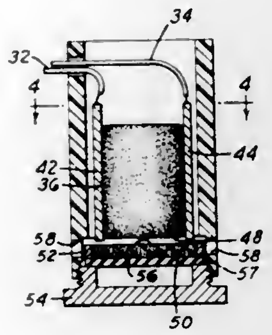
Horst Hermann Mussbach, Stuttgart-Zuffenhausen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,205
Claims priority, application Germany, Sept. 18, 1965, St 24,402
U.S. Cl. 335—131 **7 Claims**
Int. Cl. H01h *67/02*



A miniature cylindrical sealed relay is provided. The relay employs a pot-shaped armature which responds to changes in electromagnetic fields to open and close a number of contacts.

3,430,166
TEMPERATURE RESPONSIVE MAGNETICALLY ACTUATED SWITCH

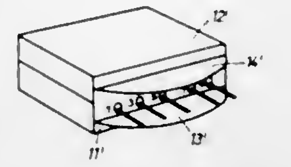
Charles C. Gambill, Tipp City, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,396
U.S. Cl. 335—146
Int. Cl. H01h *51/00, 61/00*



In preferred form, a temperature responsive switch in which a conductive member having a magnetic inversion point at a predetermined temperature is a switching and conducting element. When the environmental temperature is great enough to impart magnetic qualities to the conductive member, a resilient permanent magnet enclosed in a housing attracts the conductive element against conductor members which are secured in the housing by the expansive spring bias of the resilient permanent magnet. When the environmental temperature is not great enough to impart magnetic properties to the conductive member, no magnetically actuated switching movement occurs and the conductive member remains in a normal position out of contact with the conductor members.

3,430,167
MAGNETIC COUPLING FOR MULTIPLE CONTACT RELAYS

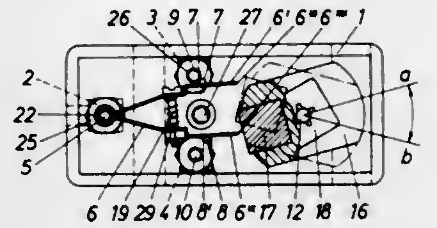
Alfred Gunst, Stuttgart-Zuffenhausen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 612,008
Claims priority, application Germany, Feb. 16, 1966, St 24,993
U.S. Cl. 335—152 **3 Claims**
Int. Cl. H01h *1/66, 51/00*



Improved magnetic circuits or returns are provided for multiple contact relays. The circuits in preferred embodiments are formed by metal plates having cross-sectional areas which are shaped to present different magnetic reluctances in different parts. The different reluctances adjust the magnetic coupling to a different value for each of the individual contacts. Relays constructed in accordance with the principles of the invention have reduced switching speeds and at the time require less power for actuation.

3,430,168
ELECTRICAL QUICK-BREAK SWITCH

Hermann Ehrenberg, Ahornstrasse 9, Langen, near Frankfurt am Main, Germany
Filed Aug. 25, 1966, Ser. No. 575,018
Claims priority, application Germany, Sept. 14, 1965, E 30,089
U.S. Cl. 335—205 **5 Claims**
Int. Cl. H01h *1/12, 9/54*

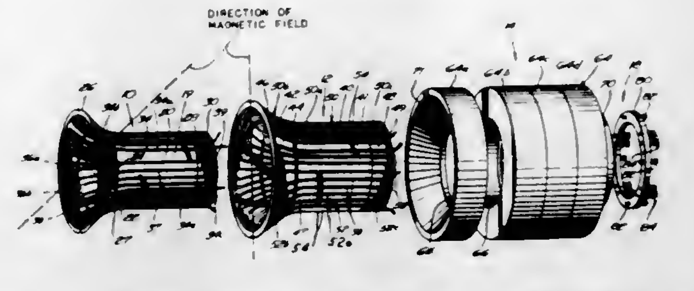


An electric quick-break switch with a magnetic contact-making device, in which a switch magnet pivotable about an axle effects a contact member pivotable in the same plane as that of the switch magnet and disposed at the end face of the magnet.

3,430,169
DEFLECTION YOKE

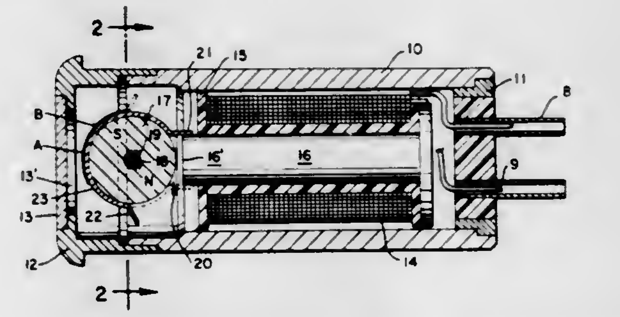
William D. Gabor, Amherst, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Continuation-in-part of application Ser. No. 503,070, Oct. 23, 1965. This application Mar. 5, 1968, Ser. No. 711,830
U.S. Cl. 335—213 **30 Claims**
Int. Cl. H01f *1/00, 5/00;* **H01j** *29/76*

A magnetic deflection system for a cathode ray tube employs opposed pairs of single layer spiral windings whose forward ends flare to develop deflection fields which remain perpendicular to the electron beam as it is deflected in the tube. A conforming sleeve of high magnetic permeability material surrounds the windings to provide a high reluctance path for leakage fields in the system, but a low reluctance path for the deflection field developed thereby. The forward winding ends are distributed to yield a pincushion correction and the rear winding ends are arranged to improve deflection linearity.



3,430,170
MAGNETIC FLAG

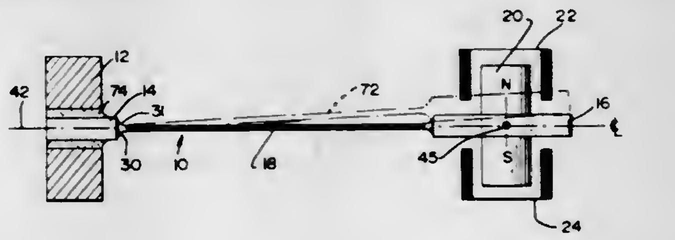
William J. Shatas, Middlebury, and Stanley Smith, Roxbury, Conn., assignors to Middlebury Manufacturing Co., Inc., Waterbury, Conn., a corporation of Connecticut
Filed Feb. 24, 1967, Ser. No. 618,534
U.S. Cl. 335—234 **7 Claims**
Int. Cl. H01f *7/00, 7/02*



A bistable fault indicator including a permanently magnetized rotor which is self-biasing into a first position; a reset-test coil of predetermined strength and polarity, when selectively energized, to displace the rotor into a second position; a monitoring coil, adapted to be continuously energized and when energized having a predetermined strength and polarity sufficient to maintain the rotor, previously displaced, in the second position, but having insufficient strength to overcome the permanent magnetic bias and to displace said rotor from the first to the second position; and a non-magnetic, index-bearing clip associated with the rotor for calibrating and limiting the travel of the same.

3,430,171
ELECTROMECHANICAL FREQUENCY RESPONSIVE TRANSLATING DEVICE

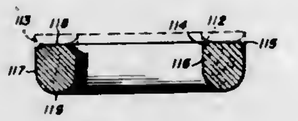
Charles W. Mooney, Wheeling, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 30, 1967, Ser. No. 612,599
U.S. Cl. 335—252 **7 Claims**
Int. Cl. H01f *7/10*



This device uses a cantilever-type vibrating member having an elliptical cross-section with the major axis of the ellipse lying in the plane of the neutral axis of the reed so that stress concentrations are reduced at the edges thereof. Radii provide a transition from the reed body to an enlarged end portion of the reed which is secured in a reed block. The radii act as stress reliefs when the reed is vibrated.

3,430,172
MAGNETIC CORE HAVING TAPERED CONFIGURATION

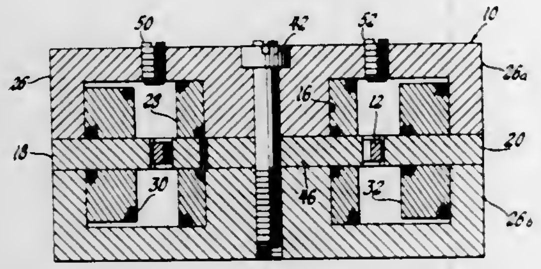
Harry Eyberger, Butler, Pa., assignor to Magnetics, Inc., a corporation of Pennsylvania
Continuation of application Ser. No. 521,478, Dec. 8, 1965, which is a division of application Ser. No. 226,761, Aug. 23, 1962, now Patent No. 3,244,782, dated Apr. 5, 1966, which in turn is a division of application Ser. No. 659,925, May 17, 1957, now Patent No. 3,063,098, dated Nov. 11, 1962, reissued as Re. 25,441, dated Sept. 10, 1963. This application Apr. 29, 1968, Ser. No. 725,219
U.S. Cl. 335—297 **6 Claims**
Int. Cl. H01f *3/00*



A toroidal-shaped magnetic core formed of compressed magnetic particles, has a symmetrical configuration about its central axis, and oppositely inclined inner and outer sidewalls with respect to said axis so that a section of said core formed by a plane which includes said axis has a tapered configuration.

3,430,173
TWO-AXIS ANGULAR DISPLACEMENT DETECTOR

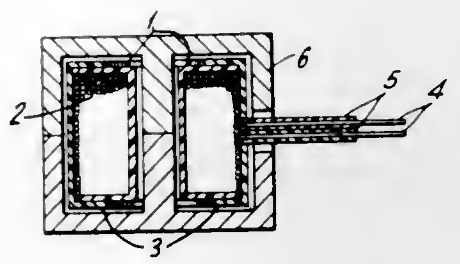
Vincent A. Orlando, Wakefield, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,224
U.S. Cl. 336—79 **4 Claims**
Int. Cl. H01f *21/04, 21/06*



1. A two-axis angular displacement detector comprising a fixed member and a movable member, the fixed member including a central core of magnetic material having an axis of symmetry, first and second pole pieces extending radially toward, but spaced from, the core in a plane substantially normal to the axis, the pole pieces being angularly spaced apart to define respective first and second output axes, which intersect on said axis and magnetic means interconnecting the core and pole pieces, an excitation winding disposed about the core and energizable to produce an alternating flux pattern in the core along said axis, first and second output windings disposed about the first and second pole pieces respectively, the movable member comprising a ring of conductive material disposed about the core, spaced from and intermediate the core and pole pieces and adapted for rotation about the output axes, said ring being responsive to current induced therein to produce a toroidal flux pattern which, when the ring is coplanar with the pole pieces induces no output in the output windings, but when noncoplanar induces an output in each of said windings related to the angle of rotation about the other axis.

3,430,174
HIGH DIELECTRIC STRENGTH INDUCTANCE COIL USING POT TYPE MAGNETIC CORE

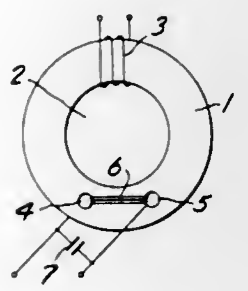
Masanori Kogo and Kazuhiro Ishizawa, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed July 3, 1967, Ser. No. 650,674
Claims priority, application Japan, July 9, 1966, 41/44,424
U.S. Cl. 336—83 **4 Claims**
Int. Cl. H01f *15/02*



An inductance coil utilizing a port type magnetic core in which the coil windings on a bobbin are partially or totally incased in a mould of insulating thermoplastic resin prior to assembly. The leads to the coil are insulated by placing them in rods of insulating material embedded in the coil mould, or by an extension of the mould extending through the pot type core.

3,430,175
FERROMAGNETIC TUNER

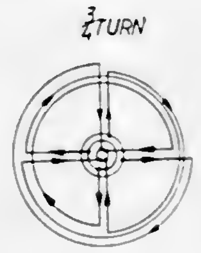
Nozomu Matsuoka, Yao-shi, Osaka-fu, and Mitsuo Sugimoto, Tokyo, Japan
Filed Aug. 4, 1965, Ser. No. 477,217
U.S. Cl. 336—155 **7 Claims**
Int. Cl. H01f *21/08, 27/28, 27/24*



A ferromagnetic tuner which has a ferrite core with an exciting coil and resonant coil thereon. The core has a ratio of μ_m/μ_0 of more than 3 and a coercive force of less than 1 oersted. The ratio of the cross-section of said core where the exciting coil is wound to the cross-section where the resonant coil is wound is more than 2/1. The resonance frequency of the tuner is changed by varying the current in the exciting coil to change the effective permeability of the core. The variation of current is restricted to the range of permeability wherein the μ-H characteristic curve of the core exhibits decreasing permeability with increasing current through the exciting coil.

3,430,176
ELECTRICAL WINDINGS

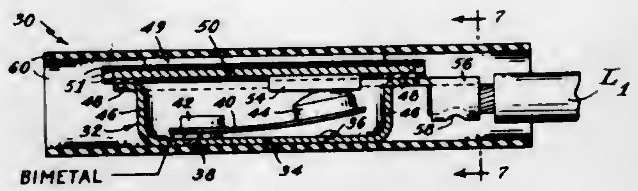
William Frank Glover, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,237
Claims priority, application Great Britain, Dec. 23, 1965, 54,589/65
U.S. Cl. 336—172 **5 Claims**
Int. Cl. H01f *17/04, 27/28*



1. Electrical windings comprising means for linking substantially the whole of a given magnetic flux distributed over a given area with a number of turns n equal to a fraction M/N where M and N are integers and M is not an integral multiple of N, said means including N winding sections connected in parallel with each other, each of said winding sections linking with a fraction M/N of the total flux, each part of the periphery of the winding having M conductors, and all conductors carrying current flowing in the same direction.

3,430,177
MINIATURE THERMOSTATIC SWITCH

Richard T. Audette, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 613,705
U.S. Cl. 337—365 **5 Claims**
Int. Cl. H01h *37/54*

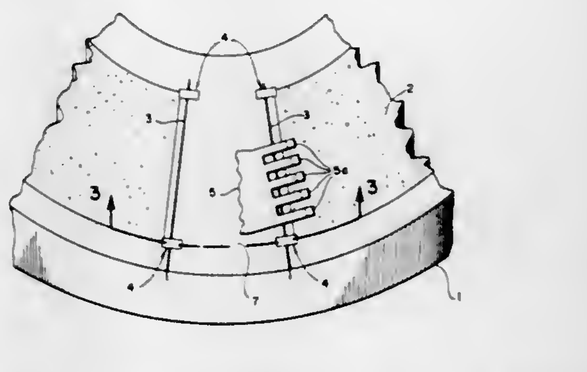


Miniature thermostatic switches, particularly snap acting which employ an electrically conductive can electrically isolated from and sealed to an electrically conductive lid by means of an electrically insulating adhesive gasket. A thermostatic element and movable contact are mounted on either the can or the lid while a stationary contact is mounted on the other of the two parts. A stop may be provided to limit travel of the thermostatic element and in one embodiment flanges on the housing are bent over to clampingly engage the cover member to facilitate bonding of the lid to the can. A plurality of weld projections are provided in the lid to permit different orientation of the lid and terminal attached thereto relative to the housing. An electrically insulating sleeve is provided to electrically isolate the switch from its environs.

3,430,178
END TERMINATIONS FOR VARIABLE RESISTANCE ELEMENTS

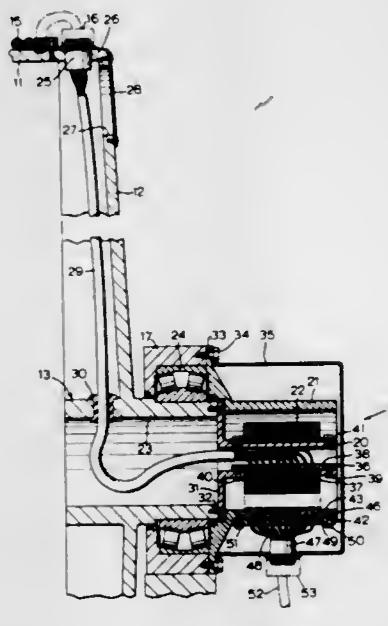
Alan J. Wright, Orange, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Nov. 3, 1966, Ser. No. 591,732
U.S. Cl. 338—162 **3 Claims**
Int. C. H01c *5/02, 1/12, 1/14*

A deposited layer type resistance element on a nonconductive substrate adapted to be traversed by a current carrying wiper and including at least one end termination for conducting current to the resistance layer which is so constructed and arranged as to cause arcing between the wiper and the termination to occur only at a distance away from the resistance layer to prevent deterioration of the layer.



3,430,179
CABLE REEL

Henry Norihiko Shoji, Rexdale, Ontario, Canada, assignor to Orenda Limited, Toronto, Ontario, Canada, a Canadian company
Filed July 21, 1966, Ser. No. 567,006
U.S. Cl. 339—5 **4 Claims**
Int. Cl. H01r *39/12*

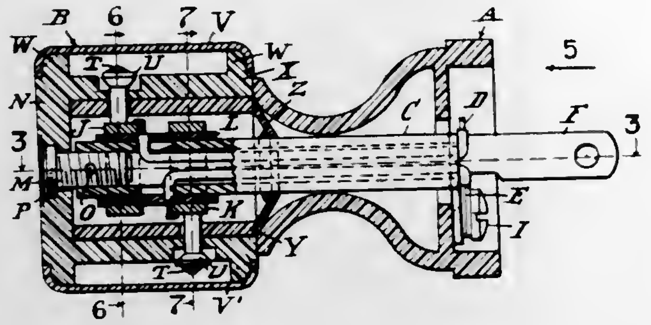


An electrical connector for connecting a multiconductor cable on a reel with an exterior multiconductor cable comprises a rotatable inner sleeve and a stationary outer sleeve, and a one-piece, flat flexible multiconductor element wound around the inner sleeve. The inner end of the multiconductor element terminates at a multiple terminal electrical connector secured to the inner sleeve, and the outer end of the cable terminates at a multiple terminal electrical connector secured to the outer sleeve. The inner sleeve is rotatable with the reel, and the multiconductor element unwinds from the inner sleeve as the reel revolves and the multiconductor cable on the reel is payed out.

3,430,180
ELECTRICAL SWIVEL CONNECTOR

Frank F. Brown, Bellflower, Calif.
(Rte. 1, Box 350, Lake Port, Calif. 95453)
Filed May 18, 1967, Ser. No. 639,457
U.S. Cl. 339—8 **5 Claims**
Int. Cl. H01r *35/00*

The device is an improvement in swiveled electrical connectors for detachably attaching a pair of conductors to an electrical wall terminal to permit rotation of the pair of conductors relative to the terminal; the invention residing in the swivel connection between a pair of connector elements and in the mode of directing electric current through such connection by means of a pair of wiper contacts electrically connected to the contacts of one of said elements and cylindrical contact associated with said wipers connected to the contacts of the other element.



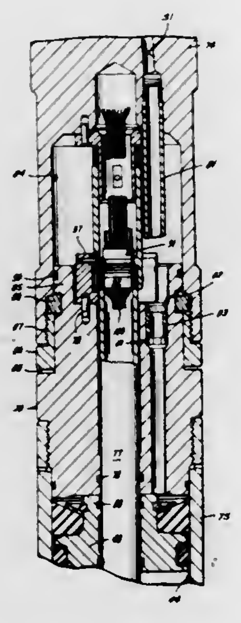
3,430,181
ELECTRICAL AND FLUID LINE COUPLING APPARATUS FOR CONNECTING WELL TOOL SECTIONS

Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 3, 1966, Ser. No. 583,778

U.S. Cl. 339—16 **21 Claims**

Int. Cl. H01r *3/04, 13/20;* **E21b** *43/00*



This invention disclosed herein is directed to new and improved coupling apparatus for facilitating the quick and foolproof connection and disconnection of electrical and fluid lines intercoupling multi-sectional well tools.

3,430,182
ELECTRICAL FEED-THROUGH CONNECTION FOR PRINTED CIRCUIT BOARDS AND PRINTED CABLE

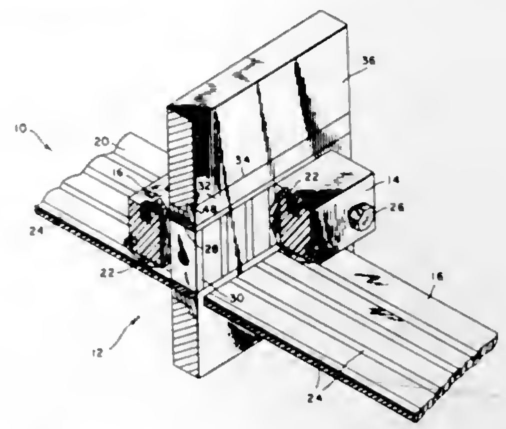
James F. Blanche, Madison, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 27, 1967, Ser. No. 635,325

U.S. Cl. 339—17 **10 Claims**

Int. Cl. H05k *1/12;* **H02b** *1/04;* **H01r** *33/18*

An electrical feed-through connection for an equipment container of the type which may be pressurized or evacuated. The feed-through has a plurality of conducting elements which are mounted flush in insulating material surrounded by a frame. The frame is fastened into the wall of the equipment container. Additional strength is given to the structure by shaping the conducting elements and the inside of the frame in irregular configurations so that the insulating material will form a secure bond at the time of molding. External pressure connectors are fastened to the feed-through by bolts or studs which fit in the tapped holes. The pressure connectors enable printed circuit boards or printed cables to be easily connected to the feed-through.



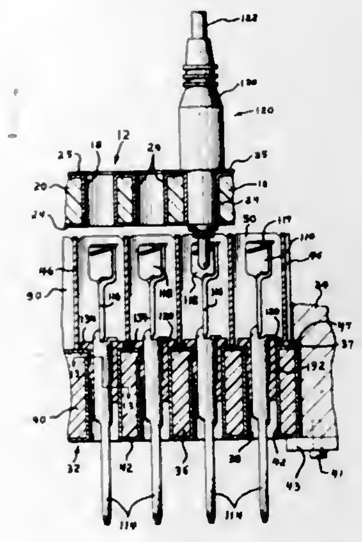
3,430,183
PLUGBOARD SYSTEM

William Coover Feeser, Camp Hill, Cornelius William Bosland and Joseph Larue Lockard, Harrisburg, and Dale Brice Mummey, Camp Hill., Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 30, 1966, Ser. No. 598,014

U.S. Cl. 339—18 **12 Claims**

Int. Cl. H01r *29/00, 3/06, 13/46*



A plugboard system comprising opposed contact board means, one of which has receiver means for receiving and securing the other board means, moving it toward and then along the plane of the one board means for contact engagement. The board means are of apertured insulation, metal-coated to form shielding and grounding. One board means has a shielding grid which isolates the mated contact ends from each other and engages the coatings. Patchcord connectors form the contacts on one board means, and insulation-sleeve-mounted spring elements form the contacts in the other board means.

3,430,184
QUICK DISCONNECT ELECTRICAL PLUG

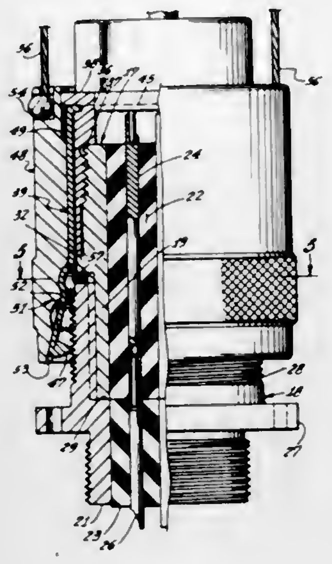
Jerry E. Acord, Artesia, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Feb. 23, 1965, Ser. No. 434,188

U.S. Cl. 339—45 **1 Claim**

Int. Cl. H01r *13/62, 13/54*

An electrical connector including first and second components adapted to establish a plurality of individual electric circuits between an aircraft and bomb or similar device and also provides means whereby the electrical circuits are simultaneously discontinued (broken) at such time as the first and second components are acted upon by predetermined tensile forces.



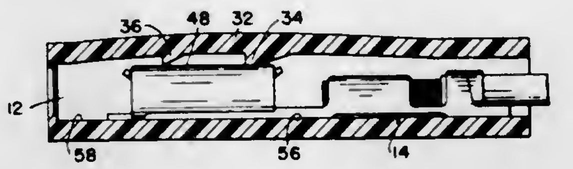
3,430,185
CONNECTOR BLOCK

Fred C. Sitzler, Mechanicsburg, Jerry A. Kendall, Etters, and Quentin Berg, New Cumberland, Pa., assignors to Berg Electronics, Inc., a corporation of Pennsylvania

Filed Oct. 11, 1967, Ser. No. 674,464

U.S. Cl. 339—59 **16 Claims**

Int. Cl. H01r *11/02*



A connector block for receiving and removably holding an electric terminal in a cavity is provided with a cam and a latch longitudinally spaced along one side of the cavity so that during insertion of the terminal into the cavity the cam engages the terminal and holds the latch away from the terminal to prevent wearing away of the latch by repeated insertion of the terminal into the cavity. When the terminal is fully inserted, the latch falls in place to secure the terminal in the cavity. The cam and latch are located on a flexible strip formed in the side of the cavity with both ends of the strip secured to the block to facilitate movement of the cam and the latch away from the terminal by flexing of the strip.

3,430,186
CONNECTOR ASSEMBLY

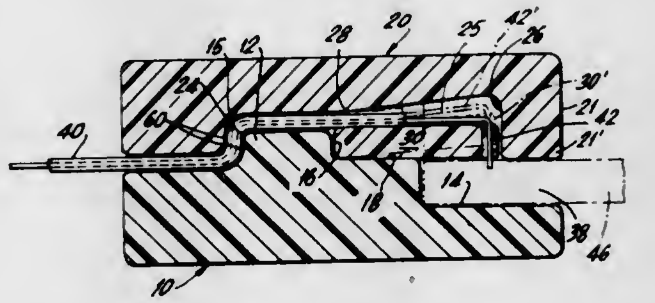
Philip J. Herb, North Branch Station, N.J., and Theodore J. Ecker, Chalfont, Pa., assignors to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey

Filed Sept. 7, 1967, Ser. No. 666,054

U.S. Cl. 339—74 **6 Claims**

Int. Cl. H01r *13/46;* **H05k** *1/00*

The invention relates to a connector assembly having particular application in cryogenic memory systems for connecting the individual conductors of a multi-conductor flat cable to the conductors on a printed circuit board. Basically, the connector is comprised of a base member, a cover plate, and a lifter bar which fits in an internal cavity in the connector that is formed when the cover plate and the base plate are assembled. More particularly, the cover plate is formed with a longitudinal recess while the base member is formed with a longitudinal relief to receive a memory board and with a longitudinal rib that fits in a portion of the longitudinal recess of the cover member. The portion of the recess which is not occupied by the rib is designed to accommodate the lifter bar for tilting movement. The lifter bar is provided with slots that extend along one longitudinal edge and serve to separate and appropriately orient each of the individual conductors of the multi-conductor flat cable. To assemble the connector, the lifter bar is placed on the base member adjacent to the rib in such a manner that the slots for the individual conductors overlie the relief in the base member provided for the memory board. The multiple conductor cable is then placed on the connector assembly base member with each connector fitting through one of the lifting bar slots and depending downwardly. The cover plate is then secured to the base member by appropriate means and thereby exerts a compressive force on the flat conductor cable sufficient to deform the cable around the rib in the base member to effect strain relief at that point. The lifter bar is then tilted in a counterclockwise direction to raise the conductors from the relief in the base member that cooperates with the cover member to form a slot in the assembly that the printed circuit memory board is designed to occupy. The printed circuit memory board is then inserted into the slot and the lifter bar is subsequently tilted in a clockwise direction to allow the depending individual conductors to positively contact the conductors on the printed circuit memory board.



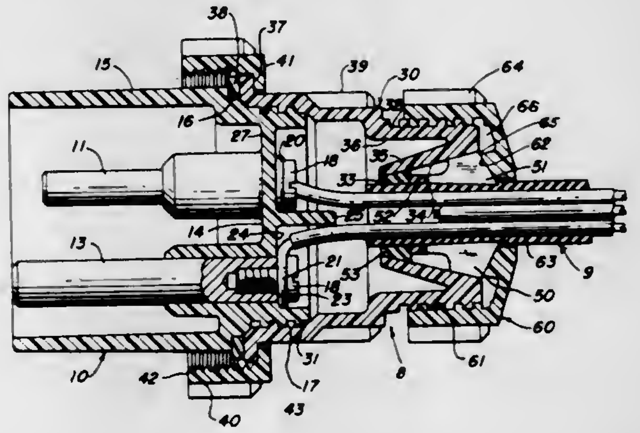
3,430,187
MARINE PLUG

Heiko T. de Man, 10 Sullivan Drive, Moraga, Calif. 94559; George G. Roberts, 447 Eleanor Drive, Woodside, Calif. 94062; and Henry Nakagawa, 358 Clifton Ave., San Carlos, Calif. 94070

Continuation-in-part of application Ser. No. 578,225, Sept. 9, 1966. This application Mar. 11, 1968, Ser. No. 712,119

U.S. Cl. 339—103 **12 Claims**

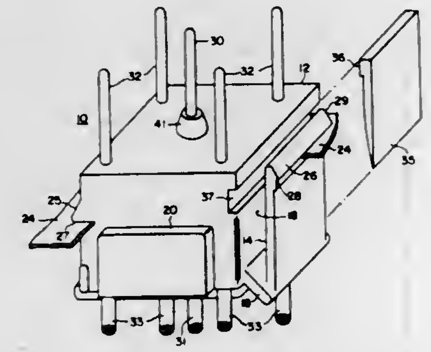
Int. Cl. H01r *13/58;* **F16g** *11/02*



A marine plug for use with an insulated cord and for engagement with a receptacle. A male member has metallic prongs embedded in a generally cylindrical plastic member having an annular shoulder between a depending cylindrical skirt and an upper extending threaded portion, with wire attachment means for said prongs. An intermediate plastic tubular member has a lower interiorly threaded portion for engagement with the threaded portion of the male member and an upper exteriorly threaded portion having an interior annular conical seat. A cord-grasping sleeve has an upper clinching portion and lower portion slightly larger than the size of the cord; the upper portion is molded to provide a short cylindrical bore much smaller in diameter than the core and joined to its upper end and to said lower portion by frusto-conical portions. The upper portion is divided by notches and has outer conical surfaces, one seated in said conical seat and having the same slope as it, the other an upper conical face. A resilient O-ring may be wedged between the sleeve and the intermediate member. A pressure cap is threaded on the intermediate member and has a conical surface having the same slope as it and pressing on the conical face, so that when the pressure cap is threaded tightly, it and the conical seat force the upper portion of the sleeve back into its as-molded shape biting into the cord and in very tight squeezing engagement with said cord, the O-ring being then forced into sealing engagement with the cord.

3,430,188
ELECTRICAL CONNECTOR WITH A LOCKING WEDGE

Robert D. Leach, West Lafayette, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 27, 1967, Ser. No. 656,486
U.S. Cl. 339—128 **4 Claims**
Int. Cl. H02b *1/02;* **G12b** *7/00*

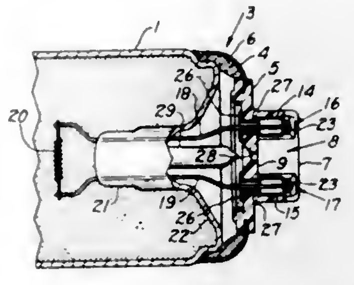


An electrical connector for fastening in a mounting opening provided in a supporting structure, the connector comprising a main body portion having an integral, flexible arm portion provided on at least one side thereof and extending in a direction substantially parallel to the plane of the side. The connector further includes a wedge means for locking the main body portion in place in the mounting opening. The wedge is dimensioned to seat in the space formed by the side of the main body and flexible arm portions and may be of a contrasting color with the main body portion of the connector for identifying the connector's position in a mating receptacle.

3,430,189
RECESSED DOUBLE CONTACT PIN BASE

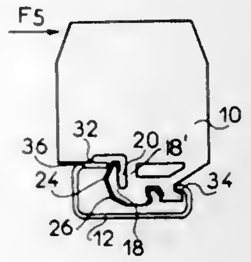
William B. Landgraf, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 15, 1967, Ser. No. 638,398
U.S. Cl. 339—145 **7 Claims**
Int. Cl. H01r *33/74, 9/08, 5/04*

An electric lamp base has a disk-shaped insulating body provided with a hollow embossment and a pair of spaced apart, inlead wire accommodating, hollow contact pins staked to and recessed within the embossed portion of the insulating body. Each pin has at its outer end an eyelet for connection to an inlead wire threaded through the pin, a rectangular portion in cross section extending longitudinally from said eyelet and, prior to being staked on the insulating body, a deformable tubular portion extending longitudinally from the rectangular portion and terminating in an open dome-shaped end. The rectangular portion of each pin is supported on three sides by the embossment, the fourth side being exposed within embossment for engagement with a lamp holder contact.



3,430,190
TERMINAL BLOCK MOUNTING

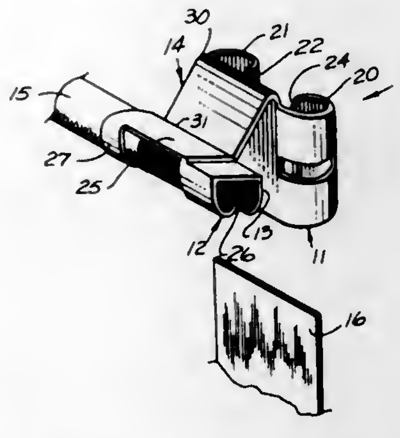
Marcel Verneau, Lyon, France, assignor to Compagnie Generale d'Entreprises Electriques, Levallois-Perret, Hauts-de-Seine, France
Filed Oct. 11, 1965, Ser. No. 494,727
Claims priority, application France, Oct. 15, 1964, 991,482
U.S. Cl. 339—198 **6 Claims**
Int. Cl. H01r *9/16*



Terminal block adapted for mounting in a mounting strip or panel comprising a plastic body having at its base two offstanding lateral projections, one of which is in the form of an upwardly directed flexible arm having a convex outside face.

3,430,191
CONNECTOR CLIP

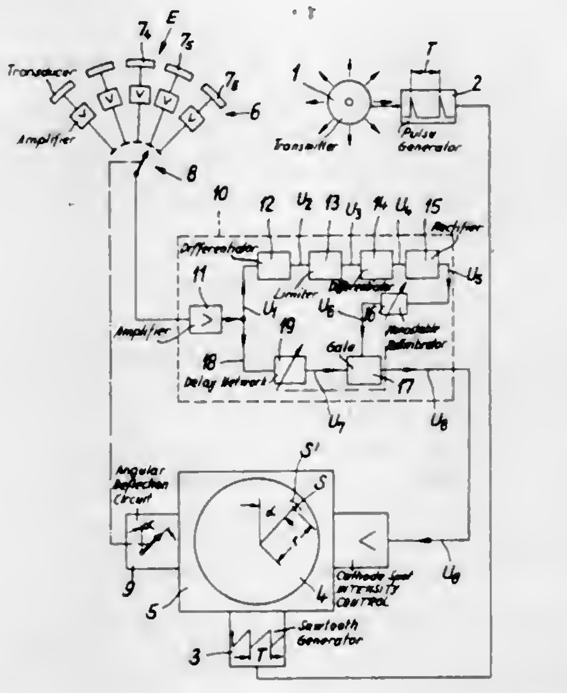
Henry H. Heimbrock, Cincinnati, Ohio, assignor to Van Products, Incorporated, Cincinnati, Ohio, a corporation of Ohio
Filed July 17, 1967, Ser. No. 653,988
U.S. Cl. 339—258 **3 Claims**
Int. Cl. H01r *13/24, 15/12, 5/00*



A flag-type electrical connector having a female receptacle and a lead wire gripping ferrule attached to the receptacle by a shank. The shank is bent to shorten the maximum dimension of the clip, to expose both ends of the receptacle for application to a male terminal and to expose the ferrule arms for engagement by crimping dies.

3,430,192
METHOD AND APPARATUS FOR INCREASING THE ANGULAR DEFINITION OF THE DIRECTION INDICATION IN SONAR SYSTEMS

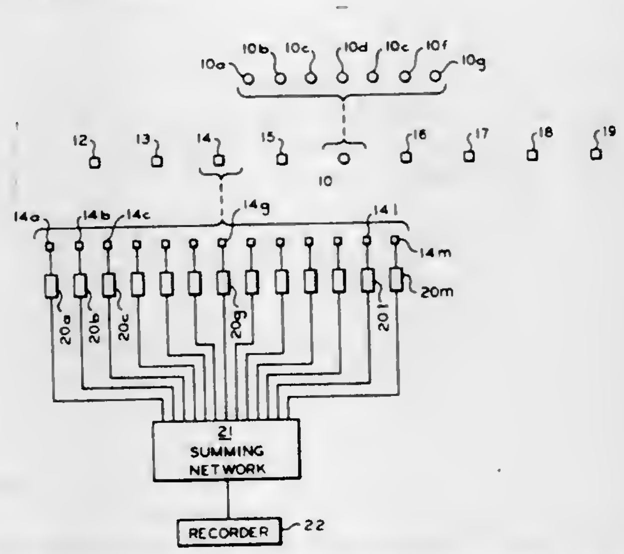
Werner Schwarz, Bremen-Oberneuland, Germany, assignor to Beteiligungs- und Patentverwaltung G.m.b.H., Essen, Germany
Filed Nov. 13, 1967, Ser. No. 681,985
Claims priority, application Germany, Nov. 10, 1966, B 89,761
U.S. Cl. 340—3 **8 Claims**
Int. Cl. G01s *9/66*



A method and apparatus for increasing the angular definition of the direction indication in sonar systems having a receiver which continuously scans the region to be monitored and which produces, in response to each received echo, a scanning pulse having a peak at a scanning angle corresponding precisely to the direction of origin of echo, the angular definitition of the directional indication being increased by passing only a limited portion of each scanning pulse to the associated indicating device, which limited portion coincides substantially with the scanning pulse peak.

3,430,193
SEISMIC SIGNAL INTERPRETATION

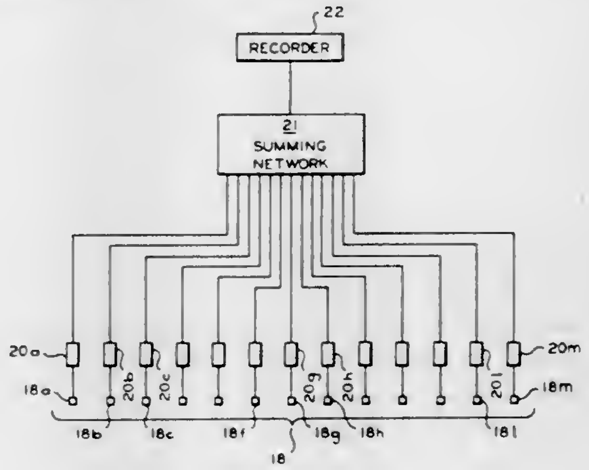
Joe P. Lindsey and Sheldon E. Elliott, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,356
U.S. Cl. 340—15.5 **5 Claims**
Int. Cl. G01v *1/00*



Seismic signals are generated sequentially at a plurality of first spaced points. These signals are received at one or more second points spaced from the first point. The received signals are velocity filtered with respect to the first points and with respect to the second points when a plurality of second points are employed.

3,430,194
SEISMIC SIGNAL INTERPRETATION

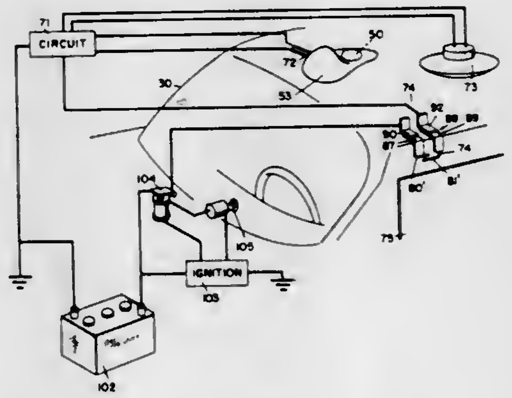
Sheldon E. Elliott, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,519
U.S. Cl. 340—15.5 **6 Claims**
Int. Cl. G01v *1/00*



Signals sensed by a plurality of seismic detectors at a seismometer detection station are velocity filtered and combined to produce a single trace characteristic of impulses received at the seismometer detection station.

3,430,195
VEHICLE WARNING SYSTEM

Robert C. Castlen, 1711 Georgia Ave., West Palm Beach, Fla. 33401
Filed May 9, 1966, Ser. No. 548,572
U.S. Cl. 340—52 **20 Claims**
Int. Cl. B60g *5/00;* **G08g** *1/00*

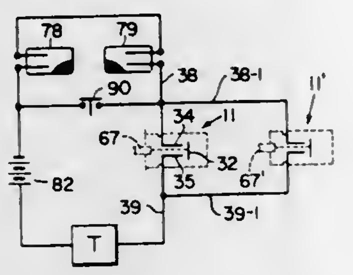


1. A warning signal indicator for the interior of a vehicle having a window adapted to be closed in conjunction with a window receiving portion, said indicator comprising:

- a microphone adapted to be mounted on said vehicle in a manner to be disposed on the exterior thereof;
- a signal device adapted to be mounted on said vehicle an to emit a signal within the interior thereof;
- an electrical circuit disposed between said microphone and said signal device in a manner to convert sound reaching said microphone from the exterior of said vehicle, to a signal emitted in said interior;
- means to supply electric current to said circuit;
- a switch adapted to be mounted on said vehicle in a manner to be closed by the closing of said window against said window-receiving portion, said switch being connected with said circuit in a manner to place it in condition for microphone-signal device operation when said window is closed.

3,430,196
TIRE PRESSURE INDICATOR

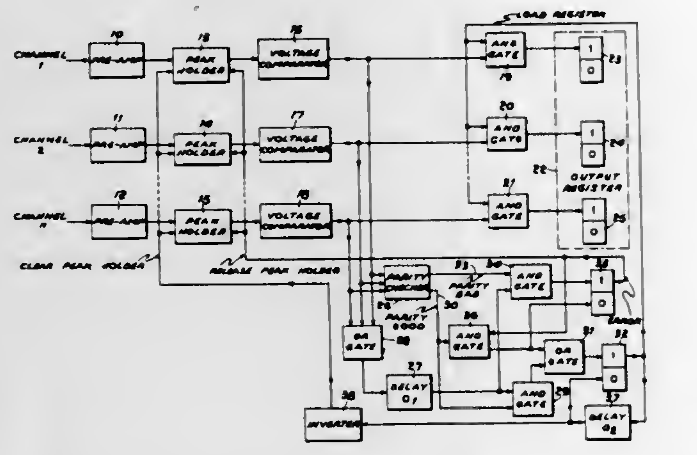
Robert L. Dalton, Pittsford, N.Y., assignor to R. D. Products Incorporated, East Rochester, N.Y., a corporation of New York
Filed June 16, 1966, Ser. No. 558,085
U.S. Cl. 340—58 **12 Claims**
Int. Cl. B60c *23/00, 23/02*



1. A device for indicating a low pressure condition in a pneumatic tire, comprising:
(a) an electrical circuit,
(b) first switch means in said circuit responsive to the pressure in the tire to close when said pressure falls below a predetermined value,
(c) second switch means in said circuit responsive to the rotation of the tire to close when the tire is rotating, and to open when the tire is not rotating, and
(d) electrical signalling means in said circuit operable to emit a warning signal only when both said first and second switch means are closed.

3,430,197
ERROR CORRECTION CIRCUIT FOR DIGITAL RECORDING SYSTEMS

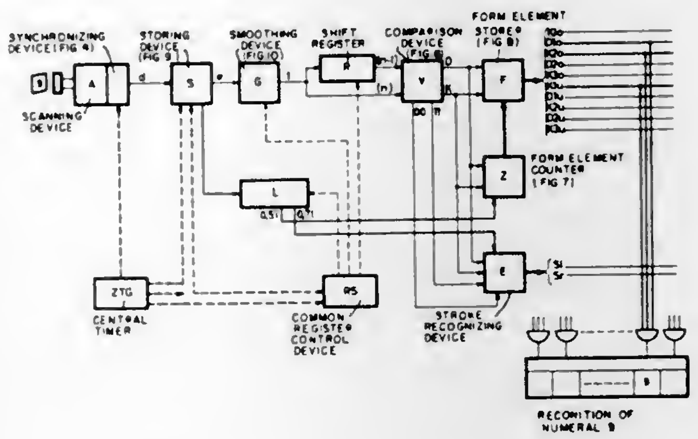
Thomas G. Brown, Ridgewood, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Oct. 21, 1965, Ser. No. 499,440
U.S. Cl. 340—146.1 **10 Claims**
Int. Cl. G08b *29/00;* **G06f** *11/10*



1. An error correction circuit for digital recording systems comprising:
(a) a plurality of independent receiving means, one for each bit of a multibit code signal to be received;
(b) a plurality of voltage storing means connected respectively to said receiving means and each adapted to maintain the peak voltage of its received signal for a period of time;
(c) a plurality of voltage comparators, one for each storing means and connected respectively thereto and arranged to respond when the voltage of the signal stored in the associated storing means exceeds a predetermined threshold value;
(d) parity checking means connected to said voltage comparators and adapted to produce a "parity good" signal when there is a correct number of code bits in the outputs of said voltage comparators and to produce a "parity bad" signal when there is an incorrect number of code bits in the outputs of said voltage comparators;
(e) individual output means, one for each of said voltage comparators;
(f) gating means between said voltage comparators and said output means and connected to said parity checking means for delivering the signals on the outputs of said voltage comparators to said output means in response to a "parity good" signal from said parity checking means;
(g) means connected to said parity checking means and responsive to a "parity bad" signal therefrom for gradually reducing the effective threshold value of said voltage comparators, and
(h) means thereafter responsive to a "parity good" signal from said parity checking means for disabling said threshold-value-reducing means and for enabling said gating means.

3,430,198
METHOD OF AND APPARATUS FOR AUTOMATICALLY IDENTIFYING SYMBOLS APPEARING IN WRITTEN MATTER

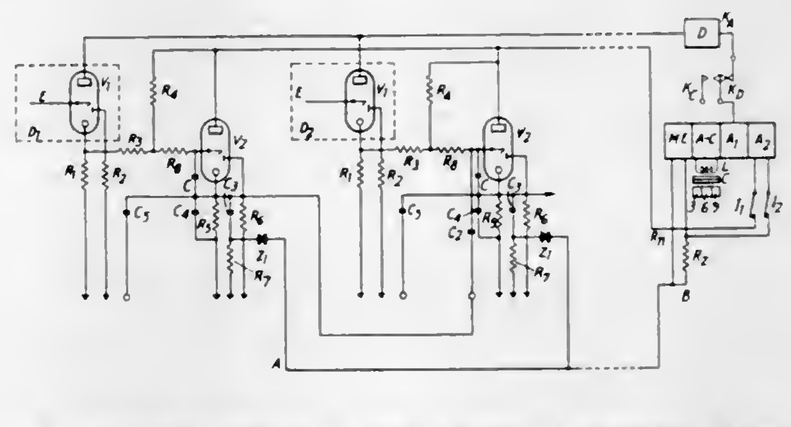
Günther E. Gattner and Rolf F. Jurk, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Nov. 4, 1960, Ser. No. 67,373
Claims priority, application Germany, Nov. 13, 1959, S 65,820
The portion of the term of the patent subsequent to May 7, 1983, has been disclaimed and dedicated to the Public
U.S. Cl. 340—146.3 **24 Claims**
Int. Cl. G06k *9/02*


SYNCHRONIZING DEVICE (FIG 4)
STORING DEVICE (FIG 9)
SMOOTHING DEVICE (FIG 10)
SHIFT REGISTER
COMPARISON DEVICE (FIG 6)
FORM ELEMENT STORER (FIG 8)
A
S
G
R
V
F
SCANNING DEVICE
L
FORM ELEMENT COUNTER (FIG 7)
Z
E
ZTG
CENTRAL TIMER
RS
COMMON REGISTER CONTROL DEVICE
STROKE RECOGNIZING DEVICE
RECONITION OF NUMERAL 9

1. An arrangement for automatically recognizing written symbols, comprising means for effecting, along a desired coordinate direction, line by line scanning of a symbol which is to be recognized, so as to produce binary scanning signal elements which respectively indicate the presence or absence of an element of a line course of the corresponding symbol, means connected with said scanning means for carrying out a comparison between said scanning signal elements and corresponding scanning signal elements obtained in the course of scanning a preceding line extending in such desired coordinate direction, the correspondence between the compared scanning signal elements residing thereby in that the respective scanned area elements have in the corresponding coordinate direction the identical coordinate, means connected with said comparison means for effecting a further comparison of successive pairs of such mutually corresponding scanning signal elements, the correspondence between compared scanning signal element pairs residing thereby in that respective pairs of area elements have the identical coordinate perpendicularly to said coordinate direction, thereby ascertaining the appearance of divergence or convergence of parts of a line course representing a form element of the symbol to be recognized, means connected with said further comparison means for storing the ascertained form elements corresponding to the relative position thereof, and further means connected with said storing means for effecting a comparison of the ascertained and stored form elements with predetermined form element symbols from which the respective written symbol is obtained.

3,430,199
TELEIDENTIFICATION SYSTEM FOR MONITORING A PLURALITY OF POINTS

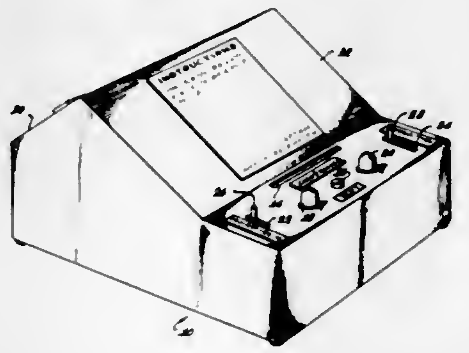
Abel Boris Amiragoff, 21 Rue Vilain XIV, Brussels, 5, Belgium
Filed Oct. 26, 1964, Ser. No. 406,388
Claims priority, application Luxembourg, Nov. 5, 1963, 44,754
U.S. Cl. 340—147 **5 Claims**
Int. Cl. H04q *1/00, 3/00*



A remote identification system having a plurality of detectors, e.g., thermometers, each connected to an associated relay circuit, all of the relays being coupled to a common conductor terminating in a counter, each relay circuit causing actuation of the next following circuit, whereby the position in the series of an alerted detector can be ascertained from the signals counted.

3,430,200
VALIDATOR APPARATUS FOR MAGNETIC CREDIT CARDS AND THE LIKE

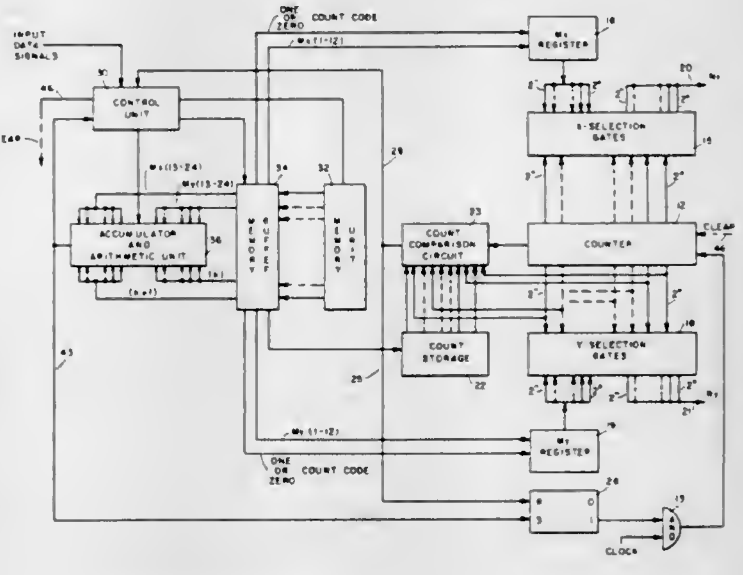
Walter W. Barney, 4720 Rubio Ave., Encino, Calif. 91316
Filed June 30, 1967, Ser. No. 650,483
U.S. Cl. 340—149 **23 Claims**
Int. Cl. H04q *9/00*



Embedded in a card are four rows of axially poled magnets. A reader plate carries similarly arranged magnet-operable switches. Corresponding card and movable magnets are poled per a pattern, with selected card magnets coded to deviate from the pattern and operate corresponding movable magnets. Similarly arranged pushbutton-operable switches are connected to the magnet switches, with some connections unrelated to positions of switches connected thereby. Mechanical means provide for operating one push-button-operable switch in each row in predetermined sequence. Circuit means establish visible indications as to validity, and facilitate operation of print-out means when validity is established.

3,430,201
EXTENDING PULSE RATE MULTIPLICATION CAPABILITY OF SYSTEM THAT INCLUDES GENERAL PURPOSE COMPUTER AND HARD-WIRED PULSE RATE MULTIPLIER OF LIMITED CAPACITY

Paul M. Kintner, Huntington Station, N.Y., assignor to Cutler-Hammer Inc., Milwaukee, Wis., a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,524
U.S. Cl. 340—172.5 **6 Claims**
Int. Cl. G11b *13/00*

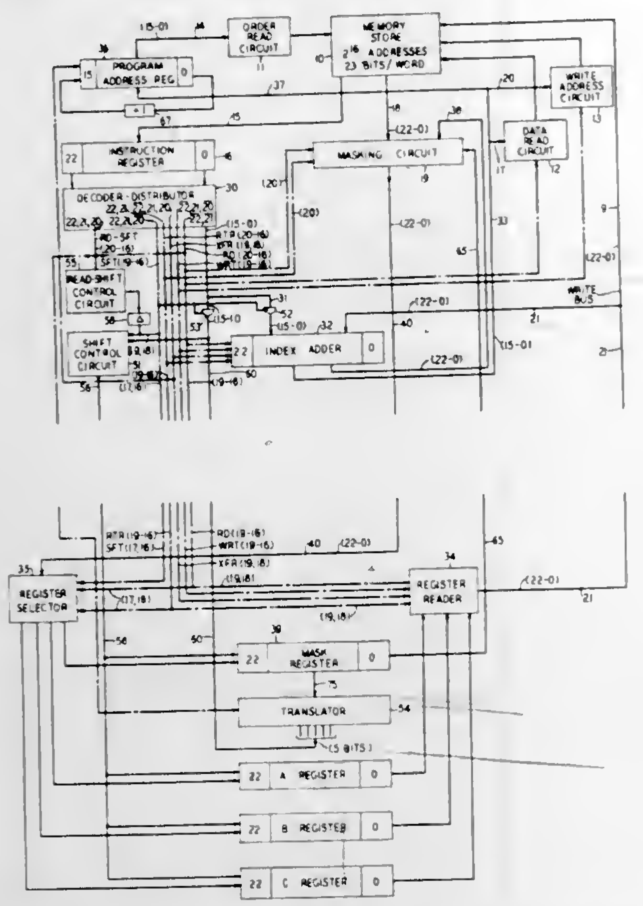


Electronic control apparatus including as a portion thereof a stored program general purpose computer for performing logical and arithmetic operations on input data. Another portion of said control apparatus operates according to operational-digital techniques and includes hard-wired circuitry of limited pulse counting capacity for performing a pulse rate multiplication operation on pulses of the limited count. A pulse rate multiplication operation is performed on a pulse count that exceeds the capacity of the hard-wired circuitry by incorporating the use of the stored program general purpose computer which operates in response to overflow pulses of the hard-wired circuitry. The computer is programmed to perform computer operations that are equivalent to pulse rate multiplication operations that would be performed on higher order bit positions of a larger pulse count, had hard-wired circuitry been employed to provide a pulse rate multiplier of greater counting capacity.

3,430,202
DATA PROCESSOR UTILIZING COMBINED ORDER INSTRUCTIONS

Randall W. Downing, Eatontown, and Ronald J. Hass, New Shrewsbury, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 7, 1964, Ser. No. 402,271
U.S. Cl. 340—172.5 **24 Claims**
Int. Cl. G11b *13/00*

We disclose a data processor in which a word may be read from memory, masked, stored in a register, and shifted in that register, all in accordance with a single instruction word. This is accomplished by limiting the shift to a simple shift to the right and examining the mask to determine the magnitude of the shift. This shift magnitude is determined by the position of the least significant "one" in the mask, so that the data will be arranged to have its first significant bit at the extreme right of the register.



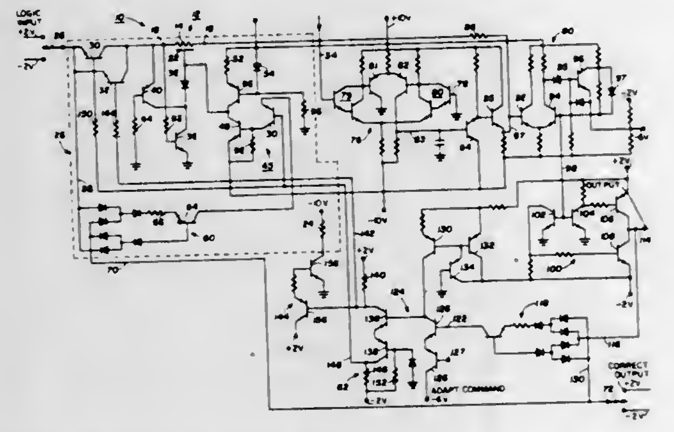
3,430,203
TRAINABLE DECISION SYSTEM UTILIZING METAL - OXIDE - SEMICONDUCTOR FIELD EFFECT TRANSISTORS

Robert H. Crawford, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 28, 1966, Ser. No. 561,161

U.S. Cl. 340—172.5 **8 Claims**

Int. Cl. G11b *13/00*



Disclosed in a trainable decision circuit that allows symmetrical operation when both positive and negative input values are applied to an adaptive element; the circuit produces an analog weight factor dependent upon the circuits previous experience in a training program. When a metal-oxide-semiconductor transistor is used as the adaptive element, the trainable circuit insures that the metal gate of the transistor is always at the same potential as the most negative terminal for a P-channel transistor or the most positive terminal for an N-channel transistor, in order to assure symmetrical operation when using both positive and negative input voltages.

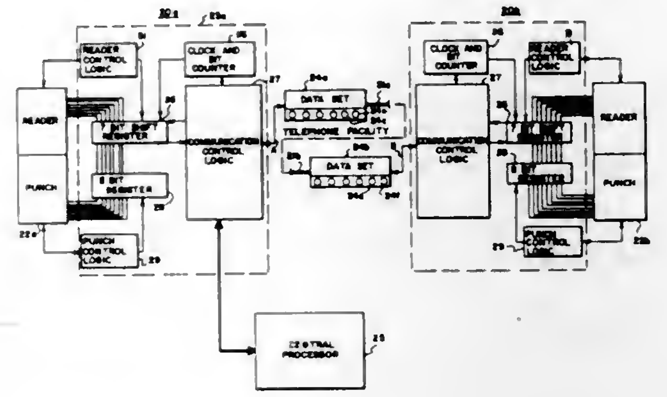
3,430,204
DATA COMMUNICATION SYSTEM EMPLOYING AN ASYNCHRONOUS START-STOP CLOCK GENERATOR

Richard E. Milford, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed May 19, 1965, Ser. No. 457,018

U.S. Cl. 340—172.5 **10 Claims**

Int. Cl. G11b *13/00;* **H04l** *5/14*



A data communications system employing a clock generating means which starts and stops periodically in response to information signals, the period of time being short enough so that resynchronization is not necessary during the period of time it is operating.

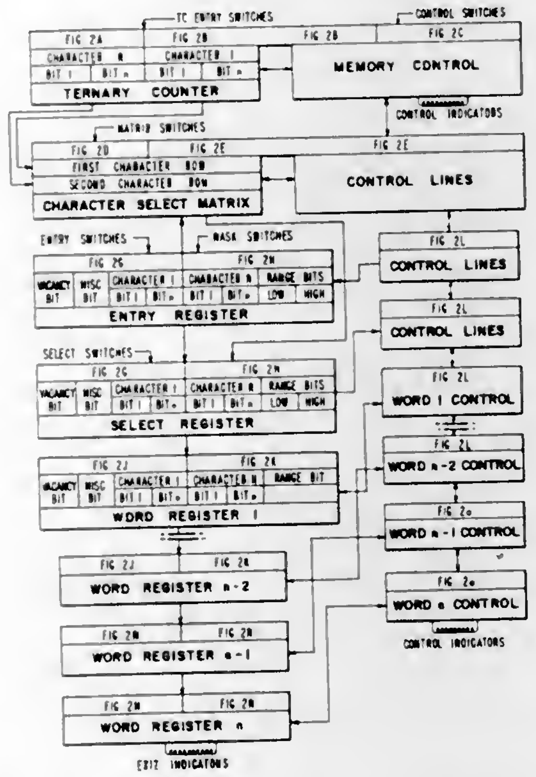
3,430,205
RANGE ASSOCIATIVE MEMORY WITH ORDERED RETRIEVAL

Robert R. Seeber and Arwin B. Lindquist, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 24, 1966, Ser. No. 537,141

U.S. Cl. 340—172.5 **13 Claims**

Int. Cl. G11b *13/00*



An associative memory system in which the Range Retrieval feature is achieved by a simplified construction at the bit level, involving only an equal or unequal output. The associative memory system includes a plurality of word registers, each of which contains a plurality of bit positions, and in which a plurality of data words are randomly stored. All of the words in the word registers, a portion of whose content matches selected data in a predetermined range, are identified and words in their entirety may then be retrieved.

3,430,206
CONTROL SYSTEMS FOR CONSTANT PROPORTION MIXTURES

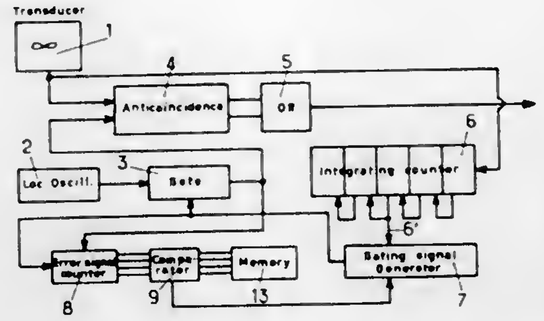
Herbert Ernyei and Philippe Huguier, Paris, France, assignors to Societe Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company of France

Filed Apr. 26, 1966, Ser. No. 545,338

Claims priority, application France, May 10, 1965, 16,400

U.S. Cl. 340—172.5 **6 Claims**

Int. Cl. G06f *9/00;* **H03k** *13/32*



The invention disclosed in the hereinafter specification comprises unique combinations of circuitry for introducing into a digital processing circuit of an automatic control system information regarding the measuring error as given by the calibration chart of the transducer used to measure the data to be processed. Specifically, logic circuit means are operated by a counter where the latter element receives the measured data including the error. Information is either added to or deleted from the processing circuits depending on the situation, and the logic circuit means are reset by an error memory, following correction; the error memory is programmed according to the error values given by the calibration chart for the transducer.

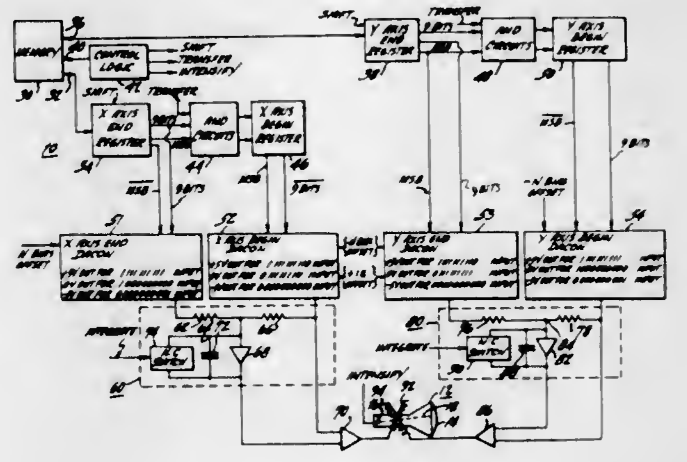
3,430,207
VECTOR DISPLAY SYSTEM

William J. Davis, Northridge, Calif., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 4, 1966, Ser. No. 570,323

U.S. Cl. 340—172.5 **7 Claims**

Int. Cl. G11b *13/00, 31/00*



A display system automatically provides the correct deflection signals to draw predetermined lines or vectors on a display device when the beginning and end X and Y coordinates of the line are specified in binary number form. The number representing a beginning coordinate is effectively subtracted from the corresponding number representing the end coordinate for both the X and Y axes of a line to provide differential X and Y binary values (i.e., ΔX and ΔY). The differential binary values are simultaneously converted from binary number form into analog signal form and are applied to the display device to produce the correct deflection to draw the desired line thereon.

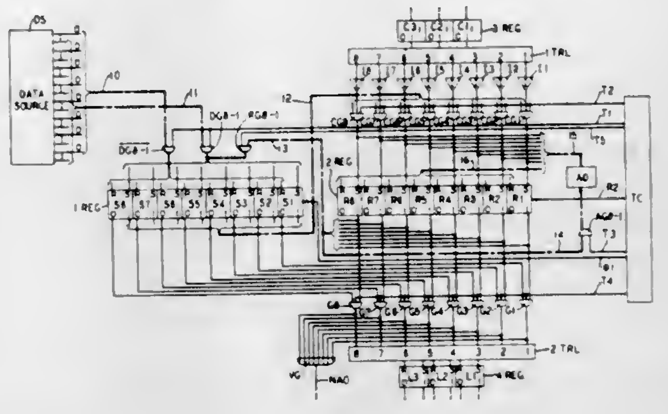
3,430,208
ARRANGEMENT FOR DETERMINING BIT POSITION OF LEAST SIGNIFICANT BIT HAVING A PREDETERMINED VALUE

Allen L. Axelson, Keyport, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Aug. 12, 1966, Ser. No. 572,053

U.S. Cl. 340—172.5 **17 Claims**

Int. Cl. G11b *13/00*



Disclosed herein is an arrangement for determining logically the least significant bit position in a data word or a selected portion thereof which contains a data bit of a predetermined value. The data word is stored in its original form in a first register and in a modified form in a second register. The original and the modified data words are combined logically to produce a resultant data word having a single binary "1" in the bit position corresponding to the least significant bit position of the original data word which contains a data bit of the predetermined value.

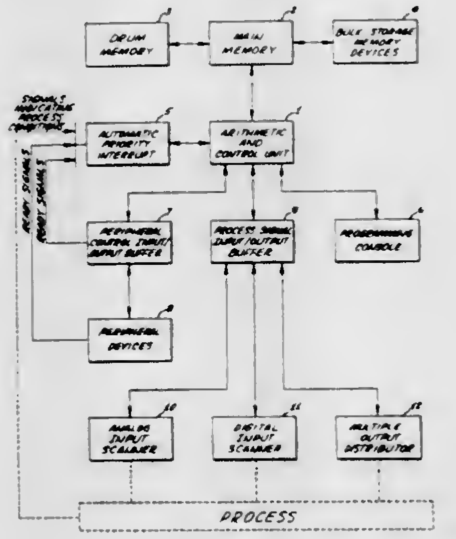
3,430,209
MEMORY UTILIZATION APPARATUS AND METHOD

Larry A. Goshorn, Villa Park, Calif., and Sherrill A. Harmon, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York

Filed Nov. 25, 1966, Ser. No. 596,891

U.S. Cl. 340—172.5 **4 Claims**

Int. Cl. G11b *13/00;* **G06f** *7/00*

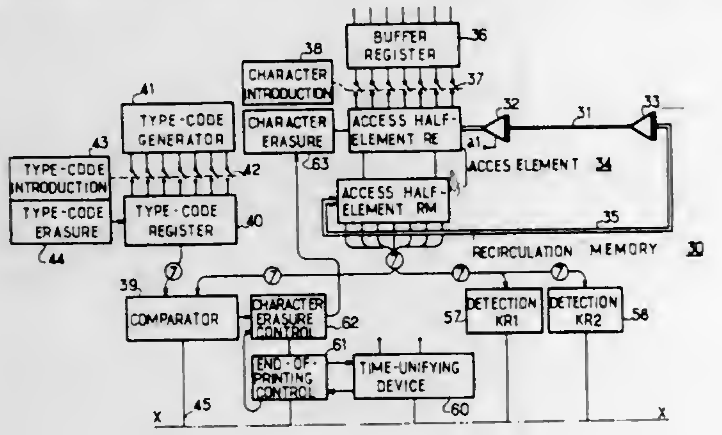

DRUM MEMORY
MAIN MEMORY
BULK STORAGE MEMORY DEVICES
SIGNALS INDICATING PROCESS CONDITIONS
AUTOMATIC PRIORITY INTERRUPT
ARITHMETIC AND CONTROL UNIT
READY SIGNALS
READY SIGNALS
PERIPHERAL CONTROL INPUT/OUTPUT BUFFER
PROCESS SIGNAL INPUT/OUTPUT BUFFER
PROGRAMMING CONSOLE
PERIPHERAL DEVICES
ANALOG INPUT SCANNER
DIGITAL INPUT SCANNER
MULTIPLE OUTPUT DISTRIBUTOR
PROCESS

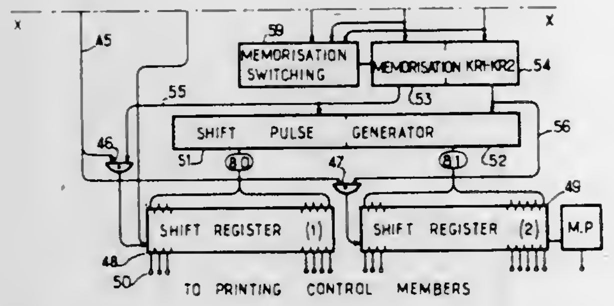
1. An information processing system comprising memory storage means including a plurality of addressable storage locations for storing a corresponding plurality of words, a first register for temporarily storing the memory

address of a command word, addressing means responsive to the memory address in said first register for transferring a command word from the addressed memory storage location to a second register, testing means for testing the command word in said second register for detecting a predetermined configuration, means for generating a signal in response to the detection of the predetermined configuration, third and fourth registers, first means responsive to said signal for transferring the contents of said third register to said fourth register, second means responsive to said signal for modifying the memory address temporarily stored in said first register, third means responsive to said signal for transferring the contents of a memory storage location specified by an operand address portion of the command word temporarily stored in said second register to said third register, fourth means for reactivating said addressing means whereby a second command word is transferred from a memory storage location specified by the modified memory address in said first register to said second register, means for decoding and executing the second command word temporarily stored in said second register, and fifth means responsive to said signal for modifying the memory address temporarily stored in said first register a second time.

3,430,210
ARRANGEMENT FOR THE CONTROL OF THE RECORDING OF ALPHANUMERICAL CHARACTERS

Francois Maurice Spire Fouré, Paris, and David John Smithson, Marly-le-Roi, France, assignors to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 27, 1967, Ser. No. 618,854
Claims priority, application France, Mar. 8, 1966, 52,547
U.S. Cl. 340—172.5 **15 Claims**
Int. Cl. G11b *13/00*

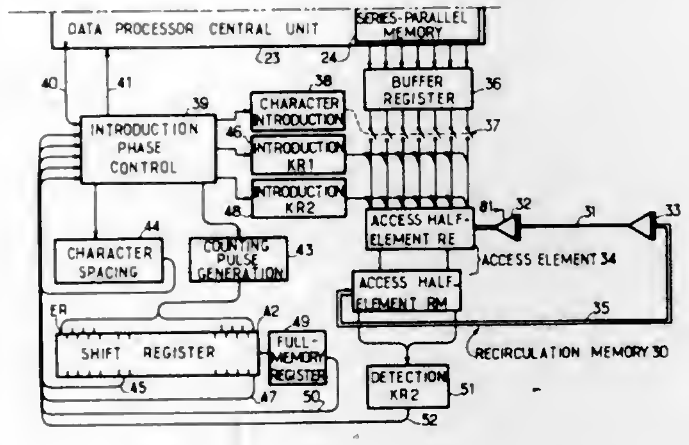




In a printer of the type-drum class, the provision of a print control arrangement which proceeds by comparison of print codes for characters and spaces with type-codes changing at each line of type faces. This asynchronous arrangement comprises a recirculating memory which dynamically stores two index-codes interspersed with 2N character codes. Index-code detector means permit commencement of the introduction of comparison results in either of two shift registers according to which index-code is detected first after a drum position pulse, so that the circulation time of said memory may be relatively large.

3,430,211
SYSTEM FOR STORING CODED CHARACTER REPRESENTATIONS

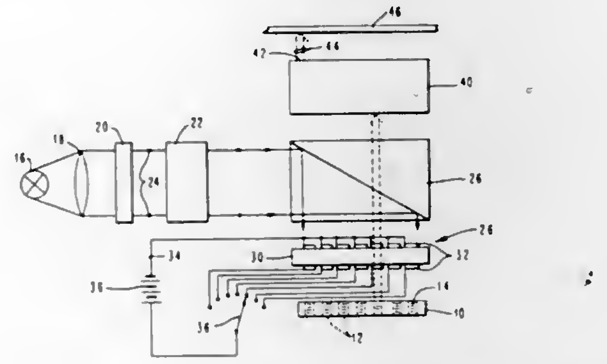
Francois Maurice Spire Fouré, Paris, and David John Smithson, Marly-le-Roi, France, assignors to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 27, 1967, Ser. No. 618,855
Claims priority, application France, Mar. 8, 1966, 52,548
U.S. Cl. 340—172.5 **14 Claims**
Int. Cl. G11b *13/00*



A data storage system cooperating with a data processor, for storing in a recirculating memory N character codes and also two interspersed index-codes useful in the reading-out of said memory. A control circuit arrangement associated with introduction counting means is operative to cause introduction in the memory of first and second special index-codes after a first number of character codes after a second number of character codes are circulating respectively in said memory.

3,430,212
APPARATUS FOR READING AND PRINTING STORED INFORMATION BY LIGHT

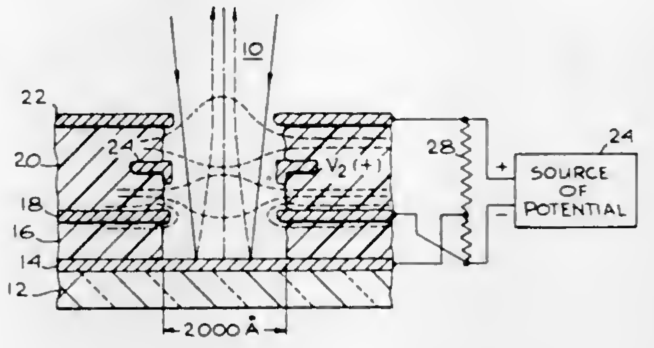
Erhard Max, Wappingers Falls, and Glenn T. Sincerbox, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 25, 1964, Ser. No. 369,961
U.S. Cl. 340—173 **6 Claims**
Int. Cl. G11b *7/00;* **G03c** *7/00;* **G02b** *1/00*



Apparatus is provided for reading information stored in the form of light reflecting lasers in a storage medium. The information is stored in areas of the medium and selectively operated apparatus controls the access to a particular area for read out by acting on the polarization of an interrogating beam of radiation. The read out information may be printed out or displayed.

3,430,213
DATA STORAGE AND LOGIC DEVICE

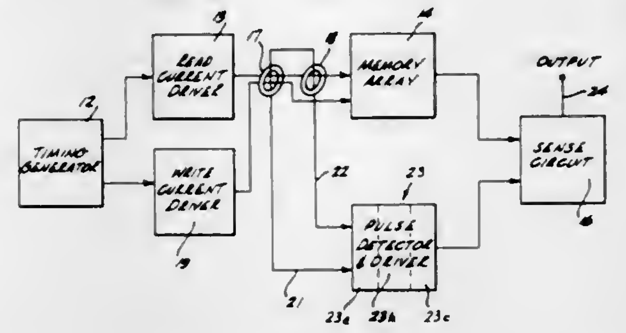
Kenneth R. Shoulders, Woodside, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Jan. 22, 1965, Ser. No. 427,229
U.S. Cl. 340—173 **10 Claims**
Int. Cl. G11b *9/08;* **H01j** *31/58*



A data storage device comprises a tube having a storage target comprising a substrate upon which there is deposited in sequence, a first metal layer, a first dielectric layer, a second metal layer, a second dielectric layer and a third metal layer. An array of holes is provided each of which extends from the third metal layer down to the first metal layer. An electrical isolated metal ring is deposited within each hole and is supported on the second dielectric layer. The various metal layers are properly biased. The energy is an electron beam used to bombard the third metal layer in the region of a ring which determines whether the ring potential is near the third or first metal layer potentials. For read out the hole is directly bombarded by electrons. Whether or not secondary electrons are emitted is determined by the potential state of the washer.

3,430,214
MEMORY INCLUDING DIFFERENTIALLY WOUND CORES GENERATING TIMING PULSES

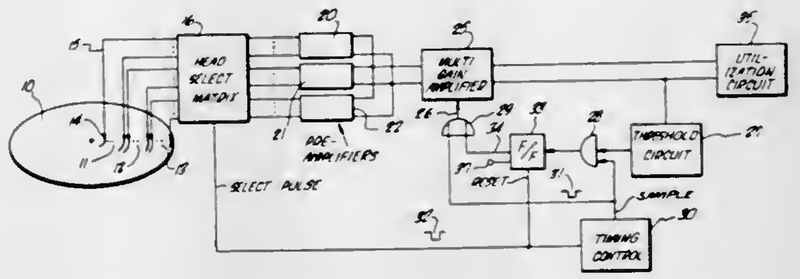
Ray L. Riley, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 16, 1964, Ser. No. 396,921
U.S. Cl. 340—174 **11 Claims**
Int. Cl. G11b *5/20*



A strobe pulse is obtained by interrogating at the same time a memory is interrogated, a pair of digital memory elements, one of which is preset to a binary "1" condition, and the other of which is preset to a binary "0" condition. The peak of the amplitude difference between the resulting binary "1" and binary "0" sense signals is detected at a circuit, whereupon a strobe pulse is generated at the precise time that the amplitude difference between the "1" sense signal and the "0" sense signal from the memory elements is at a peak. This strobe pulse is then used to ungate a memory sense detector so that sense signals from the memory can be detected at the optimum discrimination time.

3,430,215
AUTOMATIC GAIN LEVEL STEPPING SYSTEM

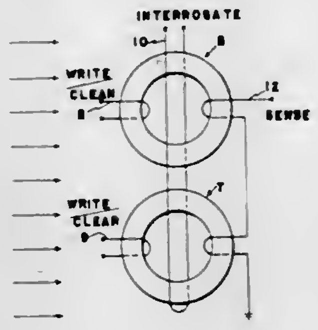
Kenneth D. Krossa, Sierra Madre, and Michael I. Behr, Los Angeles, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 13, 1964, Ser. No. 382,231
U.S. Cl. 340—174.1 **10 Claims**
Int. Cl. G11b *5/00, 5/06*



Gain control for information storage and retrieval systems is disclosed. A storage device, such as a magnetic disk, presents readout signals of various amplitudes dependent upon the radial distance of particular storage tracks from the center of the disk. Such variable amplitude signals are beyond the signal handling range for one gain value in an amplifier. An amplifier is provided which is capable of assuming any one of several different distinct gain values, which gain values are preselected to afford proper amplification of signals recovered from distinct plural-track storage areas on the magnetic disk. A gain control device having a predetermined threshold level monitors the output of the amplifier and either maintains the initial gain setting in the amplifier, or alters the gain setting for the amplifier to another distinct gain value depending upon a comparison between the amplitude of amplified signals and the threshold level of the gain control device.

3,430,216
MEMORY ELEMENT WITH A SELECTIVE NON-READOUT CHARACTERISTIC

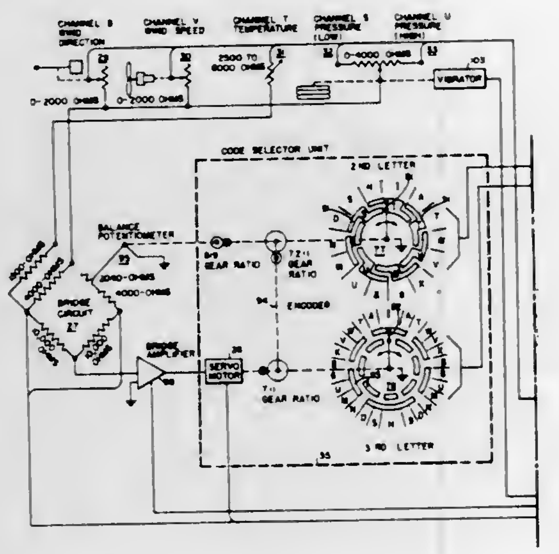
Anthony M. Apicella, Jr., Massillon, and Norman L. Boling and John T. Franks, Jr., Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,496
U.S. Cl. 340—174 **4 Claims**
Int. Cl. G11b *5/00*



The invention consists of two single aperture memory storage elements which operate as a single unit so that separate flux pattern signals may be stored as information in each of the elements, but which elements are read-out by a common source set for series signal detection whereby when similar bits of information are stored in the separate cores readout will be achieved, but where opposite bits of information are stored the readouts will cancel providing no readout. The write-in information is selective, and hence readout can be selectively controlled by simply controlling the information stored in one of the two bits. This selective readout characteristic is a desirable feature in associative memory operation.

3,430,217
AUTOMATIC WEATHER INFORMATION SENDING DEVICE

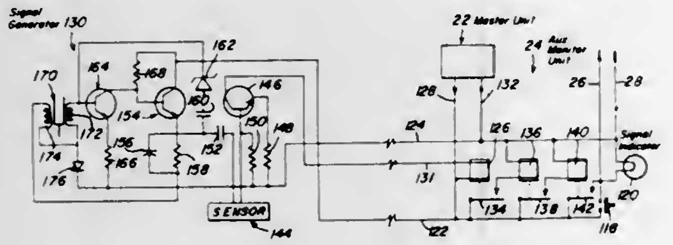
Richard B. Bridge, Greenbelt, Md., and Thomas E. Marshall III, Sterling, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 25, 1965, Ser. No. 467,152
U.S. Cl. 340—187 **5 Claims**
Int. Cl. G08c *9/00*



This invention is directed to an automatic system for obtaining at least five different weather conditions and by a definite programmed sequence transmits the information to a remote receiver. A clock functions to provide a planned time sequence for obtaining and transmitting the information by use of electrical circuits in combination with separate rotatable drums upon which conductive Morse code symbols have been placed. The weather information is transmitted by a suitable transmitter in combination with the code symbols.

3,430,218
ALARM REPORTING SYSTEM

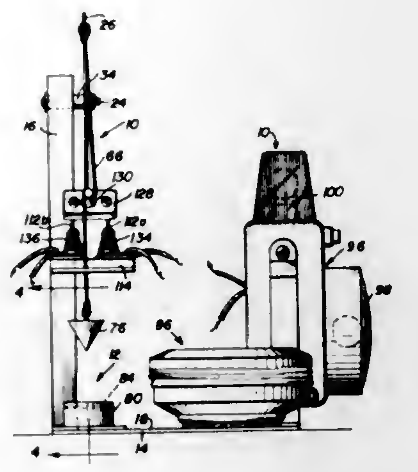
Charles P. Healey, 100 Samoset Ave., Box 151, North Haven, Conn. 06473
Filed Sept. 13, 1965, Ser. No. 486,940
U.S. Cl. 340—213 **11 Claims**
Int. Cl. G08b *1/08, 3/10, 5/36*



Continuous monitoring of various conditions by a plurality of sensors which respond to malfunction by interrupting modulating signals identifying each of the conditions being monitored. The identifying signals modulate, under supervisory control, a continuous security signal which is interrupted if monitoring and security procedures are not followed at a modulating station from which the security signal is dispatched to a remote receiving station. Interruption of signal reception at the remote receiving station triggers an alarm.

3,430,219
FIRE ALARM

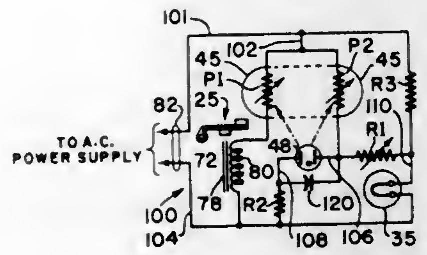
Joseph C. Powers, 10 Victoria St., Dorchester, Mass. 02122
Filed July 22, 1966, Ser. No. 567,197
U.S. Cl. 340—227.1 **9 Claims**
Int. Cl. G08b *7/00, 17/00*



1. A fire alarm comprising an audible signal means, electrical power means for actuating said audible signal means, a visual signal means, electrical power means for actuating said visual signal means, odor producing signal means, means for actuating said odor producing signal means, a common control means for all of said actuating means and means normally retaining said control means in an inoperative relation and responsive to a rise in temperature for rendering said control means operative whereby said audible signal means, visual signal means and odor producing means are operative to alert the senses of a person to the fact that a high temperature condition indicative of the presence of a fire is present.

3,430,220
FIRE DETECTOR

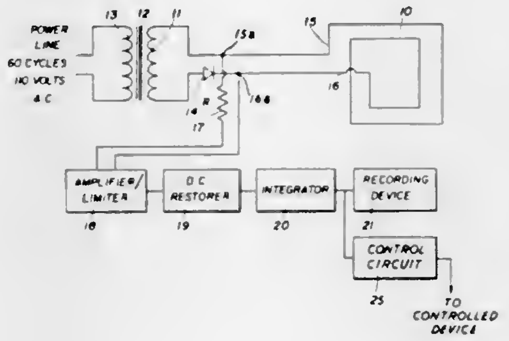
Albert F. Deuth, Fajardo, Puerto Rico, assignor to Clairex Electronics, Inc., Roosevelt, Puerto Rico, a corporation of Puerto Rico
Filed Sept. 15, 1965, Ser. No. 487,511
U.S. Cl. 340—237 **6 Claims**
Int. Cl. G01n *21/28;* **G08b** *17/00, 19/00*



A fire detector senses abnormal conditions of smoke, flame and heat. Each condition causes light from an internal lamp or external flame to fall on a photoconductive element which activates a gas discharge tube. The tube lights and illuminates another photoconductive element connected in direct circuit with an alarm device without intermediate relay means. The lamp is arranged in circuit with the tube so that the tube lights and the alarm device is activated, if the lamp fails. Response of the detector to the conditions of smoke, flame and heat is cumulative so that the alarm will be actuated if any two or three conditions are sufficiently intense, even though any one condition is not intense enough to actuate the alarm.

3,430,221
PROXIMITY DETECTOR

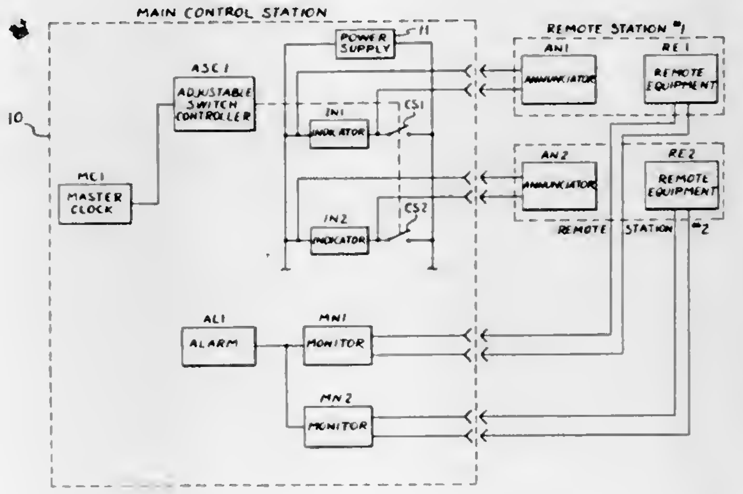
Anthony Rene Barringer, Willowdale, Ontario, Joseph Olivier Jacques Pronovost, Bramalea, Ontario, and Kenneth Alan Turner, Toronto, Ontario, Canada, assignors to Barringer Research Limited, Rexdale, Ontario, Canada, a corporation
Filed Sept. 27, 1965, Ser. No. 490,423
U.S. Cl. 340—258 **5 Claims**
Int. Cl. G08b *13/00;* **G08g** *1/00;* **G01r** *33/12*



A proximity detector employing a loop or coil positioned in proximity to an electrically conductive object to be detected. The coil is energized with electric current pulses of predetermined width with predetermined intervals between successive pulses. Transients induced in the coil due to decaying eddy currents flowing in the object are detected during the intervals between successive pulses, when the electromagnetic field created by the pulses is absent or is not time varying. The transients are separated from the remainder of the currents flowing in the coil and are converted into a signal suitable for controlling a relay, actuating a counter, etc.

3,430,222
REMOTE SIGNALING SYSTEM

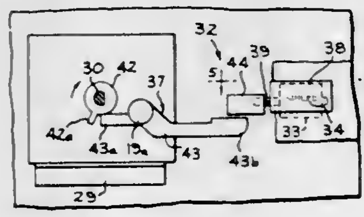
Alfred E. Gratrix, Sr., Trumbull, and David E. Earls, Norwalk, Conn., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,355
U.S. Cl. 340—286 **15 Claims**
Int. Cl. G08b *1/08*



1. In a remote signaling system, the combination which comprises, a remotely located annunciator, means including a normally open switch for rendering the annunciator operative upon switch closure, a switch control cam member associated with the switch for causing the switch to be closed when the cam member reaches a preselected position in its total travel which is representative of a desired time, cam control means for steppingly advancing the switch control cam member through prescribed portions of its total travel when energized, means including a control switch for energizing the cam control means upon switch closure, a time representative cam member associated with the control switch for causing the switch to be closed for a prescribed period of time when the time representative cam member reaches preselected positions in its total travel, means for advancing the time representative cam member through its total travel in accordance with the actual passage of time, and means for initially presetting the time representative cam member to a position in its total travel representative of the actual time so that the switch control cam member is likewise preset to a position in its total travel representative of the actual time and the annunciator is rendered operative at a desired time.

3,430,223
SIGNAL MEANS FOR AUTOMATIC WASHING MACHINE CONTROLLED BY TIMER DEVICE

Leonard J. Martiniak, Waukesha, and Marlin L. Race, Elm Grove, Wis., assignors to General Electric Company, a corporation of New York
Filed May 1, 1968, Ser. No. 725,694
U.S. Cl. 340—309.2 **8 Claims**
Int. Cl. G08b *5/02, 5/20*

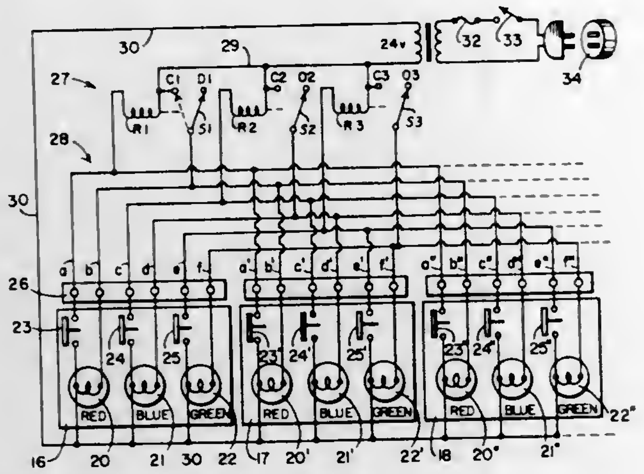


Signal means for indicating the operational status of an automatic washing machine of the type having a washing enclosure access door that is pivotal about a generally horizontal axis for movement between its open and closed positions. The signal means comprise an eccentrically-weighted indicator member bearing first and second indicia respectively indicating first and second operational conditions of the machine. The indicator member is mounted within the door for pivotal movement relative to a window in a wall of the door between a first position exposing the first indicia and a second position exposing the second indicia through the window. When the door is opened, gravity pivots the indicator member into the first position and retains it there until it is subsequently pivoted into the second position by actuator means actuated by the machine's timer at the substantial completion of the operational cycle.

3,430,224
REMOTE CONTROL PLURAL LAMP SIGNALING SYSTEM

John D. Krantz, Inglewood, Calif., assignor to Coastal Dynamics Corporation, a corporation of California
Filed Mar. 23, 1966, Ser. No. 536,713
U.S. Cl. 340—313 **3 Claims**
Int. Cl. G08b *5/36, 27/00;* **H04m** *11/02*

A remote control signaling system for offices is provided in the form of indicating lights and associated actuating means in various locations. A source of energy is arranged to be conducted to the various indicating means by a control circuit in the form of latch type relays. The arrangement is such that a person in one room may energize a given light or signal in another room to alert a person in the other room of a certain situation and the person in the other room may in turn signify his reception of this signal by de-energizing the same light. A silent communication system is thus provided for use by doctors and the like.



3,430,225
ANALOG INFORMATION STORING DEVICE

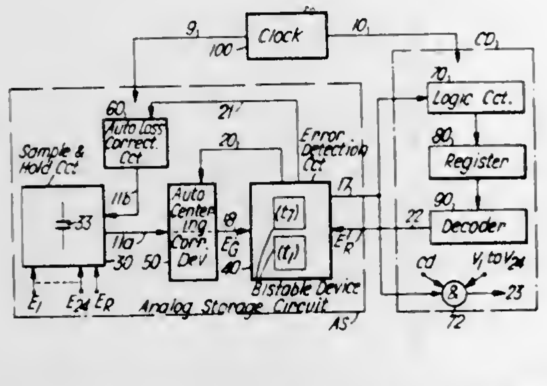
Michel Louis Avignon, Neuilly-sur-Seine, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 7, 1965, Ser. No. 446,337

Claims priority, application France, Apr. 14, 1964, 970,820

U.S. Cl. 340—347 **20 Claims**

Int. Cl. H04l *3/00;* **H03k** *13/24*



1. An analog information storage arrangement comprising:

an analog storage means;

a source of reference voltage having a predetermined value;

a source of calibration voltage having a nominal value equal to said predetermined value;

first means to couple said calibration voltage source to said analog storage means to store said calibration voltage therein during a predetermined time interval;

second means coupled to said storage means and said source of reference voltage to produce a first signal proportional to the difference between the value of said stored calibration voltage and the value of said reference voltage at the beginning of said time interval;

third means coupled to said storage means and said source of reference voltage to produce a second signal proportional to the difference between the value of said stored calibration voltage and the value of said reference voltage at the end of said time interval;

fourth means coupled to said second means and a given one of said storage means and said source of reference voltage responsive to said first signal to maintain the difference between the value of said stored calibration voltage and the value of said reference voltage less than a first given value; and

fifth means coupled to at least one of said second and third means responsive to at least one of said first and second signals to maintain the difference between the value of said stored calibration voltage and the value of said reference voltage at the beginning and end of said time interval less than a second given value.

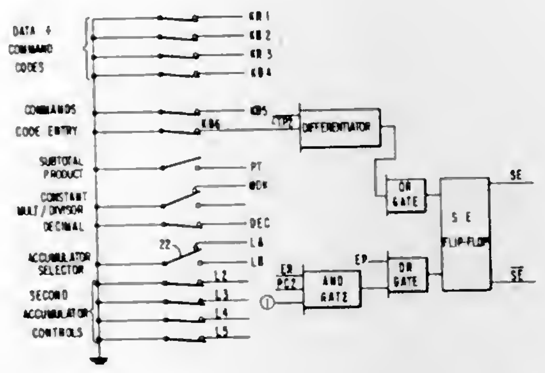
3,430,226
CALCULATORS

Allan I. Chow, Jamestown, and James F. Milne, Penfield, N.Y., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 5, 1965, Ser. No. 455,037

U.S. Cl. 340—347 **15 Claims**

Int. Cl. H04l *3/00;* **G06c** *7/02*



A keyboard comprising a plurality of manually operable keys. Each key is provided with an actuating member having cutout portions representative of a number in a desired code. A plurality of cranks are disposed to operate a plurality of switches respectively. Each actuating member serves to actuate one or more cranks depending on the arrangement of the cutout portions. The combination of operated and non-operated switches give the coded representation of the key depressed.

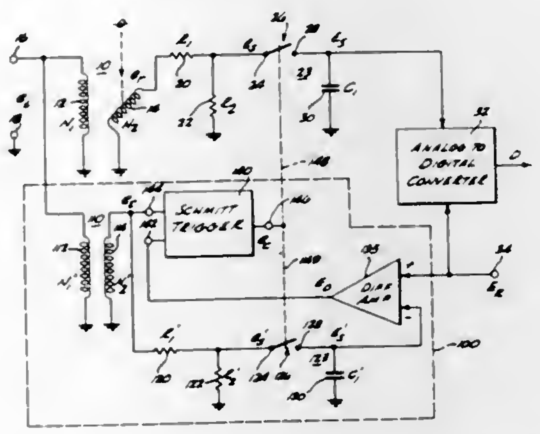
3,430,227
DRIFT COMPENSATION CIRCUIT FOR ANALOG-TO-DIGITAL CONVERTER

Donuil A. Hillis, Palos Verdes, Calif., assignor, by mesne assignments, to the United States of America as represented by the National Aeronautics and Space Administration

Filed May 13, 1965, Ser. No. 455,477

U.S. Cl. 340—347 **8 Claims**

Int. Cl. H04l *3/00;* **H03k** *13/02, 17/00*



Apparatus for providing an electrical representation of mechanical position information, in which the electrical output of a resolver driven by a shaft is periodically sampled and compared with a reference signal to produce a signal indicating the mechanical position of the shaft, wherein the sampling duration is varied by a control circuit so as to compensate for any fluctuations in auxiliary voltages.

3,430,228
PARALLEL-TO-SERIAL CONVERTER FOR A BINARY CODE GENERATOR

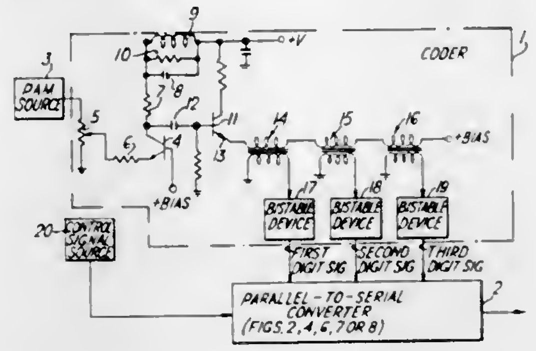
Alec Harley Reeves and John Clifford Price, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 13, 1965, Ser. No. 495,604

Claims priority, application Great Britain, Oct. 30, 1964, 44,315/64

U.S. Cl. 340—347 **19 Claims**

Int. Cl. H04l *3/00;* **H03k** *13/00*



1. A binary code generator comprising:

a source of analog signal to be coded into a code group having a plurality of digits during a predetermined period of time;

said analog signal including a pulse signal whose amplitude is to be coded into said code group and a damped oscillatory signal having a given frequency to divide said predetermined period of time into equal time intervals superimposed on said pulse signal;

a plurality of bistable devices coupled to said source of analog signal, each of said bistable devices having a different switching characteristic to produce different ones of said digits of said code group; said bistable devices being activated by said analog signals with certain ones thereof oscillating between their two stable conditions throughout said predetermined period of time in response to said damped oscillatory signal;

the amplitude characteristic of said damped oscillatory signal being selected to cause said bistable devices to indicate their final stable condition in a predetermined time sequence, one of said bistable devices being set at the end of the first of said time intervals to indicate its final stable condition and the others of said bistable devices being set at the end of successive ones of said time intervals to indicate their final stable condition;

a source of control signals having a frequency equal to said given frequency, a predetermined amplitude and a predetermined polarity relative to the polarity of the output signals of said bistable devices; and

a circuit arrangement coupled to said bistable devices and said source of control signal for combining the output signals of said bistable devices with said control signal to cancel the output signals from said bistable devices when any of said bistable devices is in a predetermined one of the two stable conditions after each of said bistable devices is set to indicate its final stable condition and to produce an output pulse when any of said bistable devices is in the other of the two stable conditions after each of said bistable devices set to indicate its final stable condition.

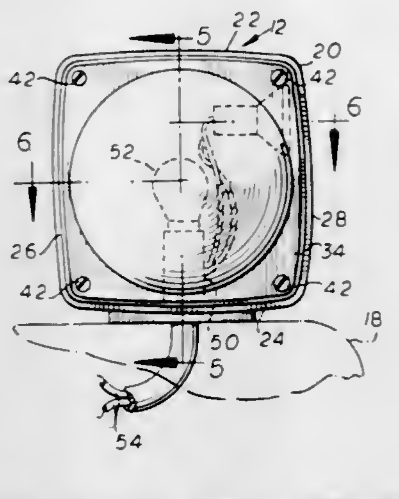
3,430,229
UNITARY SIGNAL DEVICE HAVING FRONT AND SIDE SIGNAL AREAS

Theodore Ornas, Jr., and Deo Lewton, Fort Wayne, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 11, 1968, Ser. No. 697,212

U.S. Cl. 340—383 **7 Claims**

Int. Cl. B60q *1/34;* **G09f** *13/16*



A unitary signal lamp for use on automotive vehicles and the like incorporating lighted turning signal means viewable from both front and rear, a side marker signal light and a side reflector signal. All of these signal means are conveniently incorporated in a compact unitary assembly.

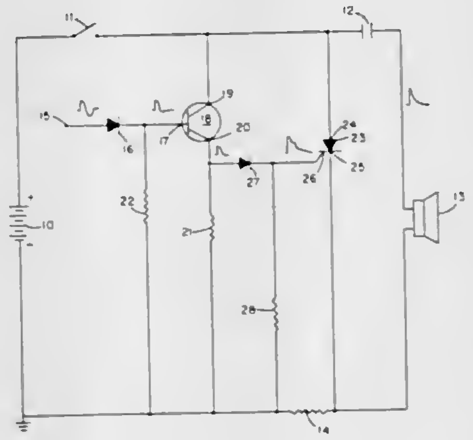
3,430,230
ANNUNCIATOR CIRCUIT

Robert H. Jones, Scotia, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 1, 1965, Ser. No. 492,342

U.S. Cl. 340—384 **5 Claims**

Int. Cl. G08b *3/00;* **H03k** *17/00*



An annunciator circuit for generating an audio alarm in response to an event represented by an electrical pulse. An SCR is connected across a storage element so as to discharge the accumulated charge on the storage element through a loudspeaker when the SCR is triggered by a signal received from the emitter of a transistor amplifier.

3,430,231
ANNUNCIATOR SYSTEM

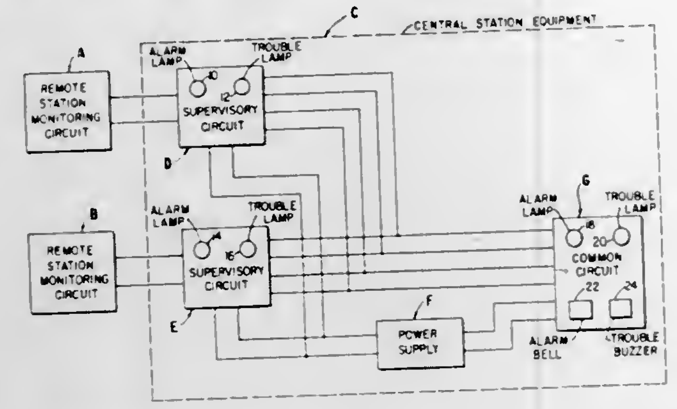
Foster E. Weld, Newton Highlands, Mass., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,264

U.S. Cl. 340—409 **10 Claims**

Int. Cl. G08b *29/00, 27/00*

A solid state system for indicating that an alarm condition exists at any of a plurality of remote station monitoring circuits having a like plurality of central station supervisory circuits, each electrically connected with an associated one of the monitoring circuits, and a central station common circuit which is connected to each of the central station supervisory circuits. An alarm signal indicative of an alarm condition at the remote station is transmitted to the associated supervisory circuit which energizes an alarm indicator in the central station supervisory circuit and causes common alarm indicators in the central station common circuit to be energized. Each of the central station supervisory circuits also has a trouble indicator which is energized by a disruption in the electrical connection between the supervisory circuit and the associated monitoring circuit, and energizes common trouble indicators in the central station common circuit. A self-restoring reset switch common to both the common alarm indicators and the common trouble indicators at the central station common circuit deenergizes the common alarm indicators and common trouble indicators while the supervisory alarm indicator or supervisory trouble indicator of any of the supervisory circuits remain energized, so that the central station common circuit may indicate an alarm or trouble condition associated with another remote station monitoring circuit.



3,430,232

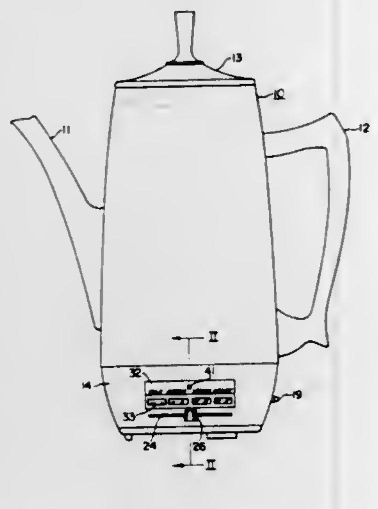
COFFEE MAKER

Harold W. Martin, Shelby, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 20, 1965, Ser. No. 481,260

U.S. Cl. 340—417 **3 Claims**

Int. Cl. G08b *5/00;* **G05b** *11/00;* **F27d** *11/00*



1. In an automatic coffee maker having electrical circuitry comprising a pump well heater, a keep-warm heater and control means for effecting sequential energization of said heaters, the improvement comprising: a hollow base member, a plurality of windows in said base member, said windows bearing indicia representing control settings, a signal light for indicating the state of one of said heaters and means for movably supporting said light contiguous said windows whereby illumination therefrom shines through only one of said windows to thereby indicate which control setting is being utilized.

3,430,233

APPARATUS FOR DETECTING THE PRESENCE AND LOCATION OF GROUND ACOUSTIC INFORMATION FROM AN AIRCRAFT

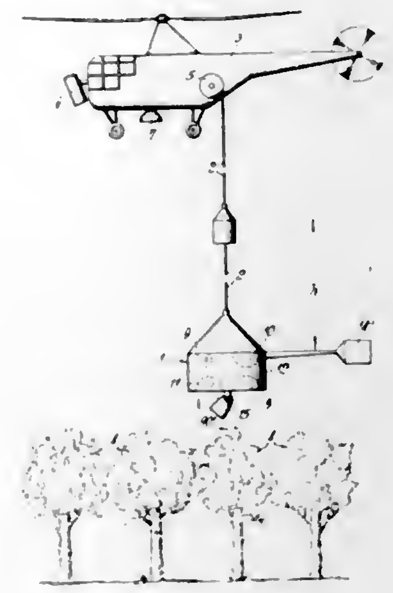
Bertil Henry Ingemar Christensson, Vasterbogatan 3A Hassleholm, Sweden

Filed July 6, 1967, Ser. No. 651,491

Claims priority, application Sweden, July 8, 1966, 9,351/66

U.S. Cl. 343—6 **7 Claims**

Int. Cl. G01s *9/66*



This invention detects both the presence and location of any source of acoustic information close to the ground from a hovering aircraft. An assembly comprising a microphone for acoustic detection is variably suspended from the aircraft by a cable and the position of the assembly is determined by either radar, light, or wind vane on the assembly in cooperation with the appropriate receiving equipment on the aircraft.

3,430,234

NAVIGATION SYSTEMS USING EARTH SATELLITES

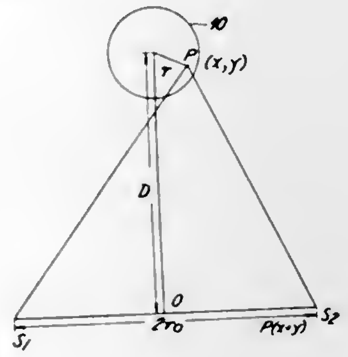
Thomas Michael Benyon Wright, Stoneham Mall Road, Brading, Isle of Wight, England

Filed May 3, 1966, Ser. No. 547,232

Claims priority, application Great Britain, May 5, 1965, 18,876/65

U.S. Cl. 343—6 **15 Claims**

Int. Cl. G01s *9/56*



A radio navigation system for determining the position of a craft on or over the earth's surface making use of a number of stationary earth satellites. Each satellite has radio receiving apparatus and transmitting apparatus for transmitting signals synchronised with received signals. On the craft, one position line is determined by measuring the time difference between signals received from two satellites while a second position line is determined by measuring the time difference between a signal transmitted from the craft and a signal synchronised therewith received from a satellite.

3,430,235

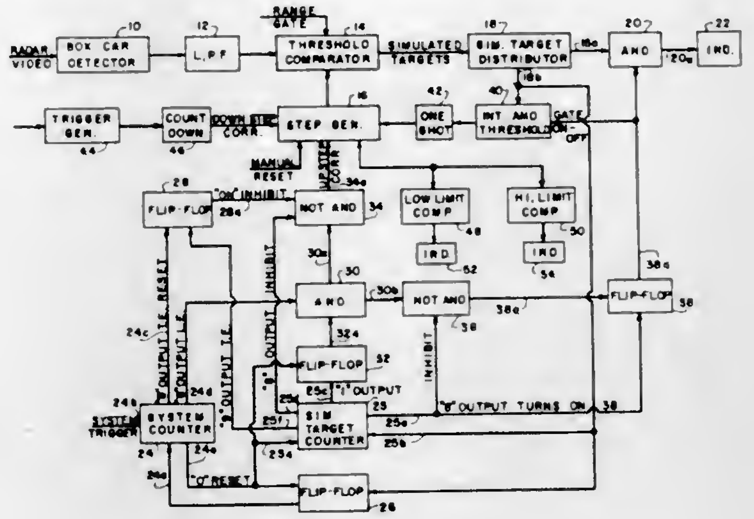
AUTOMATIC SIGNAL DISCRIMINATOR AND THRESHOLD ADJUSTMENT CIRCUIT FOR RANGE-GATED RADAR DETECTION SYSTEMS

Paul H. Bender and David A. Vaughan, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed May 1, 1964, Ser. No. 364,103

U.S. Cl. 343—7 **17 Claims**

Int. Cl. G01s *9/02*



1. In a signal receiver, said receiver generating an output when the level of received signals exceeds the threshold level of said receiver, and means for automatically adjusting the threshold level of said receiver to maintain an optimum receiver threshold level relative to receiver sensitivity versus false-alarm rate, said means comprising:

means for discriminating between a signal and a false alarm;

means for progressively decreasing the threshold level of said receiver to increase receiver sensitivity; and

means in response to a false alarm for increasing the threshold level of said receiver, whereby the sensitivity of said receiver is continuously adjusted around that level where false alarms are just barely present in the output of said receiver.

3,430,236

METHOD AND MEANS FOR ELIMINATING BEAM REFLECTION ERRORS IN A DOPPLER RADAR SYSTEM

George R. Gamertsfelder, Pleasantville, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 667,950

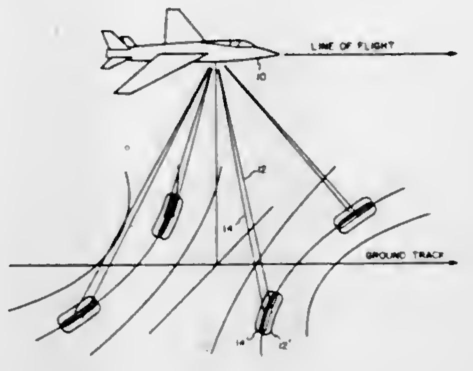
U.S. Cl. 343—7 **16 Claims**

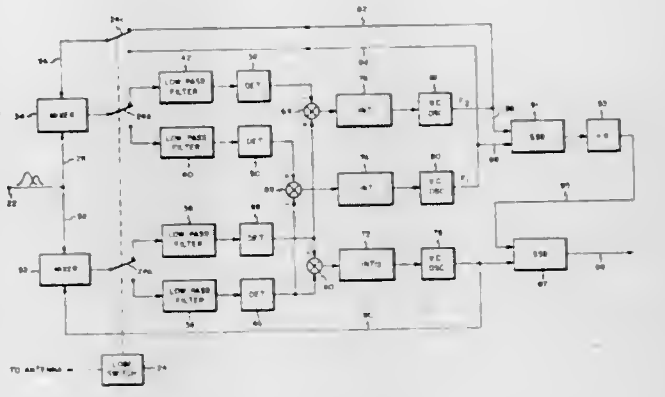
Int. Cl. G01s *9/02*

Method and means are described for eliminating overwater beam reflection errors in a Doppler radar system. Dual overlapping Doppler spectra are derived from a dual beam antenna system and applied to a frequency tracker comprising three interconnected servo loops. Each loop, in turn, comprises a mixer, a low-pass filter, an integrator, and a voltage controlled oscillator which latter serves as the local oscillator for the mixer. The loops track the frequencies F_0, F_1, and F_2 where F_0 is equal to the dual spectra cross-over frequency plus the overwater "calibration-shift" error frequency, and F_1 and F_2 are frequencies symmetrically disposed about the center frequency of each respective Doppler input spectrum with reference to F_0. The outputs of the three loops are then combined in accordance with the relation

$$\frac{3}{4}F_0+\frac{F_1}{8}+\frac{F_2}{8}$$

to yield the true cross-over frequency f_0. The latter is invariant and completely independent of changes in terrain scattering characteristics. What is more, each low-pass filter has a passband width equal to the spectral width of either input spectrum thereby minimizing fluctuation errors due to the statistical or "noiselike" character of the Doppler input signal.





3,430,237

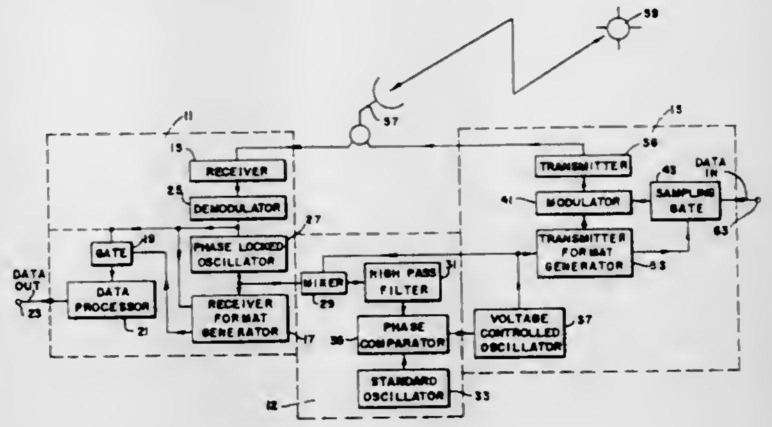
TIME DIVISION MULTIPLEX SYSTEM

Walter K. Allen, Silver Spring, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 24, 1967, Ser. No. 685,497

U.S. Cl. 343—7.5 **20 Claims**

Int. Cl. G01s *9/58*

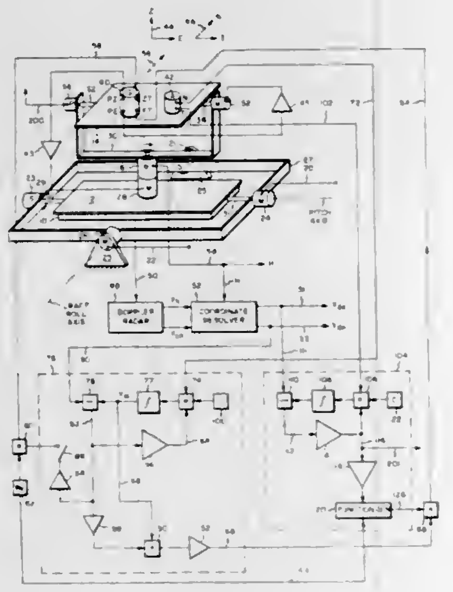


This invention is a synchronizing apparatus for a multi-access satellite time division multiplex system. A master station transmits a sync burst signal to a satellite and receives the transmitted sync burst signal as reflected from the satellite. In the master station means are provided for mixing the received signal with the transmitted signal to develop a resultant frequency sum component which is compared with a standard signal to compensate for the Doppler shift between the master station and the satellite. By this operation, the sync burst signal at the satellite is at a known frequency. The reflected sync burst signal is received by a plurality of slave stations. Each slave station also includes mixing and comparing means to compensate for the Doppler shift between them and the satellite. Both the master and the slave stations use their respective received sync burst signals to control their respective transmitter and receiver format generators so that format timing is coherent at the satellite. The slave stations also include means for transmitting a stepped tone burst signal to the satellite and for receiving the reflected stepped tone burst signal from the satellite. The stepped tone burst signal is transmitted at predetermined intervals that coincide with the timing of the format of the multiplex system. When the received stepped tone burst signal is received in an open time slot at a slave station, the slave station has its transmitter format locked to within plus or minus one-half slot of the open time slot. A further means is provided in the slave station for centering the stepped tone burst signal in the open time slot. Hence, the slave station is synchronized with an open time slot in the format of the time division multiplex system.

3,430,238

APPARATUS FOR PROVIDING AN ACCURATE VERTICAL REFERENCE IN A DOPPLER-INERTIAL NAVIGATION SYSTEM

Heinz Buell, Mount Kisco, and Jack Rubin, Brooklyn, N.Y., assignors to General Precision Systems Inc., a corporation of Delaware
Filed July 18, 1967, Ser. No. 654,272
U.S. Cl. 343—9 **9 Claims**
Int. Cl. G01s *9/48*

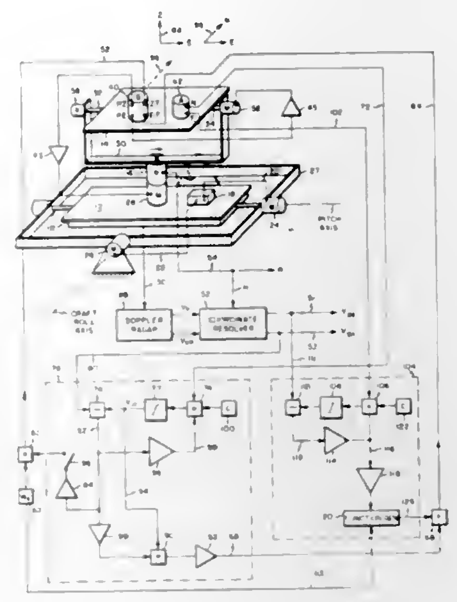


Apparatus for providing an accurate vertical reference in a combined Doppler-inertial navigation system. A relatively crude two-axis directional gyroscope having its spin-axis normally aligned to the local vertical and its two output axes respectively aligned parallel to the pitch and roll axes of the vehicle provides verticality data for stabilizing the Doppler antenna in pitch and roll. A two-gimbal heading and inertial reference unit mounted atop the antenna generates north and east error signals representing the antenna platform deviations from the true horizontal. Heading information from the latter unit is utilized to convert these error signals into corresponding pitch and roll components which are subsequently compared with the antenna platform's synchro outputs. This results in pitch and roll error signals attributable only to the directional gyroscope vertical alignment error. The last mentioned signals may then be used as correction terms to torque the gyro and thereby maintain long-term spin axis alignment to the vertical. For first order corrections, the gyro error correction terms are directly subtracted from the gyro's synchro pickoff voltages and the resulting pitch and roll data fed to the auxiliary equipment aboard the aircraft.

3,430,239

DOPPLER INERTIAL SYSTEM WITH ACCURATE VERTICAL REFERENCE

Heinz Buell, Mount Kisco, N.Y., John M. Fiore, Elizabeth, N.J., and Louis S. Marino, Yorktown Heights, and Jack Rubin, Brooklyn, N.Y., assignors to General Precision Systems Inc., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,502
U.S. Cl. 343—9 **16 Claims**
Int. Cl. G01s *9/44*



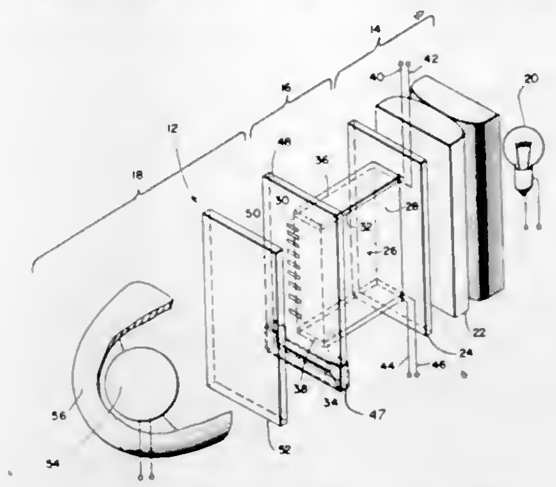
An in-flight gyrocompassing system is provided, including a heading reference system (FIG. 1) employing a two degree of freedom gyroscope **40** on table **14** together with a two-axis accelerometer **42**. A North axis signal from accelerometer **42** is the major input to a gyrocompassing circuit **76**. The operation of circuit **76** is tuned and damped by a signal V_{dn} derived from the Doppler radar **48**. Electrical compensation for leveling errors of table **14** about the North axis is provided by the compensating circuit **104**, the operation of which is tuned and damped by a Doppler velocity signal V_{de}. Very accurate vertical reference signals are provided at a location remote from the heading reference system of FIG. 1, despite airframe flexture, by the vertical reference system of FIG. 2. The FIG. 2 system includes an inertially stabilized table **126** and associated stabilization circuits **162** and **164**, the operation of each of which is corrected and damped by Doppler velocity signals obtained from the Doppler radar **48** of FIG. 1.

3,430,240

FREQUENCY MODULATED PULSE TRANSMISSION AND RECEPTION DEVICES UTILIZING ELECTRO-OPTICAL TRANSDUCTION

Buchanan Loesch, Reading, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Continuation-in-part of application Ser. No. 833,107, Aug. 11, 1959. This application July 5, 1961, Ser. No. 124,289
U.S. Cl. 343—17.2 **4 Claims**
Int. Cl. G01s *7/28*

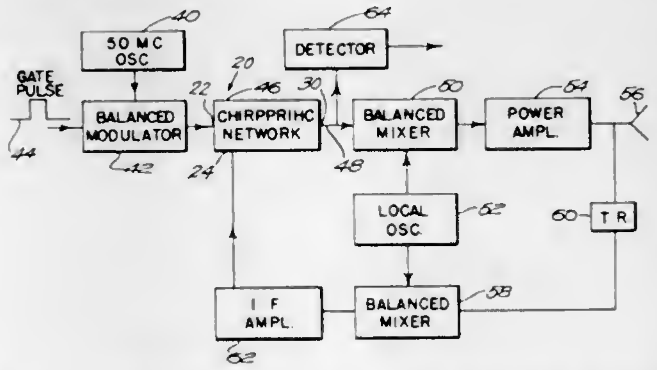
1. A pulse expansion-compression unit comprising a solid medium providing a path between an entrance face and an exit face, a source of circularly polarized radiation at said entrance face, a mask associated with said exit face, said mask providing a series of openings of varying sequential spacing, transducing means for generating a travelling wave through said medium in order to convert said circularly polarized radiation to linearly polarized radiation, analyzing means at said exit face for attenuating said linearly polarized radiation, and detecting means for receiving said linearly polarized radiation from said analyzing means, said transducing means including a first electro-acoustic transducer and a second electro-acoustic transducer coupled to said solid medium at opposite extremities of said series of openings.



3,430,241

FREQUENCY MODULATED WAVE PULSE TRANSMISSION AND RECEPTION

Buchanan Loesch, Reading, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 11, 1959, Ser. No. 833,107
U.S. Cl. 343—17.2 **4 Claims**
Int. Cl. G01s *7/30*

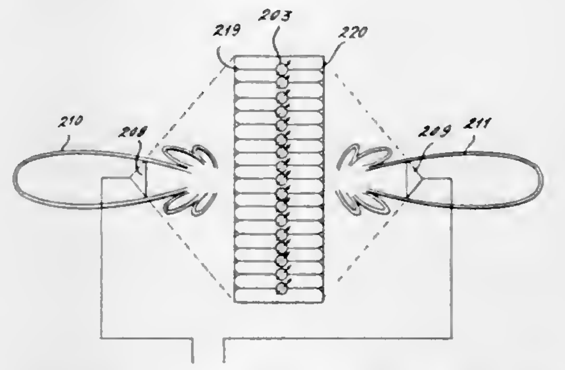


3. In combination, means for transmitting a plurality of successive signals of selectable frequencies, means for receiving said transmitted signals, and means comprising a non-linear tapped delay line for generating said signals for transmission and for producing real time correlation of said signals upon reception.

3,430,242

BIDIRECTIONAL ELECTRONICALLY SCANNED ANTENNA SYSTEM

Paul Safran, Chesterfield, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Dec. 5, 1967, Ser. No. 688,072
U.S. Cl. 343—100 **8 Claims**
Int. Cl. H04b *7/06*

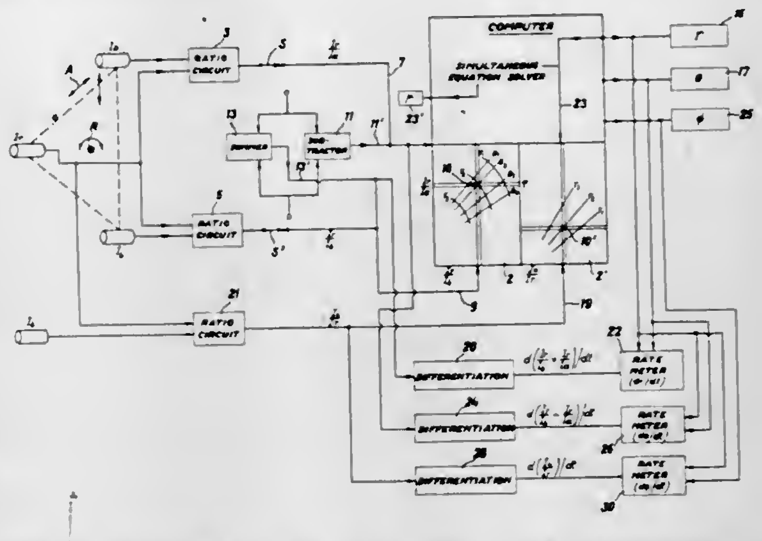


A transmission lens phased array. Two feed assemblies, one on each side of the lens, form antenna beams simultaneously or sequentially, using the same lens, phase shifters and drivers. Two arrays oriented at 90° from each other scan 360°.

3,430,243

METHOD OF AND APPARATUS FOR DETERMINING THE DISTANCE AND/OR ANGLES BETWEEN OBJECTS WITH THE AID OF RADIANT ENERGY

Robley D. Evans, 15 Hickory Lane, Belmont, Mass. 02178
Filed Apr. 4, 1966, Ser. No. 539,690
U.S. Cl. 343—112 **28 Claims**
Int. Cl. G01s *3/02*

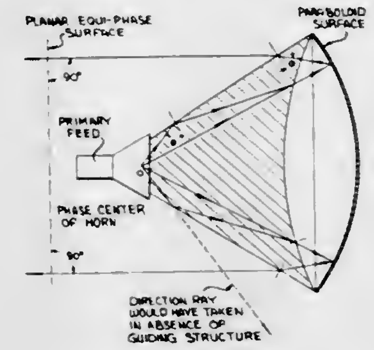


This disclosure deals with novel multiple-detector arrays that enable range, bearing and elevation determination through ratio comparisons of signals received at the multiple detectors.

3,430,244

REFLECTOR ANTENNAS

Homer E. Bartlett, Melbourne, and Roland E. Moseley, Indialantic, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Nov. 25, 1964, Ser. No. 413,819
U.S. Cl. 343—755 **8 Claims**
Int. Cl. H01q *19/12, 19/14, 19/18*


PLANAR EQUI-PHASE SURFACE
PARABOLOID SURFACE
90°
PRIMARY FEED
PHASE CENTER OF HORN
90°
DIRECTION RAY WOULD HAVE TAKEN IN ABSENCE OF GUIDING STRUCTURE

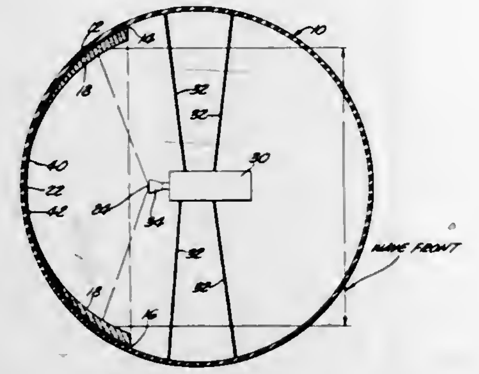
A reflector antenna has a directive feed separated from the surface of a reflector, and a solid dielectric guiding structure interposed between the feed and the reflector for directing substantially all of the radiation emanating from the feed that would otherwise produce spillover lobes, onto the reflector surface.

3,430,245

SPHERICAL REFLECTOR WITH LENS TO CONVERT TO PARABOLIC SURFACE

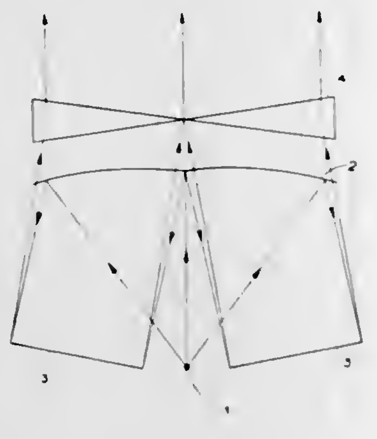
Charles E. Wolcott, El Cajon, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed May 19, 1965, Ser. No. 456,941
U.S. Cl. 343—755 **5 Claims**
Int. Cl. H01q *19/10, 1/42, 15/24*

A spherical shell of elastic dielectric material has a portion of its internal surface coated with a thin metallic spherical shaped reflecting coating which in turn is coated with an elastic dielectric material such that in effect a parabolic reflecting surface results. The entire assembly may be compacted into a small space and when the compacting forces thereon are released as, for example, in outer space the elasticity of the dielectric materials causes the assembly to assume its normal spherical appearance and capability of serving as a parabolic antenna.



3,430,246
PLURAL REFLECTOR ANTENNA WITH POLARIZATION ROTATION TO MINIMIZE FEED SHADOW

Guy Le Parquier and Robert Pierrot, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Mar. 23, 1966, Ser. No. 536,880
Claims priority, application France, Mar. 31, 1965, 11,338
U.S. Cl. 343—756 **5 Claims**
Int. Cl. H01q *19/14, 15/22*

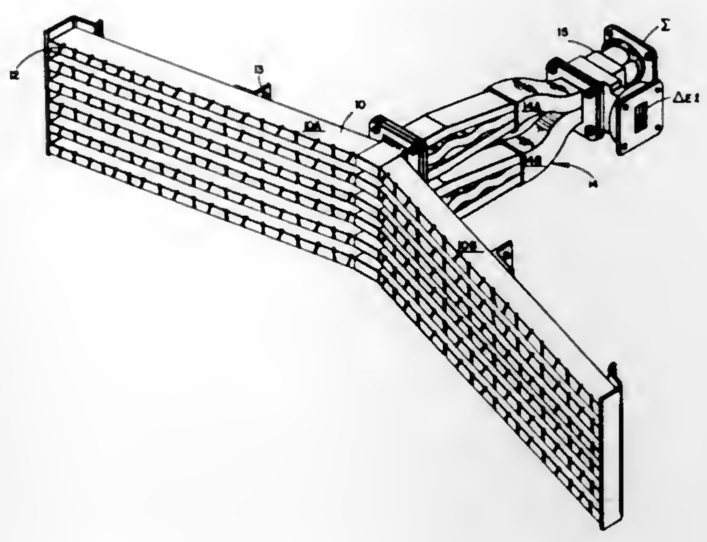


A Cassegrain antenna having a feed system to minimize shadow effect. A centrally mounted feed faces a polarization selective first reflector which reflects all the waves to a polarization rotating second split reflector. The second reflector rotates the polarization of the waves and directs them back to the first reflector which is now transparent to the new polarization.

3,430,247
CENTERFED TRAVELLING WAVE ARRAY HAVING A SQUINTED APERTURE

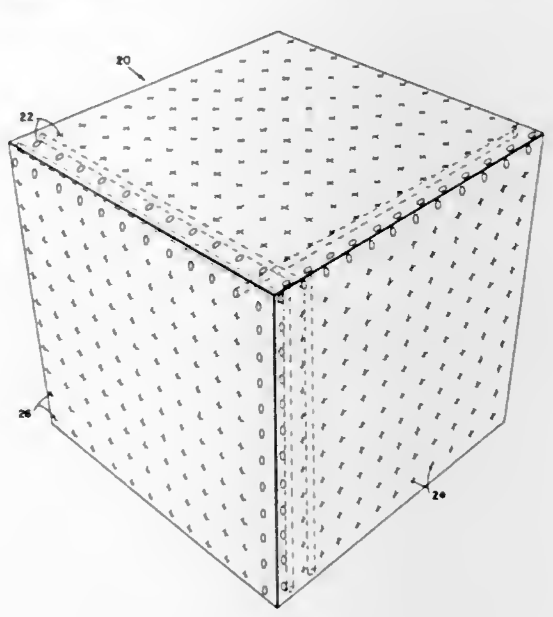
Sam H. Wong, Los Angeles, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,386
U.S. Cl. 343—771 **13 Claims**
Int. Cl. H01q *13/10*

A symmetrical centerfed travelling wave assembly comprising a pair of angularly-squinted arrays of slotted travelling wave line sources. Because each array of the centerfed pair of arrays is the mirror image of the other, frequency scanning sensitivity of both produces oppositely-scanning component beams, resulting in a nonscanning composite beam over a broad-bandwidth. Also, because the component arrays of an array pair are mutually angled or squinted, the antenna assembly boresight or aperture broadside direction is not parallel to the broadside direction of either component array, whereby the impedance mismatches and high standing wave ratios associated with the narrow-bandwidth and resonant frequencies of the broadside beam region may be avoided and improved broadband impedance matching obtained. Further, a controlled aperture distribution may be conveniently effected for improved multi-mode monopulse data processing.



3,430,248
ARTIFICIAL DIELECTRIC MATERIAL FOR USE IN MICROWAVE OPTICS

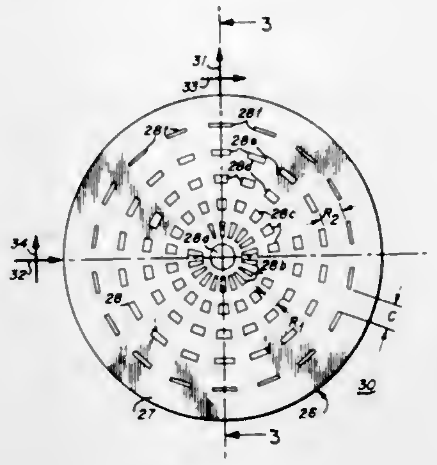
William M. Lightbowne, Morristown, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Jan. 6, 1966, Ser. No. 519,165
U.S. Cl. 343—911 **8 Claims**
Int. Cl. H01q *15/08*



An artificial dielectric material wherein an array of discrete dipoles formed by wraping cylinders of foil around plastic rods is interspersed and oriented in a three-dimensional repeating pattern, identical in the three principal planes, and supported by a lattice of insulating material.

3,430,249
ARTIFICIAL DIELECTRIC LENS

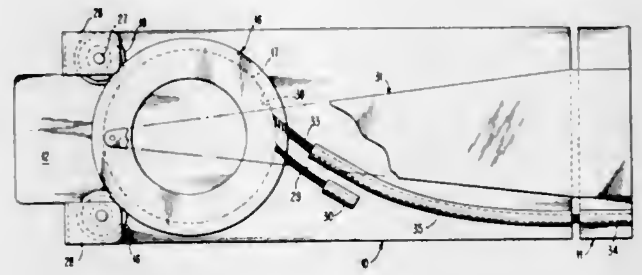
Raymond E. Franks, San Jose, Calif., assignor to ESL, Incorporated, Palo Alto, Calif., a corporation of California
Filed Sept. 8, 1966, Ser. No. 578,007
U.S. Cl. 343—911 **9 Claim**
Int. Cl. H01q *15/08*



1. An artificial dielectric lens for providing phase compensation for electromagnetic waves comprising:
at least one disc of dielectric material of substantially uniform thickness having a dielectric constant near unity;
a plurality of metallic obstacles on said dielectric disc, said obstacles being arranged on said dielectric disc in concentric rings with one of said obstacles in the center of said disc; and
the radial spacings between said metallic obstacles increasing radially of said dielectric disc to decrease the effective dielectric constant of said lens for the radial component of the electromagnetic waves as a function of the radius of said lens.

3,430,250
SCRATCH STRAIN RECORDER

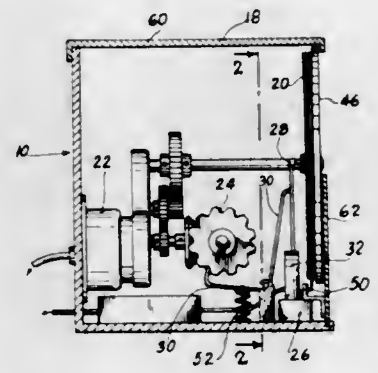
Richard H. Prewitt, 304 W. 3rd St., Lexington, Ky. 40508, and Volker Schmidt, Lexington, Ky.; said Schmidt assignor to said Prewitt
Filed Aug. 21, 1967, Ser. No. 661,905
U.S. Cl. 346—7 **18 Claims**
Int. Cl. G01d *15/02*



A scratch strain gauge has two base plates, which are attached to two spaced areas of a work that is to have the strains to which it is subjected recorded. One of the plates has an annular target rotatably mounted thereon and has means mounted thereon to prevent the target from rotating in one direction. The other of the plates has a scratch arm attached thereto with its scratch element engaging the upper surface of the annular target and forming scratches thereon in response to strains of opposite senses on the work. The other plate also has means attached thereto for rotating the annular target in the opposite direction when the plates are moved toward each other due to a compression strain in the work. In another form of the invention, the annular target is driven continuously by a timing mechanism, and the preventing and rotating means are eliminated. In still another embodiment, the annular target is replaced by a rectangular shaped target in which both the scratches on the rectangular shaped target and the advancement of the rectangular shaped target are due to movement of one of the plates with respect to the other.

3,430,251
SEMIPERMANENT READOUT DEPTH RECORDER

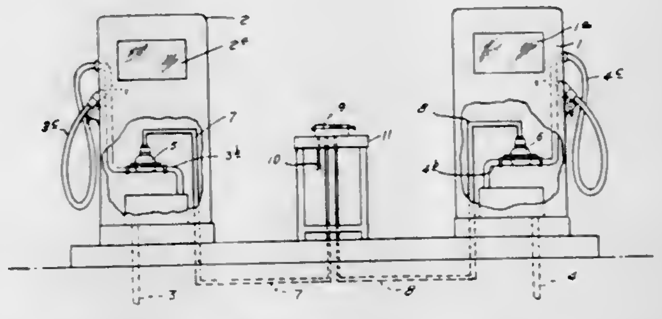
Adolph Phillips, 1100 Madison Ave., New York, N.Y. 10021
Filed Oct. 17, 1967, Ser. No. 675,818
U.S. Cl. 346—21 **1 Claim**
Int. Cl. G01d *9/00*



An electro-mechanically operated image producing impressor for producing a succession of removable images on a multi-layer chart of a depth recorder from which the images may be successively removed.

3,430,252
APPARATUS FOR RECORDING AND DOCUMENTING QUANTITIES DISPENSED IN RELATION TO TIME

William A. Bonner, 7001 Oakland St., Fort Worth, Tex.
Filed July 8, 1966, Ser. No. 563,802
U.S. Cl. 346—43 **6 Claims**
Int. Cl. G01d *9/26*

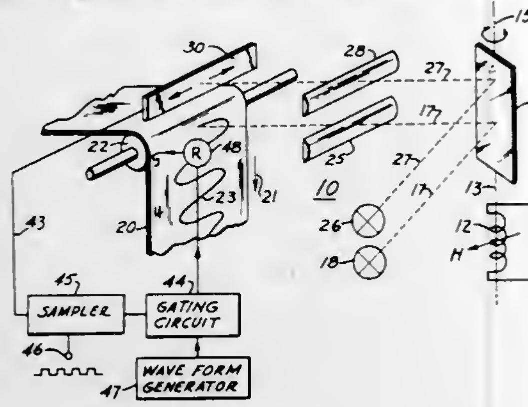


A device for measuring and recording quantities of substances such as gallons of liquid, cubic feet of gas, weight or volume of solids, electrical wattage or other measured quantities dispensed in relation to any selected time.

3,430,253
OSCILLOGRAPH WITH MEANS FOR PROVIDING SECOND RECORD OF THE INPUT

Herbert I. Chambers, Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Nov. 8, 1967, Ser. No. 681,363
U.S. Cl. 346—66 **18 Claims**
Int. Cl. G01d *9/30*

Recording apparatus comprising means for deflecting a beam of light in accordance with variable information, beam responsive means for providing electric signals corresponding to the deflection of the beam, and means responsive to said electric signals for providing an information record on a recording medium.



3,430,254

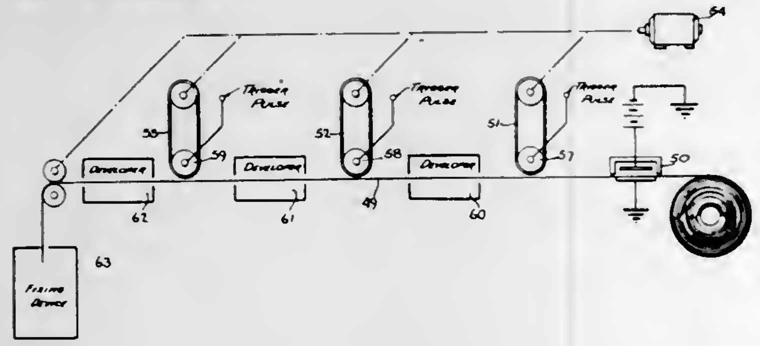
TESI PRINTING WITH FLEXIBLE ELECTRODE ON ENDLESS BELT

Frederick A. Schwertz, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Application Oct. 19, 1961, Ser. No. 146,246, now Patent No. 3,205,484, dated Sept. 7, 1965, which is a continuation of Ser. No. 638,067, Feb. 4, 1957, now Patent No. 3,050,580, dated Aug. 21, 1962. Divided and this application Dec. 18, 1964, Ser. No. 419,392

U.S. Cl. 346—74 **12 Claims**

Int. Cl. G01d *15/06*



An electrostatic recording system for depositing electrostatic charge on an insulating web at the points of tangential rolling contact with a biased, endless electrode is disclosed. A plurality of such electrodes associated with a plurality of development means making it possible to superimpose various color patterns is also disclosed.

3,430,255

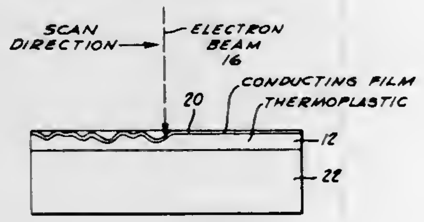
ELECTRON BEAM THERMOPLASTIC RECORDER WITH CONDUCTOR COATED THERMOPLASTIC RECORDING MEDIUM

Thomas E. Everhart, Berkeley, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Continuation of application Ser. No. 181,983, Mar. 23, 1962. This application Nov. 2, 1964, Ser. No. 408,422

U.S. Cl. 346—74 **1 Claim**

Int. Cl. G01d *15/06, 15/34*



An electrically conductive film is provided in a thermoplastic recording medium, for dissipating electron charges which build up in the thermoplastic material, and thus for confining within the thermoplastic material the electric fields generated by the stored electron charges.

3,430,256

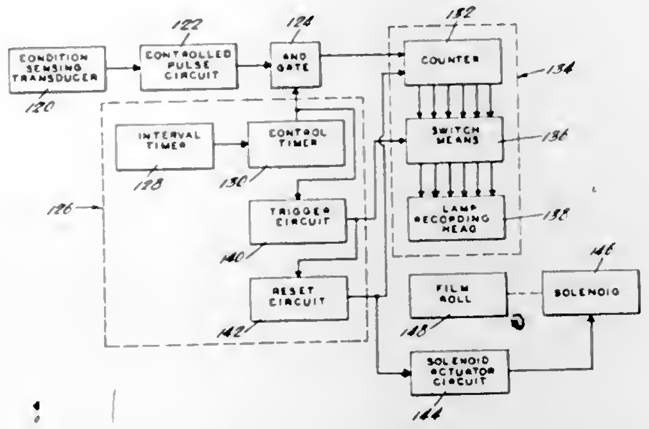
SUBMINIATURE DIGITAL RECORDER

Robert M. Goodman, Elkins Park, Pa., assignor to The Franklin Institute, Philadelphia, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 379,076, June 30, 1964. This application Mar. 5, 1968, Ser. No. 719,815

U.S. Cl. 346—107 **21 Claims**

Int. Cl. G01d *9/42*



A recorder apparatus is provided having a source of radiation sensitive material and a receptacle for the material. Drive means is employed for moving the material from the source to the receptacle. A recording head is provided having a plurality of radiation sources for exposing to radiation different areas on the material as the material moves from the source to the receptacle. Transducer means is responsive to a predetermined condition for producing an output signal indicative of the condition. Controlled pulse means is employed which is responsive to the output signal of the transducer means for providing a series of pulses indicative of the condition. The apparatus includes counter means responsive to the series of pulses from the controlled pulse means for providing a series of outputs representative of the number of pulses in the series of pulses. Switch means is provided for selectively connecting the outputs of the counter means to different ones of the radiation sources for representing information indicative of the condition by exposure of the material and having means actuatable to cause the switch means to connect the outputs of the counter means to the radiation sources. Control means is provided for actuating the actuatable means of the switch means and for actuating the drive means to move the material.

3,430,257

CHART RECORDER USING A THREAD MARKER

James Stewart Johnston, Bognor Regis, England, assignor to Rosemount Engineering Company Limited, Bognor Regis, England, a British company

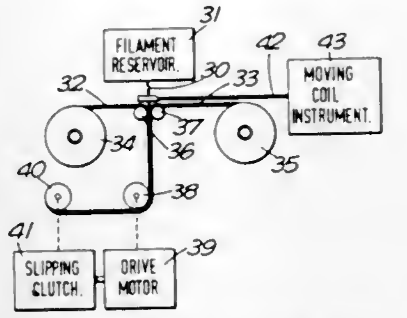
Filed Apr. 10, 1967, Ser. No. 629,620

Claims priority, application Great Britain, Apr. 14, 1966, 16,454/66

U.S. Cl. 346—112 **16 Claims**

Int. Cl. G01d *15/16*

A chart recorder has a strip or endless loop of chart material driven linearly at constant speed to which a thread or filament is fed at a position across the width of the chart which is controlled by a transducer, e.g., a moving coil instrument or pressure diaphragm. The chart may be coated with an adhesive which can be cured so that the thread or filament forms a permanent record on the chart material of the variations with time of a parameter measured by the transducer.



3,430,258

BARBITURIC ACID DERIVATIVES AND A PROCESS FOR PREPARATION THEREOF

Shigeo Senda, Gifu, Hajime Fujimura, Kyoto, and Hiroshi Izumi, Gifu, Japan, assignors to Takeda Chemical Industries Ltd., Osaka, Japan

No Drawing. Filed July 21, 1966, Ser. No. 566,737

U.S. Cl. 260—257 **9 Claims**

Int. Cl. C07d *51/20;* **A61k** *27/00*

1-cyclohexyl- or 1-phenyl-5-(4-hydroxy-n-butyl)barbituric acid and 1-cyclohexyl- or 1-phenyl-5-(3-hydroxy-n-butyl)barbituric acid are metabolites of 1-cyclohexyl- or 1-phenyl-5-n-butylbarbituric acid, respectively, and these metabolites and their related compounds such as 1-substituted-5-(3-oxo-n-butyl)barbituric acid and 1-substituted-5-(3-carboxypropyl)barbituric acid show not only uricosuric action but also high anti-inflammatory activity and less toxicity than the corresponding 1-substituted-5-butylbarbituric acids and hitherto-known anti-inflammatory agents.

3,430,259

PESTICIDALLY ACTIVE 2-TRIFLUOROMETHYL BENZIMIDAZOLES

Geoffrey Tattersall Newbold, Saffron Walden, and Albert Percival, Hauxton, England, assignors to Fisons Pest Control Limited, Harston, Cambridgeshire, England

No Drawing. Filed July 11, 1966, Ser. No. 563,954

U.S. Cl. 260—309.2 **4 Claims**

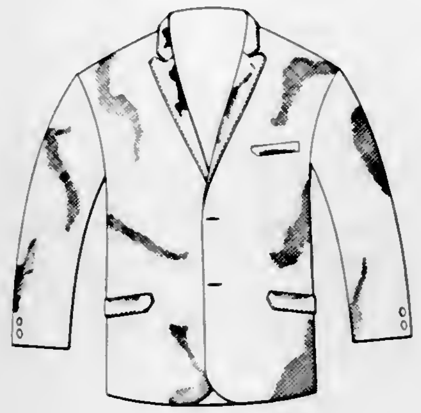
Int. Cl. C07d *49/42;* **A01n** *9/16*

Substituted benzimidazoles of the type of 1-benzenesulphonyl-4,5,6-trichloro-2-trifluoromethyl benzimidazole, 1-benzenesulphonyl-5,6-dichloro-2-trifluoromethyl benzimidazole, 1-methanesulphonyl-4,5,6-trichloro-2-trifluoromethyl benzimidazole, etc. are active as pesticides (e.g., herbicides, insecticides, etc.).

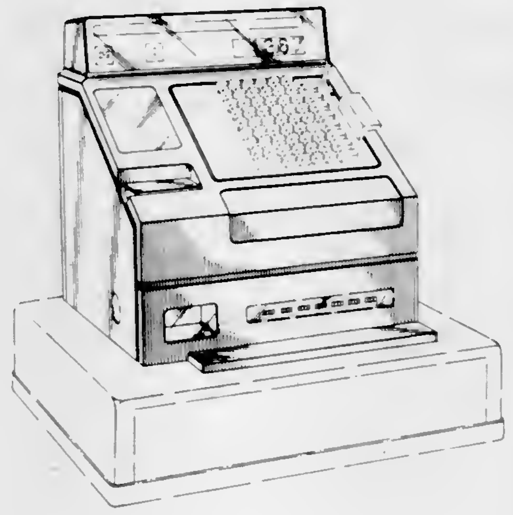
DESIGNS

FEBRUARY 25, 1969

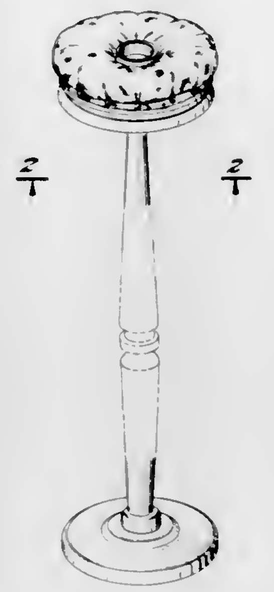
213,351
COAT OR SIMILAR ARTICLE
Felice N. Vitale, 2842 S. Union, Chicago, Ill. 60616
Filed Nov. 14, 1967, Ser. No. 9,409
Term of patent 14 years
U.S. Cl. D2—183
Int. Cl. D2—*01*



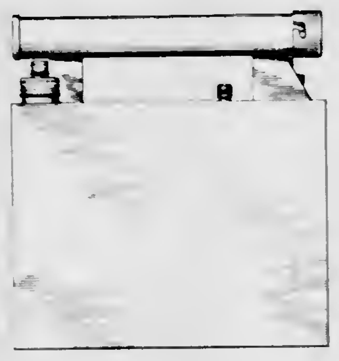
213,352
CASH REGISTER OR SIMILAR ARTICLE
Thomas L. Hermann, Springfield, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 25, 1968, Ser. No. 11,622
Term of patent 14 years
U.S. Cl. D52—4
Int. Cl. D20—*99*



213,353
DRESSMAKER'S PINCUSHION
Hilda E. Einess, 120 Maple St., Crookston, Minn. 56716
Filed Aug. 17, 1967, Ser. No. 8,297
Term of patent 14 years
U.S. Cl. D3—19
Int. Cl. D3—*99*



213,354
DUAL COMPARTMENT CONTAINER FOR LIQUIDS
Kenneth Black, P.O. Box 123, Avery, Calif. 95224
Filed Apr. 19, 1968, Ser. No. 11,530
Term of patent 14 years
U.S. Cl. D9—18
Int. Cl. D9—*04*



213,355
BOTTLE

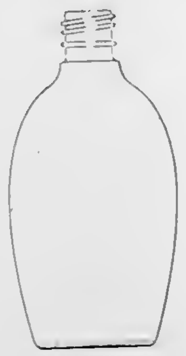
Stephen J. Kneapler, Miami, Fla., assignor to Richford Corporation, Farmingdale, N.Y., a corporation of New York

Filed Feb. 21, 1968, Ser. No. 10,678

Term of patent 14 years

U.S. Cl. D9—143

Int. Cl. D9—*01*



213,356
FOIL PACKAGING TRAY

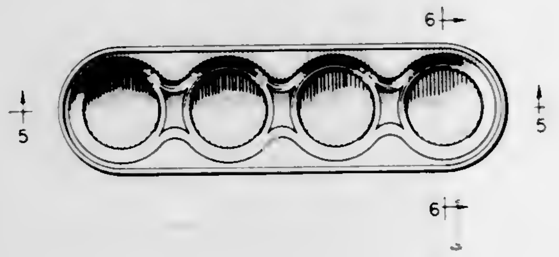
George J. Buff, Jr., % Penny Plate Inc., Kresson Road, Cherry Hill, N.J. 08034

Filed May 22, 1968, Ser. No. 12,048

Term of patent 14 years

U.S. Cl. D9—189

Int. Cl. D9—*04*



213,357
CONTAINER EDGE SUPPORTABLE PAINTBRUSH HOLDER

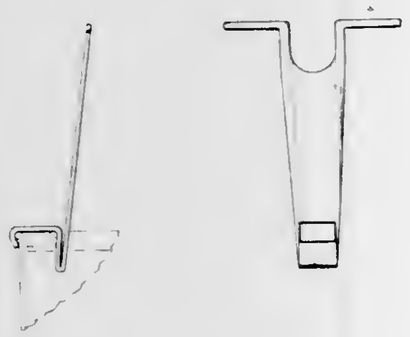
Anthony Cortina, 56 Huntington St., New London, Conn. 06320

Original design application Feb. 26, 1967, Ser. No. 5,971. Divided and this application Feb. 19, 1968, Ser. No. 10,735

Term of patent 14 years

U.S. Cl. D9—289

Int. Cl. D9—*99*



213,358
DRAWER HANDLE

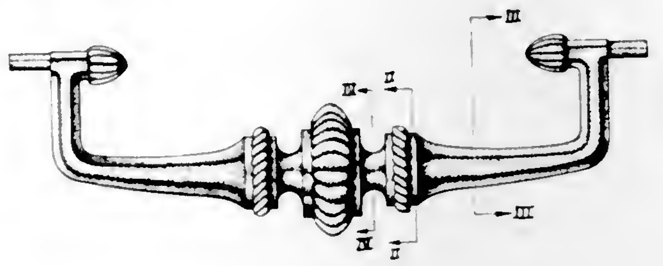
Emil J. Bocade, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich., a corporation of Michigan

Filed June 4, 1968, Ser. No. 12,204

Term of patent 14 years

U.S. Cl. D8—138

Int. Cl. D8—*03*



213,359
MOVABLE SUPPORT FOR CONES, CHEESES, OR THE LIKE

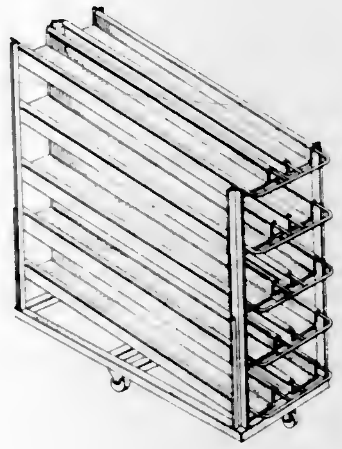
James Glenn Fisher, Hartwell, Ga., assignor to NVF Company, Wilmington, Del.

Filed May 3, 1968, Ser. No. 11,781

Term of patent 14 years

U.S. Cl. D14—3

Int. Cl. D12—*02*



213,360
CART

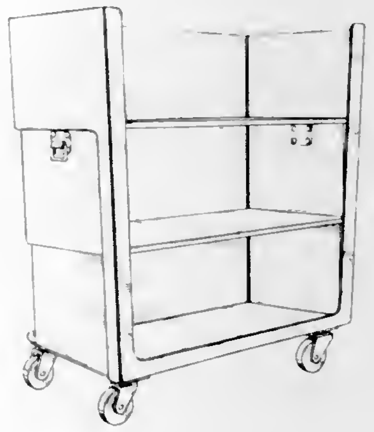
Delmar H. McClure, 9051 SE. 55th Ave., Portland, Oreg. 97206

Filed July 1, 1968, Ser. No. 12,579

Term of patent 14 years

U.S. Cl. D14—3

Int. Cl. D12—*02*



213,361
COVER FOR A TRUCK BED

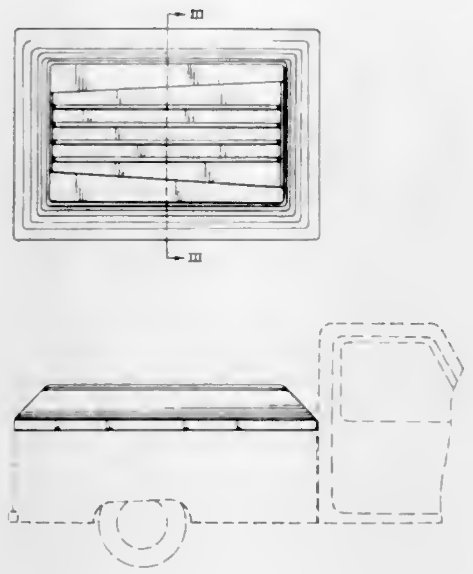
Robert L. Gardner, Newport, Ark., assignor to Gladys Hurley, doing business as Walter F. Hurley Gin, Diaz, Ark.

Filed Apr. 23, 1968, Ser. No. 11,579

Term of patent 14 years

U.S. Cl. D14—27

Int. Cl. D12—*14*



213,362
TRACK WHEEL

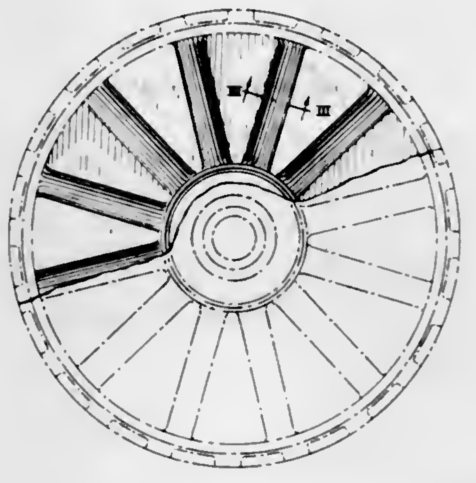
Clifford B. Harrop, Ancaster, Ontaria, and Dennis W. Walker, Hamilton, Ontario, Canada, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 13, 1967, Ser. No. 9,359

Term of patent 14 years

U.S. Cl. D14—30

Int. Cl. D12—*14*



213,363
CHAIR

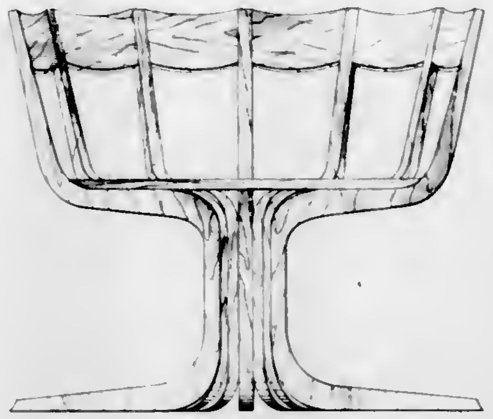
Robert N. Roane, 1106 W. Franklin, Richmond, Va. 23220

Filed Jan. 18, 1968, Ser. No. 10,216

Term of patent 14 years

U.S. Cl. D15—1

Int. Cl. D6—*01*



213,364
COMBINED ARTICLE HOLDER AND SEAT BACK COVER FOR AN AUTOMOBILE

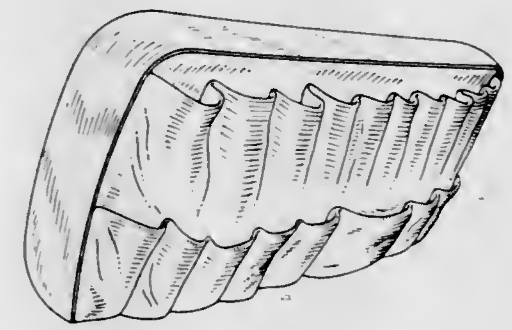
Lyda Blalock Roberts, % Security Savings & Loan Association, 128 N. Main St., Farmville, N.C. 27828

Filed Sept. 23, 1966, Ser. No. 3,993

Term of patent 14 years

U.S. Cl. D15—8

Int. Cl. D12—*14;* D6—*01*



213,365
CHAIR

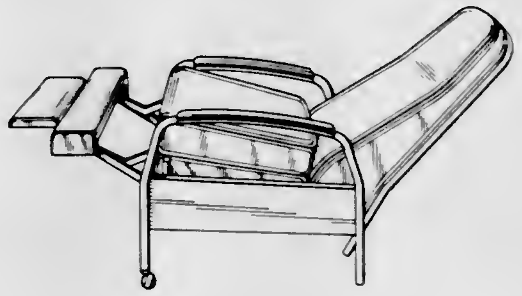
Allan H. Crawford, Amsterdam, N.Y., assignor to Mohasco Industries, Inc., Amsterdam, N.Y., a corporation of New York

Filed Oct. 20, 1967, Ser. No. 9,088

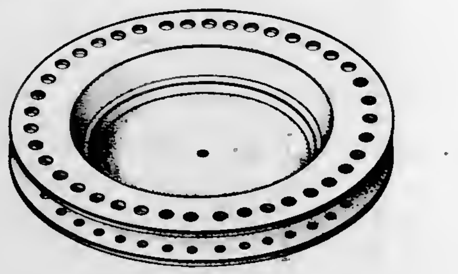
Term of patent 14 years

U.S. Cl. D15—11

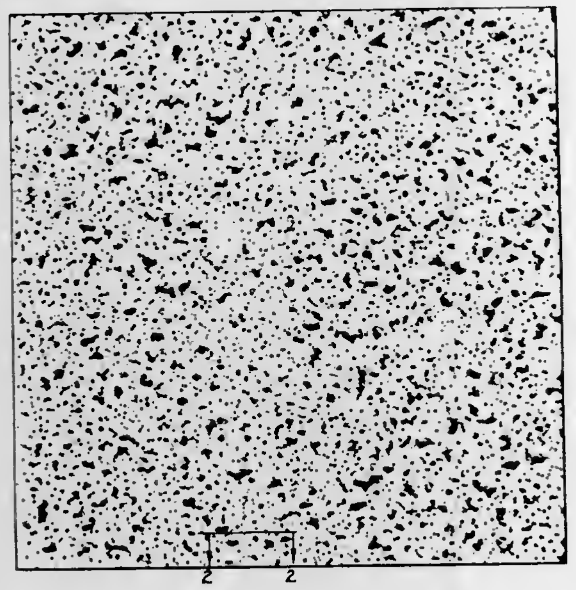
Int. Cl. D6—*01*



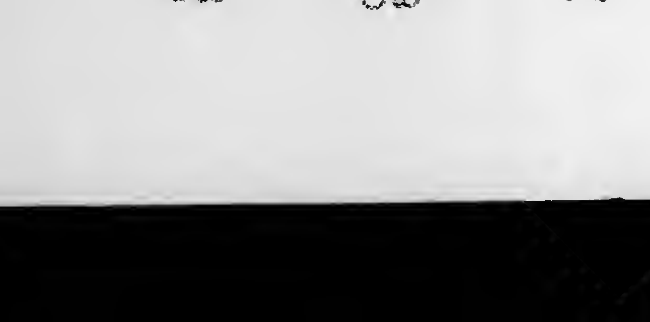
213,366
LABORATORY RACK
Richard J. Griffin, Denver, Colo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed May 31, 1968, Ser. No. 12,163
Term of patent 14 years
U.S. Cl. D16—1
Int. Cl. D24—*99, 02*



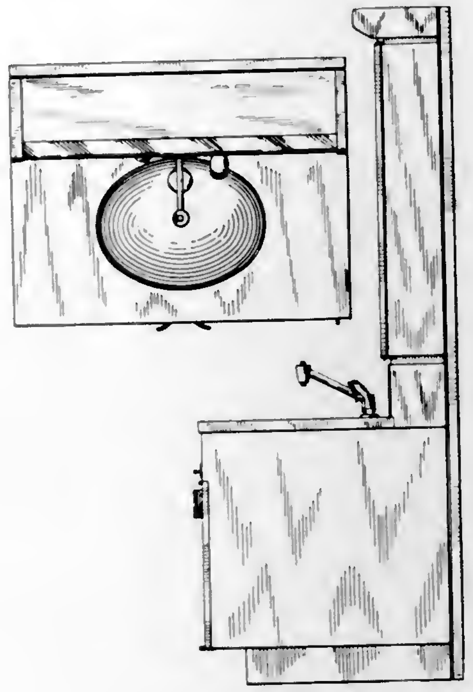
213,367
WALL PANEL
Robert Franklin Green, Westfield, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Apr. 25, 1967, Ser. No. 6,825
Term of patent 14 years
U.S. Cl. D18—2
Int. Cl. D25—*01*



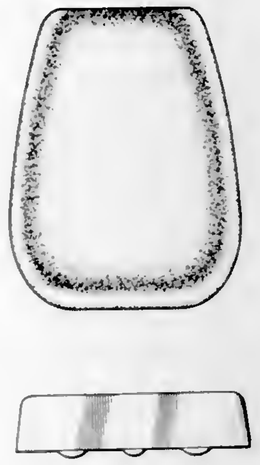
213,368
FISHING LURE
Douglas W. Parker, 3015 Free Ferry, Fort Smith, Ark. 72901
Filed July 11, 1968, Ser. No. 12,698
Term of patent 14 years
U.S. Cl. D22—28
Int. Cl. D22—*07*



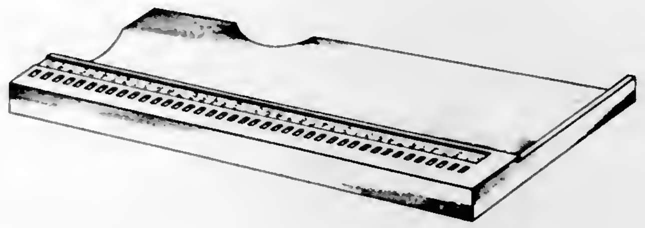
213,369
COMBINED LAVATORY AND CABINET
Nicholas Peter Arvan, Berwyn, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 10,759
Term of patent 14 years
U.S. Cl. D23—59
Int. Cl. D23—*02*



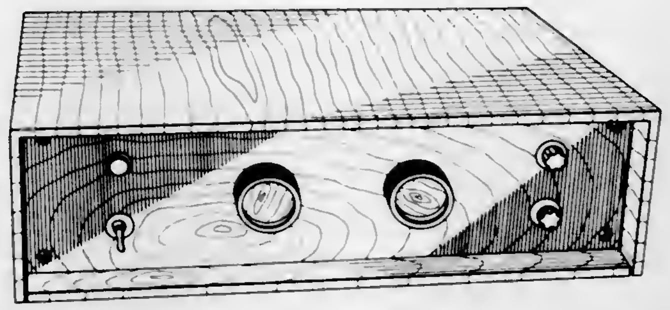
213,370
CRAWLING TRAINER FOR INFANTS
Allen B. Cherry, Oklahoma City, Okla., assignor to W. O. Gifford, Bartlesville, Okla., and Alvin Smith, Dewey, Okla., jointly
Filed Feb. 6, 1968, Ser. No. 10,462
Term of patent 14 years
U.S. Cl. D25—1
Int. Cl. D12—*13*



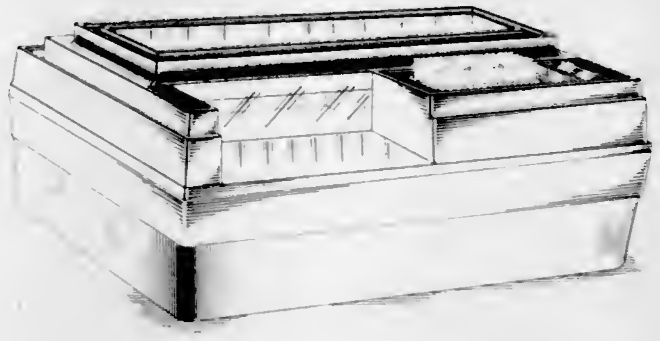
213,371
TEACHING AID FOR USE WITH DATA PROCESSING CARDS
Charles C. Worstell, 356 Burley Drive, Pocatello, Idaho 83201
Filed Feb. 21, 1968, Ser. No. 10,663
Term of patent 14 years
U.S. Cl. D25—1
Int. Cl. D19—*08*



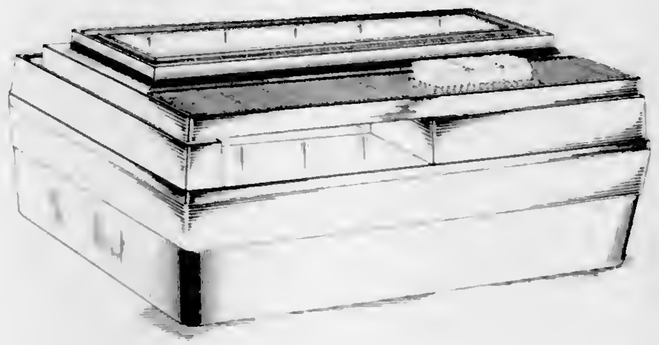
213,372
CONTROL CONSOLE FOR ILLUMINATION DEVICE
Robert I. Gross, Seneca, Mo., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed June 14, 1968, Ser. No. 12,364
Term of patent 14 years
U.S. Cl. D26—13
Int. Cl. D26—*99*



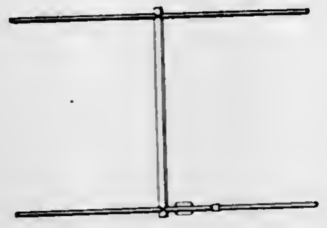
213,373
TAPE RECORDER CARTRIDGE PLAYER OR THE LIKE
Richard Samuel Cox, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 24, 1967, Ser. No. 7,951
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*01*



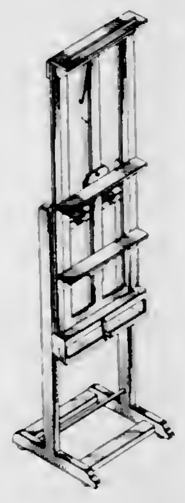
213,374
TAPE RECORDER CARTRIDGE PLAYER OR THE LIKE
Richard Samuel Cox, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 24, 1967, Ser. No. 7,952
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*01*



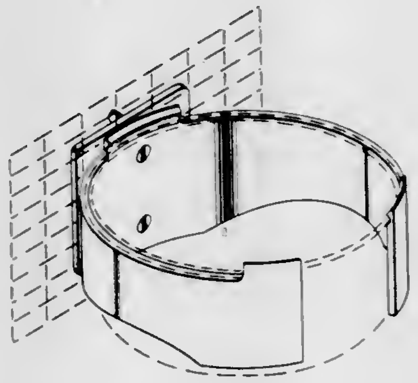
213,375
ANTENNA
Harry R. Habig, 3531 Beldare Ave., Cincinnati, Ohio 45220
Filed Nov. 2, 1967, Ser. No. 9,249
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*03*



213,376
ARTIST'S EASEL
Harry J. Hermalin, Los Angeles, Calif., assignor of one-third each to Alfonso T. Atwaters, Hollywood, Calif., and Jam A. Judie, Hollywood, Calif.
Filed June 11, 1968, Ser. No. 12,296
Term of patent 14 years
U.S. Cl. D29—20
Int. Cl. D6—*01;* D19—*07*

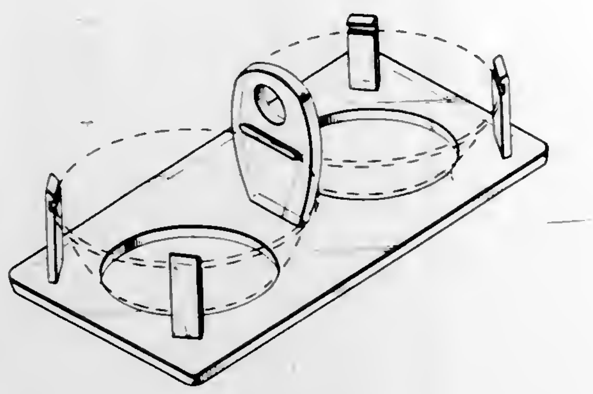


213,377
HOLDER FOR FOOD BOWL FOR PETS
Tony Robert, 5701 Southwest Freeway, Houston, Tex. 77027
Filed Feb. 13, 1968, Ser. No. 10,559
Term of patent 14 years
U.S. Cl. D30—13
Int. Cl. D6—*01;* D30—*02*



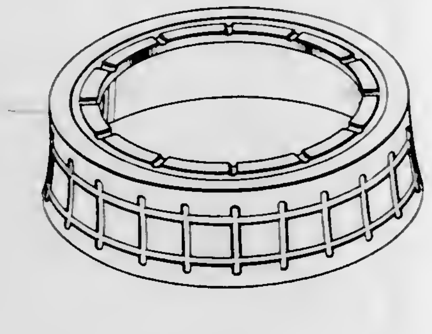
213,378
HOLDER FOR FOOD BOWLS FOR PETS

Tony Robert, 5701 Southwest Freeway,
Houston, Tex. 77027
Filed Feb. 16, 1968, Ser. No. 10,608
Term of patent 14 years
U.S. Cl. D30—13
Int. Cl. D30—*02*



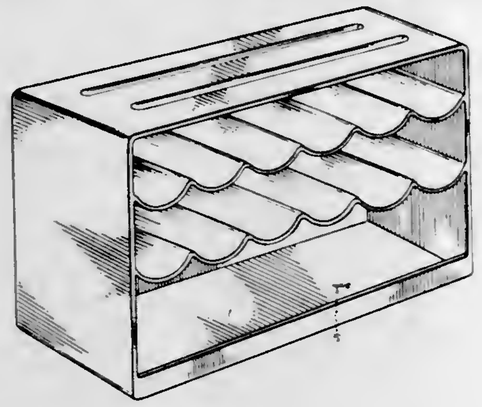
213,379
HOLDER FOR FOOD BOWL FOR PETS

Tony Robert, 5701 Southwest Freeway,
Houston, Tex. 77027
Filed Feb. 26, 1968, Ser. No. 10,710
Term of patent 14 years
U.S. Cl. D30—13
Int. Cl. D30—*02*



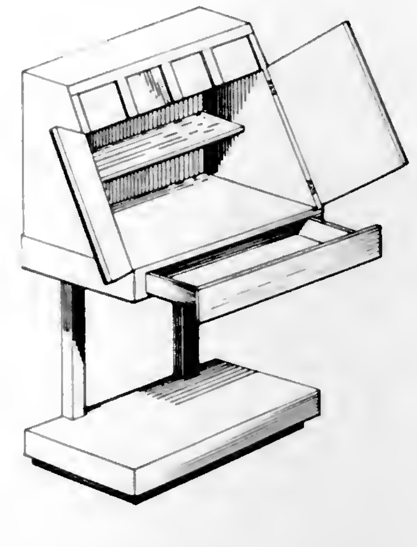
213,380
COSMETICS CABINET

Lois A. Huncovsky, 4897 Hidalgo,
San Diego, Calif. 92117
Filed Nov. 22, 1966, Ser. No. 4,771
Term of patent 14 years
U.S. Cl. D33—19
Int. Cl. D6—*01*



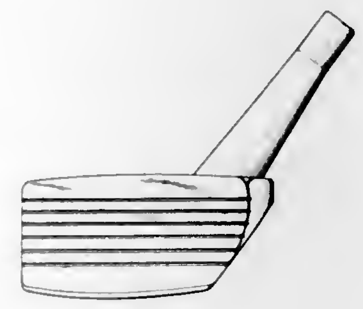
213,381
BAR CABINET OR SIMILAR ARTICLE

Louis R. Clerico, 235 NE. 122nd St.,
North Miami, Fla. 33161
Filed Dec. 8, 1967, Ser. No. 9,707
Term of patent 14 years
U.S. Cl. D33—19
Int. Cl. D6—*01*



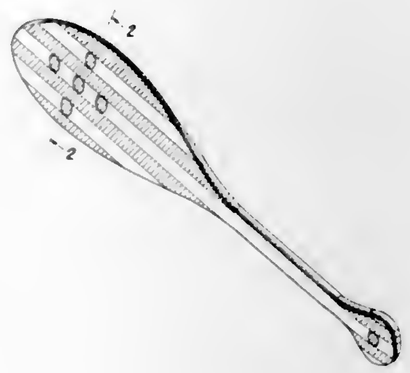
213,382
COMBINED GOLF CLUB HEAD AND SHAFT SOCKET

John D. Risher, 127 Bonnett St. SW.,
New Canton, Ohio 44720
Filed Nov. 24, 1967, Ser. No. 9,539
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



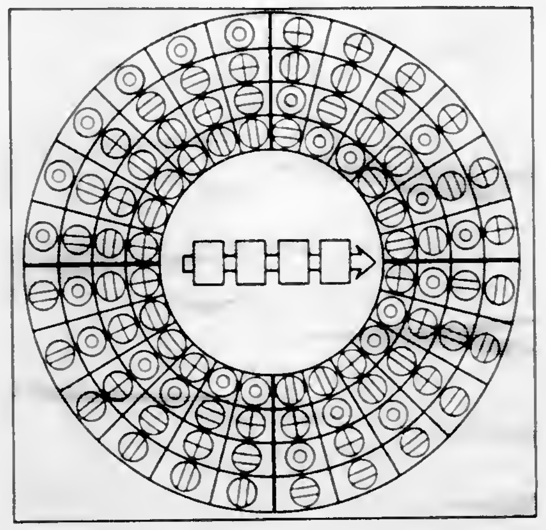
213,383
DECORATIVE PADDLE

Bruce Carlton, Memphis, Tenn.
(Rte. 5, Box 548-R, Hot Springs, Ark. 71901)
Filed Dec. 20, 1967, Ser. No. 9,863
Term of patent 7 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



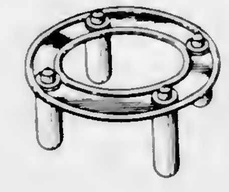
213,384
GAME BOARD

Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed Feb. 5, 1968, Ser. No. 10,430
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*01*



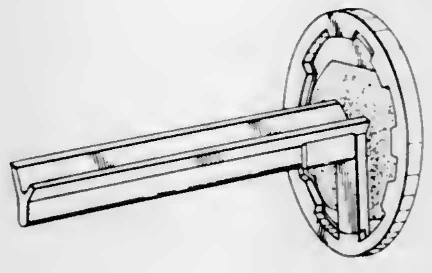
213,385
BUILDING TOY

Lester V. Molenaar, Box 777, Willmar, Minn. 56201
Filed June 16, 1967, Ser. No. 7,490
Term of patent 14 years
U.S. Cl. D34—15
Int. Cl. D21—*02*



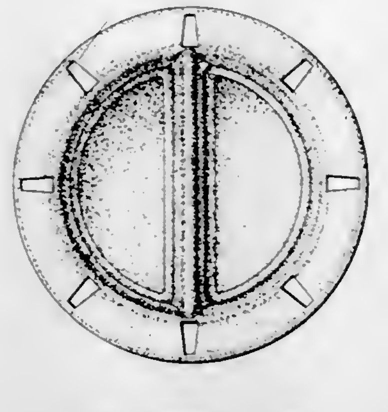
213,386
TIP SANDER FOR BILLIARD OR POOL CUE

William H. Sheffer, Riverside, Ill., assignor to Tweeten Fibre Company Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 30, 1967, Ser. No. 9,206
Term of patent 14 years
U.S. Cl. D37—1
Int. Cl. D21—*04*



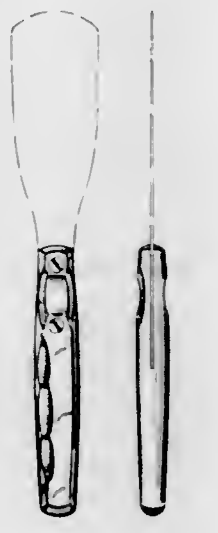
213,387
COMPARTMENTED FOOD WARMING INSERT FOR A SAUCEPAN OR THE LIKE

Richard B. Cronheim, 7 Upper Barnes,
St. Louis, Mo. 63124
Filed Feb. 12, 1968, Ser. No. 10,537
Term of patent 14 years
U.S. Cl. D44—1
Int. Cl. D7—*02*



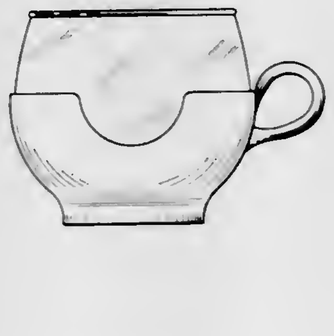
213,388
SANDWICH SPREADER OR SIMILAR ARTICLE

Richard Hopcraft, Providence, R.I., assignor to Imperial Knife Associated Companies, Inc., New York, N.Y., a corporation of Rhode Island
Original design application Aug. 10, 1967, Ser. No. 8,213, now Patent No. 211,681, dated July 9, 1968. Divided and this application Feb. 8, 1968, Ser. No. 10,503
Term of patent 14 years
U.S. Cl. D44—29
Int. Cl. D7—*02*

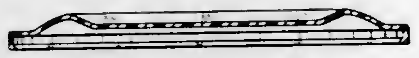


213,389
DRINKING CUP OR THE LIKE

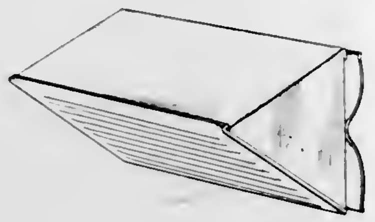
Mark R. Weitzman, Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 29, 1968, Ser. No. 10,795
Term of patent 14 years
U.S. Cl. D44—9
Int. Cl. D7—*01*



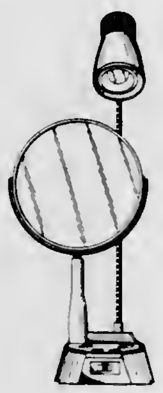
213,390
COVER FOR A BOWL OR THE LIKE
Robert A. Bruce, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 23, 1968, Ser. No. 10,690
Term of patent 14 years
U.S. Cl. D44—15
Int. Cl. D7—*01*



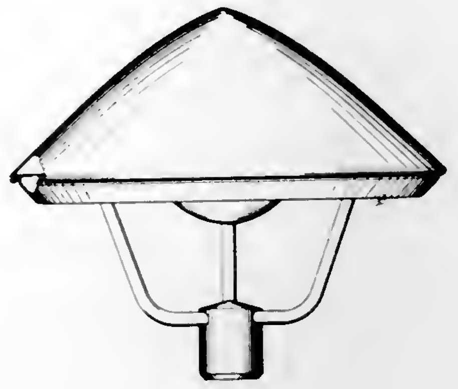
213,391
LIGHTING FIXTURE FOR WALLS OR THE LIKE
Joseph Bruno, 71 Long Vue Ave.,
North Providence, R.I. 02904
Filed Apr. 4, 1968, Ser. No. 11,305
Term of patent 14 years
U.S. Cl. D48—4
Int. Cl. D26—*02*



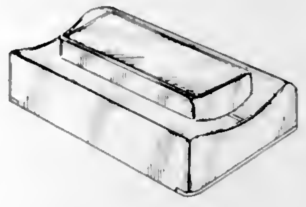
213,392
COMBINED HIGH INTENSITY COSMETIC MAKE-UP LAMP AND MIRROR
Dan M. Andre, 8843 Kostner Terrace,
Skokie, Ill. 60076
Filed Apr. 22, 1968, Ser. No. 11,553
Term of patent 14 years
U.S. Cl. D48—20
Int. Cl. D26—*02*



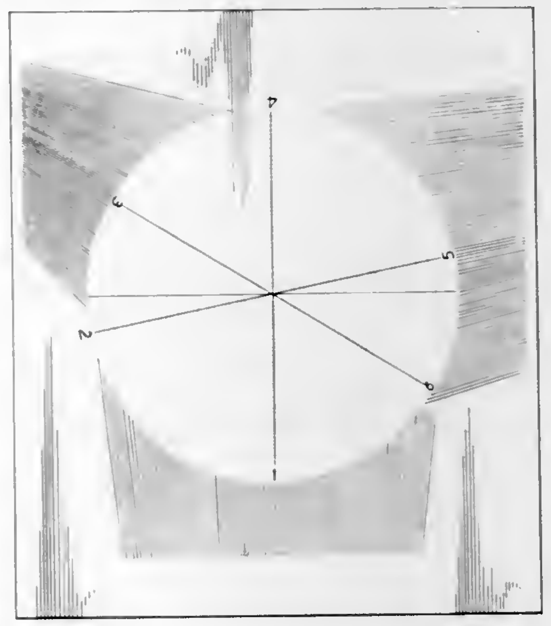
213,393
LUMINAIRE
Philip B. Clark, Hales Corners, and Paul J. Curtin, South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Continuation-in-part of design application Ser. No. 87,753, Oct. 22, 1965. This application Aug. 16, 1967, Ser. No. 8,287
Term of patent 14 years
U.S. Cl. D48—31
Int. Cl. D26—*03*



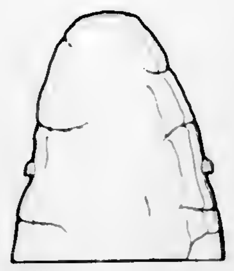
213,394
TISSUE DISPENSER
Robert Adell, Birmingham, Mich., assignor to Adell International Inc., Detroit, Mich., a corporation of Michigan
Filed Oct. 31, 1966, Ser. No. 4,471
Term of patent 14 years
U.S. Cl. D52—2
Int. Cl. D6—*01*



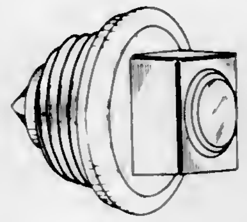
213,395
DRAWING AID DEVICE, PARTICULARLY FOR DRAWING PERSPECTIVES
Christopher Noel Vincent, 28 Lewis Road,
Birmingham 30, England
Filed June 5, 1967, Ser. No. 7,354
Claims priority, application Great Britain Dec. 9, 1966
Term of patent 7 years
U.S. Cl. D52—6
Int. Cl. D10—*99*



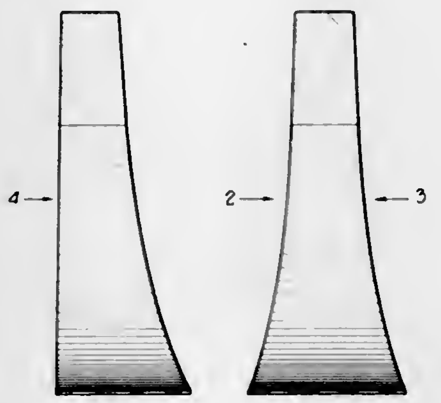
213,396
OPAQUE GAS METER COVER
Kenneth G. Salem, 226 Belmont St.,
Johnstown, Pa. 15904
Filed Oct. 20, 1967, Ser. No. 9,091
Term of patent 14 years
U.S. Cl. D52—6
Int. Cl. D10—*99*



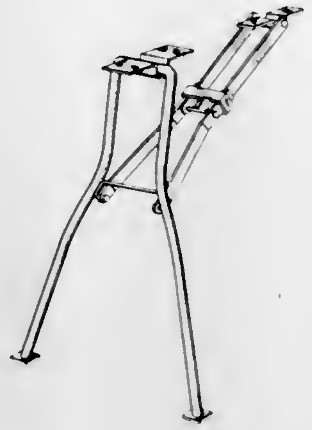
213,397
LIQUID LEVEL INDICATOR
John F. Nelson, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 21, 1968, Ser. No. 10,673
Term of patent 14 years
U.S. Cl. D52—6
Int. Cl. D10—*08*



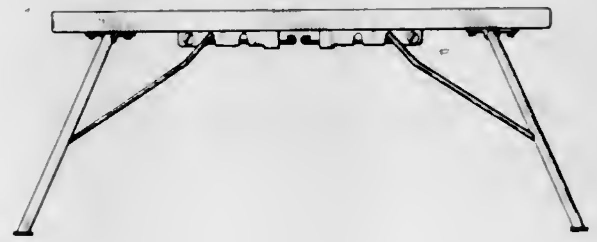
213,398
THERMOMETER HOLDER
Adam J. Grodin, Forest Hills, N.Y., assignor to Eisele & Company, Inc., Clifton, N.J., a corporation of Tennessee
Filed June 13, 1968, Ser. No. 12,330
Term of patent 14 years
U.S. Cl. D52—7
Int. Cl. D3—*99*



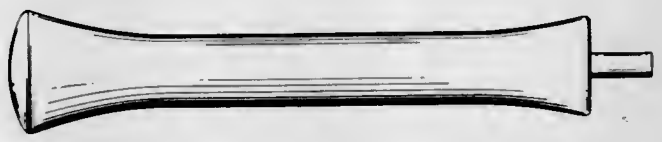
213,399
COLLAPSIBLE SAW HORSE LEG
Reine Chew, 3106 W. Garfield, Phoenix, Ariz. 85009
Filed Mar. 11, 1968, Ser. No. 10,907
Term of patent 14 years
U.S. Cl. D54—1
Int. Cl. D25—*99;* D8—*99*



213,400
SAWHORSE
James W. Cannon, 5714 Los Angeles,
Houston, Tex. 77026
Continuation-in-part of design application Ser. No. 2,932, July 5, 1966. This application Mar. 21, 1968, Ser. No. 11,085
Term of patent 14 years
U.S. Cl. D54—1
Int. Cl. D25—*99*



213,401
TIRE STUD INSERTING TOOL
Lorrain A. Holder, Willoughby Hills, Ohio
(4150 Hough Ave., Cleveland, Ohio 44103)
Filed June 23, 1967, Ser. No. 7,579
Term of patent 14 years
U.S. Cl. D54—13
Int. Cl. D8—*02*



213,402
CARPET STRETCHER

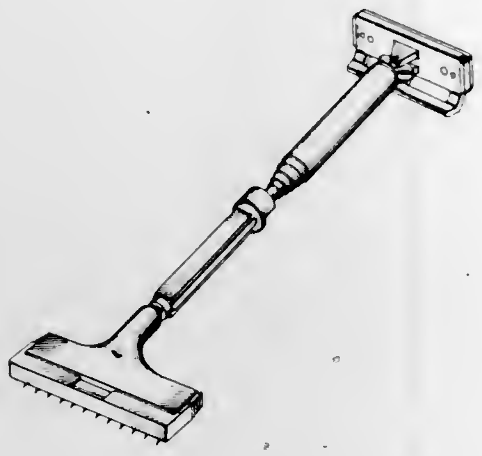
Roy L. Brenner, Highland Park, Ill., assignor to Kinkead Industries Incorporated, Chicago, Ill., a corporation of Illinois

Filed Apr. 5, 1968, Ser. No. 11,318

Term of patent 14 years

U.S. Cl. D54—13

Int. Cl. D8—*02*



213,403
AIR CLEANER COVER

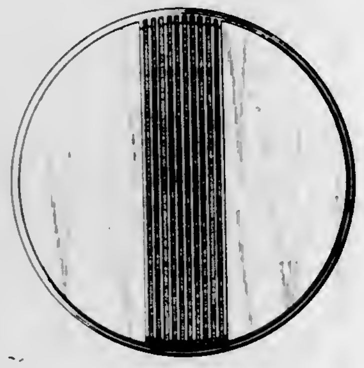
Alex Kraus, Los Angeles, Calif., assignor to California Custom Accessories Manufacturing Company, Gardena, Calif.

Filed Mar. 18, 1968, Ser. No. 11,013

Term of patent 7 years

U.S. Cl. D55—1

Int. Cl. D15—*01*; D12—*14*



213,404
HARMONICA RESONATOR

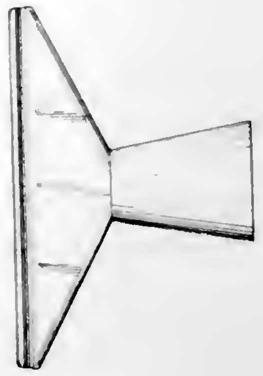
Vincent De May, Flint, Mich.
(1525 E. Pocono Trail, R.R. 2, Nokomis, Fla. 33555)

Filed Mar. 31, 1967, Ser. No. 6,454

Term of patent 14 years

U.S. Cl. D56—1

Int. Cl. D17—*02*



213,405
GARMENT HANGER

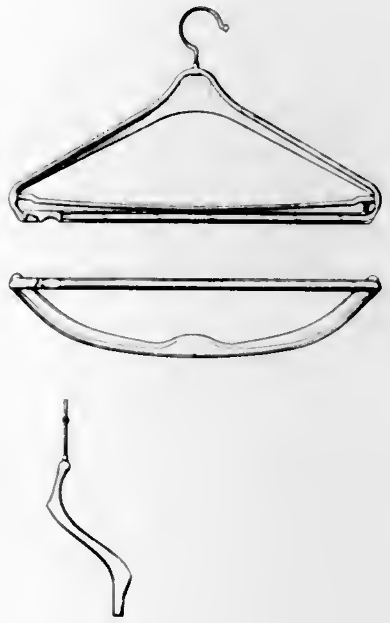
Otto B. Mantell, 200 W. 59th St., New York, N.Y. 10019

Filed June 4, 1968, Ser. No. 12,199

Term of patent 14 years

U.S. Cl. D80—8

Int. Cl. D6—*07*



213,406
DISPLAY STAND FOR A GOLF BALL OR THE LIKE

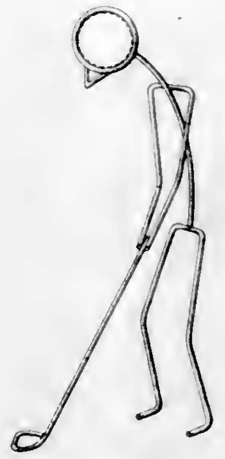
Evans G. Davis, Hellwood, Pa. 15745

Filed Aug. 4, 1967, Ser. No. 8,143

Term of patent 7 years

U.S. Cl. D80—9

Int. Cl. D20—*02*



213,407
RECORD DISPLAY RACK

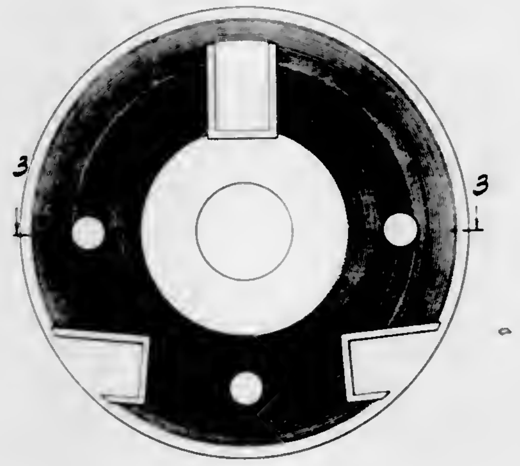
Donald M. Levy, Los Angeles, Calif.
(6200 Franklin Ave., Apt. 504, Hollywood, Calif. 90028)

Filed Dec. 22, 1967, Ser. No. 9,888

Term of patent 7 years

U.S. Cl. D80—9

Int. Cl. D6—*01*



213,408
URINE CONTAINER

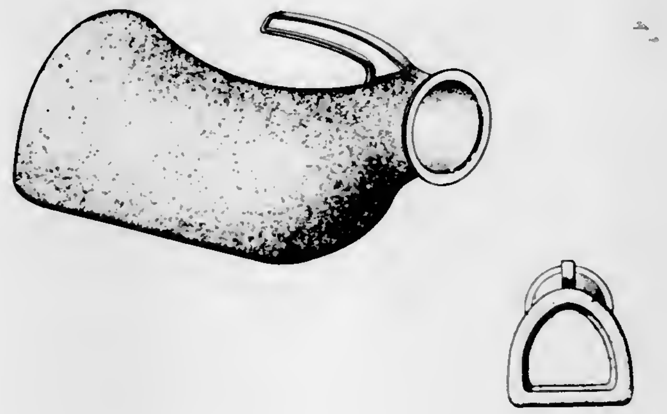
Elliott J. Brodsky, 1363 Smith St., North Providence, R.I. 02908, and David L. Brodsky, 1 Magellan St., Providence, R.I. 02906

Filed May 13, 1968, Ser. No. 11,892

Term of patent 14 years

U.S. Cl. D83—1

Int. Cl. D24—*05*



213,409
LINEAR ACCELERATOR FOR CANCER RADIOTHERAPY OR THE LIKE

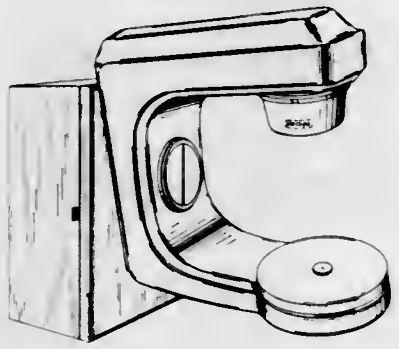
Gene D. Vedder, Granada Hills, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed June 3, 1968, Ser. No. 12,174

Term of patent 14 years

U.S. Cl. D83—1

Int. Cl. D24—*02*



213,410
ASHTRAY

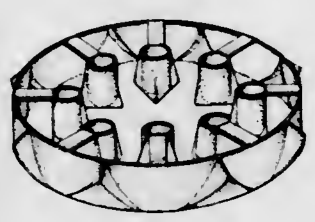
Alvin W. Hunt, Apt. 6, 1726 N. Decatur, Las Vegas, Calif. 89108

Filed Apr. 18, 1968, Ser. No. 11,523

Term of patent 14 years

U.S. Cl. D85—2

Int. Cl. D27—*03*



213,411
BILLFOLD

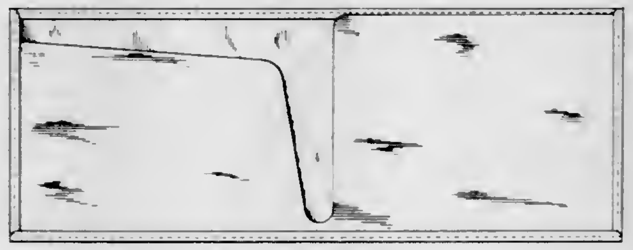
Ervin Kery, West Bend, Wis., assignor to Enger-Kress Company, West Bend, Wis., a corporation of Wisconsin

Continuation-in-part of design application Ser. No. 4,630, Nov. 14, 1966. This application Jan. 30, 1968, Ser. No. 10,782

Term of patent 14 years

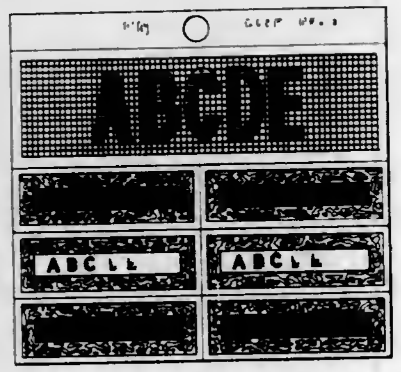
U.S. Cl. D87—3

Int. Cl. D3—*02*



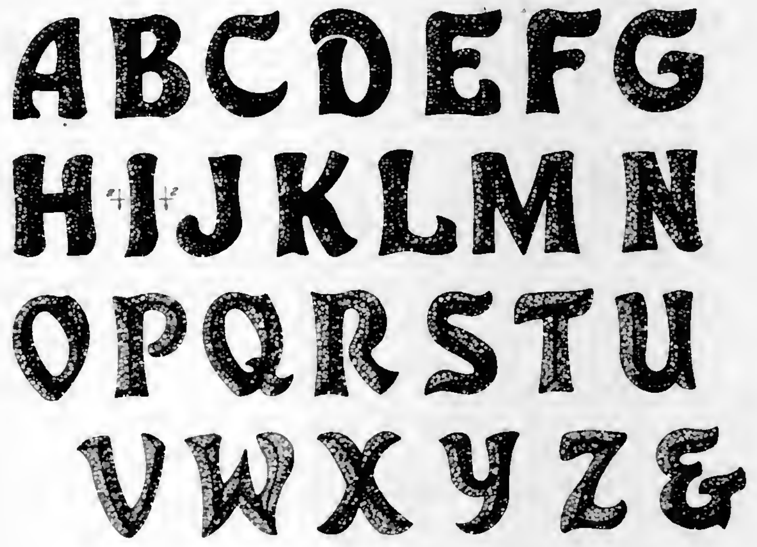
213,412
EMBOSSED LABEL CARD
David D. Fishback, 223 S. St. Francis,
Wichita, Kans. 67202
Filed Dec. 7, 1967, Ser. No. 9,694
Term of patent 14 years

U.S. Cl. D96—8
Int. Cl. D20—*03*



213,413
FONT OF LETTERS FOR SIGNS
Joseph J. Marcin, Chicago, Ill., assignor to Spanjer Brothers, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 4, 1968, Ser. No. 10,055
Term of patent 14 years

U.S. Cl. D96—12
Int. Cl. D18—*04*



LIST OF PLANT PATENTEES

TO WHOM PATENTS WERE ISSUED ON THE 25TH DAY OF FEBRUARY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Boerner, Eugene S., deceased (by Lincoln Rochester Trust Co., and R. L. Boerner, executors), to Jackson & Perkins Co. Chrysanthemum plant. 2,866, 2–25–69, Cl. 78.

Boerner, Roger L.: *See*—
Boerner, Eugene S. 2,866.

Chaplin, Charles F. Dieffenbachia plant. 2,869, 2–25–69, Cl. 88.

Ecke, Paul. Poinsettia plant. 2,865, 2–25–69, Cl. 86.

Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,866.
Zombory, William and S. B. 2,867.

Lincoln Rochester Trust Co.: *See*—
Boerner, Eugene S. 2,866.

Miller, Mark A. Geranium plant. 2,868, 2–25–69, Cl. 68.

Zombory, Sophia B.: *See*—
Zombory, William and S. B. 2,867.

Zombory, William and S. B., to Jackson & Perkins Co. Dianthus plant. 2,867, 2–25–69, Cl. 70.

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Adell International Inc.: *See*—
Adell, Robert. 213,394.

Adell, Robert, to Adell International Inc. Tissue dispenser. 213,394, 2–25–69, Cl. D52—2.

Andre, Dan M. Combined high intensity cosmetic make-up lamp and mirror. 213,392, 2–25–69, Cl. D48—20.

Arvan, Nicholas P., to Crane Co. Combined lavatory and cabinet. 213,369, 2–25–69, Cl. D23—59.

Atwaters, Alfonso T.: *See*—
Hermalin, Harry J. 213,376.

Black, Kenneth. Dual compartment container for liquids. 213,354, 2–25–69, Cl. D9—18.

Bocade, Emil J., to Keeler Brass Co. Drawer handle. 213,358, 2–25–69, Cl. D10—8.

Brenner, Roy L., to Kinkead Industries Inc. Carpet stretcher. 213,402, 2–25–69, Cl. D54—13.

Brodsky, David L.: *See*—
Brodsky, Elliott J. and D. L. 213,408.

Brodsky, Elliott J. and D. L. Urine container. 213,408, 2–25–69, Cl. D83—1.

Bruce, Robert A., to Corning Glass Works. Cover for a bowl or the like. 213,390, 2–25–69, Cl. D44—15.

Bruno, Joseph. Lighting fixture for walls or the like. 213,391, 2–25–69, Cl. D48—4.

Buff, George J., Jr. Foil packaging tray. 213,356, 2–25–69, Cl. D9—189.

California Custom Accessories Mfg. Co.: *See*—
Kraus, Alex. 213,403.

Cannon, James W. Sawhorse. 213 400, 2–25–69, Cl. D54—1.

Carlton, Bruce. Decorative paddle. 213,383, 2–25–69, Cl. D34—5.

Cherry, Allen B., to W. O. Gifford and A. Smith. Crawling trainer for infants. 213,370, 2–25–69, Cl. D25—1.

Chew, Reine. Collapsible saw horse leg. 213,399, 2–25–69, Cl. D54—1.

Clark, Phillip B., and P. J. Curtin, to McGraw-Edison Co. Luminaire. 213,393, 2–25–69, Cl. D48—31.

Clerico, Louis R. Bar cabinet or similar article. 213,381, 2–25–69, Cl. D33—19.

Corning Glass Works: *See*—
Bruce, Robert A. 213,390.
Weltzman, Mark R. 213,389.

Cortina, Anthony. Container edge supportable paint brush holder. 213,357, 2–25–69, Cl. D9—289.

Cox, Richard S., to Sylvania Electric Products Inc. Tape recorder cartridge player or the like. 213,373, 2–25–69, Cl. D26—14.

Cox, Richard S., to Sylvania Electric Products Inc. Tape recorder cartridge player or the like. 213,374, 2–25–69, Cl. D26—14.

Crane Co.: *See*—
Arvan, Nicholas P. 213,369.

Crawford, Allan H., to Mohasco Industries, Inc. Chair. 213,365, 2–25–69, Cl. D15—11.

Cronheim, Richard B. Compartmented food warming insert for a saucepan or the like. 213,387, 2–25–69, Cl. D44—1.

Curtin, Paul J.: *See*—
Clark, Phillip B., and Curtin. 213,393.

Dayco Corp.: *See*—
Griffin, Richard J. 213,366.

Davis, Evans G. Display stand for a golf ball or the like. 213,406, 2–25–69, Cl. D80—90.

De May, Vincent. Harmonica resonator. 213,404, 2–25–69, Cl. D56—1.

Eagle-Picher Industries, Inc.: *See*—
Gross, Robert I. 213,372.

Einess, Hilda E. Dressmaker's pincushion. 213,353, 2–25–69. Cl. D3—19.

Eisele & Co,. Inc.: *See*—
Grodin, Adam J. 213,398.

Enger-Kress Co.: *See*—
Kery, Ervin. 213,411.

Fishback, David D. Embossed label card. 213,412, 2–25–69, Cl. D96—8.

Fisher, James G., to NVF Co. Movable support for cones, cheeses or the like. 213,359, 2–25–69, Cl. D14—3.

Gardner, Robert L., to G. Hurley, d.b.a. Walter F. Hurley Gin. Cover for a truck bed. 213,361, 2–25–69, Cl. D14—27.

Gifford, W. O.: *See*—
Cherry, Allen B. 213,370.

Green, Robert F., to Johns-Manville Corp. Wall panel. 213,367, 2–25–69, Cl. D18—2.

Griffin, Richard J., to Dayco Corp. Laboratory rack. 213,366, 2–25–69, Cl. D16—1.

Grodin, Adam J., to Eisele & Co., Inc. Thermometer holder. 213,398, 2–25–69, Cl. D52—7.

Gross, Robert I., to Eagle-Picher Industries, Inc. Control console for illumination device. 213,372, 2–25–69, Cl. D26—13.

Habig, Harry R. Antenna. 213,375, 2–25–69, Cl. D26—14.

Harrop, Clifford B., and D. W. Walker, to International Harvester Co. Track wheel. 213,362, 2–25–69, Cl. D14—30.

Hermalin, Harry J., ⅓ each to A. T. Atwaters, and J. A. Judle. Artist's easel. 213,376, 2–25–69, Cl. D29—20.

Hermann, Thomas L., to The National Cash Register Co. Cash register or similar article. 213,352, 2–25–69, Cl. D52—4.

Holder, Lorrain A. Tire stud inserting tool. 213,401, 2–25–69, Cl. D54—13.

Hopcraft, Richard, to Imperial Knife Associated Companies, Inc. Sandwich spreader or similar article. 213,388, 2–25–69, D44—29.

Huncovsky, Lois A. Cosmetics cabinet. 213,380, 2–25–69, Cl. D33—19.

Hunt, Alvin W. Ashtray. 213,410, 2–25–69, Cl. D85—2.

Hurley, Gladys, d.b.a. Walter F. Hurley Gin: *See*—
Gardner, Robert L. 213,361.

Illinois Tool Works Inc.: *See*—
Nelson, John F. 213,397.

Imperial Knife Associated Companies, Inc.: *See*—
Hopcraft, Richard. 213,388.

International Harvester Co.: *See*—
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Johns-Manville Corp.: *See*—
Green, Robert F. 213,367.

Judle, Jam A.: *See*—
Hermalin, Harry J. 213,376.

Keeler Brass Co.: *See*—
Bocade, Emil J. 213,358.

Kery, Ervin, to Enger-Kres Co. Billfold. 213,411, 2–25–69, Cl. S7—3.

Kinkead Industries Inc.: *See*—
Brenner, Roy L. 213,402.

Kneapler, Stephen J., to Richford Corp. Bottle. 213,355, 2–5–69, Cl. D9—143.

Kraus, Alex, to California Custom Accessories Mfg. Co. Air cleaner cover. 213,403, 2–25–69, Cl. D55—1.

Levy, Donald M. Record display rack. 213,407, 2–25–69, Cl. D80—9.

Mantell, Otto B. Garment hanger. 213,405, 2–25–69, Cl. D80—8.

Marcin, Joseph J., to Spanjer Brothers, Inc. Font of letters for signs. 213,413, 2–25–69, Cl. D96—12.

McClure, Delmar H. Cart. 213,360, 2–25–69, Cl. D14—3.

McGraw-Edison Co.: *See*—
Clark, Philip B., and Curtin. 213,393.

Mohasco Industries, Inc.: *See*—
Crawford, Allan H. 213,365.

Molenaar, Lester V. Building toy. 213,385, 2–25–69, Cl. D34—15.

NVF Co.: *See*—
Fisher, James G. 213,359.

National Cash Register Co., The: *See*—
Hermann, Thomas L. 213,352.

Nelson, John F., to Illinois Tool Works Inc. Liquid level indicator. 213,397, 2–25–69, Cl. D52—6.

Parker, Douglas W. Fishing lure. 213,368, 2–25–69, Cl. D22—28.

- Richford Corp. : *See*—
  - Kneapler, Stephen J. 213,355.
- Risher, John D. Combined golf club head and shaft socket. 213,382, 2–25–69, Cl. D34—5.
- Roane, Robert N. Chair. 213,363, 2–25–69, Cl. D15—1.
- Robert, Tony. Holder for food bowl for pets. 213,377, 2–25–69, Cl. D30—13.
- Robert, Tony. Holder for food bowls for pets. 213,378, 2–25–69, Cl. D30—13.
- Robert, Tony. Holder for food bowl for pets. 213,379, 2–25–69, Cl. D30—13.
- Roberts, Lyda B. Combined article holder and seat back cover for an automobile. 213,364, 2–25–69, Cl. D15—8.
- Salem, Kenneth G. Opaque gas meter cover. 213,396, 2–25–69, Cl. D52—6.
- Schultz, Charles J. Game board. 213,384, 2–25–69, Cl. D34—5.
- Sheffer, William H., to Tweeten Fibre Co. Inc. Tip sander for billard or pool cue. 213,386, 2–25–69, Cl. D37—1.
- Spanjer Brothers, Inc. : *See*—
  - Marčin, Joseph J. 213,413.
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  - Cox, Richard S. 213,373.
  - Cox, Richard S. 213,374.
- Tweeten Fibre Co. Inc. : *See*—
  - Sheffer, William H. 213,386.
- Varian Associates : *See*—
  - Vedder, Gene D. 213,409.
- Vedder, Gene D., to Varian Associates. Linear accelerator for cancer radio-therapy or the like. 213,409, 2–25–69, Cl. D83—1.
- Vincent, Christopher N. Drawing aid device, particularly for drawing perspectives. 213,395, 2–25–69, Cl. D52—6.
- Vitale, Felice N. Coat or similar article. 213,351, 2–25–69, Cl. D2—183.
- Walker, Dennis W. : *See*—
  - Harrop, Clifford B., and Walker. 213,362.
- Weitzman, Mark R., to Corning Glass Works. Drinking cup or the like. 213,389, 2–25–69, Cl. D44—9.
- Worstell, Charles C. Teaching aid for use with data processing cards. 213,371, 2–25–69, Cl. D25—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF FEBRUARY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AB Akerlund & Ransing : *See*—
  - Nilsson, Erling I. 3,429,274.
- ACF Industries, Inc. : *See*—
  - Voros, Donald F. 3,429,083.
- A.D.L. Cement Products, Inc. : *See*—
  - Vroman, Albert L., and Bouncher. 3,429,473.
- AGA Aktiebolag : *See*—
  - Bjork, Nils A. N., and Borg. 3,430,045.
  - Arnell, Jon A., and Johannisson. 3,429,326.
- AMP Inc. : *See*—
  - Feeser, William C., Bosland, Lockard, and Mummey. 3,430,183.
- Abboud, Harry I. Aerosol, filtering apparatus. 3,429,106, 2–25–69, Cl. 55—292.
- Abel, Roy, Jr. Programmed swing training device. 3,429,571, 2–25–69, Cl. 273—26.
- Abex Corp. : *See*—
  - Keyworth, Albert. 3,429,225.
- Achey, Henry N. Flush valve mechanism. 3,428,965, 2–25–69, Cl. 4—41.
- Ackley, Edward M., to J. B. Slevin Co., Inc. Apparatus for forming and attaching full cell inserts to bottle carriers. 3,429,235, 2–25–69, Cl. 93—37.
- Acme Lane Co. : *See*—
  - Pabich, Richard W., and Treiber. 3,429,013.
- Acord, Jerry E., to Northrop Corp. Quick disconnect electrical plug. 3,430,184, 2–25–69, Cl. 339—45.
- Adaichi, Shizuo R. : *See*—
  - Wile, Daniel D., Adachi, and Brainard. 3,429,139.
- Adams, Loyd : *See*—
  - Paul, Lowell A., and Adams. 3,429,459.
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- Admaster Corp. : *See*—
  - Busch, Richard E. 3,429,523.
- Admiral Corp. : *See*—
  - Chua, James G. S. 3,430,146.
  - Wolff, Robert A. 3,430,059.
- Aebi, Hans : *See*—
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  - Duerr, Dieter, Rohr, Aebi, and Ebner. 3,429,689.
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  - Von Wasielewski, Erwin. 3,429,244.
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  - Gribble, Donald J. 3,429,513.
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  - Ayers, Joseph W. 3,429,770.
- Air Products and Chemicals, Inc. : *See*—
  - Swigar, Andrew A., and Walde. 3,429,906.
- Akagawa, Tsugio : *See*—
  - Tachimoto, Kazuo, Kamoshida, and Akagawa. 3,429,362.
- Akashi, Robert. Lock collar nut. 3,429,352, 2–25–69, Cl. 151—19.
- Akerson, David W. : *See*—
  - Bronstein, Edward L., Jr., Akerson, Gaffney, and Fisher. 3,429,767.
- Aktiebolaget Kamyr : *See*—
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- Aktiebolaget Pharmacia : *See*—
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- Aktiebolaget Svenska Flaktfabriken : *See*—
  - Bergh, Lars-Gunnar. 3,429,055.
- Aktiebolaget Tudor : *See*—
  - Sundberg, Erik G. 3,429,752.
- Alburger, James R. Gel-forming inspection penetrant and emulsifier compositions employing hydrophylic and lipophylic surfactants. 3,429,826, 2–25–69, Cl. 252—301.2.
- Alexander, Donald C., to International Telephone and Telegraph Corp. Self-supporting coaxial cable. 3,429,984, 2–25–69, Cl. 174—115.
- Alford, Lynn O., Jr., to Wagner Research Corp. Method and apparatus for folding sheets. 3,429,568, 2–25–69, Cl. 270—69.
- Alghisi, Aldo. Lifting device. 3,429,286, 2–25–69, Cl. 114—52.
- Allen-Bradley Co. : *See*—
  - Walters, Robert E., and Boysen. 3,430,014.
- Allen Industries, Inc. : *See*—
  - Goldstone, Edward G., and Neumann. 3,429,728.
- Allen, Raymond W., to General Motors Corp. Accessory drive. 3,429,192, 2–25–69, Cl. 74—217.
- Allen, Walter K., to United States of America, National Aeronautics and Space Administration. Time division multiplex system. 3,430,237, 2–25–69, Cl. 343—7.5.
- Allied Chemical Corp. : *See*—
  - Spatz, Sydney M., and Lipka. 3,429,900.
- Allis-Chalmers Mfg. Co. : *See*—
  - Freshwater, Donley D., and Jenness. 3,429,624.
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  - Cobbledick, David S. 3,429,855.
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- Aluminum Laboratories Ltd. : *See*—
  - Baker, William A., Hartree, and Gould. 3,429,166.
- Aluminum Co. of America : *See*—
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  - Bieher, William C. 3,429,761.
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  - Baitinger, William F., Jr. 3,429,732.
  - Layman, Ralph E. 3,429 857.
  - Lower, George W. 3,429,694.
  - Michael, Malden W. 3,429,830.
  - Mosby, William L. 3,429,895.
  - Mosby, William L. 3,429,905.
  - Papp, Grace P., and Clapp. 3,429,907.
- American Home Products Corp. : *See*—
  - Archibald, John L. 3,429,885.
  - Weinstein, Bernard, Terry, and Jensen. 3,429,821.
- American Hospital Supply Corp. : *See*—
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- American Metal Climax, Inc. : *See*—
  - Larson, Melvin L. 3,429,903.
- American Meter Co. : *See*—
  - Thrall, Walter I. 3,429,321.
- American Seating Co. : *See*—
  - Van Ryn, Arthur L. 3.429,611.
- American Welding & Mfg. Co., The : *See*—
  - Fortsch, Francis J., and Sullivan. 3,429,076.
- American Zinc Co. : *See*—
  - Klein, Otto C., and Mason. 3,429,662.
- Amiragoff, Abel B. Teleidentification system for monitoring a plurality of points. 3,430,199, 2–25–69, Cl. 340—147.
- Ampex Corp. : *See*—
  - Chang, David T.-L. 3,429,494.
  - Everhart, Thomas E. 3,430,255.
- Analytic Systems Co. : *See*—
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- Anchor Chemical Co. Ltd., The : *See*—
  - Bell, Stanley C. 3,429,913.
- Andersen, Hans C. : *See*—
  - Sparso, Viggo H., and Nielsen. 3,429,618.
- Andersen, Ingar F., and R. D. Brew, to Richard D. Brew and Co., Inc. Heat-treating quench furnace. 3,429,563, 2–25–69, Cl. 266—4.
- Anderson Co., The : *See*—
  - Krohm, Fred A. 3,429,597.
- Anderson, Lester F., G. W. Parsons, and R. G. Petts, to Sylvania Electric Products, Inc. Photoflash adapter. 3,430,-038, 2–25–69, Cl. 240—1.3.
- Anderson, Raymond V. : *See*—
  - Economy, James, and Anderson. 3,429,722.
- Anderson, Roland M., and P. E. Klein. Method and apparatus for making dental mouthpiece. 3,429,045, 2–25–69, Cl. 32—32.
- Anderson, Thomas P., and R. Beispel, to Microseal Corp. Film mounting assembly. 3,429,101, 2–25–69, Cl. 53—255.
- Ando, Takeo : *See*—
  - Doi, Mineo, Miura, Sakuraba, and Ando. 3,429,692.
- Andrews, Frederick A. Oxidation resistant compositions for human consumption. 3,429,716, 2–25–69, Cl. 99—150.
- Andrews, James A., and G. A. Bahm, to Institute of Cosmetic Dentistry, Inc. Dental bridge. 3,429,043, 2–25–69, Cl. 32—5.
- Angstadt, Richard L. : *See*—
  - Keenum, John C., Jr., and Angstadt. 3,429,724.
  - Keenum, John C., Jr., and Angstadt. 3,429,725.
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Bremers, Victor M. J. Structure for the assembly of adjustable framework. 3,429,601, 2-25-69, Cl. 287—189.36.

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Briden, Horace. Devices for applying hammer blows to a body. 3,429,382, 2-25-69, Cl. 173—119.

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Bridge, Richard B., and T. E. Marshall III, to United States of America, Navy. Automatic weather information sending device. 3,430,217, 2-25-69, Cl. 340—187.

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Briffaud, Georges, to Commissariat a l'Energie Atomique. Method and apparatus for underwater radiological inspection, especially in the water-tank of a swimming pool reactor. 3,430,044, 2-25-69, Cl. 250—83.3.

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Brown, Walter R. J., to United-Carr, Inc. Sintered coaxial cable. 3,429,982, 2-25-69, Cl. 174—102.

Brown, Wayne R., T. J. Cawley, and R. W. Van Tilburg, to Corning Glass Works. Fluid operated apparatus. 3,429,324, 2-25-69, Cl. 137—81.5.

Bruet, Henri R. ½ to Establissements A. Cazeneuve. Movable supports for the longitudinal master in copying devices. 3,429,208, 2-25-69, Cl. 82—14.

Brunet, Louis L. B., to S. A. Zuccolo, Rochet & Cie. Watch band adjuestable clasp. 3,429,142, 2-25-69, Cl. 63—4.

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Budzich, Tadeusz. Material pulverization. 3,429,511, 2-25-69, Cl. 241—5.

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Buell, Heinz, J. M. Fiore, L. S. Marino, and J. Rubin, to General Precision Systems, Inc. Doppler inertial system with accurate vertical reference. 3,430,239, 2-25-69, Cl. 343—9.

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Burgess, William R. Method of regenerating ion exchange material from service demineralizers. 3,429,807, 2-25-69, Cl. 210—25.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 25, 1969 Volume 859 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 225,838 (DAIRY QUEEN BRAND AND DESIGN), American Dairy Queen Corporation, Condensed milk; **Reg. No. 249,120** ("DAIRY QUEEN" ETC. AND DESIGN), The Universal Milk Company, Evaporated milk; **Reg. No. 709,406** (QUEEN OF TARTS), H. H. Hartman, doing business as Dairy Queen, Frozen ice cream tarts consisting only of ice cream with a fruit or syrup topping; **Reg. No. 728,531** (DAIRY QUEEN), McCullough's Dairy Queen, Machine for freezing and dispensing a semi-frozen dairy product; **Reg. No. 728,894**, same, Ice cream and frozen confections in cone, cup, and bar form; **Reg. No. 763,209** (DAIRY QUEEN AND DESIGN), American Dairy Queen Corporation, Ice cream and frozen confections in cone, cup, bar, and package form; **Reg. No. 776,277** (DAIRY QUEEN), same, Sundaes, strawberry short cake, chocolate bars, ice cream or ice milk cones, ice cream sandwiches, parfay sundaes, food stabilizers, pies, tarts, milk shakes, and mixes both liquid and solid for the making of ice milk and ice cream products; **Reg. No. 801,437** (QUEEN MILK AND DESIGN), same, Fluid milk; **Reg. No. 801,849** (DAIRY QUEEN), same, Semi-frozen ice cream and ice milk dispenser, walk-in cooler, freezing cabinets, refrigerated mix tanks, ice cream and ice milk shake freezers, and cone racks; **Reg. No. 804,002** (DAIRY QUEEN AND DESIGN), same, Hamburger sandwiches, barbeque sandwiches, and hot dog sandwiches; **Reg. No. 811,416**, same, Flavored carbonated soft drinks; **Reg. No. 834,054** (QUEEN'S CHOICE), same, Ice cream and ice milk—namely, vanilla, chocolate, butterscotch, blackberry, cherry, etc.; and malt and syrup bases for ice cream and ice milk drinks and products; **Reg. No. 855,283** (DAIRY QUEEN), same, Rendering technical assistance to operators of frozen custard stores in all phases of their business operation; **Reg. No. 858,332**, same, Basic mix for semi-frozen milk and ice cream, **filed** Nov. 12, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2146, *American Dairy Queen Corporation* v. *Burger Queen Drive-In, Inc.*

Reg. No. 249,120. (See Reg. No. 225,838.)

Reg. No. 270,774 (REPRESENTATION OF OVAL DESIGN), Interstate Bakeries Corporation, Bread and cake; **Reg. No. 586,855** (MISCELLANEOUS DESIGN), Interstate Bakeries Corporation, doing business as Schulze Baking Company and as Weber Baking Co., Bread; **Reg. No. 669,675** (A WEBER'S VARIETY BREAD AND DESIGN), Interstate Bakeries Corporation, Bakery Products—Namely, bread and rolls; **Reg. No. 642,408** (WEBER'S AND DESIGN), same, Bread; **Reg. No. 620,968** (BUTTER NUT AND OVAL DOILY DESIGN), same, Standard commercial white bread, **filed** Apr. 30, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c784, *Interstate Bakeries Corp.* v. *The Borden Company.*

Reg. No. 340, 334 (ANCO), The Anderson Company, Windshield wipers and parts thereof; **Reg. No. 566,229**, same, Wind-

CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	15,322
Date of oldest new application	September 20, 1967
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation **TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION**	Oldest Application New	Oldest Application Amended
(I) **L. J. BETTENDORF**, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-17-68	3-4-65
(II) **F. H. WETHERBEE**, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-1-68	3-26-65
(III) **P. S. BALL**, Classes 19, 21, 23, 26, 31, 34, 35, 36	4-4-68	7-30-64
(IV) **M. E. ABRAMSON**, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-20-67	9-22-65
Renewals (All Classes)	11-25-68	--------
Sec. 12(c) Publications (All Classes)	11-27-68	--------

Applications filed during the month of December 1968— 2,314

Registrations Issued	401—No. 865,143 to No. 865,543
Renewals Issued	80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

shield wiper motors, including therefor, mountings or brackets for supporting the motors, fittings for operatively connecting the motors to drive shafts for wiper arms, and controls for operating the motors and washers, **filed** Oct. 23, 1968, D.C., N.D. Ohio (Toledo), Doc. C–68–307, *The Anderson Company* v. *Masterson Fleet Supply, Inc.* Defendant is permanently and perpetually enjoined and restrained, Nov. 12, 1968.

Reg. No. 547,321 (AAA WITHIN A DESIGN), American Automobile Association, Services rendered to motor vehicle owners, motorists and travelers generally—namely, disseminating travel information, making travel arrangements, rating tourist accommodations, providing emergency road service, adjusting damage claims, recovering stolen motor vehicles, apprehending motor vehicle thieves and so-called hit and run drivers; obtaining insurance, legal services, bail and other bond, motor vehicle license plates, and title certificates; teaching motor vehicle operation, arranging for discount purchases, sponsoring school safety patrols, conducting traffic and pedestrian safety campaigns and giving traffic safety lessons, advocating legislation favorable to safe and economical motor vehicle travel, operation and maintenance; conducting motor vehicle speed trials and endurance tests and making tests of automotive and related products, **filed** Mar. 29, 1968, D.C., N.D. Fla. (Jacksonville), Doc. 68–138–C–J, *American Automobile Association* v. *Jax Motels, Inc.* (*Golden Sands Motor Hotel*). Judgment by default, July 24, 1968.

Reg. No. 566,229. (See Reg. No. 340,334.)

Reg. No. 586,855. (See Reg. No. 270,774.)

Reg. No. 620,968. (See Reg. No. 270,774.)

Reg. No. 642,408. (See Reg. No. 270,774.)

Reg. No. 669,675. (See Reg. No. 270,774.)

Reg. No. 709,406. (See Reg. No. 225,838.)

Reg. No. 724,610 (COUNTRY KITCHEN), B. H. Johnson, Restaurant and catering services; **Reg. No. 742,443** (COUNTRY BOY), B. H. Johnson, doing business as Country Kitchen, Hamburger sandwiches; **Reg. No. 820,477** (COUNTRY KITCHEN AND DESIGN), Country Kitchen Incorporated, Restaurant services, **filed** Aug. 30, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–644, *Country Kitchen, Inc. and Northwestern Franchised Restaurants* v. *Mickey Mantle, Mickey Mantle's Country Kitchen, Inc.* Consent judgment, plaintiff owner of trademarks in question, defendants enjoined, Oct. 22, 1968.

Reg. No. 728,531. (See Reg. No. 225,838.)

Reg. No. 728,894. (See Reg. No. 225,838.)

Reg. No. 742,443. (See Reg. No. 724,610.)

Reg. No. 763,209. (See Reg. No. 225,838.)

Reg. No. 776,277. (See Reg. No. 225,838.)

Reg. No. 801,437. (See Reg. No. 225,838.)

Reg. No. 801,849. (See Reg. No. 225,838.)

Reg. No. 804,002. (See Reg. No. 225,838.)

Reg. No. 811,416. (See Reg. No. 225,838.)

Reg. No. 820,477. (See Reg. No. 724,610.)

Reg. No. 834,054. (See Reg. No. 225,838.)

Reg. No. 841,225 (COLD-CHEK), Thexton Manufacturing Company, Antifreeze solution tester; **Reg. No. 842,750** (THEXTON), same, Automotive shock absorber attachment devices, and automotive hand brake cable repair kits (Class 19); automotive light socket attachments; battery cable lug gripping devices; and electrical repair terminals for automotive generators (Class 21); piston expanders, oil pressure regulators, regrooving tools, timing plates for automotive engines, rocker arm oiler kits, choke tube repair kits for automotive engines, choke conversion kits, rivet removers, springs for automotive carburetors, plug extractors, peening tools and automotive fuel feed systems (Class 23); and antifreeze testers, battery testers, and martini alcoholic content testers; top dead center indicators, and speedometer cable repair kits (Class 26), **filed** Oct. 30, 1968, D.C.N.J. (Newark), Doc. 1140–68, *Thexton Manufacturing Company* v. *Perfect Parts, Inc.*

Reg. No. 842,750. (See Reg. No. 841,225.)

Reg. No. 855,283. (See Reg. No. 225,838.)

Reg. No. 858,332. (See Reg. No. 225,838.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 264,568. National Twist Drill & Tool Co. (Delaware corporation), Rochester, Mich., assignee of National Twist Drill & Tool Co. (Michigan corporation), Rochester, Mich. Filed Feb. 13, 1967.

NATIONAL

Owner of Reg. No. 361,439.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Drills, Reamers, Drill and Reamer Blanks, Gun Drills and Reamers, Milling Cutters, Counterbores, Countersinks, Spotfacers, Hobs, End Mills, Router Bits, Saws, Pilots, Arbors, Sleeves and Sockets, Holders, Cut Off Blades, Slitting Discs, Sharpening Fixtures, Taps, and Dies (Int. Cls. 7 and 8).

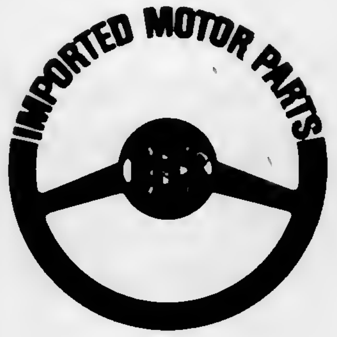
First use Nov. 3, 1903

Class 26—Measuring and Scientific Appliances

For Gages—Namely, Gun Drill Gages (Int. Cl. 9).

First use Nov. 1, 1958.

SN 265,135. Beck Distributing Corp., Melville, N.Y. Filed Feb. 21, 1967.



Applicant disclaims the terms "Imported Motor Parts" and the representation of a steering wheel apart from the mark as shown.

Class 6—Chemicals and Chemical Compositions

For Hydraulic Brake Fluid, and Rust Inhibitor With Incidental Lubricating Properties (Int. Cl. 1).

Class 19—Vehicles

For Air Conditioning, Automotive Engine Cooling Radiators; Automobile Accessories—Namely, Rearview Mirrors; Non-Driving Axles; Brakes and Brake Parts—Namely, Brake Shoes, Master Brake Cylinders, Repair Kits for Wheel Cylinders and Wheel Cylinders; Bumpers and Brackets, Fenders and Braces, Fender Tips for Motorcycles, Fender Trims, Hoods, and Panels; Structural Parts for Automobiles, Motorcycles and the Like—Namely, Bumpers and Brackets, Motorcycle Wind Guards, Steering Apparatus and Assemblies, Windshields and Wheels, and Safety Bars for the Protection of the Occupant of Automobiles or Motorcycles in the Case of Overturning (Int. Cls. 11 and 12).

Class 21—Electrical Apparatus, Machines, and Supplies

For Automotive Generators and Parts Thereof; Automotive and Motorcycle Headlamps, Bulb, Fuses, Lamps, Parking Lights and Stop Lights; Electrical Insulating Connectors; Direction Indicator Lamps; Electrical Systems—Namely, Electric Cords, Cables and Wires; Electrical Tail Lamps, Electrical Terminals, Electrical Horns, Ignition Coils and Parts, Electrical Oil Pressure Switches, Spark Plugs, and Storage Batteries (Int. Cls. 7, 9, and 11).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Pumps—Namely, Fuel Pumps, Oil Pumps, Pump Parts, Vacuum Pumps and Water Pumps; Automotive Bearings—Namely, Bushings, Flywheel Ring Gears, Motor Bearings and Roller Bearings; Differentials; Driving Axles; Engines; Engine Parts—Namely, Camshaft Bushes, Camshaft Gears, Carburetors, Engine Mountings, Intake and Exhaust Valves, Piston and Cylinder Liners and Kits, Valve Springs, Valves, Springs and Keepers; Exhaust Tail Pipes; Repair Kits and Hand Tools for Automotive, Motorcycle and General Maintenance—Namely, Spanners, Sockets, and Wrenches; Manifolds; Mufflers and Parts; Oil Pressure Switches, Mechanical; and Tire Mounting and Dismounting Levers (Int. Cls. 7, 8, 9, and 12).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

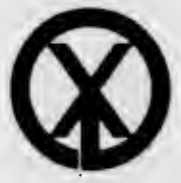
For Automotive and Motorcycle Tires and Tubes, Brake Linings, Disc Brake Pads, Fan Belts, Grease Retainers, Gaskets, Gasket Packing and Gasket Sealing Materials, Oil Seals and Oil Plugs, Radiator Hoses, and Transmission Linings (Int. Cls. 12 and 17).

Class 39—Clothing

For Boots, Gloves, and Helmets With and Without Goggles and/or Eye Shields for Men and Women (Int. Cls. 9 and 25).

First use in or about January 1963; in or about 1942 in a different form.

SN 269,998. Oxy-Catalyst, Inc., Berwyn, Pa. Filed Apr. 25, 1967.



Class 6—Chemicals and Chemical Compositions

For Oxidation Catalysts (Int. Cl. 1).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Purifier Units for Treating Exhaust Fumes From Internal Combustion Engines (Int. Cl. 7).

Class 31—Filters and Refrigerators

For Exhaust Fume Purifier Units for Industrial Use (Int. Cl. 11).

First use Feb. 15, 1967.

SN 272,532. American Chain & Cable Company, Inc., Bridgeport, Conn., assignee of Mechanical Handling Systems Inc., Warren, Mich. Filed May 29, 1967.

TIGERTOW

Class 19—Vehicles

For Driverless Towing Vehicles—Namely, Plant or Shop Tractors Which Are Automatically Operated and Controlled by Means of a Guide Wire and Magnetic Field From a Programming Center (Int. Cl. 12).

Class 26—Measuring and Scientific Appliances

For Program Panel Modules for Automatically Directing and Controlling Driverless Towing Tractors (Int. Cl. 9).

First use June 29, 1966.

SN 274,021. Diving Equipment & Supply Co., Inc., Milwaukee, Wis. Filed June 16, 1967.

DESCO

Class 22—Games, Toys, and Sporting Goods

For Diving Equipment and Parts Therefor—Namely, Diving Helmets and Cushions Therefor; Diving Masks; Divers' Dresses, Suits, Underclothing, Hats, Gloves, Cuff Rings and Clamps, Chafing Pants, Shoes and Weight Belts; Diving Regulators; and Decompression Stages and Chambers (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Divers' Knives and Air Compressors (Int. Cls. 8 and 9).

First use at least as early as Jan. 1, 1945.

SN 278,554. Mervyn Watts Ozier, Champaign, Ill. Filed Aug. 18, 1967.

SNUGGIE

Class 22—Games, Toys, and Sporting Goods

For Disposable Sleeping Bags for Outdoor, Campers' or Similar Recreational Use or Emergency Use (Int. Cl. 20).
First use May 4, 1967.

Class 37—Paper and Stationery

For Sheets of Paper With Plastic Backing for Manufacture Into Other Products (Int. Cl. 16).
First use May 6, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Blankets (Int. Cl. 24).
First use May 4, 1967.

SN 279,129. Electronic Control Corporation, Euless, Tex. Filed Aug. 28, 1967.

e/c/c

Class 21—Electrical Apparatus, Machines, and Supplies

For Semiconductors, Such as Bilateral Semiconductor Power Switches (Sometimes Referred to as Four Layer or Five Layer Semiconductor Devices), and Electronic Dimmer Circuits and Power Control Circuits Having Timing Circuits To Control the Conduction Angle for the Bilateral Switches in the Overall Dimmer and Power Control Circuits (Int. Cl. 9).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Fan Speed Control Units Sold as Components of Heating and Ventilating Units, Such as Industrial Exhaust Fans and Ventilating Units, Whereby the Power (Hence Speed) of the Fans May Be Controlled (Int. Cl. 11).

First use July 8, 1964.

SN 282,092. Jeco Company, Limited, Megruo-ku, Tokyo, Japan. Filed Oct. 9, 1967.

JECO

Owner of Japanese Reg. No. 728,365, dated Dec. 27, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

For Small Electric Motors and Electric Motor Relays Sold Only for Use in Toys, Movable Displays and Advertising Devices, and Ordinary Small Electric Household Appliances Such as Dry Shavers and Tape Recorders, and Not Including Sale for Use in Aircraft or Equipment Used in Aircraft (Int. Cls. 7, 8, and 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).

SN 287,610. The Scholl Mfg. Co., Inc., Chicago, Ill. Filed Dec. 27, 1967.

COSMETRICS

Class 44—Dental, Medical, and Surgical Appliances

For Hard Skin Reducers in the Nature of Files, and Foot Exercisers in the Nature of Cylindrical Rubber Devices Over Which the Plantar Surface of the Foot Is Exercised (Int. Cl. 10).

Class 51—Cosmetics and Toilet Preparations

For Foot Sprays and Foot Powders for Use in Relieving Tired, Aching Feet and Also as Deodorants (Int. Cl. 5).

First use Sept. 15, 1965.

SN 293,110. Colleen Pencil Co., Ltd., Adachi-ku, Tokyo, Japan. Filed Mar. 13, 1968.

COLLEEN

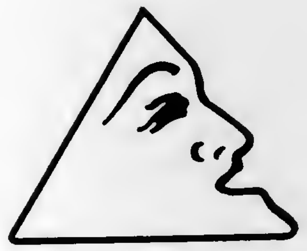
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mechanical Pencil Sharpeners (Int. Cl. 16).
First use May 10, 1958; in commerce June 1, 1959.

Class 37—Paper and Stationery

For Pencils and Ball Point Pens (Int. Cl. 16).
First use September 1927; in commerce June 1, 1959.

SN 293,111. Colleen Pencil Co., Ltd., Adachi-ku, Tokyo, Japan. Filed Mar. 13, 1968.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mechanical Pencil Sharpeners (Int. Cl. 16).
First use May 10, 1958; in commerce June 1, 1959.

Class 37—Paper and Stationery

For Pencils and Ball Point Pens (Int. Cl. 16).
First use September 1927; in commerce June 1, 1959.

SN 298,987. Hallmark Cards, Incorporated, Kansas City, Mo. Filed May 24, 1968.

CAGEY CRITTERS

Class 37—Paper and Stationery

For Scrap Books (Int. Cl. 16).

Class 38—Prints and Publications

For Greeting Cards (Int. Cl. 16).

First use May 13, 1968.

SN 299,815. Team Central Incorporated, Minneapolis, Minn. Filed June 6, 1968.

TEAM

Class 21—Electrical Apparatus, Machines, and Supplies

For Television and Radio Antennas, Antenna Lead-In Wire, Portable Electric Fans, Lamps, Speakers, Microphones, Amplifiers, Combination Amplifier and Phonograph, Radio Receivers and Two-Way Radios, Television Receivers, Headphones, Automobile and Boat Radios, Guitar Amplifiers, Transistorized Garage Door Openers; Electric Appliances—Namely, Mixers, Blenders, Steam Irons, Coffee Pots, Skillets, Electric Knife Sharpeners, and Toasters (Int. Cls. 7, 9, and 11).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electric Knives, Electric Drills, and Electric Saws (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Tubes Testers, Voltmeters, and Oscilloscopes (Int. Cl. 9).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Humidifiers, Dehumidifiers, and Space Heaters (Int. Cl. 11).

First use Aug. 28, 1967.

SN 300,151. Freedco Products, Inc., Long Island City, N.Y. Filed June 17, 1968.

FREEDCO

Owner of Reg. No. 556,179.

Class 19—Vehicles

For Suspension Parts for Motor Vehicles and Rubber Bushings for Suspension Parts for Motor Vehicles (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Replacement Parts for Passenger Automobiles, Trucks and Buses—Namely, Universal Joints, Fuel Pumps, Carburetor Parts, Fuel and Oil Lines, Engine Parts, Water Pumps and Parts Thereof, Fan Blades, Transmission Gears and Parts Thereof, Motor Mounts, and Clutch Plates (Int. Cl. 12).

Class 31—Filters and Refrigerators

For Oil Filters for Motor Vehicles (Int. Cl. 12).

First use November 1946.

SN 306,101. Comet Packaging Corporation, Bronx, N.Y. Filed Aug. 28, 1968.

Attaché

Class 2—Receptacles

For Plastic Bags—Namely, Trash Can Liner Bags, Food Storage Bags, Sandwich Bags, Food Tray Bags, Pillow Protector Bags, Guest Bags for Storing Clothing and Personal Articles, General Utility Bags, Bags for Storing Food for Pets, and Ice Cube Bags (Int. Cls. 16 and 21).

Class 37—Paper and Stationery

For Plastic Sheets for Packaging and Storage Purposes (Int. Cl. 16).

Class 39—Clothing

For Plastic Gloves (Int. Cl. 25).

First use prior to Mar. 31, 1967.

SN 306,708. Retteen Jewelry, Incorporated, New York, N.Y. Filed Sept. 6, 1968.

RETCO

Class 27—Horological Instruments

For Watches (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Jewelry Made of Precious Metal (Int. Cl. 14).

First use Sept. 19, 1960.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 294,597. B. L. Cobia, Inc., Winter Garden, Fla. Filed Apr. 1, 1968.

FROM THE GARDEN OF THE LEPRECHAUNS

For Live Plants (Int. Cl. 31).
First use Feb. 9, 1968.

SN 294,749. Randall Fuel Company Incorporated, Atlanta, Ga. Filed Apr. 2, 1968.

DARBEE

For Bituminous Coal (Int. Cl. 4).
First use at least July 11, 1966.

SN 294,929. Feldmühle Aktiengesellschaft, Dusseldorf-Oberkassel, Germany. Filed Apr. 4, 1968.

BIKORIT

For Fused Aluminum Oxide (Int. Cl. 1).
First use between 1925 and 1930; in commerce February 1960.

SN 295,134. Foster Grant Co., Inc., Leominster, Mass. Filed Apr. 8, 1968.

FOSTAFOAM

Owner of Reg. Nos. 586,280, 842,251, and others.
For Expandable or Expanded Synthetic Resins (Int. Cl. 1).
First use in or about January 1968.

SN 295,990. Winzen Research, Inc., Minneapolis, Minn. Filed Apr. 18, 1968.

WINLON

For Plastic Film (Int. Cl. 17).
First use March 1968.

SN 296,607. Hermes Leather Co., Inc., New York, N.Y. Filed Apr. 11, 1968.

Hermes LEATHER

The word "Leather" is disclaimed apart from the mark as shown.
For Leather Skins (Int. Cl. 18).
First use January 1964; September 1929 as to "Hermes."

SN 296,960. The Hill & Griffith Co., Cincinnati, Ohio. Filed Apr. 30, 1968.

VOL-A-COAL

For Coal, Including Treated Sea Coal (Int. Cl. 4).
First use Apr. 11, 1968.

SN 297,592. Reichhold Chemicals, Inc., White Plains, N.Y. Filed May 7, 1968.

UROTUF

Owner of Reg. No. 655,966.
For Synthetic Resins and Resin Solutions (Int. Cl. 1).
First use Apr. 11, 1968.

Class 2 — Receptacles

SN 306,273. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Aug. 29, 1968.

CONDIMATE

For Plastic Household Containers and Covers Therefor (Int. Cl. 21).
First use Aug. 20, 1968.

SN 306,915. Jackes-Evans Manufacturing Company, St. Louis, Mo. Filed Sept. 9, 1968.

TOWN AND Country

For Mail Boxes (Int. Cl. 6).
First use Jan. 2, 1968.

SN 306,967. Union Carbide Corporation, New York, N.Y. Filed Sept. 9, 1968.

TALCAR

For Aerosol Dispensers for Dry Powders (Int. Cl. 20).
First use on or about Sept. 3, 1968.

SN 307,089. Container Products Corporation, Frederick, Md. Filed Sept. 11, 1968.

CPC

For Polyethylene Liners for Use To Contain Liquid Products (Int. Cl. 20).
First use Aug. 1, 1968.

SN 307,730. Deerfield Groves Company, Wabasso, Fla. Filed Sept. 19, 1968.

POLYKINI

Owner of Reg. No. 836,160.
For Fruit Trays (Int. Cl. 20).
First use Apr. 17, 1968.

SN 307,741. Hedwin Corporation, New York, N.Y. Filed Sept. 19, 1968.

CUBE

Owner of Reg. Nos. 648,733 and 779,204.
For Plastic Shipping Containers for Liquids and Powders (Int. Cl. 20).
First use Aug. 13, 1963.

SN 308,111. International Paper Company, New York, N.Y. Filed Sept. 24, 1968.

GATOR LOK

For Multi-Wall Paper Bags (Int. Cl. 16).
First use July 11, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 282,259. Atlantic Products Corporation (Delaware corporation), Trenton, N.J., assignee of Atlantic Products Corporation (New Jersey corporation), Trenton, N.J. Filed Oct. 11, 1967.

TOUR-MATE

For Hand Luggage (Int. Cl. 18).
First use June 1967.

SN 293,115. Diana Stores Corporation, North Bergen, N.J. Filed Mar. 13, 1968.

VIP

For Pet Accessories—Namely, Leather Chews in the Form of Bones, Sticks, Donuts, and Balls; Chains; Combs; and Nail Clippers (Int. Cls. 6, 8, 18, and 21).
First use Nov. 30, 1967.

SN 298,828. Adolph A. Katz, New York, N.Y. Filed May 22, 1968.

Bags by Patricia

The term "Bags" is disclaimed apart from the mark as shown.
For Ladies' Handbags (Int. Cl. 18).
First use May 2, 1968.

SN 305,825. Full Bloom Products, Inc., Elkins Park, Pa. Filed Aug. 23, 1968.

FUR-SAVER

For Choke Chains for Dogs (Int. Cl. 6).
First use October 1958.

SN 306,174. Seward Luggage Manufacturing Company, Inc., Petersburg, Va. Filed Aug. 28, 1968.

SISSY

For Luggage (Int. Cl. 18).
First use on or about July 31, 1968.

SN 306,573. Lesco Lona, Inc., New York, N.Y. Filed Sept. 4, 1968.

The Mandarin

The word "The" is disclaimed apart from the mark as shown.
For Ladies' and Misses' Handbags (Int. Cl. 18).
First use June 1, 1966.

Class 4 — Abrasives and Polishing Materials

SN 266,245. Michigan Hot Rod Association, Centerline, Mich. Filed Mar. 8, 1967.

SHOW CAR

For Metal Polish and Cleaner for Automobiles (Int. Cl. 3).
First use Feb. 15, 1966.

SN 305,686. Slix Products, Inc., Woodside, Calif. Filed Aug. 21, 1968.

SLIX

For Furniture Polish With Cleaning Properties (Int. Cl. 3).
First use Nov. 1, 1946.

SN 306,744. Armour-Dial, Inc., Chicago, Ill. Filed Sept. 6, 1968.

WATERCOLOR

For Self-Polishing Floor Wax (Int. Cl. 3).
First use on or prior to July 30, 1968.

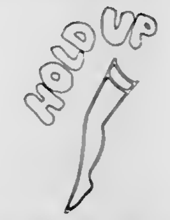
SN 306,746. Armour-Dial, Inc., Chicago, Ill. Filed Sept. 6, 1968.

EXPO

For Self-Polishing Floor Wax (Int. Cl. 3).
First use on or prior to July 30, 1968.

Class 5 — Adhesives

SN 277,284. Hold Up, Inc., Miami, Fla. Filed Aug. 1, 1967.



For Aerosol Spray Adhesives To Stick Stockings to Legs (Int. Cl. 1).
First use in or about May 1967.

SN 305,240. Pellon Corporation, New York, N.Y. Filed Aug. 15, 1968.

WONDER UNDER

Owner of Reg. No. 589,758.
For Fusible Adhesive Material for Bonding Fabrics (Int. Cl. 17).
First use July 20, 1965.

Class 6—Chemicals and Chemical Compositions

SN 258,670. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 15, 1966.

QUIK-SOFT

For Fabric Softener (Int. Cl. 1).
First use Aug. 5, 1966.

SN 279,257. Alpha Metals, Inc., Jersey City, N.J. Filed Aug. 29, 1967.

COPPERWET

For Fumeless Aqueous Solution Used as an Etching Agent Designed To Restore the Solderability of Tarnished Copper Surfaces (Int. Cl. 1).
First use Apr. 29, 1964.

SN 282,304. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Oct. 11, 1967.

ROMA

For Dyestuffs and Printing Inks for the Textile, Paper, and Plastics Industries (Int. Cl. 2).
First use on or about Sept. 17, 1952.

SN 284,837. Proctor Chemical Company, Inc., Salisbury, N.C. Filed Nov. 14, 1967.

HYTENSE

For Chemical Compositions To Impart Durable Press Properties to Fabrics (Int. Cl. 1).
First use Oct. 30, 1967.

SN 288,668. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Jan. 12, 1968.

MILSIZE

For Compositions for Use on Textile Yarns as Sizing Agents (Int. Cl. 1).
First use Mar. 3, 1967.

SN 294,625. Percy Harms Corporation, Skokie, Ill. Filed Apr. 1, 1968.

THIN-LINE

For Layout Dyes in a Variety of Colors for Use by Tool and Die Makers (Int. Cl. 2).
First use on or about June 1, 1957.

SN 299,701. Sel-Rex Corporation, Nutley, N.J. Filed June 4, 1968.

RHENEX

For Chemical Plating Solutions for the Deposition of Rhenium (Int. Cl. 1).
First use May 29, 1968.

SN 299,995. Northern Petrochemical Company, Omaha, Nebr. Filed June 7, 1968.

VARINE

For Imidazolines—Namely, Tertiary Amine Emulsifiers and Corrosion Inhibitors (Int. Cl. 1).
First use May 22, 1968.

SN 300,004. Rhodia Inc., New Brunswick, N.J. Filed June 7, 1968.

THE RIGHT APPROACH

For Chemical Compositions—Namely, Herbicides and Fungicides for Lawns (Int. Cl. 5).
First use June 5, 1962.

SN 300,188. Great Lakes Chemical Corporation, West Lafayette, Ind. Filed June 11, 1968.

BROM-O-SOL

For Soil Fumigant (Int. Cl. 5).
First use Sept. 13, 1962.

SN 300,189. Great Lakes Chemical Corporation, West Lafayette, Ind. Filed June 11, 1968.

CHLOR-O-PIC

For Preplant Soil Fumigant (Int. Cl. 5).
First use Mar. 2, 1962.

SN 300,190. Great Lakes Chemical Corporation, West Lafayette, Ind. Filed June 11, 1968.

METH-O-GAS

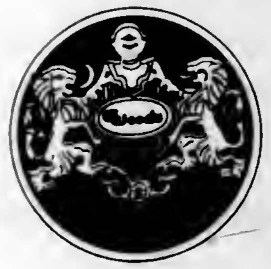
For Fumigant (Int. Cl. 5).
First use July 27, 1960.

SN 300,274. F & W Enterprises, Inc., Tampa, Fla. Filed June 12, 1968.

FLYCO

Owner of Reg. No. 649,463.
For Insecticides (Int. Cl. 5).
First use 1952.

SN 300,301. Woodlets, Inc., Buffalo, N.Y. Filed June 12, 1968.



For Chemical Compound for Freshening or Deodorizing the Air (Int. Cl. 5).
First use July 20, 1966.

SN 300,331. The Cool-Amp Co., Portland, Oreg. Filed June 13, 1968.

COOL-AMP

For Powder for Silver Plating Electrical Bus Bars, Connectors, and the Like (Int. Cl. 1).
First use July 26, 1946.

SN 300,440. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 14, 1968.

ACARALATE

Owner of Reg. Nos. 619,270 and 821,002.
For Miticides (Int. Cl. 5).
First use Aug. 22, 1967.

SN 300,747. Shell Oil Company, New York, N.Y. Filed June 18, 1968.

ALDRITE

For Insecticide (Int. Cl. 5).
First use at least as early as Apr. 9, 1968.

SN 300,748. Shell Oil Company, New York, N.Y. Filed June 18, 1968.

DIELDRITE

For Insecticide (Int. Cl. 5).
First use at least as early as Apr. 9, 1968.

SN 300,749. Shell Oil Company, New York, N.Y. Filed June 18, 1968.

VAPONITE

For Insecticide (Int. Cl. 5).
First use at least as early as May 3, 1968.

SN 301,172. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

FERNERIE

For Room Freshener (Int. Cl. 5).
First use May 27, 1968.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 286,429. Ireco Chemicals, Salt Lake City, Utah. Filed Dec. 7, 1967.

DBA

For Slurry Blasting Agents (Int. Cl. 13).
First use on or about Aug. 2, 1960.

SN 300,278. Henco Enterprises, Inc., Niles, Mich. Filed June 12, 1968.

KUSH WADS

The word "Wads" is disclaimed apart from the mark as shown.
For Partially Collapsible Wads Used in Shotgun Shells (Int. Cl. 13).
First use Apr. 11, 1968.

Class 10—Fertilizers

SN 279,445. Allied Chemical Corporation, Morristown, N.J. Filed Aug. 31, 1967.

FARMSCO

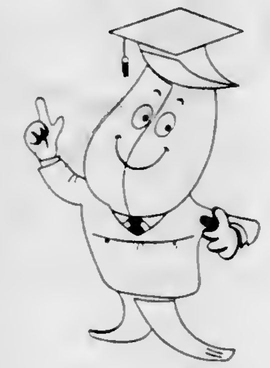
For Plant Foods and Chemical Fertilizers (Int. Cl. 1).
First use June 20, 1967.

SN 305,274. Farmers Regional Cooperative, Fort Dodge, Iowa. Filed Aug. 16, 1968.

F
Felco

Owner of Reg. Nos. 600,806, 711,703, and others.
For Fertilizers (Int. Cl. 1).
First use at least as early as Feb. 15, 1968; August 1948 as to "Felco."

SN 305,404. Continental Oil Company, Ponca City, Okla. Filed Aug. 19, 1968.



For Fertilizer (Int. Cl. 1).
First use about Mar. 1, 1968.

Class 12—Construction Materials

SN 270,297. Supradur Manufacturing Corporation, Wind Gap, Pa. Filed Apr. 28, 1967.

SHADO-SHAKE

Owner of Reg. No. 699,987.
For Asbestos-Cement Siding and Roofing Shingles (Int. Cl. 19).
First use June 5, 1958.

SN 271,323. Allied Compositions Co., Inc., Maspeth, N.Y. Filed May 12, 1967.

LEVELON

For Adherent Underlayment for Wooden Block Flooring and for Rubber and Vinyl Tile (Int. Cls. 19 and 27).
First use Feb. 15, 1954.

SN 277,703. Keene Corporation, New York, N.Y., assignee of Penn Metal Company, Inc., Boston, Mass. Filed Aug. 7, 1967.

KWIK-ZIP

For Ceiling High and Cornice High Interior Movable Partitions and Parts Thereof, Not of a Screen Type (Int. Cl. 19).
First use July 21, 1967.

SN 283,911. Mastic Corporation, South Bend, Ind. Filed Nov. 1, 1967.

MASCO

For Building Siding Materials Made From Metal, Plastic or Asphalt Coated Composition Board (Int. Cls. 6 and 19).
First use Sept. 28, 1967.

SN 283,912. Mastic Corporation, South Bend, Ind. Filed Nov. 1, 1967.

MASCOR

For Building Siding Materials Made From Metal, Plastic or Asphalt Coated Composition Board (Int. Cls. 6 and 19).
First use Sept. 28, 1967.

SN 286,510. Constructions Metalliques Fillod, Paris, France. Filed Dec. 8, 1967.

CMF

Owner of French Reg. No. 450,501, dated Apr. 20, 1955 (Seine); Natl. Inst. No. 55,530.
For Prefabricated Metal Buildings and Structural Parts Thereof (Int. Cl. 6).
First use at least as early as 1964; in commerce Sept. 16, 1964.

SN 288,006. Costain Concrete Co. Limited, London, England. Filed Jan. 3, 1968.

COSTYE

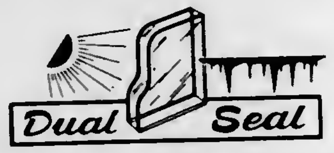
Owner of British Reg. No. 899,416, dated Sept. 14, 1966.
For Masonry and Concrete Buildings, Concrete Components for Use in Such Buildings, and Railroad Ties (Int. Cl. 19).

SN 291,864. Globe Roofing Products Co., Inc., Chicago, Ill. Filed Feb. 26, 1968.

THERMOWALL

For Asphalt Insulated Siding (Int. Cl. 19).
First use July 6, 1944.

SN 293,925. H & D, Inc., Everett, Wash. Filed Mar. 22, 1968.



Applicant disclaims the pictorial representation of the glass apart from the mark as shown.
For Insulating Glass for Use in Building Structures (Int. Cl. 19).
First use Mar. 10, 1965.

SN 297,278. Dixisteel Buildings Inc., Atlanta, Ga. Filed May 3, 1968.

db

Owner of Reg. No. 719,116.
For Pre-Fabricated Steel Buildings (Int. Cl. 6).
First use Oct. 13, 1967.

SN 299,829. The Cambridge Tile Manufacturing Company, Cincinnati, Ohio. Filed June 6, 1968.

CAMTILE

For Ceramic Floor and Wall Tile (Int. Cl. 19).
First use in December 1961.

SN 302,839. Holmes Insulations Ltd., Sarnia, Ontario, Canada. Filed July 16, 1968.

HILBLOK

For High Temperature Insulation Principally of Mineral Fibre (Int. Cl. 17).
First use Feb. 28, 1968; in commerce Feb. 28, 1968.

SN 305,707. AA Wire Products Company, Chicago, Ill. Filed Aug. 22, 1968.

BLOK-TRUS

For Wire Masonry Wall Reinforcements and Ties (Int. Cl. 6).
First use June 19, 1968.

SN 305,963. Niles Expanded Metals Company, Niles, Ohio. Filed Aug. 26, 1968.

UNIWALK

For Gratings of Expanded Metal (Int. Cl. 6).
First use June 5, 1968.

SN 306,545. Armstrong Cork Company, Lancaster, Pa. Filed Sept. 4, 1968.

INSTALOK

For Spline for Mounting Ceiling Boards (Int. Cl. 19).
First use Aug. 10, 1968.

SN 306,588. Pittsburgh Corning Corporation, Pittsburgh, Pa. Filed Sept. 4, 1968.

PITTWRAP

For Flexible Thermoplastic Sheet Material for Covering Pipe Insulation and the Like (Int. Cl. 17).
First use about Nov. 21, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 292,670. Automatic Devices Company, Allentown, Pa. Filed Mar. 7, 1968.

PATRIARC

For Heavy Duty Curved Stage Curtain Track (Int. Cl. 20).
First use Feb. 12, 1968.

SN 294,954. Minnesota Apollo Corporation, Minneapolis, Minn. Filed Apr. 4, 1968.

TONKA TOASTER

Applicant disclaims "Toaster" apart from the mark as shown.
For Non-Electrical Sandwich Toaster (Int. Cl. 21).
First use Apr. 1, 1965.

Class 14—Metals and Metal Castings and Forgings

SN 304,460. General Magnaplate Corporation, Linden, N.J. Filed Aug. 6, 1968.

MAGNAGLIDE

Owner of Reg. Nos. 756,699 and 708,534.
For Aluminum Sheets or Strips Having a Veneer of Tetrafluoroethylene (Int. Cl. 6).
First use June 20, 1968.

Class 16—Protective and Decorative Coatings

SN 270,500. Benjamin Moore & Co., New York, N.Y. Filed May 2, 1967.

SPS

For Rapid-Drying Primer and Sealer for Use as an Undercoat for Paint or Enamel (Int. Cl. 2).
First use Mar. 7, 1966.

SN 273,659. Modern Products, Inc., Kansas City, Mo. Filed June 12, 1967.

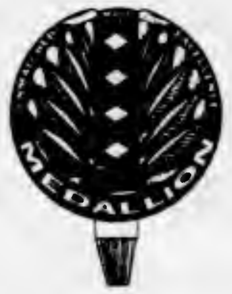
The words "Line" and "Tested Quality" are disclaimed apart from the mark as shown. The drawing is lined for the color red.
For Enamels and Paints (Int. Cl. 2).
First use May 25, 1967.

SN 277,437. The Chemical Corporation, Springfield, Mass. Filed Aug. 3, 1967.

LUSTER-FOS

For Protective Coating Compositions for Finishing Metal Surfaces (Int. Cl. 2).
First use on or about November 1964.

SN 280,591. Hunt Manufacturing Co., Philadelphia, Pa. Filed Sept. 18, 1967.



The words "Unmatched Mark of Excellence" are disclaimed apart from the mark as shown.
For Polymer Emulsion Paints for Use by Artists (Int. Cl. 2).
First use Mar. 30, 1967.

SN 296,589. Sperry Rand Corporation, New York, N.Y. Filed Apr. 25, 1968.

REMLAC

For Lacquer (Int. Cl. 2).
First use May 1, 1950.

SN 296,814. Daniel Products Company, Jersey City, N.J. Filed Apr. 29, 1968.

SLIP-AYD

For Paint Additives for Use as an Ingredient of Paints and Lacquers for Improving Slip, Mar Resistance, Polish Resistance, Anti-Blocking Properties and Metal Marking (Int. Cl. 1).
First use during the month of March 1967.

SN 296,815. Daniel Products Company, Jersey City, N.J. Filed Apr. 29, 1968.

SUSPEND AYD

For Paint Additives for Use as an Ingredient of Paints for Improving Pigment Suspension and Sag Resistance (Int. Cl. 1).
First use November 1957.

SN 296,816. Daniel Products Company, Jersey City, N.J. Filed Apr. 29, 1968.

VISC-AYD

For Paint Additives for Use as an Ingredient of Paints for Imparting Higher Viscosity (Int. Cl. 1).
First use during the month of March 1962.

SN 298,605. International Paint Company, Inc., New York, N.Y. Filed May 20, 1968.

Copper-lux

For Antifouling Paint (Int. Cl. 2).
First use Mar. 11, 1968.

SN 299,451. Finnaren & Haley, Incorporated, Philadelphia, Pa. Filed May 31, 1968.

AFLON

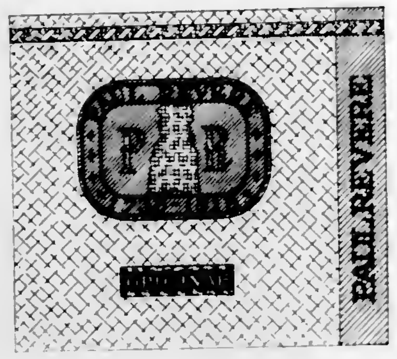
For Thermal-Curing Enamel (Int. Cl. 2).
First use at least as early as Aug. 16, 1966.

Class 17—Tobacco Products

SN 269,839. Alfred Dunhill Limited, St. James's, London, England. Filed Apr. 24, 1967.

Applicant makes no claim to the words "London-Paris-New York" apart from its mark as shown. The drawing is lined for the colors red and gold.
For Cigarettes (Int. Cl. 34).
First use July 25, 1966; in commerce July 25, 1966.

SN 279,974. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Filed Aug. 18, 1967.



Applicant disclaims the word "Original" apart from the mark as shown. Paul Revere is the name of a famous Eighteenth Century American patriot. The mark is lined for the colors orange, gold, brown, and blue.
For Cigarettes (Int. Cl. 34).
First use May 26, 1967; in commerce May 26, 1967.

SN 286,079. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed Dec. 4, 1967.

CONNOISSEUR

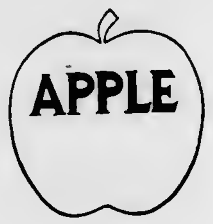
For Cigars (Int. Cl. 34).
First use Sept. 18, 1967.

SN 303,477. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.

STRATER'S

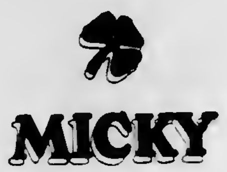
For Chewing Tobacco (Int. Cl. 34).
First use at least as early as July 1, 1919.

SN 303,482. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.



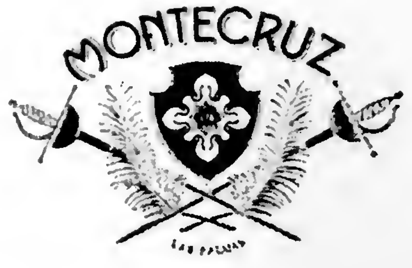
For Chewing Tobacco (Int. Cl. 34).
First use at least as early as Oct. 26, 1905.

SN 303,483. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.



For Chewing Tobacco (Int. Cl. 34).
First use at least as early as Apr. 17, 1906.

SN 306,428. Compania Insular Tabacalera, S.A., Las Palmas, Canary Islands. Filed Sept. 3, 1968.



The exclusive use of the words "Las Palmas" is disclaimed apart from the mark as a whole. Owner of U.S. Reg. No. 856,364.
For Cigars (Int. Cl. 34).
First use Aug. 13, 1964; in commerce Aug. 13, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 274,719. Dee Cee Laboratories, Inc., Madison, Tenn. Filed June 26, 1967.

6BG +

For Vitamin and Mineral Supplement (Int. Cl. 5).
First use Feb. 18, 1966.

SN 284,799. Carnation Company, Los Angeles, Calif. Filed Nov. 14, 1967.

PELSIFOOD

For Fur Bearing Animal Food (Medicated) (Int. Cl. 5).
First use at least as early as July 18, 1967.

SN 285,734. Michel Guerbet, Paris, France. Filed Nov. 28, 1967.

DUROLIOPAQUE

Owner of French Reg. No. 536,510, dated July 22, 1965 (Paris); Natl. Inst. No. 259,978.
For Contrast Medium for Use in Myelography and Iodoventriculography (Int. Cl. 5).

SN 292,080. Conal Pharmaceuticals, Inc., Chicago, Ill. Filed Feb. 28, 1968.

MANDACON

For Medicinal Preparation for the Treatment of Urinary Infections (Int. Cl. 5).
First use Feb. 15, 1968.

SN 294,669. Salsbury Laboratories, Charles City, Iowa. Filed Apr. 1, 1968.

SALFURIDE

For Veterinary Preparations for the Control of Avian Gastrointestinal Infections, Especially Histomoniasis in Turkeys and for the Stimulation of Growth in Poultry (Int. Cl. 5).
First use Mar. 7, 1968.

SN 307,921. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

V IMMUNITY

For Feminine Cleansing Douche (Int. Cl. 5).
First use Aug. 6, 1968.
Subj. to Intf. with SN 306,430.

Class 19—Vehicles

SN 266,909. North American Fiberglass Corporation, High Point, N.C. Filed Mar. 16, 1967.

Natco

For Boats (Int. Cl. 12).
First use Aug. 3, 1964.

SN 285,352. Societe Ermans, Saint-Germain-en-Laye, France. Filed Nov. 21, 1967.

ERMANS

Priority claimed under Sec. 44(d) on French Reg. No. 725,923, dated July 13, 1967.
For Hatch Covers and Hold Covers for Ships, Fluid-Tight Doors and Closure Panels for Ships, Motor Trucks and Railway Cars (Int. Cl. 12).

SN 286,702. Milsco Manufacturing Co., Milwaukee, Wis. Filed Dec. 11, 1967.

IMPERIAL

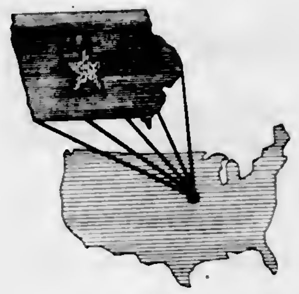
For Contour Seats and Seat Suspensions for Tractors, Trucks, and Buses (Int. Cl. 12).
First use on or about Nov. 2, 1967.

SN 293,250. Roger A. Fries, Mount Clemens, Mich. Filed Mar. 14, 1968.

SLINGSHOT WHEELIE

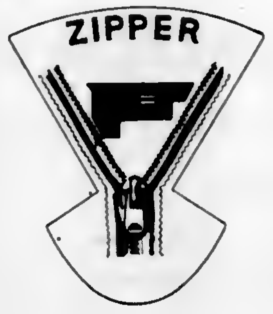
For Drag Cycles (Int. Cl. 12).
First use Mar. 6, 1968.

SN 295,354. Mid-America Body & Equipment Co., Inc., West Des Moines, Iowa. Filed Apr. 10, 1968.



The drawing is lined for blue and gold. Applicant disclaims the representation of an outline map of the United States and of the State of Iowa apart from the mark as shown.
For Truck Bodies (Int. Cl. 12).
First use Feb. 26, 1968.

SN 295,581. Zipper Manufacturing Company, Inc., Elkhart, Ind. Filed Apr. 12, 1968.



The representation of the truck camper is disclaimed apart from the mark as shown.
For Truck Campers (Int. Cl. 12).
First use Jan. 2, 1968.

SN 297,596. Roth-Schlenger, Inc., Union, N.J. Filed May 7, 1968.

HALLMARK

For Bicycles (Int. Cl. 12).
First use Dec. 21, 1967.

SN 298,448. Hupen-Schede Horst C. Schede KG, Hamburg, Germany. Filed May 17, 1968.

FINNCLIPPER

For Motorboats, Sailing Boats, and Motorsailers (Int. Cl. 12).
First use Feb. 25, 1966; in commerce May 30, 1966.

SN 299,253. Sport-Craft, Inc., Perry, Fla. Filed May 28, 1968.

Sportcraft

For Boats (Int. Cl. 12).
First use July 1, 1956.

SN 299,274. Caveman Camper, Inc., Grants Pass, Oreg. Filed May 29, 1968.

GRANTURISTE

For Camper Body for Pickup Trucks (Int. Cl. 12).
First use May 11, 1968.

SN 300,357. Irvin Industries, Inc., Lexington, Ky. Filed June 13, 1968.

For Safety Seat Belts and Parts Therefor (Int. Cl. 12).
First use on or about Feb. 29, 1968.

SN 301,560. The Troxel Manufacturing Company, Moscow, Tenn. Filed June 27, 1968.

"MOON"-BAR

For Brace for Bicycle Seat (Int. Cl. 12).
First use May 27, 1968.

SN 301,657. Universal Oil Products Company, d.b.a. UOP Bostrom Division, Des Plaines, Ill. Filed June 28, 1968.

THINLINE

For Seats and Parts Thereof for Automotive Land Vehicles (Int. Cl. 12).
First use July 15, 1965.

SN 302,197. National Homes Corporation, Lafayette, Ind. Filed July 8, 1968.

National
MOBILE HOMES

Applicant disclaims the words "Mobile Homes" apart from the mark as shown.
For Mobile Homes (Int. Cl. 12).
First use June 14, 1968.

SN 308,393. North & Judd Manufacturing Company, New Britain, Conn. Filed Sept. 27, 1968.

DIVISION OF NORTH & JUDD
WILCOX-CRITTENDEN
MIDDLETOWN, CONN.

For Marine Windows, Boat Drains and Ventilators (Int. Cl. 12).
First use on or before Apr. 5, 1955.

Class 20 — Linoleum and Oiled Cloth

SN 275,834. Color Tile of Colorado, Inc., Denver, Colo. Filed July 12, 1967.

COLOR
TILE
SUPERMARTS

Applicant disclaims the words "Supermarts" and "Tile" apart from the trademark as shown. The drawing is lined for blue and red, but color is not claimed as a feature of the mark.
Owner of Reg. No. 725,848.
For Wall and Floor Coverings—Namely, Plastic Wall Tile, Rubber Tile, Solid Vinyl Tile, Asbestos Tile, and Linoleum Tile (Int. Cl. 19).
First use on or about July 1, 1957.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 152,500. Crown Radio Corporation, Taito-ku, Tokyo, Japan. Filed Sept. 5, 1962.

CROWN

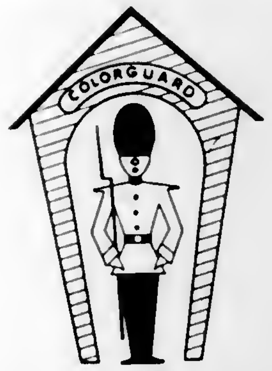
For Radios, Television Receivers, Flashlights, and Batteries (Int. Cls. 9 and 11).
First use November 1956; in commerce November 1956.

SN 158,965. Fisher Radio Corporation, Long Island City, N.Y. Filed Dec. 12, 1962.

STEREO BEACON

For Radio Receiving Sets Having Therein Special Circuitry for Multiplex Operation, and Devices for Adapting Frequency Modulated Radio Receiving Sets for Multiplex Operation (Int. Cl. 9).
First use June 22, 1961.

SN 235,128. Sears, Roebuck and Co., Chicago, Ill. Filed Dec. 22, 1965.



For Electronic Component, Known as an Automatic Degausser, Sold Only as a Part of a Color Television Receiver (Int. Cl. 9).
First use on or about Sept. 28, 1964.

SN 258,266. Trans-Lux Corporation, New York, N.Y. Filed Nov. 8, 1966.

TRANS-VIDEO

Owner of Reg. Nos. 209,929, 355,263, and others.
For Dual Projection System Utilizing a Projector, Screens, and Television Monitors for the Projection of an Image of Stock Ticker Tape and for the Transmission and Reception of That Image Via Electronic Means (Int. Cl. 9).
First use on or about Apr. 5, 1966.

SN 262,047. Macbeth Corporation, Newburgh, N.Y. Filed Jan. 6, 1967.

PROOFLITE

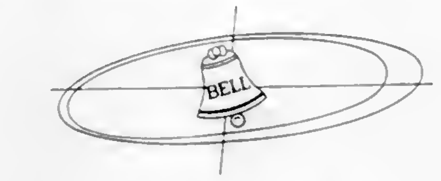
For Luminaires Providing a Scientifically Accurate Lighting Source for Color Appraisal (Int. Cl. 11).
First use Nov. 8, 1966.

SN 277,485. Uthe Technology, Inc., Mountain View, Calif. Filed Aug. 3, 1967.

UTI

For High Frequency Electronic Power Supplies—Namely, Power Source and Logical Control Units for Precision Control of Ultrasonic Transducers (Int. Cl. 9).
First use Sept. 16, 1966.

SN 285,968. Bell Electric Co., Chicago, Ill. Filed Dec. 1, 1967.



For Electrical Wiring Devices for Interior and/or Outdoor Uses, Including Electrical Outlet and/or Junction Boxes, Adaptors, Extensions, Covers and Cover Plates Therefor, Electrical Switches, Electrical Receptacles, 3-Wire Grounding Devices, Electric Garden and Walk Light, and Wall Plates (Int. Cls. 9 and 11).
First use on or about July 1, 1963; on or about July 15, 1954, in another form.

SN 286,457. Western World Electronics Corp., New York, N.Y. Filed Dec. 7, 1967.

PHILI-TEC

For A.C. Adapters for Electronic Tape Recorders, Foot-Operated Controls for Such Recorders, Headphones, Converters for Automobile Current Supply for Such Recorders, Microphones, Telephone Pick-Ups, Electrical Cord Sets, Bracket-Carried Electrical Connection Boxes and Connection Cables (Int. Cl. 9).
First use June 7, 1967.

SN 287,158. HB Engineering Corporation, Silver Spring, Md. Filed Dec. 18, 1967.

TWINTRON

For Electromechanical Devices—Namely, Resonators and Filters (Int. Cl. 9).
First use Mar. 27, 1967.

SN 289,166. Burroughs Corporation, Detroit, Mich. Filed Jan. 19, 1968.

B

Owner of Reg. Nos. 505,160, 522,893, and others.
For Electronic Components—Namely, Circuit Modules, Magnetic Cores, Readout Devices, Indicator Tubes, Switching Tubes; Information Transmission, Conversion and Display Devices—Namely, Terminal Units for Interconnection of Keyboard Machines and Computers, Multiplexing Units, and Cathode Ray Tube Alphanumeric Display Units; Electrical Apparatus—Namely, Electric Motors, Interference Eliminators, Radio Filters, Condensers, Circuit Protectors; and Parts Thereof (Int. Cls. 7 and 9).
First use Apr. 16, 1947.

SN 289,167. Burroughs Corporation, Detroit, Mich. Filed Jan. 19, 1968.

Burroughs

Owner of Reg. Nos. 505,174 and 508,144.
For Electronic Components—Namely, Circuit Modules, Magnetic Cores, Readout Devices, Indicator Tubes, Switching Tubes; Information Transmission, Conversion and Display Devices—Namely, Terminal Units for Interconnection of Keyboard Machines and Computers, Multiplexing Units, and Cathode Ray Tube Alphanumeric Display Units; Electrical Apparatus—Namely, Electric Motors, Interference Eliminators, Radio Filters, Condensers, Circuit Protectors; and Parts Thereof (Int. Cls. 7 and 9).
First use March 1910.

SN 289,762. Ashland Oil & Refining Company, Ashland, Ky. Filed Jan. 29, 1968.

TOPFLITE

Owner of Reg. No. 543,584.
For Wet Cell Batteries (Int. Cl. 9).
First use at least as early as Nov. 20, 1967.

SN 290,266. Electrohome Limited, Kitchener, Ontario, Canada. Filed Feb. 5, 1968.

E

Owner of Canadian Reg. No. 142,060, dated Sept. 24, 1965.
For Phonographs and Record Players, Radio Receiving Sets, Television Receiving Sets, Combination Phonograph and Radio Receiving Sets; Combination Sets—Namely, Phonograph, Tape Recorders and Radio or Television Receiving Sets; Intercommunication Units, Electric Fans, Electric Motors, A.C. and D.C., and Electric Warming Trays (Int. Cls. 7, 9, and 11).

SN 296,675. Electric Cord Sets, Inc., Avon Lake, Ohio. Filed Apr. 26, 1968.

"THE RIGHT CONNECTION"

For Power Supply Cords, Wiring Harnesses, and Parts Therefor (Int. Cl. 9).
First use Sept. 18, 1964.

SN 299,664. Fisher Radio Corporation, Long Island City, N.Y. Filed June 4, 1968.

XP-15

For Speaker Systems (Int. Cl. 9).
First use Oct. 12, 1966.

SN 299,897. CTS Corporation, Elkhart, Ind. Filed June 7, 1968.

STRIPTROL

Owner of Reg. Nos. 690,505 and 742,279.
For Variable Resistors and Associated On-Off Switches, and Parts of the Foregoing Apparatus (Int. Cl. 9).
First use at least as early as May 10, 1968.

SN 310,278. Fedtro, Inc., Rockville Centre, N.Y. Filed Oct. 23, 1968.

ELECTRO-BRITE

For Indoor TelevisionAntennas (Int. Cl. 9).
First use Sept. 27, 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 262,413. Edison Giocattoli di Ferri Giampiero e Marinai Jori, Florence, Italy. Filed Jan. 12, 1967.

PANTHERMATIC

Owner of Italian Reg. No. 178,029, dated May 9, 1966; and U.S. Reg. Nos. 808,426 and 828,153.
For Toy Arms and Ammunition for Toy Arms (Int. Cl. 28).

SN 275,095. Whitman Publishing Company, Racine, Wis. Filed June 29, 1967.

Whitman

Owner of Reg. Nos. 697,472, 721,356, and others.

For Coin and Stamp Collecting Items and Accessories—Namely, Coin Tubes and Holding Cards; Stamp Hinges, Tongs, Perforation Gages, Watermark Trays, and Labels; and Coin, Stamp, and Currency Collecting Kits, Containers, Holders, and Protectors (Int. Cl. 16).

First use Feb. 17, 1967.

SN 282,208. Rapaport Brothers, Inc., Chicago, Ill. Filed Oct. 10, 1967.

TUMBLE STONES

Applicant disclaims the word "Stones" apart from the mark as shown.

For Toy Hobby Kit Comprising a Tumbling Device, Rough Rocks, and Abrasives for Polishing the Rocks (Int. Cl. 28).

First use Sept. 27, 1967.

SN 283,935. James A. Smith, Metairie, La. Filed Nov. 1, 1967.

HI LO ~~SPLIT~~

For Sheets and Dice Used for Playing a Table Game (Int. Cl. 28).

First use Dec. 14, 1966.

SN 286,525. O. & M. Hausser, Neustadt, Coburg, Germany. Filed Dec. 8, 1967.

POTATO DUMPLING WEAPON

The term "Weapon" is disclaimed apart from the mark, all common law rights being preserved.

For Toy Catapults (Int. Cl. 28).

First use March 1967; in commerce March 1967.

SN 288,594. B and H Enterprises of Euless, Euless, Tex. Filed Jan. 11, 1968.

TOUCHDOWN USA

For Equipment (or Apparatus), Sold as a Unit for the Playing of a Football-Type Parlor Game (Int. Cl. 28).

First use January 1950.

SN 291,820. Peter Arthur Adolph, Tunbridge Wells, Kent, England. Filed Feb. 26, 1968.

NEWFOOTY

Owner of British Reg. No. 749,043, dated Dec. 15, 1955.

For Equipment (or Apparatus), Sold as a Unit for Playing a Table-Type Football or Soccer Game (Int. Cl. 28).

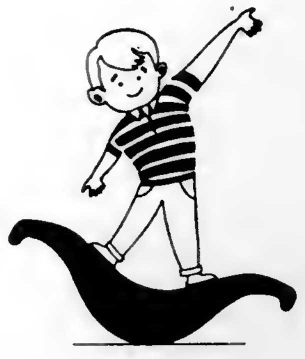
SN 294,933. Granny Goodfox, Chicago, Ill. Filed Apr. 4, 1968.

GRANNY GOODFOX

For Children's Toys (Int. Cl. 28).

First use October 1965.

SN 295,100. Blazon, Inc., Akron, Ohio. Filed Apr. 8, 1968.



Applicant disclaims the representation of the goods apart from the mark as shown; but applicant waives none of its common law rights in said mark or any feature thereof.

For General Purpose, Indoor and Outdor Activity Toy for Such Use as Rocking, Balancing, Teetering, Sliding on, and Snow Sliding (Int. Cl. 28).

First use Nov. 9, 1967.

SN 295,929. General Standard Company, Chicago, Ill. Filed Apr. 18, 1968.

ACCUSHOT

For Golf Clubs (Int. Cl. 28).

First use Mar. 18, 1968.

SN 296,136. Federal Machine Corp., Des Moines, Iowa. Filed Apr. 22, 1968.

Federal

For Pool Tables (Int. Cl. 28).

First use Jan. 15, 1968.

SN 296,231. Randolph Manufacturing Co., Inc., Randolph, Mass. Filed Apr. 23, 1968.

Randy AQUA-SPORT

Owner of Reg. Nos. 584,777, 846,310, and others.

For Skin Diving and Underwater Sporting Equipment, and Related Parts Therefor—Namely, Swimming Fins, Snorkels, Face Masks, Air Supply Tubes, Goggles, Diving Suits, Tank Regulators, Tanks and Tank Valves and Accessories, Spear Guns, Compression Equipment, and the Like, and Protective Shoes for Use With Swimming Fins (Int. Cl. 9).

First use Nov. 22, 1967.

SN 296,301. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 23, 1968.

WIN·A·CARD

For Equipment Comprising a Game Board, Playing Cards, and Chance Control Device for Playing a Parlor-Type Game (Int. Cl. 28).

First use Mar. 1, 1968.

SN 296,303. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 23, 1968.

GO BACK

For Equipment Comprising Game Cards and a Delineated Playing Surface for Playing an Action-Type Game (Int. Cl. 28).

First use Mar. 1, 1968.

SN 299,013. Funtastic, Inc., Alexandria, Va. Filed May 24, 1968.

GOTCHA

For Equipment Consisting of a Long Plastic Beak, Rope, Ankle Bands, and Handcuffs for Use in Playing a Parlor-Type Game (Int. Cl. 28).

First use Jan. 15, 1968.

SN 300,010. The Ski Hut, Berkeley, Calif. Filed June 7, 1968.

CHEVRON

For Sleeping Bags (Int. Cl. 20).

First use May 15, 1959.

SN 300,767. Ziegler Tackle Company, Haslett, Mich. Filed June 18, 1968.

MAULER

For Fish Lure (Int. Cl. 28).

First use Dec. 7, 1967.

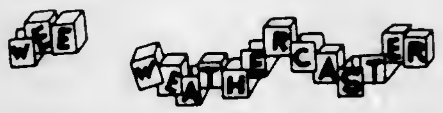
SN 300,926. The General Tire & Rubber Company, Akron, Ohio. Filed June 20, 1968.

Gen-Flyte

For Golf Balls (Int. Cl. 28).

First use September 1963.

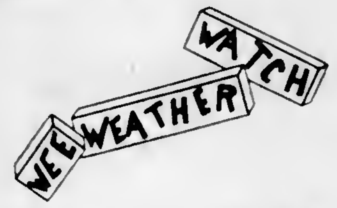
SN 300,955. National Educational Aids, Inc., Abilene, Tex. Filed June 20, 1968.



For Toys Consisting of Small Board Mounted Maps and Indicator Devices To Be Attached to the Maps (Int. Cl. 28).

First use May 3, 1968.

SN 300,956. National Educational Aids, Inc., Abilene, Tex. Filed June 20, 1968.



For Toys Consisting of Small Board Mounted Maps and Indicator Devices To Be Attached to the Maps (Int. Cl. 28).

First use May 3, 1968.

SN 301,478. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed June 26, 1968.

PLUMPEE

For Dolls and Doll Accessories (Int. Cl. 28).

First use on or about Oct. 2, 1967.

SN 301,648. Sterling Automotive Mfg. Co., Inc., Elk Grove Village, Ill. Filed June 28, 1968.

Sterling

Owner of Reg. Nos. 755,019, 781,619, and 782,019.

For Sporting Goods—Namely, Tennis Rackets and Covers Therefor (Int. Cl. 28).

First use Mar. 19, 1968.

SN 301,909. Brunswick Corporation, Chicago, Ill. Filed July 3, 1968.

TRAVEL-PAK

For Fishing Tackle Reel/Rod Combinations in a Case (Int. Cl. 28).

First use July 1, 1966.

SN 308,970. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

SAFARI

For Toy Guns (Int. Cl. 28).

First use Aug. 26, 1968.

SN 308,972. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

GREENIE-MEENIE

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).

First use Aug. 9, 1968.

SN 308,973. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

PURPLE-GURPLE

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).

First use Aug. 9, 1968.

SN 308,989. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

BEAUTY FAIR

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).

First use Aug. 7, 1968.

SN 308,990. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

BERNARDO

For Dolls, Doll Clothing, Doll Accessories, and Puppets (Int. Cl. 28).

First use Sept. 4, 1968.

SN 308,992. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

BABOONY

For Dolls, Doll Clothing, Doll Accessories, and Puppets (Int. Cl. 28).

First use Sept. 4, 1968.

SN 308,993. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

YELLO-FELLO

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).

First use Aug. 9, 1968.

SN 308,994. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

CALLISTO

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).

First use Aug. 30, 1968.

SN 308,995. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

EUROPA

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 30, 1968.

SN 310,400. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

MR. M

For Toys of the Magic-Type for Producing Tricks, Sleight of Hand Demonstrations, and the Like (Int. Cl. 28).
First use Sept. 6, 1968.

SN 310,401. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

ROSESTONE

For Toy Jewelry (Int. Cl. 28).
First use Sept. 6, 1968.

SN 310,403. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

JOGGLES

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use Sept. 24, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 239,099. Zefex, Inc., Rockford, Ill. Filed Feb. 17, 1966.

zefex

Owner of Reg. No. 809,264.
For Air Compressors (Int. Cl. 7).
First use Dec. 21, 1966.

SN 279,881. United States Machinery, Inc., North Billerica, Mass. Filed Sept. 7, 1967.

MULTI-MATIC

For Machine for Wrapping Insulating Tape Around Wire and Cable (Int. Cl. 7).
First use May 12, 1967.

SN 279,945. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Sept. 8, 1967.

SUPER-FOG

Owner of Reg. No. 200,461.
For Sprayers and Applicators for Dispensing or Distributing Insecticides, Fungicides, Pesticides, Weed Killers, Fertilizers, Liquids, and the Like (Int. Cl. 7).
First use on or about Oct. 24, 1949.

SN 285,303. Ateliers Roannais de Constructions Textiles, S.A., Roanne, France. Filed Nov. 21, 1967.

FTF

For Textile Machines for Weaving Yarns (Int. Cl. 7).
First use at least as early as 1961; in commerce at least as early as 1961.

SN 286,050. Versitron, Inc., Washington, D.C. Filed Dec. 1, 1967.

VERSITRON

For Hand Tools for Trimming and Forming Lead Wires of Electrical Components for Circuitboards (Int. Cl. 8).
First use Oct. 11, 1967.

SN 286,722. Reynolds Research & Manufacturing Corp., McAllen, Tex. Filed Dec. 11, 1967.

FLOAT PLANE

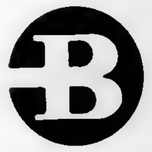
The word "Plane" is disclaimed apart from the mark as shown.
For Tractor-Drawn Land Levelers (Int. Cl. 7).
First use February 1964.

SN 289,001. Bombardier Limited, Valcourt, Quebec, Canada. Filed Jan. 17, 1968.

TERRAIN MASTER

For Track Type Vehicle for Lifting, Handling, and Transporting Logs (Int. Cl. 12).
First use July 7, 1967; in commerce July 7, 1967.

SN 289,165. Burroughs Corporation, Detroit, Mich. Filed Jan. 19, 1968.



Owner of Reg. Nos. 513,593 and 522,893.
For Business Machines—Namely, Check Writers and Signers, Check Certifiers, Paper Tape Punching Machines, Card Punching Machines, Line Printers; and Document Handling Machines Namely: Machines for Recognizing Characters and Sorting Documents Bearing Such Characters, Ledger Readers; Card Readers and Magnetic Ink Printing-Encoding Machines, and Parts for All of Said Machines (Int. Cl. 16).
First use Apr. 16, 1947.

SN 289,692. Jeffrey Galion Manufacturing Company, Columbus, Ohio. Filed Jan. 26, 1968.

HELIMINER

For Continuous Mining Machines Primarily Intended for Underground Mining Applications (Int. Cl. 7).
First use on or about Mar. 13, 1967.

SN 292,379. Huber Corporation, Marion, Ohio. Filed Mar. 4, 1968.

HUBER

Owner of Reg. Nos. 514,010 and 633,137.
For Road Building and Road Maintenance Machines, Earth Moving and Earth Loading Machines, Cranes, and Parts Thereof and Attachments Therefor (Int. Cl. 7).
First use 1863.

SN 294,413. Rosco Manufacturing Company, Minneapolis, Minn. Filed Mar. 28, 1968.

VIBRA-TRAC

Owner of Reg. Nos. 696,720 and 824,401.
For Power Road Rollers (Int. Cl. 7).
First use May 18, 1967.

SN 294,739. Koehring Company, Milwaukee, Wis. Filed Apr. 2, 1968.

SABER PLOW

The word "Plow" is disclaimed apart from the mark as shown.
For Mobile Vibrator Plow Units for Trenching and Inserting Wire, Cable, Pipe, Tubing and the Like Underground (Int. Cl. 7).
First use no later than Aug. 24, 1966.

SN 297,671. Greenlee Bros. & Co., Rockford, Ill. Filed May 8, 1968.

POSI-TRAC

For Feed Mechanism for Woodworking Machines and the Like (Int. Cl. 7).
First use Apr. 30, 1968.

SN 297,815. Towle Manufacturing Company, Newburyport, Mass. Filed May 9, 1968.

TOWLE

Owner of Reg. No. 540,881.
For Stainless Steel Flatware (Int. Cl. 8).
First use January 1963.

SN 302,164. Woolsey Marine Industries, Inc., New York, N.Y. Filed July 5, 1968.

FROG HORN

Applicant disclaims the word "Horn" apart from the mark.
For Aerosol Powered Warning or Signaling Horn for Marine Use and for Use in Homes and at Sporting Events (Int. Cl. 9).
First use Apr. 24, 1968.

SN 304,557. Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. Filed Aug. 7, 1968.

ACE

For Machines for Cutting Strips of Cloth, Webbing, Tape and Like Material (Int. Cl. 7).
First use Feb. 4, 1966.

Class 24 — Laundry Appliances and Machines

SN 297,305. Monday's Maid, Inc., Union City, Ind. Filed May 3, 1968.

MONDAY'S MAID

For Electrically Operated Washing Machines (Int. Cl. 7).
First use at least as early as Oct. 18, 1963.

Class 26 — Measuring and Scientific Appliances

SN 254,271. General Dynamics Corporation, San Diego, Calif. Filed Sept. 12, 1966.

RATER

For Electronic Response Analysis Tester for the Measurement of Sensory-Motor Skills (Int. Cl. 9).
First use June 29, 1965.

SN 267,326. Firma Dirk Strobbe PVBA, Izegem, Belgium. Filed Mar. 22, 1967.

FORM-O-TYPE

Owner of Belgian Reg. No. 3,830, dated Mar. 29, 1966.
For Photocomposing and Phototypesetting Machines (Int. Cl. 9).
First use at least as early as July 4, 1961; in commerce at least as early as July 11, 1964.

SN 283,292. The Virtis Company, Inc., Gardiner, N.Y. Filed Oct. 24, 1967.

VIRTIS

Owner of Reg. Nos. 607,271, 731,514, and 731,901.
For Laboratory Glassware (Int. Cl. 9).
First use Feb. 11, 1953.

SN 288,360. Sperry Rand Corporation, New York, N.Y. Filed Jan. 8, 1968.

REMINGTON

Owner of Reg. No. 233,910.
For Photosensitive Copier Paper (Int. Cl. 1).
First use Oct. 23, 1967.

SN 290,612. Hoyer-Stanyer Industries, Inc., Overland Park, Kans. Filed Feb. 8, 1968.

COROMETER

For Instrument for Measuring Corrosion Potential in Vehicular Cooling Systems in Terms of Electrical Activity in the System (Int. Cl. 9).
First use on or about Jan. 5, 1968.

SN 300,847. Sew-Knit-N-Stretch, Inc., Golden Valley, Minn. Filed June 19, 1968.

SEW-KNIT-N-STRETCH

For Patterns for Use in Making Garments From Knit Material (Int. Cl. 16).
First use Sept. 14, 1967.

SN 302,477. Ace Glass Incorporated, Vineland, N.J. Filed July 11, 1968.

ADJUSTA-CHROM

For Column Apparatus for Reverse Flow Chromatography (Int. Cl. 9).
First use June 27, 1968.

SN 307,264. Sid Brawer, d.b.a. Tri-Ads Company, Los Angeles, Calif. Filed Sept. 13, 1968.

3-D WHEEL-O-RAMA

The letters "3-D" and the representation of a steering wheel forming the letter "O" in the mark are disclaimed apart from the other features of the mark.
For Stereoscopic Device To Be Attached to the Steering Wheel of an Automobile While in a Service Station, Such Device Displaying Three-Dimensional Pictures of Services Available in the Service Station, or Other Appropriate Pictures (Int. Cl. 9).
First use July 2, 1968.

SN 309,918. Stimulant Products, Inc., Culver City, Calif. Filed Oct. 17, 1968.

MAGNI-VISION

For Magnifying Lens for Use With a Mirror (Int. Cl. 9).
First use on or about Sept. 15, 1968.

SN 311,445. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 6, 1968.

3M

For Overhead Projectors (Int. Cl. 9).
First use Feb. 28, 1961.

Class 27 — Horological Instruments

SN 295,926. Endura Time Corporation, New York, N.Y. Filed Apr. 18, 1968.

RICHEMOND

For Clocks; Watches; Movements; and Parts of Said Goods (Int. Cl. 14).
First use Apr. 10, 1968.

Class 28 — Jewelry and Precious-Metal Ware

SN 297,429. Adolf Merath, Ulm, Germany. Filed May 6, 1968.

AMU

Owner of German Reg. No. 684,278, dated Nov. 17, 1955.
For Goods Made of Precious Metal—Namely, Gold Hollow-ware and Silver Flatware; Precious and Non-Precious Jewelery (Int. Cls. 8 and 14).

SN 301,868. Wingback Inc., New York, N.Y. Filed July 2, 1968.

JUDITH MCCANN DESIGNS

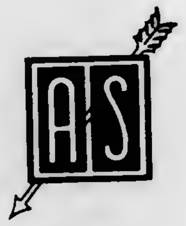
The word "Designs" is disclaimed except as a part of the entire mark. "Judith McCann" is the name of a deceased person who was the designer of earrings sold under the trademark "Judith McCann Designs."
For Jewelry, Particularly Earrings (Int. Cl. 14).
First use as early as Jan. 1, 1963.

SN 305,084. Textron Inc., Providence, R.I. Filed Aug. 13, 1968.

DATE FINDER

For Expansion Bracelets Including Watch Bracelets (Int. Cl. 14).
First use May 7, 1968.

SN 305,392. Aro-Sac Inc., Providence, R.I. Filed Aug. 19, 1968.



For Jewelry (Int. Cl. 14).
First use on or about Aug. 27, 1946.

SN 305,678. James Manecke Randall, Wausau, Wis. Filed Aug. 21, 1968.

JMR

For Hand-Crafted Jewelry (Int. Cl. 14).
First use June 1, 1968.

Class 29 — Brooms, Brushes, and Dusters

SN 302,980. Sorenson Research Corporation, Salt Lake City, Utah. Filed July 17, 1968.

PRO-SCRUB

For Disposable Anti-Bacterial Brushes for Medical and Laboratory Procedures Requiring Pre-Scrubbing of the Hands (Int. Cl. 21).
First use Apr. 13, 1968.

Class 31 — Filters and Refrigerators

SN 283,291. The Virtis Company, Inc., Gardiner, N.Y. Filed Oct. 24, 1967.

REPP

For Freeze Dryers, Solvent Evaporators, Freezers and Parts Therefor (Int. Cl. 11).
First use May 22, 1962.

SN 301,365. Snowbird Refrigeration Company, Pompano Beach, Fla. Filed June 25, 1968.

SNOW BIRD

For Refrigerating Machinery for Producing Ice Cubes and Ice Chips for Consumer Use in Cooling Drinks and Edibles (Int. Cl. 11).
First use Feb. 23, 1968.

Class 32 — Furniture and Upholstery

SN 285,126. The Englander Company, Inc., New York, N.Y. Filed Nov. 17, 1967.

Sp-a-c-e-maker

For Beds, Couches, Davenports and Convertible Sleeping Units (Int. Cl. 20).
First use on or about Jan. 14, 1960.

SN 307,634. Edsal Manufacturing Company, Inc., d.b.a. Home-E-Quip Consumer Products Division, Chicago, Ill. Filed Sept. 18, 1968.

HOM-E-QUIP

For Shelving Units Comprising Corner Posts, Joiners Therefor and Shelves (Int. Cl. 20).
First use in the month of February 1962.

SN 311,210. Pagebar, Inc., Miami, Fla. Filed Nov. 4, 1968.

Versa-Cabinet

Without waiver of common law rights, the word "Cabinet" is disclaimed apart from the mark as shown.
For Wall Cabinets or Cupboards (Int. Cl. 20).
First use at least as early as Jan. 15, 1968.

Class 33 — Glassware

SN 305,028. American Saint Gobain Corporation, Kingsport, Tenn. Filed Aug. 13, 1968.

L-BUK

For Plate, Pattern, and Sheet Glass, Shipped in Special Storage Containers (Int. Cl. 21).
First use May 3, 1968.

SN 306,448. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Sept. 3, 1968.

THE PARTY STARTER

For Table Glassware—Namely, a Punch Set Including Punch Bowl, Cups and Similar Articles (Int. Cl. 21).
First use on or about July 25, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 301,614. Dye Oxygen Company, Phoenix, Ariz. Filed June 28, 1968.

DYE NAMIC

For Welding Machines (Int. Cl. 7).
First use May 9, 1968.

SN 302,034. Born Engineering Company, Tulsa, Okla. Filed July 5, 1968.

BORN

For Fluid Heaters for Industrial Purposes (Int. Cl. 11).
First use in or about 1930.

SN 302,745. Thomas Lightfoot Maguire, Broadheath, Chester, England. Filed July 15, 1968.

ALUMISTE

Owner of British Reg. No. 916,523, dated Oct. 31, 1967.
For Lampshades (Int. Cl. 11).

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 299,862. Ramsey Corporation, St. Louis, Mo. Filed June 6, 1968.

DUO-250

For Piston Rings (Int. Cl. 7).
First use Apr. 29, 1968.

SN 306,356. Deupree Industries, Inc., Blair, Nebr. Filed Aug. 30, 1968.

SPARE-AIR

For Air Transfer Hoses for Automotive Use (Int. Cl. 12).
First use Aug. 12, 1968.

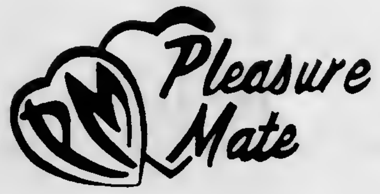
Class 36 — Musical Instruments and Supplies

SN 280,051. Grotrian, Helfferich, Schulz, Th. Steinweg Nachf, Braunschweig, Germany. Filed Sept. 11, 1967.

Grotrian-Steinweg

For Grand Pianos and Pianos (Int. Cl. 15).
First use in 1926; in commerce in 1926.

SN 291,079. Maurice C. Killenbeck, Tacoma, Wash. Filed Feb. 14, 1968.



For Phonograph Records (Int. Cl. 9).
First use Nov. 16, 1965.

SN 298,425. Cloverlay, Inc., Philadelphia, Pa. Filed May 17, 1968.

CLOVERLAY

For Phonograph Records (Int. Cl. 9).
First use Mar. 2, 1968.

SN 307,853. Newport-Opti-Sonics Company, Newport Beach, Calif. Filed Sept. 20, 1968.

OLLY-O

For Phonograph Records (Int. Cl. 9).
First use on or about June 16, 1967.

Class 37 — Paper and Stationery

SN 284,164. Clevite Corporation, Cleveland, Ohio. Filed Nov. 6, 1967.

ACCUCHART

For Instrument Chart Paper (Int. Cl. 16).
First use June 30, 1967.

SN 285,385. The Bates Manufacturing Company, Orange, N.J. Filed Nov. 22, 1967.

CLASSIC

For List Finders Comprising Casings Having a Stack of Selectively Separable Index Cards Hingedly Mounted Therein (Int. Cl. 16).
First use September 1964.

SN 285,945. Scott Paper Company, Boston, Mass. Filed Nov. 30, 1967.

STRIPKOTE

For Release or Casting Paper Used in the Manufacture of Vinyl Plastic (Int. Cl. 16).
First use on or before Aug. 19, 1946.

SN 297,081. Lillian Mitchell, Chicago, Ill. Filed May 1, 1968.

Lill-o-gram

For Note Paper (Int. Cl. 16).
First use Feb. 19, 1968.

SN 299,499. Scripto, Inc., Atlanta, Ga. Filed May 31, 1968.

LAB-PEN

For Writing Instruments, Specifically Fiber Tip Pens and Fiber Tip Refills (Int. Cl. 16).
First use May 15, 1968.

SN 299,694. The Northwest Paper Company, Cloquet, Minn. Filed June 4, 1968.

KARMA

For Printing, Publishers' and Converting Paper (Int. Cl. 16).
First use Apr. 26, 1968.

SN 299,969. French Paper Company, Niles, Mich. Filed June 7, 1968.

SPARKLEPAQUE

For Printing Paper Sold in Wholesale Lots (Int. Cl. 16).
First use July 1956.

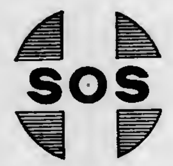
SN 310,290. Wallace Business Forms, Inc., Chicago, Ill. Filed Oct. 23, 1968.

WAL-LOK

For Manifold Forms (Int. Cl. 16).
First use on or about July 8, 1968.

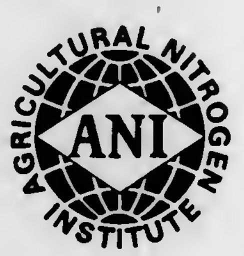
Class 38 — Prints and Publications

SN 269,521. Herold Overseas Publishing Corporation, New York, N.Y., assignee of Deutscher Herold Verlag und Pressedienst GmbH, Munich, Germany. Filed Apr. 19, 1967.



The lining on the drawing depicts the color blue but no claim to color is made.
For Books, Booklets, Pamphlets and Religious Prints (Int. Cl. 16).
First use Mar. 15, 1966; in commerce Dec. 23, 1966.

SN 278,356. Agricultural Nitrogen Institute, Memphis, Tenn. Filed Aug. 16, 1967.



For Magazine (Int. Cl. 16).
First use July 1967.

SN 278,980. Michigan Historical Commission, Lansing, Mich. Filed Aug. 24, 1967.

MICHIGAN HISTORY

For Scholarly Journal Publishing Articles About the History of Michigan and the Old Northwest Territory (Int. Cl. 16).
First use March 1947.

SN 280,820. Standard & Poor's Corporation, New York, N.Y. Filed Sept. 20, 1967.

STANDARD & POOR'S EARNINGS FORECASTER

The words "Earnings Forecaster" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 527,414, 791,984, and others.
For Financial Magazine Dealing With the Estimated Future Earnings of Leading Corporations (Int. Cl. 16).
First use Jan. 6, 1967.

SN 295,149. Jostens, Inc., Owatonna, Minn. Filed Apr. 8, 1968.

COPIMOUNT

For Books of Layout Boards and Overlay Sheets for Assisting in the Laying Out of Pictorial Material and Captions for the Pages of a Printed Publication (Int. Cl. 16).
First use Mar. 9, 1968.

SN 306,016. Board of Publication of the Methodist Church, Inc., d.b.a. The Graded Press, Nashville, Tenn. Filed Aug. 22, 1968.

COMMONLIFE

For Magazine Published Semi-Annually (Int. Cl. 16).
First use May 7, 1968.

SN 306,628. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press, Nashville, Tenn. Filed Sept. 5, 1968.

YOUTH LEADER

For Magazine Published Quarterly (Int. Cl. 16).
First use July 22, 1968.

SN 306,629. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press, Nashville, Tenn. Filed Sept. 5, 1968.

FACE TO FACE

For Monthly Magazine (Int. Cl. 16).
First use July 22, 1968.

SN 306,630. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press, Nashville, Tenn. Filed Sept. 5, 1968.

ACCENT ON YOUTH

For Monthly Magazine (Int. Cl. 16).
First use July 22, 1968.

SN 307,344. Norcross, Inc., New York, N.Y. Filed Sept. 13, 1968.

PICKLED TINK

For Greeting Cards (Int. Cl. 16).
First use June 26, 1968.

SN 307,855. Newport Opti-Sonics Company, Newport Beach, Calif. Filed Sept. 20, 1968.

OLLY-O

For Books (Int. Cl. 16).
First use on or about Nov. 4, 1966.

SN 309,008. American Map Company, Inc., New York, N.Y. Filed Oct. 7, 1968.

LAM-O-TEX

Owner of Reg. No. 803,439.
For Maps (Int. Cl. 16).
First use Jan. 5, 1966.

Class 39 — Clothing

SN 273,143. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed June 5, 1967.

Owner of Reg. Nos. 382,480, 788,828, and others.
For Athletic Clothing—Namely, Socks, Jackets, Trousers, Rubbers, Caps, and Shirts; Tennis Jackets, Shirts, Shorts, Caps, Baseball Caps, Jackets, Dickies, Undershirts, and Belts; Track Pants and Shirts; T-Shirts; Gym Pants; Sweat Shirts; Sweat Pants; Football Jerseys, Belts, Warm-Up Jackets, Sideline Capes and Sideline Coats; Basketball Uniforms, Warm-Up Jackets, Warm-Up Pants, Socks; Athletic Socks; Football Officials' Shirts, Knickers, Jackets, Arm Bands, Caps, and Hose; Skirts; Sweaters; Jackets; Shoes; Jerseys and Pants; Boxing and Wrestling Robes; Boxing Trunks Wrestling Shirts, Trunks, Tights and Gymnastic Clothing (Int. Cl. 25).
First use May 13, 1926.

SN 275,846. Famous Fashions of Miami, Inc., Miami, Fla. Filed July 12, 1967.

KOA

"Koa" is an Hawaiian word and the English translation thereof is "species of trees."
For Ladies' dresses, blouses, shorts and skirts (Int. Cl. 25).
First use May 15, 1967.

SN 276,521. Angelica Corporation, St. Louis, Mo., by change of name from Angelica Uniform Company, St. Louis, Mo. Filed July 21, 1967.

ADJ-L

For Dresses Having Belts Adjustable to Heights of Waistlines (Int. Cl. 25).
First use June 26, 1967.

SN 279,772. Invertère Coat Company Limited, Newton Abbot, England. Filed Aug. 7, 1967.

INVERTÈRE

For Coats (Int. Cl. 25).
First use in the year 1904; in commerce June 1, 1949.

SN 280,234. Kohkoku Chemical Industry Co., Ltd., Shinjuku-ku, Tokyo, Japan. Filed Sept. 13, 1967.

Owner of U.S. Reg. No. 719,347.
For Wearing Apparel—Namely, Raincoats and Other Rainwear, Parka Suits, Jackets, Coats and Pants for Men, Women and Children Made Out of Rubberized Fabrics, Plastic Film, Plastic Sheeting (Supported and Unsupported), Expanded Vinyl Sheeting and Suede-Like Expanded Vinyl Sheeting (Int. Cl. 25).
First use Sept. 10, 1963; in commerce Sept. 10, 1963.

SN 282,556. Emanuel Ungaro, Société a responsabilité Limitée, Paris, France. Filed Oct. 16, 1967.

EMANUEL UNGARO PARALLELE

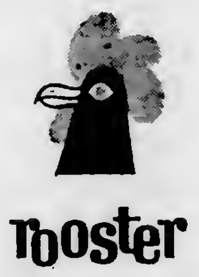
Priority claimed under Sec. 44(d) on French Reg. No. 722,289, dated Apr. 21, 1967. Owner of U.S. Reg. No. 858,292.
For Ladies' Coats, Dresses and Scarves, Pants, Dresses and Jackets, Blouses, Gloves, Stockings and Socks, and Shorts (Int. Cl. 25).

SN 282,658. Rooster, Inc., Philadelphia, Pa. Filed Oct. 17, 1967.

ROOSTER

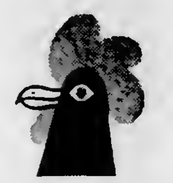
For Men's Ties (Int. Cl. 25).
First use Mar. 3, 1957.

SN 282,659. Rooster, Inc., Philadelphia, Pa. Filed Oct. 17, 1967.



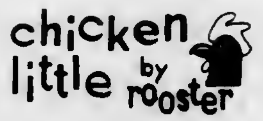
For Men's Ties (Int. Cl. 25).
First use Mar. 3, 1957.

SN 282,660. Rooster, Inc., Philadelphia, Pa. Filed Oct. 17, 1967.



For Men's Ties (Int. Cl. 25).
First use Mar. 3, 1957.

SN 282,755. Rooster, Inc., Philadelphia, Pa. Filed Oct. 18, 1967.



For Men's Ties (Int. Cl. 25).
First use December 1961.

SN 288,015. The Grove Company, St. Louis, Mo. Filed Jan. 3, 1968.

SLIM GILLUMS

For Clothing—Namely, Bib Overall Type of Playsuit for Ladies and Girls (Int. Cl. 25).
First use Dec. 11, 1967.

SN 295,552. Pennyrich International, Carolina, Puerto Rico, Filed Apr. 12, 1968.

PENNYRICH

For Brassieres, Girdles, Swimsuits, Dresses, and Underwear (Int. Cl. 25).
First use Apr. 7, 1967.

SN 296,223. The Villager, Inc., Philadelphia, Pa. Filed Apr. 22, 1968.

RAYMODES

For Women's Wear—Namely, Robes, Dusters, Shifts, Lounging Pajamas, Culottes, Jump Suits, Lingerie and Sleepwear (Int. Cl. 25).
First use in or about 1938.

SN 296,500. S. Augstein & Co., Inc., New York, N.Y. Filed Apr. 25, 1968.

FULURA

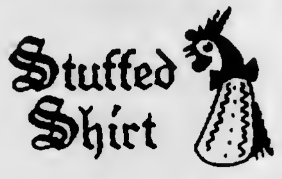
For Women's and Children's Dresses, Suits, Blouses, Slacks, and Bathing Suits (Int. Cl. 25).
First use Mar. 1, 1942.

SN 296,985. Rob Roy Company, Inc., New York, N.Y. Filed Apr. 30, 1968.

STROBE

For Dress and Sport Shirts of Woven and of Knitted Materials, Sweaters, Bermuda Shorts, Jackets, Vests, Trousers, Caps, Swimwear, Pants and Shirt Combinations, Belts, Coats, and Hosiery for Men, Young Men, and Boys (Int. Cl. 25).
First use Apr. 22, 1968.

SN 302,342. Philip Rothenberg & Co., Inc., New York, N.Y. Filed July 9, 1968.



The word "Shirt" is disclaimed apart from the mark as shown. Owner of Reg. No. 796,437.
For Ladies' Apparel—Namely, Shirts, Shifts, Sport Dresses, Pant Dresses, Skirts, Jackets, Vests, Bathing Suits, Lingerie, and Raincoats (Int. Cl. 25).
First use Nov. 10, 1964.

SN 302,450. L. Schwartz & Sons, New York, N.Y. Filed July 10, 1968.

RAINWALKER

For Ladies' All Purpose Raincoats (Int. Cl. 25).
First use January 1967.

SN 303,442. Points East Sportswear, Inc., New York, N.Y. Filed July 23, 1968.

POINTS EAST

For Skirts, Blouses, Dresses, Pants, Jackets, Shorts, Vests, Sweaters, and Coats (Int. Cl. 25).
First use Apr. 4, 1968.

SN 306,519. The Tailored Woman, Inc., New York, N.Y. Filed Sept. 3, 1968.

FUR GIRL

The word "Fur" is disclaimed apart from the mark as shown.
For Fur Coats, Fur Jackets, Fur Stoles, Fur Scarves, Fur Hats, Fur Suits, Fur Dresses and Fur Muffs (Int. Cl. 25).
First use July 20, 1968.

SN 308,826. Tempco Quilters, Inc., Seattle, Wash. Filed Oct. 3, 1968.

TEMPCO

For Down Insulated Parkas and Jackets (Int. Cl. 25).
First use Apr. 25, 1958.

SN 309,118. Topaz Hosiery Mills, Inc., New York, N.Y. Filed Oct. 7, 1968.

Topaz'os

Owner of Reg. No. 235,344.
For Panti-Hose (Int. Cl. 25).
First use September 1966.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 297,440. Robeco Products Inc., New York, N.Y. Filed May 6, 1968.

BEAUTYFALL

For Wigs, Wiglets and Falls (Int. Cl. 26).
First use Apr. 5, 1968.

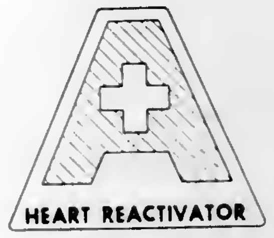
SN 301,807. Fashion Tress, Inc., Miami Beach, Fla. Filed July 2, 1968.

CURLS GALORE

Applicant disclaims the exclusive right to the use of the word "Curls" apart from the mark as shown.
For Ladies' Curls Made of Human Hair (Int. Cl. 26).
First use on or about Apr. 1, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

SN 286,076. American Safety Equipment Corporation, New York, N.Y. Filed Dec. 4, 1967.



The drawing is lined for green, but no limitation of scope is implied, and no exclusive rights are claimed, in the color as such. Applicant disclaims the term "Heart Reactivator" apart from the mark as a whole.
For Heart Resuscitation Machines (Int. Cl. 10).
First use May 25, 1967.

SN 289,212. Schick Electric Inc., Lancaster, Pa. Filed Jan. 19, 1968.

SCHICK

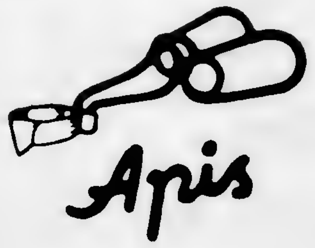
For Electrically Operated Ultrasonic Cleaners for Dentures and Small Items (Int. Cl. 9).
First use on or about June 12, 1967.

SN 295,173. Caryl Richards, Inc., New York, N.Y. Filed Apr. 8, 1968.

beautybug

For Portable Hair Dryers (Int. Cl. 11).
First use July 21, 1967.

SN 307,319. Dr. Peter Endres, Cologne-Ehrenfeld, Germany. Filed Sept. 13, 1968.



Owner of German Reg. No. 636,102, dated Feb. 23, 1952.
For Matrix Straining Device, and Matrix Bands for Dental Treatment (Int. Cl. 10).
First use May 16, 1951; in commerce Sept. 10, 1953.

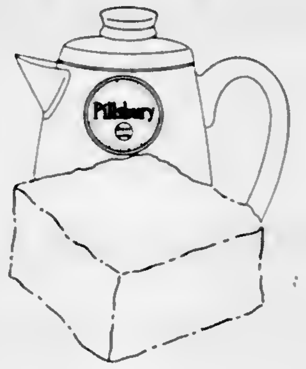
SN 308,947. Denver Chemical Manufacturing Company, Stamford, Conn. Filed Oct. 7, 1968.

EZETTES

Owner of Reg. No. 415,195.
For Dental Cushion Adhesive (Int. Cl. 5).
First use Oct. 2, 1968.

Class 46 — Foods and Ingredients of Foods

SN 261,676. The Pillsbury Company, Minneapolis, Minn. Filed Dec. 29, 1966.



The representation of the portion of baked goods does not form part of the mark except insofar as it shows the relationship of the coffee pot design to the baked goods. Owner of Reg. Nos. 45,179 and 662,329.
For Mixes for Preparing Coffee Cakes and Breads (Int. Cl. 30).
First use at least as early as October 1965.

SN 268,972. Martin-Brower Corporation, Chicago, Ill. Filed Apr. 12, 1967.

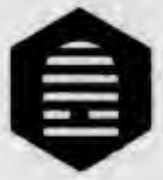
The mark consists of the letters "MB" in distinctive block lettering. Owner of Reg. No. 817,202.
For Vegetable Oil and Shortening; Dehydrated Onions; Chocolate and Fruit Flavored Syrups for Food Purposes; Fruit and Nut Toppings for Sundaes and Frozen Desserts; Packets of Sugar, Salt, Ketchup, and Mustard; Ice Cream Sandwich Wafers; Powdered Coffee Creamer; Cole Slaw Dressing; Barbeque Sauce (Int. Cls. 29 and 30).
First use prior to Jan. 16, 1967.

SN 278,738. Sigman Meat Company, Inc., Denver, Colo. Filed Aug. 21, 1967.

PEAK

For Sliced Bacon (Int. Cl. 29).
First use on or about Feb. 1, 1960.

SN 279,870. B. Sprengel & Co., Hanover, Germany. Filed Sept. 7, 1967.



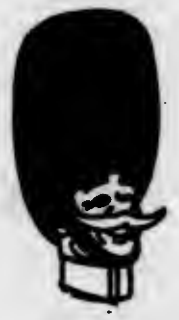
For Candy and Confectionery—Namely, Tarts and Fancy Cakes (Int. Cl. 30).
First use 1954; in commerce 1954.

SN 288,970. National Biscuit Company, New York, N.Y. Filed Jan. 16, 1968.

FROLIC

Owner of Reg. Nos. 346,281 and 805,302.
For Ice Cream Mix Frozen Dessert (Int. Cl. 30).
First use Nov. 28, 1967.

SN 291,862. General Foods Corporation, White Plains, N.Y. Filed Feb. 26, 1968.



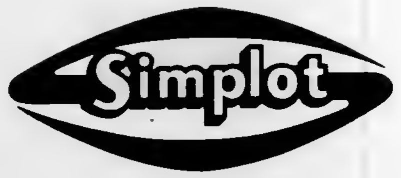
Owner of Reg. No. 813,538.
For Shelled and Unshelled Nuts (Int. Cls. 29 and 31).
First use Aug. 30, 1963.

SN 293,453. Alroy Packing Co., San Francisco, Calif. Filed Mar. 18, 1968.

MEXI-TREATS

For Pumpkin Seed Kernels (Int. Cl. 29).
First use Jan. 14, 1958.

SN 296,622. J. R. Simplot Company, Boise, Idaho. Filed Apr. 26, 1968.



Owner of Reg. Nos. 535,091, 846,389, and others.
For Frozen Chicken Parts (Int. Cl. 29).
First use Feb. 28, 1968; at least as early as 1928 as to the mark "Simplot."

SN 302,582. Armour and Company, Chicago, Ill. Filed July 12, 1968.

MORVOL

For Vegetable Shortening (Int. Cl. 29).
First use on or prior to August 1964.

SN 302,969. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 17, 1968.

HAPP'NINS

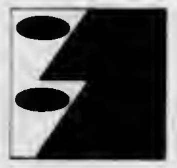
For Pork Rinds (Int. Cl. 29).
First use May 24, 1968.

SN 302,970. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 17, 1968.

HONCHOS

For Barbecued Potato Chips (Int. Cl. 29).
First use May 24, 1968.

SN 303,027. Amurol Products Company, Naperville, Ill. Filed July 18, 1968.



For Gum and Candy (Int. Cl. 30).
First use on or before July 5, 1963.

SN 308,956. Thomas J. Lipton, Inc., Englewood Cliffs, N.J. Filed Oct. 7, 1968.

"BRISK"

Owner of Reg. No. 627,497.
For Tea (Int. Cl. 30).
First use on or before Oct. 1, 1946.

SN 309,139. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed Oct. 8, 1968.

BIG STICK

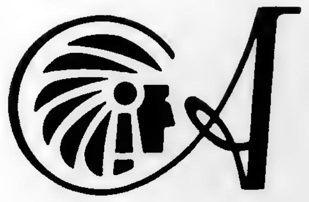
Owner of Reg. No. 635,349.
For Frozen Confections on Sticks and Liquid Concentrates for Making the Same (Int. Cls. 30 and 32).
First use Jan. 16, 1955.

SN 309,526. The Theobald Industries, Kearny, N.J. Filed Oct. 14, 1968.

LARD-PLUS-BRAND

"Lard" is disclaimed apart from the mark as shown. Owner of Reg. No. 750,325.
For Hydrogenated Lard Containing Anti-Foaming Agent and Oxygen Interceptor (Int. Cl. 29).
First use July 4, 1955.

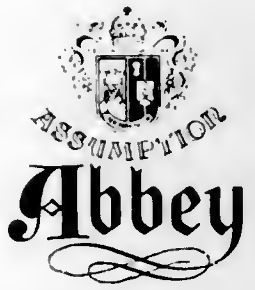
SN 309,715. The American Tobacco Company, New York, N.Y. Filed Oct. 16, 1968.



For Cookies and Potato Chips (Int. Cls. 29 and 30).
First use Oct. 10, 1968.

Class 47 — Wines

SN 294,719. Brookside Vineyard Company, d.b.a. Assumption Abbey Winery, Guasti, Calif. Filed Apr. 2, 1968.



The term "Pax" may be translated as "peace." The terms "Iter Para Tutum" may be translated into "prepare for a safe journey." Owner of Reg. Nos. 669,065, 669,706, and 799,217.
For Wines (Int. Cl. 33).
First use Apr. 5, 1957.

SN 295,761. Pastis Duval S.A., d.b.a. Ancienne Maison F. Duval Successeurs de Dubied Pere et Fils, Marseille, France. Filed Apr. 16, 1968.

For Vermouths (Int. Cl. 33).
First use Aug. 12, 1966; in commerce Aug. 12, 1966.

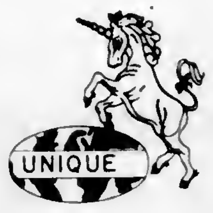
Class 49 — Distilled Alcoholic Liquors

SN 289,389. Jean Etchart, Castelnau-d'Auzan, Gers, France. Filed Jan. 23, 1968.

Owner of French Reg. No. 713,558, dated Sept. 6, 1966.
For Armagnac (Int. Cl. 33).

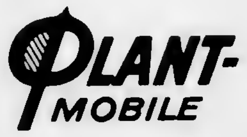
Class 50 — Merchandise Not Otherwise Classified

SN 265,361. United Import Corporation, Cleveland, Ohio. Filed Feb. 23, 1967.



For Plastic Flowers and Plants, and Figurines (Int. Cls. 20 and 26).
First use Jan. 13, 1967.

SN 304,440. Jewel Aquarium Co., Inc., Chicago, Ill. Filed Aug. 6, 1968.



The lining shown on the drawing is not used to indicate color.
For Plant Study Center for Teaching Botany, Including a Stand With Shelves, Soil Trays, Light Fixtures, and Accessories (Int. Cl. 9).
First use May 21, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 296,880. Stacy, Inc., Providence, R.I. Filed Apr. 29, 1968.

For Perfume (Int. Cl. 3).
First use on or about Mar. 11, 1968.

SN 297,806. Roux Laboratories, Inc., New York, N.Y. Filed May 9, 1968.

SHEER DELIGHT

For Creme Hair Lightener (Int. Cl. 3).
First use Apr. 26, 1968.

SN 298,398. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

NOW

For Personal Deodorant (Int. Cl. 5).
First use May 6, 1968.

SN 298,407. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

IN THE PINK

For Nail Enamel and Lipstick (Int. Cl. 3).
First use May 6, 1968.

SN 298,536. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

PASTORALE

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet, and Powder Sachet (Int. Cl. 3).
First use May 8, 1968.

SN 298,538. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

SILENT WOODS

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet, and Powder Sachet (Int. Cl. 3).
First use May 8, 1968.

SN 298,542. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

WISTFUL

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet, and Powder Sachet (Int. Cl. 3).
First use May 8, 1968.

SN 298,553. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

GLOAMING

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet, and Powder Sachet (Int. Cl. 3).
First use May 8, 1968.

SN 298,557. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

ORACLE

For Cologne, Dusting Powder, Perfume, Talcum Powder, Bath Oil, Cream Sachet, and Powder Sachet (Int. Cl. 3).
First use May 8, 1968.

SN 298,797. Bristol-Myers Company, New York, N.Y. Filed May 22, 1968.

OBSIDIAN

For Hair Groom and Conditioner, After Shave Lotion, and Roll-On Deodorant (Int. Cls. 3 and 5).
First use Apr. 1, 1968.

SN 299,211. Bristol-Myers Company, New York, N.Y. Filed May 28, 1968.

FREE HAND

For Skin Lotion (Int. Cl. 3).
First use Apr. 9, 1968.

SN 299,212. Bristol-Myers Company, New York, N.Y. Filed May 28, 1968.

AT HOME

For Skin Lotion (Int. Cl. 3).
First use Apr. 9, 1968.

SN 299,213. Bristol-Myers Company, New York, N.Y. Filed May 28, 1968.

COBRA

For After Shave, Hair Groom and Conditioner, Roll-On Deodorant, and Shaving Foam (Int. Cls. 3 and 5).
First use Apr. 9, 1968.

SN 299,311. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

NIGHT SOUNDS

For Cologne, Dusting Powder, and Perfume (Int. Cl. 3).
First use May 10, 1968.

SN 299,313. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

CHANGING TIMES

For Hair Coloring Preparation (Int. Cl. 3).
First use May 10, 1968.

SN 299,314. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

SKY LANTERNS

For Dusting Powder, Cologne, and Perfume (Int. Cl. 3).
First use May 10, 1968.

SN 300,419. Bishop Industries Inc., Union, N.J. Filed June 14, 1968.

INTAN

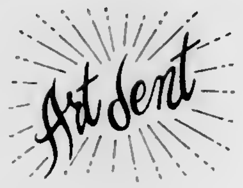
For Skin Bronzer (Int. Cl. 3).
First use May 24, 1968.

SN 300,548. Chas. Pfizer & Co., Inc., New York, N.Y., assignee of Bergdorf & Goodman Company, New York, N.Y. Filed June 17, 1968.

BACCHUS

For Men's Cologne (Int. Cl. 3).
First use in or about December 1962.

SN 300,693. Arthur C. Dunkle, d.b.a. Art Dent Co., Neosho, Mo. Filed June 18, 1968.



For Denture Powder (Int. Cl. 3).
First use November 1967.

SN 301,151. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

THROUGH THE LOOKING GLASS

For Dusting Powder, Bubble Bath, Cologne, Lip Pomade, and Talcum Powder (Int. Cl. 3).
First use May 27, 1968.

SN 301,153. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

WILLOW SIGH

For Perfume, Talcum Powder, Dusting Powder, and Cologne (Int. Cl. 3).
First use May 27, 1968.

SN 301,159. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MACH III

For After Shave Lotion and Talcum Powder (Int. Cl. 3).
First use May 27, 1968.

SN 301,165. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MOST OF ALL

For Perfume, Talcum Powder, Dusting Powder, and Cologne (Int. Cl. 3).
First use May 27, 1968.

SN 301,170. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

PATTERNS

For Perfume, Talcum Powder, Dusting Powder, and Cologne (Int. Cl. 3).
First use May 27, 1968.

SN 301,173. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

FERNERIE

For After Bath Freshener (Int. Cl. 3).
First use May 27, 1968.

SN 301,177. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

LITTLE CHARMER

For Dusting Powder, Bubble Bath, Cologne, Lip Pomade, and Talcum Powder (Int. Cl. 3).
First use May 27, 1968.

SN 301,180. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

TIMELESS

For Facial Skin Cream (Int. Cl. 3).
First use May 27, 1968.

SN 302,263. Alberto-Culver Company, Melrose Park, Ill. Filed July 9, 1968.

LIGHT'NING BUG

For Hair Color Preparation (Int. Cl. 3).
First use Mar. 15, 1968.

SN 302,264. Alberto-Culver Company, Melrose Park, Ill. Filed July 9, 1968.

LIGHT'NING BUG

For Shampoo-In Hair Brightener (Int. Cl. 3).
First use Mar. 15, 1968.

SN 304,069. Estee Lauder, Incorporated, New York, N.Y. Filed Aug. 1, 1968.

estée

For Perfume and Toilet Water (Int. Cl. 3).
First use June 28, 1968.

SN 304,227. Richard Hudnut, Morris Plains, N.J. Filed Aug. 2, 1968.

BEAUTY THINGS

For Fluid Makeup (Int. Cl. 3).
First use July 24, 1968.

SN 305,525. John H. Breck, Inc., Wayne, N.J. Filed Aug. 20, 1968.

BEAU BRECK

Owner of Reg. Nos. 521,473, 847,717, and others.
For Hair Spray for Men (Int. Cl. 3).
First use July 30, 1968.

SN 306,430. Diplomat Products, Inc., Culver City, Calif. Filed Sept. 3, 1968.

IMMUNITY

For Cologne Deodorant (Int. Cl. 5).
First use July 5, 1968.
Subj. to Intf. with SN 307,912 and SN 307,921.

Class 52 — Detergents and Soaps

SN 282,621. Amerace Corporation, New York, N.Y., assignee of Patek & Co., San Francisco, Calif. Filed Oct. 16, 1967.

FORMULA X-111

Applicant disclaims the word "Formula" apart from the mark as shown.
For Composition for Removing Silver Nitrate Stains From Fabrics (Int. Cl. 3).
First use on or about Sept. 3, 1965.

SN 283,728. Southwest Grease & Oil Co. (Kansas City), Inc., d.b.a. Ultra Guard Products Co., Kansas City, Mo. Filed Oct. 30, 1967.

ULTRA GUARD

Owner of Reg. No. 737,760.
For Preparation for Cleaning Carburetors and Automotive and Machine Parts, Electrical Equipment Cleaner, Steam Cleaning Detergent, Waterless Hand Cleaner, General Purpose Cleaner, and General Degreaser (Int. Cl. 3).
First use on or before Feb. 24, 1967.

SN 294,633. Madison Chemical Corporation, Maywood, Ill. Filed Apr. 1, 1968.

GARBATE

For Preparation for Cleaning and Deodorizing Refuse Disposal Equipment (Int. Cl. 5).
First use February 1967.

SN 294,634. Madison Chemical Corporation, Maywood, Ill. Filed Apr. 1, 1968.

SHOOT!

For Preparation for Cleaning and Deodorizing Waste and Garbage Receptacles (Int. Cl. 5).
First use February 1968.

SN 298,535. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

ORACLE

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,537. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

PASTORALE

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,539. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

SILENT WOODS

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,543. Avon Products, Inc., New York, N.Y. Filed Filed May 20, 1968.

WISTFUL

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,554. Avon Products, Inc., New York, N.Y. Filed May 20, 1968.

GLOAMING

For Toilet Soap (Int. Cl. 3).
First use May 8, 1968.

SN 298,731. Kortman & Schulte N.V., Rotterdam, Netherlands. Filed May 21, 1968.

BIO kes

Owner of Dutch Reg. No. 162,667, dated Dec. 29, 1966.
For Pre-Washing Agents for Dissolving or Digesting Stains During Pre-Wash Soaking, Detergents and Cleaning Agents for Laundering Purposes (Int. Cl. 3).

SN 298,735. Lobob Laboratories, Wenatchee, Wash. Filed May 21, 1968.

CLC

For Contact Lens Cleaner (Int. Cl. 3).
First use Sept. 8, 1965.

SN 299,208. Bristol-Myers Company, New York, N.Y. Filed May ~~28~~, 1968.

OBSIDIAN

For Hair Shampoo (Int. Cl. 3).
First use Apr. 1, 1968.

SN 299,300. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

SEA WILLOW

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 299,304. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

TEMPLE BELLS

For Toilet Soap (Int. Cl. 3).
First use May 10, 1968.

SN 301,152. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

THROUGH THE LOOKING GLASS

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,154. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

WILLOW SIGH

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,156. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

HUMORESQUE

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,160. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MACH III

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,164. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MAINSTREAM

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,166. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MOST OF ALL

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,171. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

PATTERNS

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,174. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

FERNERIE

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SN 301,178. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

LITTLE CHARMER

For Toilet Soap (Int. Cl. 3).
First use May 27, 1968.

SERVICE MARKS

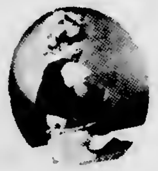
Class 100 — Miscellaneous

SN 266,837. Morgan Construction Company, Worcester, Mass. Filed Mar. 16, 1967.

STELMOR

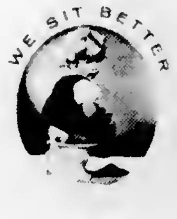
For Rendering Engineering Assistance to Firms Which Operate Steel Rod Rolling Mills (Int. Cl. 42).
First use September 1964.

SN 271,740. We Sit Better, Inc., Chicago, Ill. Filed May 17, 1967.



The picture of the girl is of a living person whose consent is of record.
For Baby Sitting Services (Int. Cl. 42).
First use on or about Feb. 28, 1966.

SN 271,741. We Sit Better, Inc., Chicago, Ill. Filed May 17, 1967.



The picture of the girl is of a living person whose consent is of record.
For Baby Sitting Services (Int. Cl. 42).
First use on or about Feb. 28, 1966.

SN 279,832. Industrial Nucleonics Corporation, Columbus, Ohio. Filed Sept. 7, 1967.

AccuRay

Owner of Reg. Nos. 723,084, 799,849, and others.
For Evaluation, Consultation, and Systems Engineering Relating to Operation, Control, Adjustment and Modification of Industrial Manufacturing Equipment (Int. Cl. 42).
First use at least as early as December 1951.

SN 290,115. Valle's Steak House, Portland, Maine. Filed Feb. 1, 1968.

VALLE'S

Owner of Reg. Nos. 649,480, 823,109, and others.
For Restaurant Services (Int. Cl. 42).
First use on or about Nov. 15, 1955.

Class 101 — Advertising and Business

SN 258,994. Fill-R-Up Auto Wash, Inc., Fort Lauderdale, Fla. Filed Nov. 18, 1966.

FILL-R-UP

For Rendering Technical Assistance to Combined Car-Wash and Gasoline Station Operators in the Establishment, Operation and Management of Their Businesses (Int. Cl. 35).
First use on or about Aug. 2, 1966.

SN 264,822. HMH Publishing Co., Inc., Chicago, Ill. Filed Feb. 16, 1967.

REACTS

For Providing Information to Readers of a Publication Who Inquire About a Product Advertised in the Publication the Names and Addresses of Retail Outlets Which Merchandise the Product Advertised, Advising Those Retail Outlets to Which the Reader Is Referred That Information Regarding the Advertised Product Has Been Received, and Supplying the Advertiser With the Names and Addresses of Those Readers Who Requested Product Information and the Names and Addresses of Those Retail Outlets to Which the Reader Was Referred (Int. Cl. 35).
First use on or about Oct. 31, 1966.

SN 286,037. The Reynolds & Reynolds Company, Dayton, Ohio. Filed Dec. 1, 1967.

For Accounting Service for Consumer Goods Dealers (Int. Cl. 35).
First use on or before Jan. 19, 1966.

SN 301,886. Inmark, Inc., Kensington, Md. Filed July 3, 1968.

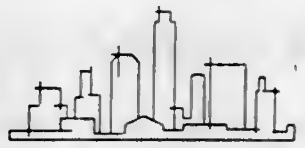
The mark comprises a fanciful representation of the letter "R."
For Electronic Instrumentation and Computer Rentals (Int. Cl. 35).
First use Feb. 1, 1968.

Class 102 — Insurance and Financial

SN 279,996. AMCAP Fund, Inc., Los Angeles, Calif. Filed Sept. 11, 1967.

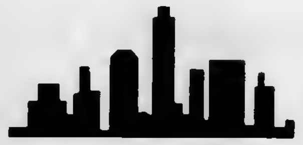
For Mutual Fund Investment Services (Int. Cl. 36).
First use June 5, 1967.

SN 292,592. Manhattan Fund, Inc., New York, N.Y. Filed Mar. 6, 1968.



For Mutual Fund Investment Services (Int. Cl. 36).
First use January 1966.

SN 292,593. Manhattan Fund, Inc., New York, N.Y. Filed Mar. 6, 1968.



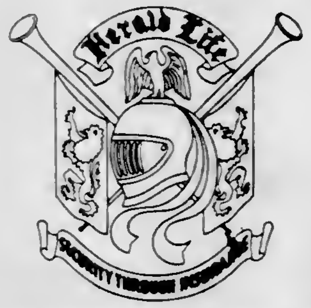
For Mutual Fund Investment Services (Int. Cl. 36).
First use March 1966.

SN 301,217. The First National Bank of Tullahoma, Tullahoma, Tenn. Filed June 24, 1968.

MI-BANKARD
"Good as Gold"

For Financial Services—Namely, Extending Credit Through the Issuance of Honoring of Credit Cards (Int. Cl. 36).
First use Feb. 2, 1968.

SN 306,842. Herald Life Insurance Company, Jacksonville, Fla. Filed Sept. 9, 1968.



The word "Life" is disclaimed apart from the mark as shown.
For Underwriting Life, Health, and Accident Insurance (Int. Cl. 36).
First use July or August 1960.

SN 311,546. Rosenthal & Rosenthal, Inc., New York, N.Y. Filed Nov. 7, 1968.

The lining in the drawing is part of the design component of the mark and no claim is made as to color.
For Financial Services—Namely, Factoring, and Commercial, Industrial, and International Financing (Int. Cl. 36).
First use 1938.

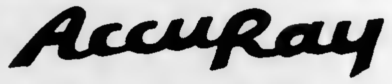
Class 103 — Construction and Repair

SN 274,434. Norman Lipsig, d.b.a. Draperies by Norman, Skokie, Ill. Filed June 21, 1967.

DRAPERIES BY NORMAN

The word "Draperies" is disclaimed apart from the mark.
For Interior Decorating, Including Decoration With Draperies (Int. Cl. 37).
First use June 28, 1961.

SN 279,654. Industrial Nucleonics Corporation, Columbus, Ohio. Filed Sept. 5, 1967.



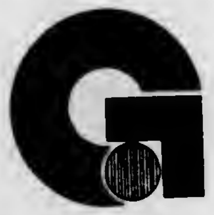
Owner of Reg. Nos. 723,084, 799,849, and others.

For Installation, Testing, Equipment Operation, Maintenance, Radiological Inspection, Calibration and Field Modification; Relating to Electronic, Mechanical, Electromechanical, and Other Apparatus (Int. Cl. 37).

First use at least as early as December 1951.

Class 105 — Transportation and Storage

SN 280,052. Gulf Atlantic Warehouse Co., Houston, Tex. Filed Sept. 11, 1967.



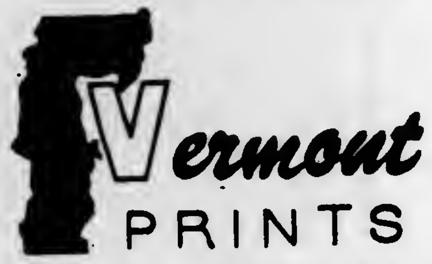
The mark consists of the stylized letters "G" and "a" and is lined for red, but no claim is made to any particular color.

For Distribution Services—Namely, Public Commercial Warehousing of Bulk, Industrial, and Agricultural Products, and Related Packing and Repacking Thereof; Shipside Terminal Operations; and Common Carrier and Contract Trucking Services (Int. Cl. 39).

First use July 12, 1967.

Class 106 — Material Treatment

SN 289,366. Wilson Sports Equipment Company, Inc., d.b.a. Vermont Prints, Rutland, Vt. Filed Jan. 22, 1968.



No claim is made to the word "Prints" apart from the mark as shown.

For Mail Order Photo Finishing, and Developing and Printing of Films (Int. Cl. 40).

First use in 1941.

SN 291,001. Cooper Industries, Inc., Canfield, Ohio. Filed Feb. 14, 1968.

DURA-CLAD

For Applying a Coating to the Metal Parts of Others (Int. Cl. 40).

First use Jan. 10, 1967.

Class 107 — Education and Entertainment

SN 253,548. Parents Without Partners, Inc., New York, N.Y. Filed Aug. 31, 1966.

PARENTS WITHOUT PARTNERS, INC.

For Providing Educational Services Directed to the Problems of the Single Parents and Their Children; and Dissemination of Educational Material Relating to the Welfare and Interests of Single Parents and Their Children (Int. Cl. 41).

First use on or about Mar. 10, 1958.

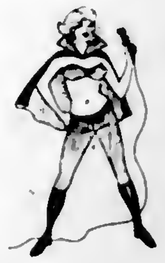
SN 266,461. Romper Room, Inc., Baltimore, Md. Filed Mar. 10, 1967.

EASY TO DRAW

For Elementary Drawing Instructions to Children by Means of Television (Int. Cl. 41).

First use Jan. 6, 1967.

SN 267,974. Pepper Sound Studios, Inc., d.b.a. Airplay International, Memphis, Tenn. Filed Mar. 30, 1967.



The drawing is lined for red; no claim is made to color.

For Periodically Manufacturing, Supervising and Distributing Customized Tape Recordings for Subscribing Radio Stations, Furnishing Instructional Material and Supplemental Information, Including Promotional Materials Concerning Such Tape Recordings, to Each Subscribing Radio Station, for Assisting Each Subscribing Radio Station in Its Programming of Advertising and Programs (Int. Cl. 41).

First use Jan. 25, 1967.

SN 277,955. Tennessee Walking Horse National Celebration Association, Shelbyville, Tenn. Filed May 3, 1967.

TENNESSEE WALKING HORSE NATIONAL CELEBRATION

Applicant disclaims the words "Tennessee Walking Horse" apart from the mark as shown.

For Conducting Trials of Walking Horses and Reporting the Results Thereof (Int. Cl. 41).

First use about 1951.

SN 280,879. New Orleans Buccaneers, Inc., New Orleans, La. Filed Sept. 21, 1967.

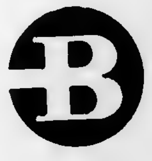
NEW ORLEANS BUCCANEERS

The phrase "New Orleans" is disclaimed apart from the mark as shown.

For Furnishing Entertainment Services in the Nature of Professional Basketball Games (Int. Cl. 41).

First use Mar. 27, 1967.

SN 295,013. Burroughs Corporation, Detroit, Mich. Filed Apr. 5, 1968.



For Educational Services—Namely, Conducting Schools and Training Courses, and Furnishing Instructional Material to Others (Int. Cl. 41).

First use Apr. 16, 1947.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

865,143. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 276,962. Pub. 12-10-68. Filed 7-27-67.

865,144. LEGUVAL. Farbenfabriken Bayer Aktiengesellschaft. SN 280,943. Pub. 11-19-68. Filed 9-22-67.

865,145. PAPYEX. Societe le Carbone Lorraine. SN 287,590. Pub. 12-10-68. Filed 12-26-67.

865,146. IMPAX. Impact Plastics, Inc. SN 288,822. Pub. 12-10-68. Filed 1-15-68.

865,147. BECKBOUNCE. Beckwith-Arden Inc. SN 289,569. Pub. 12-10-68. Filed 1-25-68.

865,148. FILMEX. Filmex Corporation. SN 289,580. Pub. 12-10-68. Filed 1-25-68.

865,149. VONDAFOL. Fabriek Van Chemische Producten Vondelingenplaat N.V. SN 289,795. Pub. 12-10-68. Filed 1-29-68.

865,150. TUMBLENE. Cosden Oil & Chemical Company. SN 289,880. Pub. 12-10-68. Filed 1-30-68.

865,151. THE SEALMARK OF FASHION. The Fouke Company, by change of name from Fouke Fur Company. SN 289,983. Pub. 12-10-68. Filed 1-31-68.

865,152. S IN A CIRCLE. The Fouke Company, by change of name from Fouke Fur Company. SN 289,984. Pub. 12-10-68. Filed 1-31-68.

865,153. PERMAPOL. Products Research & Chemical Corporation. SN 290,015. Pub. 12-10-68. Filed 1-31-68.

865,154. SEACRUMB. Seafield Amalgamated Rubber Company Limited. SN 290,026. Pub. 12-10-68. Filed 1-31-68.

Class 2 — Receptacles

865,155. TISSUE ISSUE AND DESIGN. Adell International, Inc., assignee of Robert Adell. SN 273,838. Pub. 8-6-68. Filed 6-14-67.

865,156. COVERTOP. Container Corporation of America. SN 290,721. Pub. 12-10-68. Filed 2-9-68.

865,157. GAYLOK. Crown Zellerbach Corporation. SN 292,084. Pub. 12-10-68. Filed 2-28-68.

865,158. LINCUBE. Linco Products Corporation. MULTIPLE CLASS (Classes 2 and 6). SN 304,533. Pub. 12-10-68. Filed 8-7-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

865,159. JOHNSON. The Johnson Ideal Halter Co. SN 262,426. Pub. 12-10-68. Filed 1-12-67.

865,160. PLUMB-LINE AND DESIGN. D. Donald Plumb, d.b.a. The Plumb-Line Incomparable. SN 292,957. Pub. 12-10-68. Filed 3-11-68.

865,161. FRONTIER. Jack C. Abert, d.b.a. Mechanical Products Company. SN 299,079. Pub. 12-10-68. Filed 5-27-68.

865,162. PERMAMATIC. Lark Luggage Corp. SN 300,828. Pub. 12-10-68. Filed 6-19-68.

865,163. SPOT AND DESIGN. Ethical Products, Inc. SN 305,023. Pub. 12-10-68. Filed 8-13-68.

Class 4 — Abrasives and Polishing Materials

865,164. AMAZON. Trio Chemical Works, Inc. SN 292,636. Pub. 12-10-68. Filed 3-6-68.

Class 5 — Adhesives

865,165. GE GENERAL ELECTRIC AND DESIGN. General Electric Company. SN 306,436. Pub. 12-10-68. Filed 9-3-68.

865,166. SCOTCH-GRIP. Minnesota Mining and Manufacturing Company. SN 306,990. Pub. 12-10-68. Filed 9-10-68.

Class 6 — Chemicals and Chemical Compositions

865,158. (See Class 2 for this trademark.)

865,167. SENTRY. Sentry Hardware Corporation. SN 250,306. Pub. 12-10-68. Filed 7-14-66.

865,168. ZERO. Geigy Chemical Corporation. SN 271,144. Pub. 6-25-68. Filed 5-10-67.

865,169. PBI AND DESIGN. Pan Britannica Industries Limited. MULTIPLE CLASS (Classes 6 and 10). SN 274,764. Pub. 12-10-68. Filed 6-26-67.

865,170. ISSUE. Wyandotte Chemicals Corporation. SN 277,402. Pub. 12-10-68. Filed 8-2-67.

865,171. THERMO BENZ. Xttrium Laboratories, Inc. SN 280,998. Pub. 12-10-68. Filed 9-22-67.

865,172. AMPHOLINE. LKB-Produkter Aktiebolag. SN 284,094. Pub. 12-10-68. Filed 11-3-67.

865,173. PITCH-PAK. Allied Chemical Corporation. SN 284,562. Pub. 12-10-68. Filed 11-13-67.

865,174. POLYSYNTHREN. Cassella Farbwerke Mainkur Aktiengesellschaft. SN 290,158. Pub. 12-10-68. Filed 2-2-68.

865,175. JEM DEFO. Ajem Laboratories, Inc. SN 291,473. Pub. 12-10-68. Filed 2-20-68.

865,176. VANGARD MB. R. T. Vanderbilt Company, Inc. SN 295,782. Pub. 12-10-68. Filed 4-16-68.

865,177. MISCELLANEOUS DESIGN. Ciba Corporation, d.b.a. Ciba Chemical and Dye Company. SN 296,940. Pub. 12-10-68. Filed 4-30-68.

865,178. ACHE-TEL. Chas. Pfizer & Co., Inc. SN 305,377. Pub. 12-10-68. Filed 8-19-68.

Class 7 — Cordage

865,179. F FELCO AND DESIGN. Farmers Regional Cooperative. SN 305,273. Pub. 12-10-68. Filed 8-16-68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

865,180. GEOFLEX. Imperial Chemical Industries Limited. SN 305,047. Pub. 12-10-68. Filed 8-13-68.

Class 10 – Fertilizers

865,169. (See Class 6 for this trademark.)

865,181. AGWAY 33½N AND DESIGN. Agway, Inc. SN 261,270. Pub. 10–1–68. Filed 12–22–66.

Class 12 – Construction Materials

865,182. AERO POOL. Hendon Construction Company. SN 283,664. Pub. 12–10–68. Filed 10–30–67.

865,183. MISCELLANEOUS DESIGN. Marshall E. Benjamin, d.b.a. Port-A-Pig Company. SN 297,517. Pub. 12–10–68. Filed 5–7–68.

865,184. PORT-A-PIG. Marshall E. Benjamin, d.b.a. Port-A-Pig Company. SN 297,518. Pub. 12–10–68. Filed 5–7–68.

865,185. PENEFELT. The Tremco Manufacturing Company. SN 298,065. Pub. 12–10–68. Filed 5–13–68.

865,186. G-P-M. Benjamin Foster Company. SN 299,455. Pub. 12–10–68. Filed 5–31–68.

865,187. PERATEX. General Refractories Company. SN 304,280. Pub. 12–10–68. Filed 8–5–68.

865,188. STRAN-STAND. Stran-Steel Corporation. SN 304,987. Pub. 12–10–68. Filed 8–12–68.

865,189. GE GENERAL ELECTRIC AND DESIGN. General Electric Company. SN 306,437. Pub. 12–10–68. Filed 9–3–68.

Class 13 – Hardware and Plumbing and Steam-Fitting Supplies

865,190. SPHINX. Sphinxworks Muller & Co. Ltd. SN 264,857. Pub. 12–10–68. Filed 2–16–67.

865,191. B AND DESIGN. Bundy Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 277,626. Pub. 12–10–68. Filed 8–7–67.

865,192. GUSTAV. Gustav J. Schutterman, d.b.a. Progredo Trading Co. SN 286,283. Pub. 12–10–68. Filed 12–5–67.

865,193. PORTA POTTI. Thetford Engineering Corporation. SN 289,542. Pub. 12–10–68. Filed 1–24–68.

865,194. SCOVILL. Scovill Manufacturing Company. SN 293,589. Pub. 12–10–68. Filed 3–18–68.

865,195. HL. Hi-Shear Corporation. SN 293,720. Pub. 12–10–68. Filed 3–20–68.

865,196. ROTO-PAK. Rowe Manufacturing Company. SN 294,414. Pub. 12–10–68. Filed 3–28–68.

865,197. TITAN. Titan Fasteners, Division of Slant/Fin Corporation. SN 294,698. Pub. 12–10–68. Filed 4–1–68.

865,198. MISCELLANEOUS DESIGN. Robin Products Company. SN 295,462. Pub. 12–10–68. Filed 4–11–68.

865,199. DM AND DESIGN. Dri Mark Products, Inc. SN 295,813. Pub. 12–10–68. Filed 4–17–68.

865,200. I.C.U. Belwith International Ltd. SN 296,096. Pub. 12–10–68. Filed 4–22–68.

865,201. HONEYSERTS. Tridair Industries. SN 296,362. Pub. 12–10–68. Filed 4–23–68.

865,202. BLIND SERTS. Hi-Shear Corporation. SN 296,427. Pub. 12–10–68. Filed 4–24–68.

865,203. HYDRO-VALET. Swimquip, Inc. SN 296,466. Pub. 12–10–68. Filed 4–24–68.

Class 14 – Metals and Metal Castings and Forgings

865,204. GLASTEEL. Ritter Pfaudler Corporation. SN 281,315. Pub. 12–10–68. Filed 9–27–67.

865,205. GE GENERAL ELECTRIC AND DESIGN. General Electric Company. SN 306,438. Pub. 12–10–68. Filed 9–3–68.

Class 15 – Oils and Greases

865,206. PATHMARK. Supermarkets General Corporation, by mesne assignment and change of name from Supermarkets Oil Company, Inc. SN 288,922. Pub. 9–17–68. Filed 1–16–68.

865,207. NALROLL. Nalco Chemical Company. SN 296,183. Pub. 12–10–68. Filed 4–22–68.

865,208. A-PLUS. Ashland Oil & Refining Company. SN 296,788. Pub. 12–10–68. Filed 4–29–68.

Class 16 – Protective and Decorative Coatings

865,209. TUFFER. Puritan Chemical Company. SN 290,529. Pub. 12–10–68. Filed 2–7–68.

865,210. UNIFLOOR. Vilar Products. SN 302,287. Pub. 12–10–68. Filed 7–9–68.

Class 17 – Tobacco Products

865,211. GOYA. Geryl Company, Ltd. SN 279,733. Pub. 12–10–68. Filed 9–6–67.

865,212. JOHN BARRY—FATHER OF OUR NAVY AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 279,861. Pub. 12–10–68. Filed 9–7–67.

865,213. BERING RED LABEL. Corral, Wodiska y Ca. SN 297,976. Pub. 12–10–68. Filed 5–13–68.

865,214. MARK IV AND DESIGN. House of Windsor, Inc. SN 300,705. Pub. 12–10–68. Filed 6–18–68.

Class 18 – Medicines and Pharmaceutical Preparations

865,215. BRL AND DESIGN. Beecham Group Limited, d.b.a. Beecham Research Laboratories. SN 225,466. Pub. 3–19–68. Filed 8–11–65.

865,216. LEVOMYCETIN. Archifar Laboratori Chimico-Farmacologici S.p.A. SN 271,680. Pub. 6–25–68. Filed 5–17–67.

865,217. ASCAP. Maxim Baskies, d.b.a. Maxim Chemicals Ltd. SN 276,804. Pub. 12–10–68. Filed 7–26–67.

865,218. LEPTOMUNE. Affiliated Laboratories Corporation. SN 278,652. Pub. 12–10–68. Filed 8–21–67.

865,219. OSBIL. Mallinckrodt Chemical Works. SN 280,077. Pub. 12–10–68. Filed 9–11–67.

865,220. KYORIN. Kyorin Seiyaku Kabushiki Kaisha. SN 281,206. Pub. 12–10–68. Filed 9–26–67.

865,221. AMSTAT. American Cyanamid Company. SN 284,286. Pub. 12–10–68. Filed 11–7–67.

865,222. GAYPET. American Home Products Corporation. SN 286,568. Pub. 12–10–68. Filed 12–6–67.

865,223. CINCH. K. J. Quinn & Co., Inc. MULTIPLE CLASS (Classes 18, 22, 40, and 51). SN 286,594. Pub. 12–10–68. Filed 12–11–67.

865,224. ELVACAPS. Merck & Co., Inc. SN 286,695. Pub. 12–10–68. Filed 12–11–67.

865,225. LIP SAVERS. Sea & Ski Corporation. SN 287,380. Pub. 12–10–68. Filed 12–21–67.

865,226. MUCOGEN. Armour Pharmaceutical Company. SN 288,270. Pub. 12–10–68. Filed 1–8–68.

865,227. MISCELLANEOUS DESIGN. Richardson-Merrell Inc. SN 289,920. Pub. 12–10–68. Filed 1–30–68.

865,228. DEXTROID. James H. Walters, d.b.a. Starr Pharmacal Co. SN 291,924. Pub. 12–10–68. Filed 2–26–68.

865,229. ORTHO-NOVUM MINI. Ortho Pharmaceutical Corporation. SN 296,387. Pub. 7–30–68. Filed 4–24–68.

865,230. VITYMES. Menley & James Laboratories, Ltd. SN 298,288. Pub. 9–17–68. Filed 5–16–68.

865,231. VITIME. Menley & James Laboratories, Ltd. SN 298,289. Pub. 9–17–68. Filed 5–16–68.

Class 19 – Vehicles

865,232. RN AND DESIGN. Regie Nationale des Usines Renault. MULTIPLE CLASS (Classes 19 and 23). SN 272,137. Pub. 12–10–68. Filed 5–23–67.

865,233. WINK. Fullview Mirror Company, assignee of Roy Winkelmann Racing of America, Inc. SN 290,655. Pub. 8–6–68. Filed 2–8–68.

865,234. GLASSTARP. Gladys Hurley, d.b.a. Walter F. Hurley Gin. SN 295,144. Pub. 12–10–68. Filed 4–8–68.

865,235. TAMARACK. Champion Home Builders Co. SN 295,218. Pub. 12–10–68. Filed 4–9–68.

865,236. BRIGHT STAR AND DESIGN. Bright Star Industries Incorporated. SN 295,909. Pub. 12–10–68. Filed 4–18–68.

865,237. COMANCHE AND DESIGN. Alexander-Reynolds Corp. SN 296,001. Pub. 12–10–68. Filed 4–19–68.

865,238. FINBACK. Vemaline Products Co., Inc. SN 296,222. Pub. 12–10–68. Filed 4–22–68.

865,239. ALLWIN. Richards Son & Allwin Limited. SN 296,453. Pub. 12–10–68. Filed 4–24–68.

865,240. SANDLAPPER. Researched Plastics, Inc. SN 297,439. Pub. 12–10–68. Filed 5–6–68.

865,241. KWICKY. Federal Auto Products Co., Inc., d.b.a. Everhot Products Co. SN 297,994. Pub. 12–10–68. Filed 5–13–68.

Class 20 – Linoleum and Oiled Cloth

865,242. CAPETOWN. Congoleum Industries, Inc., assignee of Congoleum-Nairn Inc. SN 293,907. Pub. 12–10–68. Filed 3–22–68.

865,243. CRESCENT. Congoleum Industries, Inc., assignee of Congoleum-Nairn Inc. SN 293,908. Pub. 12–10–68. Filed 3–22–68.

865,244. FAIRFIELD. Congoleum Industries, Inc., assignee of Congoleum-Nairn Inc. SN 295,915. Pub. 12–10–68. Filed 4–18–68.

865,245. VINYL-EASE. Mannington Mills Inc. SN 295,934. Pub. 12–10–68. Filed 4–18–68.

Class 21 – Electrical Apparatus, Machines, and Supplies

865,246. STOLAB. Stow Laboratories, Inc. SN 263,410. Pub. 12–10–68. Filed 1–26–67.

865,247. YELLOW JACKET. Air Reduction Company, Incorporated. SN 268,279. Pub. 12–10–68. Filed 4–4–67.

865,248. EVERENE. Triangle Conduit & Cable Co. Inc., by change of name and assignment from Triangle Conduit & Cable Co. Inc. SN 276,716. Pub. 12–10–68. Filed 7–24–67.

865,249. RED SNAP'R. North Central Plastics, Inc. SN 278,233. Pub. 12–10–68. Filed 8–14–67.

865,250. NAFOIL. National Wire and Cable Corporation. SN 282,120. Pub. 12–10–68. Filed 10–9–67.

865,251. CIR-CAP. Bestran Corporation. SN 293,686. Pub. 12–10–68. Filed 3–20–68.

865,252. LVA. TRW Semiconductors, Inc. SN 293,753. Pub. 12–10–68. Filed 3–20–68.

865,253. ARAMATIC. Automatic Retailers of America, Inc. SN 295,298. Pub. 12–10–68. Filed 4–10–68.

865,254. CERMIDE. CTS Corporation. SN 296,007. Pub. 12–10–68. Filed 4–19–68.

865,255. ME. Marathon Electric Manufacturing Corporation. SN 297,143. Pub. 12–10–68. Filed 5–2–68.

865,256. VIDAIRE. Vidaire Electronics Manufacturing Corp. SN 297,932. Pub. 12–10–68. Filed 5–13–68.

865,257. VIGILANTE. Accuray Products Incorporated. SN 305,367. Pub. 12–10–68. Filed 8–19–68.

Class 22 – Games, Toys, and Sporting Goods

865,223. (See Class 18 for this trademark.)

865,258. JET BACK. Brunswick Corporation. SN 275,621. Pub. 12–10–68. Filed 7–10–67.

865,259. "ONE SHOT." Bruce B. Mises, Inc. SN 288,025. Pub. 12–10–68. Filed 1–3–68.

865,260. MUSTANG. Colt's Inc. SN 291,033. Pub. 12–10–68. Filed 2–14–68.

865,261. CHALLENGER. Colt's Inc. SN 291,034. Pub. 12–10–68. Filed 2–14–68.

865,262. THE FRONTIER. Colt's Inc. SN 291,035. Pub. 12–10–68. Filed 2–14–68.

865,263. FRONTIER SCOUT. Colt's Inc. SN 291,036. Pub. 12–10–68. Filed 2–14–68.

865,264. PENGUIN. Alan J. Klitzner. SN 292,109. Pub. 12–10–68. Filed 2–28–68.

865,265. FANCIFUL LETTER N. Newport Palpo. SN 292,407. Pub. 12–10–68. Filed 3–4–68.

865,266. NIMROD GT. Nimrod Products, Inc. SN 292,806. Pub. 12–10–68. Filed 3–8–68.

865,267. PARATEPEE. George R. Wolstad. SN 294,987. Pub. 12–10–68. Filed 4–4–68.

Class 23 – Cutlery, Machinery, and Tools, and Parts Thereof

865,191. (See Class 13 for this trademark.)

865,232. (See Class 19 for this trademark.)

865,268. HR. Hewitt-Robins Incorporated. SN 245,924. Pub. 12–10–68. Filed 5–18–66.

865,269. BLOHM-SIMPLEX. Robert Blohm. SN 260,234. Pub. 12–10–68. Filed 12–7–66.

865,270. PALLETRON AND DESIGN. Precision Welder & Flexopress Corp. SN 266,088. Pub. 12–10–68. Filed 3–6–67.

865,271. CHEM FARM AND DESIGN. Chem-Farm Inc. SN 270,894. Pub. 12–10–68. Filed 5–8–67.

865,272. LARK AND DESIGN. Lark Manufacturing Co. SN 270,926. Pub. 12–10–68. Filed 5–8–67.

865,273. DONALDSON AND DESIGN. Donaldson Company, Inc. SN 271,776. Pub. 12–10–68. Filed 5–18–67.

865,274. MW AND DESIGN. Lenkotex Company, Inc. SN 272,616. Pub. 12–10–68. Filed 5–29–67.

865,275. JETSTER-MATIC. National Can Corporation. SN 273,519. Pub. 12–10–68. Filed 6–9–67.

865,276. MUTOP. Albe S.A. SN 273,581. Pub. 12–10–68. Filed 6–12–67.

865,277. ME AND DESIGN. Machinery & Equipment Co. SN 273,658. Pub. 12–10–68. Filed 6–12–67.

865,278. CHAMPION. Champion Corporation. SN 275,743. Pub. 12–10–68. Filed 7–11–67.

865,279. MIF. MIF Industries, Inc. SN 276,148. Pub. 12–10–68. Filed 7–17–67.

865,280. MISCELLANEOUS DESIGN. Uniroyal, Inc. SN 278,046. Pub. 12–10–68. Filed 8–10–67.

865,281. ANDAR. Andar Corporation. SN 280,536. Pub. 12–10–68. Filed 9–18–67.

865,282. KELLY PERFECT. True Temper Corporation. SN 280,900. Pub. 12–10–68. Filed 9–21–67.

865,283. AXBO. Axbo Aktiebolag. SN 282,039. Pub. 12–10–68. Filed 10–9–67.

865,284. SNAP-LOK. Oconomowoc Manufacturing Corporation. SN 284,721. Pub. 12–10–68. Filed 11–13–67.

865,285. APPLIED POWER. Applied Power Industries, Inc. SN 286,622. Pub. 12–10–68. Filed 12–11–67.

865,286. PACESETTER. U.S. Industries, Inc., assignee of Big Dutchman, Inc. SN 286,627. Pub. 12–10–68. Filed 12–11–67.

865,287. ROTOPOKA. Fyne Machinery & Engineering Limited. SN 287,166. Pub. 12–10–68. Filed 12–18–67.

865,288. INGRID. Gustav J. Schutterman, d.b.a. Progredo Trading Co. SN 287,765. Pub. 12–10–68. Filed 12–28–67.

865,289. HYLOX. Union Carbide Corporation. SN 287,775. Pub. 12–10–68. Filed 12–28–67.

865,290. CLEVELAND. The Cleveland Twist Drill Company. SN 288,002. Pub. 12–10–68. Filed 1–3–68.

865,291. CASE-REDI. Reynolds Metals Company. SN 288,116. Pub. 12–10–68. Filed 1–4–68.

865,292. FITZ MILL AND DESIGN. The Fitzpatrick Company. SN 288,205. Pub. 12–10–68. Filed 1–5–68.

865,293. SMOKER. Nutri-Seal Storage Systems, Inc. SN 288,226. Pub. 12–10–68. Filed 1–5–68.

865,294. VICTOR. Jacobsen Manufacturing Company. SN 289,685. Pub. 12–10–68. Filed 1–26–68.

865,295. SNO-BLITZ. Jacobsen Manufacturing Company. SN 289,686. Pub. 12–10–68. Filed 1–26–68.

865,296. TRIM-O. Jacobsen Manufacturing Company. SN 289,691. Pub. 12–10–68. Filed 1–26–68.

865,297. INSTAMATIC. Empisal (Proprietary) Limited, d.b.a. Empisal Textile Machinery Corporation, and Home Industries Schools. SN 289,883. Pub. 12–10–68. Filed 1–30–68.

865,298. JET-AIR. Jet-Air Thread Control Co. SN 290,173. Pub. 12–10–68. Filed 2–2–68.

865,299. BLITZER. Jacobsen Manufacturing Company. SN 290,298. Pub. 12–10–68. Filed 2–5–68.

865,300. CLASSIC CHARM. Utica Cutlery Company. SN 294,220. Pub. 12–10–68. Filed 3–27–68.

865,301. NOVAK. The Novak Company, Inc., SN 295,288. Pub. 12–10–68. Filed 4–10–68.

865,302. CAMPAGNA. Imperial International Corp. SN 296,962. Pub. 12–10–68. Filed 4–30–68.

865,303. KANTERBURY. Imperial International Corp. SN 296,963. Pub. 12–10–68. Filed 4–30–68.

865,304. ESTORIL. Imperial International Corp. SN 296,964. Pub. 12–10–68. Filed 4–30–68.

865,305. CLASSIC SCROLL. Utica Cutlery Company. SN 301,283. Pub. 12–10–68. Filed 6–24–68.

865,306. AMERACE. Amerace Corporation. SN 301,299. Pub. 12–10–68. Filed 6–25–68.

865,307. PAUL BUNYAN. The Union Fork and Hoe Company. SN 306,620. Pub. 12–10–68. Filed 9–5–68.

Class 26—Measuring and Scientific Appliances

865,308. S.F.O.M. Societe Francaise d'Optique et de Mecanique—S.F.O.M. SN 263,851. Pub. 12–10–68. Filed 2–2–67.

865,309. ASCOP. Weston Instruments, Inc., assignee of Electro-Mechanical Research, Inc. SN 273,187. Pub. 12–10–68. Filed 6–6–67.

865,310. EDU-CENTER. Responsive Environments Corporation, assignee of Edu-Center, Inc. SN 287,780. Pub. 12–10–68. Filed 12–29–67.

865,311. P WITH CONCENTRIC CIRCLES. The Porter-Spear Company. SN 288,114. Pub. 12–10–68. Filed 1–4–68.

865,312. TROPHY. Bausch & Lomb Incorporated. SN 290,942. Pub. 12–10–68. Filed 2–13–68.

865,313. ALCOLOR. L.P.C. Chemicals and Dyes Limited. SN 297,070. Pub. 12–10–68. Filed 5–1–68.

865,314. SILUFOL. Sklárny Kavalier, Nårodni Podnik. SN 297,713. Pub. 12–10–68. Filed 5–8–68.

865,315. QUANTIMET. Metals Research Limited. SN 297,790. Pub. 12–10–68. Filed 5–9–68.

Class 29—Brooms, Brushes, and Dusters

865,316. THE QUIET ONE. All-American Brush Mfg. Corp. SN 266,294. Pub. 1–9–68. Filed 3–9–67.

865,317. PATHMARK. Supermarkets General Corporation, by change of name and assignment from Louket Markets, Inc. SN 297,071. Pub. 10–22–68. Filed 5–1–68.

Class 32—Furniture and Upholstery

865,318. BATHIQUE. Wolff Products Co. SN 269,006. Pub. 12–10–68. Filed 4–12–67.

865,319. B AND CIRCLE DESIGN. Burroughs Corporation. SN 289,772. Pub. 12–10–68. Filed 1–29–68.

865,320. BURROUGHS. Burroughs Corporation. SN 289,773. Pub. 12–10–68. Filed 1–29–68.

865,321. JD ORIGINALS AND DESIGN. Jackson Chair Company, Inc. SN 290,734. Pub. 12–10–68. Filed 2–9–68.

865,322. M-I-RAK. Midland Machine Company. SN 291,885. Pub. 12–10–68. Filed 2–26–68.

865,323. PARAMOUNT. Slick Industrial Company. SN 293,746. Pub. 12–10–68. Filed 3–20–68.

865,324. SACHS QUALITY AND DESIGN. Sachs Quality Stores, Inc. SN 294,317. Pub. 12–10–68. Filed 3–27–68.

865,325. A . . . QUALITY HALL MASTERPIECE AND DESIGN. Sachs Quality Stores, Inc. SN 294,318. Pub. 12–10–68. Filed 3–27–68.

865,326. SURE PLUS. Sure Plus Manufacturing Co. SN 295,777. Pub. 12–10–68. Filed 4–16–68.

865,327. ALUMNA. Massey-Ferguson Industries Limited. SN 295,834. Pub. 12–10–68. Filed 4–17–68.

865,328. WEDGE-LOCK. Republic Steel Corporation. SN 296,043. Pub. 12–10–68. Filed 4–19–68.

865,329. MONTICELLO. National Mattress Company. SN 296,341. Pub. 12–10–68. Filed 4–23–68.

865,330. SAFE REST. W & J Sloane of Beverly Hills, d.b.a. Angelus Furniture Manufacturing Co. SN 297,888. Pub. 12–10–68. Filed 5–10–68.

Class 33—Glassware

865,331. GRAYLITE. PPG Industries, Inc. SN 299,072. Pub. 12–10–68. Filed 5–27–68.

Class 34—Heating, Lighting, and Ventilating Apparatus

865,332. NEW CASTLE. The Joseph Dixon Crucible Company. SN 285,122. Pub. 12–10–68. Filed 11–17–67.

865,333. SSCF. American Standard Inc. SN 296,287. Pub. 12–10–68. Filed 4–23–68.

865,334. MISCELLANEOUS DESIGN. C. Cretors & Co., d.b.a. Cretors & Company. SN 297,917. Pub. 12–10–68. Filed 5–13–68.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

865,335. DIXYLON. R. & J. Dick Co., Inc. SN 284,297. Pub. 12–10–68. Filed 11–7–67.

865,336. MEMORY. The Goodyear Tire & Rubber Company. SN 294,187. Pub. 12–10–68. Filed 3–26–68.

865,337. BIG JACK. Universal Packing & Gasket Company. SN 297,112. Pub. 12–10–68. Filed 5–1–68.

865,338. TRUMP. Dayco Corporation. SN 297,986. Pub. 12–10–68. Filed 5–13–68.

865,339. GUARDSMAN. Sears, Roebuck and Co. SN 298,253. Pub. 12–10–68. Filed 5–15–68.

865,340. RAYO-STEEL. The Goodyear Tire & Rubber Company. SN 298,440. Pub. 12–10–68. Filed 5–17–68.

865,341. DYNASTEEL. The Goodyear Tire & Rubber Company. SN 298,442. Pub. 12–10–68. Filed 5–17–68.

865,342. RAYOGLAS. The Goodyear Tire & Rubber Company. SN 298,443. Pub. 12–10–68. Filed 5–17–68.

865,343. NYLOGLAS. The Goodyear Tire & Rubber Company. SN 298,444. Pub. 12–10–68. Filed 5–17–68.

865,344. SOFTRAC. The Goodyear Tire & Rubber Company. SN 298,445. Pub. 12–10–68. Filed 5–17–68.

865,345. NYLOSTEEL. The Goodyear Tire & Rubber Company. SN 300,276. Pub. 12–10–68. Filed 6–12–68.

865,346. G-LUG. Bridgestone Tire Company Limited. SN 302,007. Pub. 12–10–68. Filed 7–5–68.

Class 36—Musical Instruments and Supplies

865,347. CROWNCORDER. International Radio and Electronics Corporation, assignee of Crown Radio Corporation. SN 180,295. Pub. 7–7–64. Filed 11–1–63.

865,348. CAPITOL. Grossman Music Corporation. SN 271,936. Pub. 12–10–68. Filed 5–19–67.

865,349. CENTURY MARK IV. Douglas Dunhill, Inc. SN 296,818. Pub. 12–10–68. Filed 4–29–68.

865,350. DEL REY. WMI Corporation. SN 296,901. Pub. 12–10–68. Filed 4–29–68.

865,351. SOUND SEMINARS. Behavioral Science Associates, Inc. SN 301,385. Pub. 12–10–68. Filed 6–26–68.

Class 37—Paper and Stationery

865,352. FOX AND DESIGN. The Fox Paper Company. SN 272,923. Pub. 12–10–68. Filed 6–2–67.

865,353. DATAMARK. Data Mark, Inc. SN 276,928. Pub. 12–10–68. Filed 7–27–67.

865,354. RESEARCH IN EVERY POUND AND DESIGN. Combined Paper Mills, Inc. SN 278,285. Pub. 12–10–68. Filed 8–15–67.

865,355. GOLDTONE. The Western Paper Goods Co. SN 278,546. Pub. 12–10–68. Filed 8–17–67.

865,356. RECKONDAR. Lynn S. Gladding. SN 279,820. Pub. 12–10–68. Filed 9–7–67.

865,357. FASHION MAGIC. American Greetings Corp. SN 284,435. Pub. 8–27–68. Filed 11–9–67.

865,358. OSM. Xerox Corporation. SN 285,282. Pub. 12–10–68. Filed 11–20–67.

865,359. HAPPENINGS. Scripto, Inc. SN 294,671. Pub. 12–10–68. Filed 4–1–68.

Class 38—Prints and Publications

865,360. ENVIRONMENTAL TECHNOLOGY & ECONOMICS. Technomic Publishing Company, Inc. SN 258,001. Pub. 12–10–68. Filed 11–4–66.

865,361. ECI. Institute for Scientific Information, Inc. SN 273,153. Pub. 9–17–68. Filed 6–6–67.

865,362. TROPIC. The Miami Herald Publishing Company. SN 281,604. Pub. 12–10–68. Filed 10–2–67.

865,363. GHF AND DESIGN. Monitor Publishing Company, Inc. SN 283,687. Pub. 12–10–68. Filed 10–30–67.

865,364. TEEN TEMPO. William Levi, d.b.a. Advertising Unlimited. SN 286,160. Pub. 12–10–68. Filed 12–4–67.

865,365. THE STANLEY STANDARD AND DESIGN. Stanley Home Products, Inc. SN 287,235. Pub. 12–10–68. Filed 12–19–67.

865,366. SANDLAPPER. Sandlapper Press, Inc. SN 291,435. Pub. 12–10–68. Filed 2–19–68.

865,367. HOT SPOTS. Fleer Corp. SN 297,831. Pub. 12–10–68. Filed 5–10–68.

Class 39—Clothing

865,368. SHANTUNG TRICOT BY CAMCO AND DESIGN. Cotton Art Mills, Inc. SN 264,147. Pub. 12–10–68. Filed 2–7–67.

865,369. BOUNCE STRETCH AND DESIGN. Wm. G. Leininger Knitting Co., Inc., d.b.a. The Railroad Sock. SN 267,162. Pub. 12–10–68. Filed 3–20–67.

865,370. HOMYPED. Alfons Saum, d.b.a. Alfons Saum, Fabrik fur Schuhbodenteile. SN 272,409. Pub. 12–10–68. Filed 5–25–67.

865,371. PANTS PLACE AND DESIGN. Canadian Fur Trappers Corp. SN 273,481. Pub. 12–10–68. Filed 6–9–67.

865,372. DAVID SMITH. David H. Smith, Inc. SN 275,697. Pub. 12–10–68. Filed 7–10–67.

865,373. GALLI·GA·SKINS. Galligaskins, Inc. SN 282,568. Pub. 12–10–68. Filed 10–16–67.

865,374. WEE JORDAN. Arlan's Dept. Stores, Inc. SN 283,417. Pub. 12–10–68. Filed 10–26–67.

865,375. TAILORED BY H. FREEMAN & SON AND DESIGN. H. Freeman & Son, Inc. SN 285,011. Pub. 12–10–68. Filed 11–16–67.

865,376. DUO JET AND DESIGN. Duofold, Inc. SN 286,248. Pub. 12–10–68. Filed 12–5–67.

865,377. DORSINI FOOTWEAR AND DESIGN. Dorson-Fleisher, Inc. SN 289,175. Pub. 12–10–68. Filed 1–19–68.

865,378. COURT COUTURE. Gino Paoli. SN 289,800. Pub. 12–10–68. Filed 1–29–68.

865,379. TRU-PALS. J. G. Plotkin & Son Shoe Co. SN 292,498. Pub. 12–10–68. Filed 3–5–68.

865,380. LADY FLO. Fashionaire Hosiery, Inc. SN 292,902. Pub. 12–10–68. Filed 3–11–68.

865,381. FABULOUS FRISCOS AND DESIGN. R. G. Barry Corporation. SN 294,007. Pub. 12–10–68. Filed 3–25–68.

865,382. GURU. Rob Roy Company, Inc. SN 294,314. Pub. 12–10–68. Filed 3–27–68.

865,383. THE STRAWBERRY PATCH INC. The Strawberry Patch, Inc. SN 294,869. Pub. 12–10–68. Filed 4–3–68.

865,384. STOP-LITE AND DESIGN. Latest Trends, Inc. SN 297,193. Pub. 12–10–68. Filed 5–2–68.

865,385. AFTER SHAVE. Cluett, Peabody & Co., Inc. SN 297,276. Pub. 12–10–68. Filed 5–3–68.

865,386. IMPERIAL ROOM. Spartans Industries, Inc. SN 297,611. Pub. 12–10–68. Filed 5–7–68.

865,387. THE SIGNE OF THE RED LION. Superba Cravats, Inc. SN 298,055. Pub. 12–10–68. Filed 5–13–68.

865,388. TUBBINS. Farmington Industries, Inc. SN 299,446. Pub. 12–10–68. Filed 5–31–68.

865,389. PORT OF ENTRY. Michaels Stern & Company, Inc. SN 299,737. Pub. 12–10–68. Filed 6–5–68.

865,390. ETERNALITE. Genesco Inc. SN 299,843. Pub. 12–10–68. Filed 6–6–68.

865,391. ENGAGEMENT. Berkshire International Corporation. SN 300,418. Pub. 12–10–68. Filed 6–14–68.

865,392. FABRI-KNEE. Tex-Togs, Inc. SN 304,517. Pub. 12-10-68. Filed 8-6-68.

865,393. FIGURE PERSUADER. Henson-Kickernick, Inc. SN 305,089. Pub. 12-10-68. Filed 8-6-68.

865,394. TAME-ME. Maidenform, Inc. SN 305,613. Pub. 12-10-68. Filed 8-21-68.

865,395. ULTRAS AND DESIGN. Caressa, Inc. SN 305,714. Pub. 12-10-68. Filed 8-22-68.

865,396. 'FOLLOW ME' AND DESIGN. Tiny Town Togs, Inc. SN 306,446. Pub. 12-10-68. Filed 9-3-68.

Class 40 — Fancy Goods, Furnishings, and Notions

865,223. (See Class 18 for this trademark.)

865,397. CINEMATIQUE. Cinematique, Ltd. SN 252,544. Pub. 12-10-68. Filed 8-17-66.

865,398. CAPRI AND DESIGN. International Wig Imports, Inc. SN 281,984. Pub. 12-10-68. Filed 10-6-67.

865,399. PATHMARK. Supermarkets General Corporation, by change of name and assignment from Louket Markets, Inc. SN 297,072. Pub. 10-22-68. Filed 5-1-68.

865,400. POETRY COLLECTION. Yardley of London, Inc. SN 297,478. Pub. 12-10-68. Filed 5-6-68.

865,401. CENTURY. Reid-Meredith, Inc. SN 305,186. Pub. 12-10-68. Filed 8-15-68.

Class 41 — Canes, Parasols, and Umbrellas

865,402. SMOOTHY. Giant Umbrella Company, Inc. SN 299,017. Pub. 12-10-68. Filed 5-24-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

865,403. LUSTRALAN. Gerrit van Delden & Co. MULTIPLE CLASS (Classes 42 and 43). SN 273,059. Pub. 10-1-68. Filed 6-5-67.

865,404. BIDIM. Societe Rhodiaceta. SN 281,233. Pub. 12-10-68. Filed 9-26-67.

865,405. HARTEX AND DESIGN. Harper Manufacturing Company. SN 284,473. Pub. 10-15-68. Filed 11-9-67.

865,406. WEBHIDE. The Kendall Company. SN 285,136. Pub. 8-20-68. Filed 11-17-67.

865,407. ACRYL·ANNIN SINCE 1847 AND DESIGN. Annin & Co. SN 289,651. Pub. 8-20-68. Filed 1-26-68.

865,408. BF BARON FABRICS AND DESIGN. Baron Fabrics, Inc. SN 289,767. Pub. 12-10-68. Filed 1-29-68.

865,409. PACIFIC SILVERCLOTH. M. Lowenstein & Sons, Inc. SN 291,882. Pub. 12-10-68. Filed 2-26-68.

865,410. BELLEAIR. Allied Stores Corporation. SN 294,245. Pub. 12-10-68. Filed 3-27-68.

865,411. A LAURENCE CREATION. W. F. Breuss, Inc. SN 294,369. Pub. 12-10-68. Filed 3-28-68.

865,412. ARCTEX. J. E. Morgan Knitting Mills, Inc. SN 298,238. Pub. 12-10-68. Filed 5-15-68.

865,413. COUNTRY SPORTSMAN AND DESIGN. Haft & Co., Ltd. SN 298,935. Pub. 12-10-68. Filed 5-23-68.

865,414. DURA-SLEEVE. Albany Felt Company. SN 299,416. Pub. 12-10-68. Filed 5-31-68.

865,415. LOUVEAU. Fieldcrest Mills, Inc. SN 299,450. Pub. 12-10-68. Filed 5-31-68.

865,416. COMPUDYED. Beaunit Corporation. SN 299,542. Pub. 12-10-68. Filed 6-3-68.

Class 43 — Thread and Yarn

865,403. (See Class 42 for this trademark.)

865,417. PARLEY. Johan Parmentier Textielfabrieken N.V. SN 280,811. Pub. 12-10-68. Filed 9-20-67.

865,418. POLY-ALPAC. Sociedad Industrial Textil S.A. (Sitex). SN 287,963. Pub. 12-10-68. Filed 1-2-68.

865,419. TORQUEL. J. P. Stevens & Co., Inc. SN 298,261. Pub. 12-10-68. Filed 5-15-68.

865,420. SPINLENE. Roselon Yarns, Inc. SN 298,866. Pub. 12-10-68. Filed 5-22-68.

865,421. 401. Owens-Corning Fiberglas Corporation. SN 299,478. Pub. 12-10-68. Filed 5-31-68.

Class 44 — Dental, Medical, and Surgical Appliances

865,422. ALUMOLAIN. Precious Metals Research Works, Inc. SN 290,975. Pub. 12-10-68. Filed 2-13-68.

865,423. FACIATONER. Faciatoner, Inc. SN 293,027. Pub. 12-10-68. Filed 3-12-68.

865,424. SELECTABLE AND DESIGN. Professional Specialties Co. SN 293,173. Pub. 12-10-68. Filed 3-13-68.

865,425. TRIFLEX. Baxter Laboratories, Inc. SN 296,006. Pub. 12-10-68. Filed 4-19-68.

865,426. HI-LIFE. Howmet Corporation. SN 298,126. Pub. 12-10-68. Filed 5-14-68.

865,427. TIK-N-TEL. Sunbeam Corporation. SN 298,642. Pub. 12-10-68. Filed 5-20-68.

865,428. OLYMPUS. Dahlberg Electronics, Inc. SN 299,004. Pub. 12-10-68. Filed 5-24-68.

865,429. FIWAY. Tony Velazquez. SN 299,510. Pub. 12-10-68. Filed 5-31-68.

865,430. ULTRA-CART. Black Dentaprises, Inc. SN 300,552. Pub. 12-10-68. Filed 6-17-68.

865,431. ENCORE. Encore, Inc. SN 301,729. Pub. 12-10-68. Filed 7-1-68.

865,432. LEDERTINE. American Cyanamid Company. SN 305,522. Pub. 12-10-68. Filed 8-20-68.

Class 45 — Soft Drinks and Carbonated Waters

865,433. WHAM. National Dairy Products Corporation. SN 281,213. Pub. 12-10-68. Filed 9-26-67.

865,434. MAYIM CHAIM. Great Lakes Beverages Corp. SN 285,544. Pub. 12-10-68. Filed 11-24-67.

865,435. NATIVE HEAD (DESIGN). Tahitian Products Co., Inc., d.b.a. Tahiti Joe Co. SN 291,788. Pub. 12-10-68. Filed 2-23-68.

Class 46 — Foods and Ingredients of Foods

865,436. WM WAREHOUSE MARKET ETC. AND DESIGN. Nash-Finch Company, d.b.a. Warehouse Market. SN 221,740. Pub. 5-24-66. Filed 6-22-65.

865,437. PAGE HOUSE. Lewpage Corporation. MULTIPLE CLASS (Classes 46 and 100). SN 242,417. Pub. 12-10-68. Filed 4-1-66.

865,438. UNCLE CHARLIE'S TENDER 'N JUICY EATIN' MEAT AND DESIGN. Uncle Charlie's Sausage Co., Inc. SN 256,158. Pub. 12-10-68. Filed 10-10-66.

865,439. ACCELER AGED AND DESIGN. Beverly E. Williams. SN 259,616. Pub. 12-10-68. Filed 11-28-66.

865,440. CHILI DELIGHT. Chicken Delight, Inc. SN 270,355. Pub. 12-10-68. Filed 5-1-67.

865,441. CHILI DELIGHT AND DESIGN. Chicken Delight, Inc. SN 271,224. Pub. 12-10-68. Filed 5-11-67.

865,442. STOCK CHAMP. Carnation Company. SN 274,046. Pub. 12-10-68. Filed 6-16-67.

865,443. BON TON. Hallock-Denton Company. SN 275,942. Pub. 12-10-68. Filed 7-13-67.

865,444. TOMMY TUCKER SINGS FOR HIS SUPPER AND DESIGN. Thomas & Howard Company, Incorporated. SN 282,838. Pub. 12-10-68. Filed 10-18-67.

865,445. SAFIE'S. Safie Bros. Farm Pickle Co., Inc. SN 284,736. Pub. 12-10-68. Filed 11-13-67.

865,446. ZABERERS. Rerebaz, Inc. SN 286,179. Pub. 12-10-68. Filed 12-4-67.

865,447. ANGELDOR. Società per Azioni Abele Bertozzi. SN 287,172. Pub. 12-10-68. Filed 12-18-67.

865,448. FLOR. J. M. Rodriguez & Co., Inc. SN 291,433. Pub. 12-10-68. Filed 2-19-68.

865,449. MC LAUGHLIN'S. National Dairy Products Corporation. SN 293,558. Pub. 12-10-68. Filed 3-18-68.

865,450. BIG TEE. The Harlee Company. SN 294,886. Pub. 12-10-68. Filed 4-4-68.

865,451. SENSE. Bristol-Myers Company. SN 296,397. Pub. 12-10-68. Filed 4-24-68.

865,452. 444. South Atlantic Sales Co. SN 297,319. Pub. 12-10-68. Filed 5-3-68.

865,453. EMPORASE. Dairyland Food Laboratories, Inc. SN 297,540. Pub. 12-10-68. Filed 5-7-68.

865,454. TRIMAID. Sweetheart Bakers, Inc. SN 297,616. Pub. 12-10-68. Filed 5-7-68.

865,455. RED RIVER VALLEY GOLD. Jiffy Fry, Inc. SN 297,784. Pub. 12-10-68. Filed 5-9-68.

865,456. VALLEY FARMS AND DESIGN. Jiffy Fry, Inc. SN 297,785. Pub. 12-10-68. Filed 5-9-68.

865,457. SUPER H. Wyandot Popcorn Company. SN 297,909. Pub. 12-10-68. Filed 5-10-68.

865,458. SO BIGS AND DESIGN. Gerber Products Company. SN 301,224. Pub. 12-10-68. Filed 6-24-68.

865,459. AC'CENT. International Minerals & Chemical Corporation. SN 301,492. Pub. 12-10-68. Filed 6-27-68.

Class 48 — Malt Beverages and Liquors

865,460. PARTY/PACK. Stegmaier Brewing Company. SN 285,588. Pub. 12-10-68. Filed 11-24-67.

Class 49 — Distilled Alcoholic Liquors

865,461. MR. BOSTON'S PROPER GIN. Mr. Boston Distiller Inc. SN 261,665. Pub. 12-10-68. Filed 12-29-66.

865,462. STOLICHNAYA. V/O Sojuzplodoimport. SN 269,237. Pub. 12-10-68. Filed 4-14-67.

865,463. ORIENTE. Schenley Distillers, Inc. SN 284,941. Pub. 7-2-68. Filed 11-15-67.

865,464. SAN MATIAS. Tequila San Matias de Jal., S.A., d.b.a. Tequila San Matias de Jalisco, S.A. SN 291,107. Pub. 12-10-68. Filed 2-14-68.

865,465. SYMBOL. United African Distilleries Anstalt. SN 293,420. Pub. 12-10-68. Filed 3-15-68.

Class 50 — Merchandise Not Otherwise Classified

865,466. MISCELLANEOUS DESIGN. H-C Industries, Inc. SN 287,013. Pub. 12-10-68. Filed 12-15-67.

865,467. MANULETT. Klaus Wichelhaus, d.b.a. the firm Klaus Wichelhaus. SN 299,390. Pub. 12-10-68. Filed 5-29-68.

865,468. TUFF-SPUN. Crown Rubber Company. SN 299,437. Pub. 12-10-68. Filed 5-31-68.

865,469. BIO-RACK. Jewel Aquarium Co., Inc. SN 304,439. Pub. 12-10-68. Filed 8-6-68.

Class 51 — Cosmetics and Toilet Preparations

865,223. (See Class 18 for this trademark.)

865,470. SHAPE-UP. Caryl Richards, Inc. SN 234,579. Pub. 6-7-66. Filed 12-14-65.

865,471. OUTDOOR MAN. Ar. Winarick, Inc. SN 251,580. Pub. 12-10-68. Filed 8-3-66.

865,472. QUELQUES FLEURS. Houbigant, Inc. SN 282,368. Pub. 12-10-68. Filed 10-12-67.

865,473. EXPERIENCE. Colgate-Palmolive Company. MULTIPLE CLASS (Classes 51 and 52). SN 287,331. Pub. 12-10-68. Filed 12-21-67.

865,474. FROSTAN. Clairol Incorporated. SN 288,787. Pub. 12-10-68. Filed 1-15-68.

865,475. DEW-GOODER LOTION. Clairol Incorporated. SN 288,789. Pub. 12-10-68. Filed 1-15-68.

865,476. FRONT AND CENTER. Luzier Incorporated. SN 289,997. Pub. 12-10-68. Filed 1-31-68.

865,477. HELLO, DOLLY AND DESIGN. C. J. Monette Associates, Inc. SN 292,704. Pub. 12-10-68. Filed 3-7-68.

865,478. RASCAL. Sharon Ray Corp. SN 292,723. Pub. 12-10-68. Filed 3-7-68.

865,479. ULTRA VIE. Luzier Incorporated. SN 292,798. Pub. 12-10-68. Filed 3-8-68.

865,480. GOOD CLEAN FUN. Bristol-Myers Company. SN 296,636. Pub. 12-10-68. Filed 4-26-68.

865,481. PRIVAID. American Home Products Corporation. SN 306,199. Pub. 12-10-68. Filed 8-29-68.

865,482. STARLIGHT. Lever Brothers Company. SN 306,537. Pub. 12-10-68. Filed 9-4-68.

Class 52 — Detergents and Soaps

865,473. (See Class 51 for this trademark.)

865,483. POETRY COLLECTION. Yardley of London, Inc. SN 287,984. Pub. 12-10-68. Filed 1-2-68.

865,484. LONDONDERRY. Yardley of London, Inc. SN 290,127. Pub. 12-10-68. Filed 2-1-68.

865,485. SOLVENT 26. Cities Service Oil Company. SN 293,476. Pub. 12-10-68, Filed 3-18-68.

865,486. SDU-145. Beecham Inc. SN 294,226. Pub. 12-10-68. Filed 3-27-68.

865,487. PATH FINDER. Bristol-Myers Company. SN 294,588. Pub. 12-10-68. Filed 4-1-68.

865,488. RELLAD. Wyandotte Chemicals Corporation. SN 295,069. Pub. 12-10-68. Filed 4-5-68.

865,489. HOUSE MATE. Zynolyte Products Company. SN 295,869. Pub. 12-10-68. Filed 4-17-68.

865,490. IN. Alcra Industries, Inc. SN 296,087. Pub. 12-10-68. Filed 4-22-68.

865,491. GOOD CLEAN FUN. Bristol-Myers Company. SN 296,637. Pub. 12-10-68. Filed 4-26-68.

865,492. SEARCH-LITES. Helene Curtis Industries, Inc. SN 296,655. Pub. 12-10-68. Filed 4-26-68.

865,493. BENDOLENE. Fischer - Davila Industries, Inc., d.b.a. Heinrich Fischer & Co. SN 296,680. Pub. 12-10-68. Filed 4-26-68.

865,494. KANT MISS. Tagrn Corporation. SN 296,887. Pub. 12-10-68. Filed 4-29-68.

865,495. MAGNA. Tinolan Service Associates, Inc. SN 296,893. Pub. 12-10-68. Filed 4-29-68.

865,496. SCOTCH-BRITE. Minnesota Mining and Manufacturing Company. SN 303,648. Pub. 12-10-68. Filed 7-26-68.

865,497. 3M. Minnesota Mining and Manufacturing Company. SN 303,651. Pub. 12-10-68. Filed 7-26-68.

865,498. POWDERED SILK. Powdered Silk Mfr. Co., Inc. SN 306,314. Pub. 12-10-68. Filed 8-30-68.

Service Marks

Class 100 — Miscellaneous

865,437. (See Class 46 for this trademark.)

865,499. THE SCANDA HOUSE ETC. AND DESIGN. Sveden House International, Inc., by change of name from Sveden House Developers, International, Inc. SN 245,630. Pub. 12-10-68. Filed 5-12-66.

865,500. BEAUTY AT BERGDORF'S. Bergdorf & Goodman Company. SN 269,395. Pub. 12-10-68. Filed 4-18-67.

865,501. PEP AND DESIGN. Better Management Services, Inc. SN 281,763. Pub. 12-10-68. Filed 10-4-67.

865,502. HI HILTON INTERNATIONAL. Hilton International Co. SN 289,402. Pub. 12-10-68. Filed 1-23-68.

865,503. INSTA-TRIM. Figure Trim, Inc., d.b.a. Insta-Trim. SN 289,496. Pub. 12-10-68. Filed 1-24-68.

865,504. DESIGN OF ELF. Special Promotions, Inc. SN 290,906. Pub. 12-10-68. Filed 2-12-68.

865,505. THE PEPPER MILL AND DESIGN. Pepper Mill Associates, Inc. SN 300,960. Pub. 12-10-68. Filed 6-20-68.

865,506. MB AND DESIGN. Maul Bros. Inc. MULTIPLE CLASS (Classes 100 and 103). SN 301,809. Pub. 12-10-68. Filed 7-2-68.

865,507. HARRY M. STEVENS. Harry M. Stevens, Inc. SN 305,352. Pub. 12-10-68. Filed 8-16-68.

865,508. MISCELLANEOUS DESIGN. Heritage House Restaurants, Inc. SN 306,443. Pub. 12-10-68. Filed 9-3-68.

865,509. GOTEL. The New Yorker Hotel Corporation. SN 306,856. Pub. 12-10-68. Filed 9-9-68.

Class 101 — Advertising and Business

865,510. WM WAREHOUSE MARKET ETC. AND DESIGN. Nash-Finch Company, d.b.a. Warehouse Market. SN 221,772. Pub. 5-24-66. Filed 6-22-65.

865,511. TALENTED TEEN SEARCH AND DESIGN. George F. Koehnke, d.b.a. Talented Teen Foundation. SN 263,275. Pub. 12-10-68. Filed 1-25-67.

865,512. MARY'S SUNSHINE DRIVE-THRU DAIRIES AND DESIGN. Mary's Sunshine Dairies, Inc. SN 278,810. Pub. 12-10-68. Filed 8-22-67.

865,513. WHERE SERVICE IS FIRST. Advo-System, Inc. SN 284,962. Pub. 12-10-68. Filed 11-16-67.

865,514. CUC. Computer Usage Company, Inc. SN 286,600. Pub. 12-10-68. Filed 12-11-67.

865,515. VICTOR TEMPORARIES. Victor Comptometer Corporation. SN 287,198. Pub. 12-10-68. Filed 12-18-67.

865,516. THE BOOTLEG PLACE. Clark Shoe Company, Inc. SN 287,521. Pub. 12-10-68. Filed 12-26-67.

865,517. THE GAME WITHOUT A NAME. Nan Miller & Associates, Inc. SN 287,932. Pub. 12-10-68. Filed 1-2-68.

865,518. RKR (DESIGN). Ronnie Ketchel, d.b.a. Ronnie Ketchel Research. SN 290,176. Pub. 12-10-68. Filed 2-2-68.

865,519. MISCELLANEOUS DESIGN. 1975 World Freedom Fair, Incorporated. SN 295,405. Pub. 12-10-68. Filed 4-11-68.

865,520. ALCO. The A. L. Duckwall Stores Company. SN 295,627. Pub. 12-10-68. Filed 4-15-68.

865,521. THE INTERDEPENDENCE OF MAN. 1975 World Freedom Fair, Incorporated. SN 298,090. Pub. 12-10-68. Filed 5-14-68.

865,522. AIM. Automated Information Management, Inc. SN 301,672. Pub. 12-10-68. Filed 7-1-68.

Class 102 — Insurance and Financial

865,523. FAMILY GROUP STATUE (DESIGN). The Independent Life and Accident Insurance Company. SN 306,843. Pub. 12-10-68. Filed 9-9-68.

865,524. INDEPENDENT LIFE. The Independent Life and Accident Insurance Company. SN 306,980. Pub. 12-10-68. Filed 9-9-68.

Class 103 — Construction and Repair

865,506. (See Class 100 for this trademark.)

865,525. GILTECH. Giltech Corporation. SN 277,163. Pub. 12-10-68. Filed 7-31-67.

865,526. HDO PRODUCTIONS. HDO Productions, Inc. SN 301,129. Pub. 12-10-68. Filed 6-24-68.

Class 105 — Transportation and Storage

865,527. FUN IN THE SUN SHOPPERS' SPECIAL. Fun in the Sun Tours, Inc. SN 287,643, Pub. 12-10-68. Filed 12-27-67.

865,528. MITCO. Modern Intermodal Traffic Corp. SN 288,843. Pub. 12-10-68. Filed 1-15-68.

865,529. COMMONWHEEL CORPORATION AND DESIGN. Commonwheel Corporation. SN 294,918. Pub. 12-10-68. Filed 4-4-68.

Class 106 — Material Treatment

865,530. RI (DESIGN). Michael J. Raab, d.b.a. Raab Industries. SN 273,976. Pub. 12-10-68. Filed 6-15-67.

Class 107 — Education and Entertainment

865,531. CHARGING ELEPHANT (DESIGN). The Madison Women's Republican Club. SN 255,336. Pub. 12-10-68. Filed 9-28-66.

865,532. CBSI AND DESIGN. Statistical Tabulating Corporation. SN 285,682. Pub. 12-10-68. Filed 11-27-67.

865,533. GORDON ROSE AND THE GENERATION GAP. Hero International Corp., d.b.a. Generation Gap Productions. SN 306,059. Pub. 12-10-68. Filed 8-27-68.

Collective Membership Marks

Class 200

865,534. MISCELLANEOUS DESIGN. CUNA International, Inc. SN 270,359. Pub. 12-10-68. Filed 5-1-67.

865,535. JCI. Junior Chamber International, Inc. SN 275,760. Pub. 12-10-68. Filed 7-11-67.

Certification Mark

Class A — Goods

865,536. FINER THAN FAMOUS. Washington State Potato Commission. SN 293,998. Pub. 12-10-68. Filed 3-25-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 34 — Heating, Lighting, and Ventilating Apparatus

865,537. NMS Industries, Inc., New York, N.Y. SN 297,147. Filed P.R. 5-2-68; Am. S.R. 11-22-68.

ROSSINI

For Hibachi Barbecue Stoves (Int. Cl. 11).
First use March 1966.

Class 39 — Clothing

865,538. Volk Bros. Company, Dallas, Tex. SN 272,123. Filed P.R. 5-22-67; Am. S.R. 11-7-68.

HILDE

For Children's Ready-To-Wear and Sportswear—Namely, Coats, Dresses, Pants, Skirts, Shirts, Sweaters, and Shoes (Int. Cl. 25).
First use Aug. 11, 1966, on children's coats.

865,539. Excello Cravats, Inc., New York, N.Y. SN 280,034. Filed P.R. 9-11-67; Am. S.R. 11-12-68.

TIFFANY COLLECTION

For Neckties (Int. Cl. 25).
First use Aug. 22, 1967.

865,540. Champ Hats, Inc., New York, N.Y. SN 288,937. Filed P.R. 1-16-68; Am. S.R. 11-21-68.

FAIRFAX

For Men's and Boys' Hats and Caps (Int. Cl. 25).
First use Nov. 14, 1967.

865,541. Thoroughly Modern, Inc., New York, N.Y. SN 291,206. Filed P.R. 2-15-68; Am. S.R. 11-12-68.

THOROUGHLY MODERN

For Ladies' Apparel—Namely, Suits, Shirts, Blouses, Skirts, Pants, Shorts, and Skirt and Blouse or Shorts and Blouse Sets (Int. Cl. 25).
First use Oct. 25, 1967.

865,542. Melbo Clothing Incorporated, Higashiku, Osaka, Japan. SN 293,542. Filed P.R. 3-18-68; Am. S.R. 11-21-68.

DressWell

Owner of Japanese Reg. No. 626,991, dated Oct. 18, 1963.
For Men's and Women's Suits (Int. Cl. 25).

Class 50 — Merchandise Not Otherwise Classified

865,543. Keith Clark Inc. (Puerto Rican corporation), New York, N.Y., assignee of Keith Clark Inc. (New York corporation), New York, N.Y. SN 260,319. Filed P.R. 12-8-66; Am. S.R. 9-3-68.

LOK·LETT'RS

For Boxes of Letters for Use in Making Nameplates (Int. Cl. 16).
First use Nov. 21, 1966.

TRADEMARK REGISTRATIONS RENEWED

32,210. "HOLOCAIN" ETC. AND DESIGN. Cl. 18 (Int. Cl. 5). 12-6-1898.
69,986. "PHONO-ELECTRIC" AND REPRESENTATION OF A SPOOL OF WIRE. Cl. 21 (Int. Cl. 9). 7-21-08.
69,988. "PHONO-ELECTRIC" AND REPRESENTATION OF A SPOOL OF WIRE. Cl. 14 (Int. Cl. 6). 7-21-08.
70,529. MAGIC-HOODOO. Cl. 6 (Int. Cl. 5). 9-8-08.
70,689. THE MONTSERRAT. Cl. 45 (Int. Cl. 32). 9-22-08.
71,217. COMET. Cl. 2 (Int. Cl. 16). 11-10-08.
242,402. CONSUL. Cl. 27 (Int. Cl. 14). 5-22-28.
244,843. "NEW ZEALAND" AND REPRESENTATION OF A LEAF. Cl. 46 (Int. Cl. 29). 7-31-28.
248,626. DETRITOR. Cl. 23 (Int. Cl. 7). 10-23-28.
249,344. FORD. Cl. 10 (Int. Cl. 1). 11-13-28.
249,502. JUBILEE. Cl. 40 (Int. Cl. 25). 11-13-28.
249,644. LE PIRATE. Cl. 51 (Int. Cl. 3). 11-20-28.
250,072. FORD. Cl. 33 (Int. Cl. 21). 11-27-28.
250,176. WASHINGTON PARK. Cl. 1 (Int. Cl. 31). 12-4-28.
250,265. LEVI'S. Cl. 39 (Int. Cl. 25). 12-4-28.
250,333. FOSALSIL. Cl. 1 (Int. Cls. 1, 3, 4, 6, 17, and 19). 12-4-28.
250,429. B. ALTMAN & CO. Cls. 39 and 42 (Int. Cls 24, 26, and 27). 12-11-28.
250,435. KWIKSOLV. Cl. 52 (Int. Cl. 3). 12-11-28.
250,471. DUCHESS. Cl. 44 (Int. Cl. 10). 12-11-28.
250,633. ELASTOPLAST. Cl. 44 (Int. Cl. 5). 12-11-28.
250,913. "PAGE" ETC. AND DESIGN. Cl. 46 (Int. Cls. 30 and 31). 12-18-28.
251,058. STAR OF THE EAST. Cl. 46 (Int. Cl. 30). 12-25-28.
252,399. MAIDENETTE. Cl. 39 (Int. Cl. 25). 2-5-29.
252,478. ODO-RO-NO. Cl. 51 (Int. Cls. 3 and 5). 2-5-29.
254,201. THIONEX. Cl. 6 (Int. Cl. 1). 3-12-29.
254,204. NEOZONE. Cl. 6 (Int. Cl. 1). 3-12-29.
254,429. JACK FROST. Cl. 43 (Int. Cl. 23). 3-26-29.
255,630. SILVER NIP. Cl. 46 (Int. Cl. 32). 4-30-29.
256,642. ACOUSTOLIGHT. Cl. 16 (Int. Cl. 2). 5-21-29.
440,638. BRONCO. Cl. 21 (Int. Cl. 9). 9-14-48.
441,019. GENSE. Cl. 28 (Int. Cls. 8 and 14). 10-19-48.
441,179. JAMES VICKS. Cl. 1 (Int. Cl. 31). 10-26-48.
441,478. SANI-TOP. Cl. 32 (Int. Cl. 20). 11-30-48.
441,550. EISEN-HEISS. Cl. 16 (Int. Cl. 2). 12-7-48.
441,672. SPORTSTER. Cl. 39 (Int. Cl. 25). 12-28-48.
441,806. DENDROL. Cl. 6 (Int. Cl. 5). 1-4-49.
441,922. WINK. Cl. 45 (Int. Cl. 32). 1-25-49.
442,178. MAGCOA. Cl. 14 (Int. Cls. 1 and 6). 3-8-49.
442,260. BULLS EYE AND DESIGN. Cl. 22 (Int. Cl. 28). 3-15-49.
442,287. FRUITOSYNTH. Cl. 46 (Int. Cl. 30). 3-22-49.
442,387. CORSETVELOPE. Cl. 2 (Int. Cl. 16). 4-5-49.
442,388. TIEVELOPE. Cl. 2 (Int. Cl. 16). 4-5-49.
442,389. SHIRTVELOPE. Cl. 2 (Int. Cl. 16). 4-5-49.

442,737. DITZLER AND DESIGN. Cl. 16 (Int. Cls. 2, 3, and 19). 5–24–49.
502,279. DETRICK. Cl. 34 (Int. Cl. 11). 9–21–48.
503,314. RE NEW. Cl. 6 (Int. Cl. 1). 10–19–48.
503,483. ZYROX. Cl. 1 (Int. Cl. 1). 10–26–48.
503,809. COFFE-COLA. Cl. 45 (Int. Cl. 32). 11–9–48.
504,013. FORHAN'S. Cl. 51 (Int. Cl. 3). 11–16–48.
504,127. TWILIGHT COMFORTS. Cl. 39 (Int. Cl. 25). 11–23–48.
504,263. TRU-FLATE. Cl. 26 (Int. Cl. 9). 11–30–48.
504,278. P & W. Cl. 26 (Int. Cl. 9). 11–30–48.
504,299. AMERICAN HAMMERED. Cl. 35 (Int. Cl. 7). 11–30–48.
504,318. SCOTCH SOAP. Cl. 4 (Int. Cl. 3). 11–30–48.
504,561. HEL-COR. Cl. 13 (Int. Cl. 6). 12–7–48.
504,572. TRU-FLATE. Cl. 13 (Int. Cls. 6 and 11). 12–7–48.
504,602. CARLTON WARE AND DESIGN. Cl. 13 (Int. Cls 11 and 21). 12–7–48.
504,829. CATERPILLAR. Cl. 21 (Int. Cl. 9). 12–14–48.
504,913. EBONETTE. Cl. 51 (Int. Cl. 3). 12–21–48.
504,969. KARNAN. Cl. 12 (Int. Cl. 19). 12–21–48.
505,027. CHANCE. Cl. 12 (Int. Cls. 6 and 19). 12–21–48.
505,923. TOTEBRUSH. Cl. 50 (Int. Cl. 21). 1–25–49.
505,985. LIPTON. Cl. 46 (Int. Cls. 29 and 30). 1–25–49.
506,435. VITAMINERALS. Cl. 18 (Int. Cl. 5). 2–8–49.
506,458. FIRSEAL. Cl. 16 (Int. Cl. 2). 2–8–49.
506,459. KILRUST. Cl. 16 (Int. Cl. 2). 2–8–49.
506,465. FROZEN CHAMPAGNE. Cl. 51 (Int. Cl. 3). 2–8–49.
506,466. GRAND GESTURE. Cl. 51 (Int. Cl. 3). 2–8–49.
506,690. YOUNGSTAR. Cl. 22 (Int. Cl. 28). 2–15–49.
506,811. HILLVIEW. Cl. 46 (Int. Cl. 31). 2–22–49.
506,815. ALBEMARLE. Cl. 46 (Int. Cl. 30). 2–22–49.
506,925. LIQUOR SEDANS. Cl. 18 (Int. Cl. 5). 2–22–49.
507,684. POLAR GRIP AND DESIGN. Cl. 35 (Int. Cl. 12). 3–15–49.
507,791. TALON. Cl. 25 (Int. Cl. 6). 3–22–49.
508,029. KLONDIKE. Cl. 46 (Int. Cl. 29). 3–29–49.
509,924. MODERN MACHINE SHOP. Cl. 38 (Int. Cl. 16). 3–17–49.
509,939. ENGLISH OVALS. Cl. 17 (Int. Cl. 34). 3–17–49.
509,942. LYON'S OWN. Cl. 17 (Int. Cl. 34). 5–17–49.
510,056. PAULA BROOKS. Cl. 39 (Int. Cl. 25). 5–24–49.
510,103. L AND DESIGN. Cl. 32 (Int. Cl. 20). 5–24–49.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

804,320. "ST. ANDREWS" BY STRATFORD AND DESIGN. Cl. 39. 2–22–66.

Section 8

The following registrations issued Jan. 8, 1963

743,192. DAPONITE. Cl. 1.
743,197. CHEMISTRONIC. Cl. 2.
743,200. LUG A TURE AND DESIGN. Cl. 3.
743,205. FRACTEX. Cl. 6.
743,213. AEROZINE. Cl. 6.
743,219. DURA-SPHERE. Cl. 12.
743,221. U.S. UNDERGROUND SECURITY SURVIVAL SHELTER AND DESIGN. Cl. 12.
743,223. PAN L CEL. Cl. 12.
743,224. RIGITRIM. Cl. 12.
743,231. PRE STOP AND DESIGN. Cl. 12.
743,232. SPACE SET. Cl. 12.
743,233. AD-A-PAC. Cl. 12.
743,235. GISTGATE. Cl. 12.
743,236. CERFACE. Cl. 12.
743,239. ALOHA. Cl. 12.
743,240. SUN SHOWER. Cl. 12.
743,241. KINGSTONE. Cl. 12.
743,242. PARK AVENUE. Cl. 12.
743,244. POLAPLEX. Cl. 12.
743,245. SALIRPRE. Cl. 12.
743,246. DALMISCAN. Cl. 13.
743,253. EP AND DESIGN. Cl. 13.
743,256. WALK-OVER. Cl. 13.
743,258. CROS-OVER. Cl. 13.
743,260. PORTAGE. Cl. 13.
743,261. TI AND DESIGN. Cl. 14.
743,276. QUALI-CHEM. Cl. 15.
743,279. 7 SEAS AND DESIGN. Cl. 16.
743,280. DURADEIL. Cl. 16.
743,281. REL-TILE. Cl. 16.
743,282. STROMEX. Cl. 16.
743,292. MILHEPARINE. Cl. 18.
743,295. SAFEWAY AND DESIGN. Cl. 18.
743,298. MORN-N-AFTER AND DESIGN. Cl. 18.
743,299. PROFORM. Cl. 18.
743,303. DAFFODIL. Cl. 19.
743,306. WRIGHT. Cl. 20.
743,308. RUBEROID MATICO. Cl. 20.
743,309. GOLFER–48. Cl. 21.
743,312. UED AND DESIGN. Cl. 21.
743,313. UED. Cl. 21.
743,316. WHERE RESEARCH IS THE KEY TO TOMORROW. Cl. 21.
743,317. ROTOSTAT. Cl. 21.
743,318. SCANITRAN. Cl. 21.
743,324. VALULITE. Cl. 21.
743,325. SUTTLECOM. Cl. 21.
743,326. POWERMETRIC. Cl. 21.
743,327. WESIX AND DESIGN. Cl. 21.
743,335. SKI-ROCKET. Cl. 22.
743,336. SNOW-ROCKET. Cl. 22.
743,337. HIT THE MOON. Cl. 22.
743,341. SWINGMASTER. Cl. 22.
743,342. UNISPORT AND DESIGN. Cl. 22.
743,343. UNISPORT AND DESIGN. Cl. 22.
743,346. DRYEX. Cl. 23.
743,347. TA. Cl. 23.
743.348. HYDRACLONE. Cl. 23.
743,359. SHARK-O-MATIC "800." Cl. 23.
743,360. SPRAWLER. Cl. 23.
743,366. GAY BLADES. Cl. 23.
743,367. FELT-FAST. Cl. 23.
743,369. T AND DESIGN. Cl. 23.
743,373. ECONO–20. Cl. 24.
743,374. HERCULES. Cl. 24.
743,377. HANDI-DRY AND DESIGN. Cl. 24.
743,379. LOK-'N-LOK. Cl. 25.
743,382. UED AND DESIGN. Cl. 26.
743,383. UED. Cl. 26.
743,384. WHERE RESEARCH IS THE KEY TO TOMORROW. Cl. 26.
743,386. HYDEL. Cl. 26.
743,388. ROTOSTAT. Cl. 27.
743,390. CRESCENDO. Cl. 27.
743,398. DESIGN OF TWO ARROWS JOINED TOGETHER. Cl. 28.
743,404. PATOIR. Cl. 28.
743,413. G AND DESIGN. Cl. 28.
743,417. 14K AND DESIGN. Cl. 28.
743,418. RAYTEX. Cl. 29.
743,420. LIP-O-LATOR. Cl. 29.
743,423. FA-CON. Cl. 31.
743,424. MC ALPINE PURE AND DESIGN. Cl. 31.
743,430. SHOWCASE. Cl. 32.
743,431. DURADEIL. Cl. 32.
743,442. ACE HIGH. Cl. 34.
743,444. MARY MAUKSCH. Cl. 34.
743,447. ROYAL GOLD BURRO. Cl. 35.
743,449. PARA-SEAL. Cl. 35.
743,453. MEMOSCRIBER. Cl. 36.
743,454. LESCAY. Cl. 36.
743,457. TEMPWOOD V. Cl. 36.
743,460. CARICATURE. Cl. 36.
743,461. STRAND. Cl. 36.
743,462. WHITING'S WOVEN LINEN. Cl. 37.
743,463. LOIS. Cl. 37.
743,464. VASSAR. Cl. 37.
743,465. WHEN YOU THINK OF WRITING, THINK OF WHITING. Cl. 37.
743,466. SHUR-RAP. Cl. 37.
743,469. CHROME–CALS. Cl. 38.
743,473. BUTTONEERS. Cl. 38.
743,475. BOWLERS JOURNAL. Cl. 38.
743,481. DEMI-PETITEMAKER AND DESIGN. Cl. 39.
743,482. A WEATHER-WATCHER WEIGHT. Cl. 39.
743,484. HURLINGHAM ALL SILK BY EXCELLO. Cl. 39.

743,485. PEPPERMINT TWIST. Cl. 39.
743,487. HOOK 'N HUG. Cl. 39.
743,488. GLENVILLE. Cl. 39.
743,491. JILLY TOGS AND DESIGN. Cl. 39.
743,493. MY LITTLE TOT AND DESIGN. Cl. 39.
743,494. ADAM AND DESIGN. Cl. 39.
743,498. TUF-TEAR. Cl. 42.
743,500. LASTILEN. Cl. 42.
743,502. PERMATIZED. Cl. 42.
743,503. CASTLE GARDEN. Cl. 42.
743,505. ULTRA-MATTE. Cl. 42.
743,507. HUNCH MAKER. Cl. 44.
743,508. FOREGGER. Cl. 44.
743,510. CARDIACTIVATOR. Cl. 44.
743,513. SPINALETTE. Cl. 44.
743,514. ETHERON. Cl. 44.
743,515. AVALON. Cl. 45.
743,524. RIVALISON. Cl. 46.
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743,566. VALVE LIFE AND DESIGN. Cl. 52.
743,573. "MINUTE MYSTERIES." Cl. 101.
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297,749. REPOSE. Cl. 32. 9–27–32.
532,863. FARM WAGON. Cl. 46. 10–31–50.

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518,485. HIAWATHA. Cl. 16. 12–6–49. Chicago Paints, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 22 and 23 "; the figure is fanciful" is deleted, and the drawing is amended to appear:

HIAWATHA

562,075. WHITE SEAL. Cl. 16, 7–22–62. Chicago Paints, Inc., Chicago, Ill. Amended to appear:

WHITE SEAL

784,493. DUBLINK. Cl. 41. 2–2–65. Abaco Fabrics Corp., New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

823,634. VISI-TROL AND DESIGN. Cl. 23. 2–7–67. Visitrol Engineering Company, Inc., Detroit, Mich. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

843,757. CYTEC. Cl. 44. 2–6–68. Nuclear Research Associates, Inc., Long Island City, N.Y. Corrected: In the statement, column 1, line 1, "Maryland" should be deleted and *Delaware* should be inserted.

845,739. CUNIP. Cl. 14. 3–12–68. Handy & Harman, New York, N.Y. Corrected: In the statement, column 2, line 2, "Phosphate" should be releted and ***phosphorus*** should be inserted.

856,037. GIRL-LAND. Cl. 39. 9–3–68. Bobbie Brooks, Incorporated, by merger from Max Siegel Associates, Inc., New York, N.Y. Corrected: In the statement, column 1, lines 1 through 3 should be deleted and *Bobbie Brooks, Incorporated (Ohio corporation) 3830 Kelley Ave., Cleveland, Ohio 44114 by merger from* should be inserted.

859,954. KEYCAST. Cl. 15. 11–12–68. Kerns United Corporation, assignee of Keystone Lubricating Company, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Pennsylvania* should be inserted.

860,468. 4 POINT 1. Cl. 22. 11–19–68. The Carlton Tyre Saving Company Limited, Saffron Walden, Essex, England. Corrected: In the statement, column 1, line 1, "Carlson" should be deleted and *Carlton* should be inserted.

860,469. 4 POINT 3. Cl. 22. 11–19–68. The Carlton Tyre Saving Company Limited, Saffron Walden, Essex, England. Corrected: In the statement, column 1, line 1, "Carlson" should be deleted and *Carlton* should be inserted.

860,742. OILKOTE. Cl. 15. 11–19–68. Oils, Incorporated, Chicago, Ill. Corrected: In the statement, column 2, line 3, "1957" should be deleted and *1967* should be inserted.

860,917. VERPLEX. Cl. 21. 11–26–68. The Verplex Company, Essex, Conn. Corrected: In the statement, column 1, line 1, "New Jersey" should be deleted and *Connecticut* should be inserted.

860,988. MICROFLASH. Cl. 26. 11–26–68. EG & G, Inc., Bedford, Mass. Corrected: In the statement, column 2, line 5, "blanks" should be deleted and *banks* should be inserted.

862,172. HOT ROD INDUSTRY NEWS. Cl. 38. 12–17–68. Petersen Publishing Company, Los Angeles, Calif. Corrected:

HOT ROD INDUSTRY NEWS

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

503,974. BOXER AND DESIGN. Cl. 52. O. W. Meeker, doing business as Industrial Chemical Cleaner Co. 11–16–48. New Cert. Sec. 7(c) to Industrial Chemical Cleaner Inc., Houston, Tex.

794,661. MARBLEMOLD. Cl. 13. Summit Industries. 8–24–65. New Cert. Sec. 7(c) to Kinkead Industries Incorporated, Chicago, Ill.

825,295. ULTRACEL. Cl. 31. Envirco, Inc., by change of name from Comfort Air Service Company, Inc. 3–7–67. New Cert. Sec. 7(c) to Cambridge Filter Corporation, Syracuse, N.Y.

854,751. INITOL. Cl. 46. Mar-Ko Company. 8–13–68. New Cert. Sec. 7(c) to Mark Morris Associates, Topeka, Kans.

854,752. ANOREK. Cl. 46. Mar-Ko Company. 8–13–68. New Cert. Sec. 7(c) to Mark Morris Associates, Topeka, Kans.

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Excello Cravats, Inc., New York, N.Y. 865,539. Cl. 39.
FMC Corp., from Food Machinery & Chemical Corp., New York, N.Y. 743,192, canc. Cl. 1.
Fabriek Van Chemische Producten Vondelingen-Plaat N.V., Rotterdam, Netherlands. 865,149, pub. 12–10–68. Cl. 1.
Faciatoner, Inc., Oklahoma City, Okla. 865,423, pub. 12–10–68. Cl. 44.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. 865,144, pub. 11–19–68. Cl. 1.
Farbkerke, vormals Meister Lucius & Bruning, Hochst-on-the-Main, Germany, to Sterling Drug Inc., New York, N.Y. 32,210, ren. 2–25–69. Cl. 18.
Farmers Regional Cooperative, Fort Dodge, Iowa. 865,179, pub. 12–10–68. Cl. 7.
Farmington Industries, Inc., St. Louis, Mo. 865,388, pub. 12–10–68. Cl. 39.
Fashionaire Hosiery, Inc., Kansas City, Mo. 865,380, pub. 12–10–68. Cl. 39.

Federal Auto Products Co., Inc., d.b.a. Everhot Products Co., Chicago, Ill. 865,241, pub. 12–10–68. Cl. 19.
Fieldcrest Mills, Inc., Eden, N.C. 865,415, pub. 12–10–68. Cl. 42.
Figure Trim, Inc., d.b.a. Insta-Trim, South Bend, Ind. 865,503, pub. 12–10–68. Cl. 100.
Filmex Corp., Mahanoy, Pa. 865,148, pub. 12–10–68. Cl. 1.
Firestone Tire & Rubber Co., The, Akron, Ohio. 507,684, ren. 2–25–69. Cl. 35.
Fischer-Davila Industries, Inc., d.b.a. Heinrich Fischer & Co., Cincinnati, Ohio. 865,493, pub. 12–10–68. Cl. 52.
Fischer, Heinrich, & Co. : *See—*
    Fischer-Davila Industries, Inc.
Fitzpatrick Co., The, Elmhurst, Ill. 865,292, pub. 12–10–68. Cl. 23.
Fleer Corp., Philadelphia, Pa. 865,367, pub. 12–10–68. Cl. 38.
Florasynth, Inc. : *See—*
    Florasynth Laboratories, Inc.
Florasynth Laboratories, Inc., New York, to Florasynth, Inc., Bronx, N.Y. 442,287, ren. 2–25–69. Cl. 46.
Florida Fruit Canners, Inc., to Ben Hill Griffin, Inc., Frostproof, Fla. 255,630, ren. 2–25–69. Cl. 46.
Food Machinery & Chemical Corp. : *See—*
    FMC Corp.
Food Marketers : *See—*
    Kelly, Duncan, Frozen Food Sales Service.
Ford Motor Co., Dearborn, Mich. 249,344, ren. 2–25–69. Cl. 10.
Ford Motor Co., Dearborn, Mich. 250,072, ren. 2–25–69. Cl. 33.
Foregger Co., Inc., The, Roslyn Heights, N.Y. 743,508, canc. Cl. 44.
Forray, Fred A., d.b.a. Seven Seas Supply Co., New York, N.Y. 743,279, canc. Cl. 16.
Foster, Benjamin, Co., Philadelphia, Pa. 865,186, pub. 12–10–68. Cl. 12.
Fouke Co., The, from Fouke Fur Co., Greenville, S.C. 865,151–2, pub. 12–10–68. Cl. 1.
Fouke Fur Co. : *See—*
    Fouke Co., The.
Fox Paper Co., The, Cincinnati, Ohio. 865,352, pub. 12–10–68. Cl. 37.
Freeman, H., & Son, Inc., Philadelphia, Pa. 865,375, pub. 12–10–68. Cl. 39.
Fullview Mirror Co., San Francisco, from Roy Winkelmann Racing of America, Inc., South El Monte, Calif. 865,233, pub. 8–6–68. Cl. 19.
Fun in the Sun Tours, Inc., Abington, Pa. 865,527, pub. 12–10–68. Cl. 105.
Fyne Machinery & Engineering Ltd., London, England. 865,287, pub. 12–10–68. Cl. 23.
Galligaskins, Inc., Reading, Pa. 865,373, pub. 12–10–68. Cl. 39.
Gardner Publications, Inc., Cincinnati, Ohio. 509,924. ren 2–25–69. Cl. 38.
Geigy Chemical Corp., Ardsley, N.Y. 865,168, pub. 6–25–68. Cl. 6.
Gem Die & Mold Co., Chicago, Ill., to Vistron Corp., Cleveland, Ohio. 505,923, ren. 2–25–69. Cl. 50.
General Electric Co., Schenectady, N.Y. 865,165, pub. 12–10–68. Cl. 5.
General Electric Co., Schenectady, N.Y. 865,189, pub. 12–10–68. Cl. 12.
General Electric Co., Schenectady, N.Y. 865,205, pub. 12–10–68. Cl. 14.
General Motors Corp., Detroit, Mich. 743,276, canc. Cl. 15.
General Refractories Co., Philadelphia, Pa. 865,187, pub. 12–10–68. Cl. 12.
General Time Corp., New York, N.Y. 743,390, canc. Cl. 27.
Generation Gap Productions : *See—*
    Hero International Corp.
Genesco Inc., Nashville, Tenn. 865,390, 12–10–68. Cl. 39.
Gerber Products Co., Fremont, Mich. 865,458, pub. 12–10–68. Cl. 46.
Gerrit Van Delden & Co., Gronau, Westphalia, Germany. 865,403, pub. 10–1–68. Multiple Class (Classes 42 and 43).
Gerts-Lumbard & Co., Chicago, Ill. 743,418, canc. Cl. 29.
Geryl Co., Ltd., New York, N.Y. 865,211, pub. 12–10–68. Cl. 17.
Giant Umbrella Co., Inc., New York, N.Y. 865,402, pub. 12–10–68. Cl. 41.
Giltech Corp., St. Paul, Minn. 865,525, pub. 12–10–68. Cl. 103.
Gist, Madeline K. : *See—*
    Pre-Stop Moisture Control, Inc.
Gist, Thomas E., Gerald, Mo. 743,235, canc. Cl. 12.
Gladding, Lynn S., Penfield, N.Y. 865,356, pub. 12–10–68. Cl. 37.
Glenville Ltd., New York, N.Y. 743,488, canc. Cl. 39.
Gogolick, N., & Son, Inc., Cleveland, Ohio. 743,413, canc. Cl. 28.
Goodrich, Elvin R., d.b.a. Goodrich Maintenance Supply Co., Oklahoma City, Okla. 743,564, canc. Cl. 52.
Goodrich Maintenance Supply Co. : *See—*
    Goodrich, Elvin R.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 865,336, pub. 12–10–68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 865,340–5, pub. 12–10–68. Cl. 35.
Graybar Electric Co., Inc., New York, N.Y. 743,324, canc. Cl. 21.
Graybar Electric Co., Inc., New York, N.Y. 743,326, canc. Cl. 21.
Great Lakes Beverages Corp., Brooklyn, N.Y. 865,434, pub. 12–10–68. Cl. 45.

Griffin, Ben, Hill, Inc. : *See—*
    Florida Fruit Canners, Inc.
Grossman Music Corp., Cleveland, Ohio. 865,348, pub. 12–10–68. Cl. 36.
Grosvenor, C. A., Shoe Co., Worcester, Mass., to Tru-Stitch Moccasin Corp., Malone, N.Y. 504,127, ren. 2–25–69. Cl. 39.
Gunson, R. W., (Seeds) Ltd., London, England. 743,346, canc. Cl. 23.
HDO Productions, Inc., Highland Park, Ill. 865,526, pub. 12–10–68. Cl. 103.
H-C Industries, Inc., Crawfordsville, Ind. 865,466, pub. 12–10–68. Cl. 50.
H & P Products, Inc., White Plains, N.Y. 743,377, canc. Cl. 24.
Haft & Co., Ltd., New York, N.Y. 865,413, pub. 12–10–68. Cl. 42.
Hallmark Cards, Inc., Kansas City, Mo. 743,473, canc. Cl. 38.
Hallock-Denton Co., Newark, N.J. 865,443, pub. 12–10–68. Cl. 46.
Handy & Harman, New York, N.Y. 845,739, cor. Cl. 14.
Harlee Co., The, Chicago, Ill. 865,450, pub. 12–10–68. Cl. 46.
Harper Mfg. Co., East Point, Ga. 865,405, pub. 10–15–68. Cl. 42.
Hendon Construction Co., Little Ferry, N.J. 865,182, pub. 12–10–68. Cl. 12.
Henson-Kickernick, Inc., Greenville, Tex. 865,393, pub. 12–10–68. Cl. 39.
Heritage House Restaurants, Inc., Springfield, Ill. 865,508, pub. 12–10–68. Cl. 100.
Hero International Corp., d.b.a. Generation Gap Productions, New York, N.Y. 865,533, pub. 12–10–68. Cl. 107.
Hewitt-Robins Inc., Stamford, Conn. 865,268, pub. 12–10–68. Cl. 23.
Hill, George W., & Co. : *See—*
    McCullough's, J. M., Sons Co., The.
Hilton International Co., New York, N.Y. 865,502, pub. 12–10–68. Cl. 100.
Hi-Shear Corp., Torrance, Calif. 865,195, pub. 12–10–68. Cl. 13.
Hi-Shear Corp., Torrance, Calif. 865,202, pub. 12–10–68. Cl. 13.
Hitchcock Publishing Co., Wheaton, Ill. 743,589, canc. Cl. 38.
Home Industries Schools : *See—*
    Empisal (Proprietary) Ltd.
Home Products Co., to Sani-Top, Inc., Los Angeles, Calif. 441,478, ren. 2–25–69. Cl. 32.
Houbigant, Inc., New York, N.Y. 865,472, pub. 12–10–68. Cl. 51.
House of Windsor, Inc., Windsor, Pa. 865,214, pub. 12–10–68. Cl. 17.
Howmet Corp., New York, N.Y. 865,426, pub. 12–10–68. Cl. 44.
Hudnut, Richard, Morris Plains, N.J. 506,465–6, ren. 2–25–69. Cl. 51.
Hurley, Glayds, d.b.a. Walter F. Hurley Gin, Diaz, Ark. 865,234, pub. 12–10–68. Cl. 19.
Hurley, Walter F., Gin : *See—*
    Hurley, Gladys.
Impact Plastics, Inc., Gastovia, N.C. 865,146, pub. 12–10–68. Cl. 1.
Imperial Chemical Industries Ltd., Millbank, London, England. 865,180, pub. 12–10–68. Cl. 9.
Imperial International Corp., New York, N.Y. 865,302–4, pub. 12–10–68. Cl. 23.
Independent Life & Accident Insurance Co., The, Jacksonville, Fla. 865,523–4, pub. 12–10–68. Cl. 102.
Industrial Chemical Cleaner Co. : *See—*
    Meeker, O. W.
Industrial Chemical Cleaner Inc. : *See—*
    Meeker, O. W.
Industrie Biologique Francaise S.A., Seine, France. 743,292, canc. Cl. 18.
Insta-Trim : *See—*
    Figure Trim, Inc.
Institute for Scientific Information, Inc., Philadelphia, Pa. 865,361, pub. 9–17–68. Cl. 38.
International Minerals & Chemical Corp., Skokie, Ill. 865,459, pub. 12–10–68. Cl. 46.
International Oil Burner Co., St. Louis, Mo. 743,586, canc. Cl. 34.
International Radio & Electronics Corp., Elkhart, Ind., from Crown Radio Corp., New York, N.Y. 865,347, pub. 7–7–64. Cl. 36.
International Wig Imports, Inc., Muskegon, Mich. 865,398, pub. 12–10–68. Cl. 40.
Jack Frost Yarn Co., New York, N.Y. 254,429, ren. 2–25–69. Cl. 43.
Jackson Chair Co., Inc., Danville, Ky. 865,321, pub. 12–10–68. Cl. 32.
Jacobsen Mfg. Co., Racine, Wis. 865,294–6, pub. 12–10–68. Cl. 23.
Jacobsen Mfg. Co., Racine, Wis. 865,299, pub. 12–10–68. Cl. 23.
Jet-Air Thread Control Co., Hummelstown, Pa. 865,298, pub. 12–10–68. Cl. 23.
Jewel Aquarium Co., Inc., Chicago, Ill. 865,469, pub. 12–10–68. Cl. 50.
Jiffy Fry, Inc., Crookston, Minn. 865,455–6, pub. 12–10–68. Cl. 46.
Johan Parmentier Textielfabrieken N.V., Dokkum, Netherlands. 865,417, pub. 12–10–68. Cl. 43.
Johnson Ideal Halter Co., The, Aurora, Ill. 865,159, pub. 12–10–68. Cl. 3.
Junior Chamber International, Inc., Miami Beach, Fla. 865,535, pub. 12–10–68. Cl. 200.

Kalee Klassics, Inc., New York, N.Y. 743,491, canc. Cl. 39.
Karnak Chemical Corp.: *See—*
Lewis Asphalt Engineering Corp.
Kelly, Duncan, Frozen Food Sales Service, d.b.a. Food Marketers, Los Angeles, Calif. 743,537, canc. Cl. 46.
Kendall Co., The, Walpole, Mass. 865,406, pub. 8–20–68. Cl. 42.
Kerns United Corp., from Keystone Lubricating Co., Philadelphia, Pa. 859,954, cor. Cl. 15.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 743,576, canc. Cl. 103.
Ketchel, Ronnie, d.b.a. Ronnie Ketchel Research, New York, N.Y. 865,518, pub. 12–10–68. Cl. 101.
Ketchel, Ronnie, Research: *See—*
Ketchel, Ronnie.
Kinkead Industries Inc.: *See—*
Summit Industries.
Kleinert, I. B., Rubber Co., New York, N.Y. 249,502, ren. 2–25–69. Cl. 40.
Klitzner, Alan J., Providence, R.I. 865,264, pub. 12–10–68. Cl. 22.
Koehnke, George F., d.b.a. Talented Teen Foundation, Itasca, Ill. 865,511, pub. 12–10–68. Cl. 101.
Koehring Co., Milwaukee, Wis. 743,360, canc. Cl. 23.
Koppers Co., Inc.: *See—*
Union Carbide & Carbon Corp.
Koppers Co., Inc., Pittsburgh, Pa. 504,299, ren. 2–25–69. Cl. 35.
Kyorin Seiyaku Kabushiki Kaisha, Surugadai, Chiyoda-ku, Tokyo, Japan. 865,220, pub. 12–10–68. Cl. 18.
LKB-Produkter Aktiebolag, Stockholm-Bromma, Sweden. 865,172, pub. 12–10–68. Cl. 6.
L. & M. Division, New York, N.Y. 743,498, canc. Cl. 42.
L.P.C. Chemicals & Dyes Ltd., London, England. 865,313, pub. 12–10–68. Cl. 26.
La Mirada Potteries, Inc., Los Angeles, Calif. 743,236, canc. Cl. 12.
Lark Luggage Corp., New York, N.Y. 865,162, pub. 12–10–68. Cl. 3.
Lark Mfg. Co., Columbus, Ohio. 865,272, pub. 12–10–68. Cl. 23.
Latest Trends, Inc., Rutherford, N.J. 865,384, pub. 12–10–68. Cl. 39.
Leggett & Platt Inc., Carthage, Mo. 510,103, ren. 2–25–69. Cl. 32.
Leininger, Wm. G., Knitting Co., Inc., d.b.a. The Railroad Sock, Mohnton, Pa. 865,369, pub. 12–10–68. Cl. 39.
Lenkotex Co., Inc., New York, N.Y. 865,274, pub. 12–10–68. Cl. 23.
Lentheric, Inc., New York, N.Y., to Les Parfums Chypron S.A., Boise Colombes (Seine), France. 249,644, ren. 2–25–69. Cl. 51.
Les Parfums Chypron S.A.: *See—*
Lentheric, Inc.
Lever Bros. Co., New York, N.Y. 865,482, pub. 12–10–68. Cl. 51.
Levi, William, d.b.a. Advertising Unlimited, Cincinnati, Ohio. 865,364, pub. 12–10–68. Cl. 38.
Lewis Asphalt Engineering Corp., Clark, N.J., to Karnak Chemical Corp., New York, N.Y. 504,969, ren. 2–25–69. Cl. 12.
Lewpage Corp., Washington, N.C. 865,437, pub. 12–10–68. Multiple Class (Classes 46 and 100).
Linco Products Corp., Chicago, Ill. 865,158, pub. 12–10–68. Multiple Class (Classes 2 and 6).
Lipton, Thomas J., Inc., Englewood Cliffs, N.J. 505,985, ren. 2–25–69. Cl. 46.
Little Tots Dress Co., Inc., New York, N.Y. 743,493, canc. Cl. 39.
Loma Industries, Fort Worth, Tex. 743,197, canc. Cl. 2.
Lorbeer, Carroll, Farms: *See—*
Lorbeer, Carroll W. C.
Lorbeer, Carroll W. C., d.b.a. Carroll Lorbeer Farms, Santa Monica, Calif. 532,863, canc. Cl. 46.
Los Angeles Soap Co., Los Angeles, Calif. 504,318, ren. 2–25–69. Cl. 4.
Louket Markets, Inc.: *See—*
Supermarkets General Corp.
Lowenstein, M., & Sons, Inc., New York, N.Y. 865,409, pub. 12–10–68. Cl. 42.
Lüscher & Bömper A.-G., Fahr, Germany, to Duke Laboratories, Inc., South Norwalk, Conn. 250,633, ren. 2–25–69. Cl. 44.
Luzier Inc., Kansas City, Mo. 865,476, pub. 12–10–68. Cl. 51.
Luzier Inc., Kansas City, Mo. 865,479, pub. 12–10–68. Cl. 51.
M.G. Plastics Ltd., Blackburn, England. 743,244, canc. Cl. 12.
Machinery & Equipment Co., Brisbane, Calif. 865,277, pub. 12–10–68. Cl. 23.
Madison Women's Republican Club Association, The, Madison, Conn. 865,531, pub. 12–10–68. Cl. 107.
Magnesium Co. of America, Detroit, Mich. 442,178, ren. 2–25–69. Cl. 14.
Maidenform, Inc.: *See—*
Enid Mfg. Co.
Maidenform, Inc., New York, N.Y. 865,394, pub. 12–10–68. Cl. 39.
Mallinckrodt Chemical Works, St. Louis, Mo. 865,219, pub. 12–10–68. Cl. 18.
Mankato Citizens Telephone Co., Mankato, Minn. 743,577, canc. Cl. 104.
Manning, Martha, Co.: *See—*
Carafiol-Silverman Co.
Mannington Mills Inc., Salem, N.J. 865,245, pub. 12–10–68. Cl. 20.
Marathon Electric Mfg. Corp., Wausau, Wis. 865,255, pub. 12–10–68. Cl. 21.
Mar-Ko Co., to Mark Morris Associates, Topeka, Kans. 854,751–2, new cert. Cl. 46.
Marlow, Harry C., Jr., d.b.a. Harry Marlow's Industries, Warren, Ohio. 743,566, canc. Cl. 52.
Marlow's, Harry, Industries: *See—*
Marlow, Harry C., Jr.
Mar-Tay, Inc., d.b.a. Mar-Tay Sales, Inc., Orlando, Fla. 743,299, canc. Cl. 18.
Mar-Tay Sales, Inc.: *See—*
Mar-Tay, Inc.
Mary's Sunshine Dairies, Inc., Hartsdale, N.Y. 865,512, pub. 12–10–68. Cl. 101.
Massey-Ferguson Industries Ltd., Toronto, Ontario, Canada. 865,327, pub. 12–10–68. Cl. 32.
Master Mechanics Co., The, Cleveland, Ohio. 441,550, ren. 2–25–69. Cl. 16.
Matralin Co., Inc., Elgin, Ill. 743,200, canc. Cl. 3.
Mauksch, Mary, d.b.a. Mary Mauksch Designs, Ossining, N.Y. 743,444, canc. Cl. 34.
Mauksch, Mary, Designs: *See—*
Mauksch, Mary.
Maul Bros. Inc., Millville, N.J. 865,506, pub. 12–10–68. Multiple Class (Classes 100 and 103).
Maxim Chemicals Ltd.: *See—*
Baskies, Maxim.
McAlpine Pure, Inc., Minneapolis, Minn. 743,424, canc. Cl. 31.
McCullough's, J. M., Sons Co., The, Cincinnati, Ohio, to George W. Hill & Co., Covington, Ky. 250,176, ren. 2–25–69. Cl. 1.
McGraw-Edison Co., Elgin, Ill. 743,373–4, canc. Cl. 24.
Mechanical Products Co.: *See—*
Abert, Jack C.
Meco, Inc.: *See—*
Seiberling Latex Products Co.
Meeker, O. W., d.b.a. Industrial Chemical Cleaner Co., to Industrial Chemical Cleaner Inc., Houston, Tex. 503,974, new cert. Cl. 52.
Meier, Joshua, Co., Inc., New York, N.Y. 743,588, canc. Cl. 37.
Melbo Clothing Inc., Osaka, Japan. 865,542. Cl. 39.
Menley & James Laboratories, Ltd., Philadelphia, Pa. 865,230–1, pub. 9–17–68. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 865,224, pub. 12–10–68. Cl. 18.
Metals Research Ltd., Royston, England. 865,315, pub. 12–10–68. Cl. 26.
Miami Herald Publishing Co., The, Miami, Fla. 865,362, pub. 12–10–68. Cl. 38.
Michaels Stern & Co., Inc., Rochester, N.Y. 865,389, pub. 12–10–68. Cl. 39.
Michaels, Vincent, Inc., New York, N.Y. 743,573, canc. Cl. 101.
Midland Machine Co., Elizabeth, N.J. 865,322, pub. 12–10–68. Cl. 32.
Midwestern Beverage Laboratories, Inc., St. Louis, Mo., to Canada Dry Corp., New York, N.Y. 441,922, ren. 2–25–69. Cl. 45.
Mif Industries, Inc., Branford, Conn. 865,279, pub. 12–10–68. Cl. 23.
Miller Bros. Hat Co. Inc., New York, N.Y. 743,494, canc. Cl. 39.
Miller, Nan, & Associates, Inc., Chicago, Ill. 865,517, pub. 12–10–68. Cl. 101.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 743,316, canc. Cl. 21.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 743,384, canc. Cl. 26.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 865,166, pub. 12–10–68. Cl. 5.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 865,496–7, pub. 12–10–68. Cl. 52.
Minnesota & Ontario Paper Co., Minneapolis, Minn. 743,239–42, canc. Cl. 12.
Mises, Bruce B., Inc., Los Angeles, Calif. 865,259, pub. 12–10–68. Cl. 22.
Mr. Boston Distiller Inc., Boston, Mass. 865,461, pub. 12–10–68. Cl. 49.
Mlodzikowski, Frank A., d.b.a. "Coffe-Cola Co.," Philadelphia, Pa. 503,809, ren. 2–25–69. Cl. 45.
Modern Intermodal Traffic Corp., Oakland, Calif. 865,528, pub. 12–10–68. Cl. 105.
Moler Products Ltd., Colchester, Essex, England. 250,333, ren. 2–25–69. Cl. 1.
Moline Paint Mfg. Co., to Moline Paint Mfg. Co., Moline, Ill. 503,314, ren. 2–25–69. Cl. 6.
Monette, C. J., Associates, Inc., Norfolk, Va. 865,477, pub. 12–10–68. Cl. 51.
Monitor Publishing Co., Inc., Houston, Tex. 865,363, pub. 12–10–68. Cl. 38.
Montres Consul S.A.: *See—*
Phinney-Walker Co.
Montserrat Co. Ltd., The: *See—*
Evans Sons Lescher & Webb Ltd.
Morgan, J. E., Knitting Mills, Inc., Tamaqua, Pa. 865,412, pub. 12–10–68. Cl. 42.
Morris, Mark, Associates: *See—*
Mar-Ko Co.
Morris, Philip, & Co. Ltd. Inc., to Philip Morris Inc., New York, N.Y. 509,939, ren. 2–25–69. Cl. 17.
Morris, Philip, & Co. Ltd. Inc., to Philip Morris Inc., New York, N.Y. 509,942, ren. 2–25–69. Cl. 17.
Morris, Philip, Inc.: *See—*
Morris, Philip, & Co. Ltd. Inc.
Mountford Mfg. Co., East Orange, N.J. 743,398, canc. Cl. 28.
Mullikin, Wilbur J., Washington, D.C. 743,510, canc. Cl. 44.
NMS Industries, Inc., New York, N.Y. 865,537. Cl. 34.

Nalco Chemical Co., Chicago, Ill. 865,207, pub. 12–10–68. Cl. 15.
Namm, A. I., & Son, d.b.a. The Namm Store, Brooklyn, N.Y. 297,749, canc. Cl. 32.
Namm Store, The: *See—*
Namm, A. I., & Son.
Nash-Finch Co., d.b.a. Warehouse Market, Minneapolis, Minn. 865,436, pub. 5–24–66. Cl. 46.
Nash-Finch Co., d.b.a. Warehouse Market, Minneapolis, Minn. 865,510, pub. 5–24–66. Cl. 101.
National Bowlers Journal, Inc., Chicago, Ill. 743,475, canc. Cl. 38.
National Can Corp., Chicago, Ill. 865,275, pub. 12–10–68. Cl. 23.
National Cibo House Corp., Memphis, Tenn. 743,592, canc. Cl. 46.
National Dairy Products Corp., Chicago, Ill. 865,433, pub. 12–10–68. Cl. 45.
National Dairy Products Corp., Chicago, Ill. 865,449, pub. 12–10–68. Cl. 46.
National Distillers & Chemical Corp.: *See—*
Bridgeport Brass Co., The.
National Mattress Co., Huntington, W. Va. 865,329, pub. 12–10–68. Cl. 32.
National Wire & Cable Corp., Los Angeles, Calif. 865,250, pub. 12–10–68. Cl. 21.
Nationwide Homes Corp., Atlanta, Ga. 743,595, canc. Cl. 103.
New Yorker Hotel Corp., The, New York, N.Y. 865,509, pub. 12–10–68. Cl. 100.
New Zealand Dairy Board: *See—*
New Zealand Dairy-Produce Control Board.
New Zealand Dairy-Produce Control Board, to New Zealand Dairy Board, Wellington, New Zealand. 244,843, ren. 2–25–69. Cl. 46.
Newport Palpo, Newport Beach, Calif. 865,265, pub. 12–10–68. Cl. 22.
Niles-Bement-Pond Co., to Pratt & Whitney Inc., West Hartford, Conn. 504,278, ren. 2–25–69. Cl. 26.
Nimrod Products, Inc., New York, N.Y. 865,266, pub. 12–10–68. Cl. 22.
1975 World Freedom Fair, Inc., Boston, Mass. 865,519, pub. 12–10–68. Cl. 101.
1975 World Freedom Fair, Inc., Boston, Mass. 865,521, pub. 12–10–68. Cl. 101.
North Central Plastics, Inc., Ellendale, Minn. 865,249, pub. 12–10–68. Cl. 21.
Novak Co., Inc., The, Plainfield, N.J. 865,301, pub. 12–10–68. Cl. 23.
Nuclear Research Associates, Inc., Long Island City, N.Y. 843,757, cor. Cl. 44.
Nutri-Seal Storage Systems, Inc., Myerstown, Pa. 865,293, pub. 12–10–68. Cl. 23.
Oconomowoc Mfg. Corp., Oconomowoc, Wis. 865,284, pub. 12–10–68. Cl. 23.
Odorono Co., The, Cincinnati, Ohio, to The Odorono Co., Inc., Stamford, Conn. 252,478, ren. 2–25–69. Cl. 51.
Odorono Co., Inc., The: *See—*
Odorono Co., The.
Oils, Inc., Chicago, Ill. 860,742, cor. Cl. 15.
Oncrete Products, Inc., Evanston, Ill. 743,282, canc. Cl. 16.
Ortho Pharmaceutical Corp., Raritan, N.J. 865,229, pub. 7–30–68. Cl. 18.
Oulevay SA, Morges, Vaud, Switzerland. 743,524, canc. Cl. 46.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 865,421, pub. 12–10–68. Cl. 43.
PPG Industries, Inc.: *See—*
Pittsburgh Plate Glass Co.
United States Gutta Percha Paint Co.
PPG Industries, Inc., Pittsburgh, Pa. 865,331, pub. 12–10–68. Cl. 33.
Page Milling Co., The, Luray, Va. 250,913, ren. 2–25–69. Cl. 46.
Page Milling Co., The, Luray, Va. 251,058, ren. 2–25–69. Cl. 46.
Palmolive-Peet Co., The, now by change of name Colgate-Palmolive-Peet Co., Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 250,435, ren. 2–25–69. Cl. 52.
Pan Britannica Industries Ltd., Waltham Cross, England. 865,169, pub. 12–10–68. Multiple Class (Classes 6 and 10).
Paoli, Gino, Clifton, N.J. 865,378, pub. 12–10–68. Cl. 39.
Paperback Library, Inc., New York, N.Y. 743,590, canc. Cl. 38.
Parke, Davis & Co., Detroit, Mich. 506,925, ren. 2–25–69. Cl. 18.
Parker-Hannifin Corp.: *See—*
Druge Bros. Mfg. Co.
Patricia's Lip-O-Lator Co.: *See—*
Anderson, Mary P., Mrs.
Pepper Mill Associates, Inc., Westport, Conn. 865,505, pub. 12–10–68. Cl. 100.
Petersen Publishing Co., Los Angeles, Calif. 862,172, cor. Cl. 38.
Petitemaker Inc., New York, N.Y. 743,481, canc. Cl. 39.
Pfizer, Chas., & Co., Inc., New York, N.Y. 865,178, pub. 12–10–68. Cl. 6.
Pharmaceutical Products, Inc., Charlotte, N.C. 743,298, canc. Cl. 18.
Phinney-Walker Co., New York, N.Y., to Montres Consul S.A., La Chaux-de-Fonds, Switzerland. 242,402, ren. 2–25–69. Cl. 27.
Phoenix, Inc., Allentown, Pa. 743,482, canc. Cl. 39.
Pittsburgh Plate Glass Co., to PPG Industries, Inc., Pittsburgh, Pa. 442,737, ren. 2–25–69. Cl. 16.
Plotkin, J. G., & Son Shoe Co., Scranton, Pa. 865,379, pub. 12–10–68. Cl. 39.
Plumb, D. Donald, d.b.a. The Plumb-Line Incomparable, Panorama City, Calif. 865,160, pub. 12–10–68. Cl. 3.
Plumb-Line Incomparable, The: *See—*
Plumb, D. Donald.
Portage Insulated Pipe Co., Barberton, Ohio. 743,260, canc. Cl. 13.
Port-A-Pig Co.: *See—*
Benjamin, Marshall E.
Porter-Spear Co., The, Hagerstown, Md. 865,311, pub. 12–10–68. Cl. 26.
Powdered Silk Manufacturer Co., Inc., Stratford, Iowa. 865,498, pub. 12–10–68. Cl. 52.
Pratt & Whitney Inc.: *See—*
Niles-Bement-Pond Co.
Precious Metals Research Works, Inc., Brooklyn, N.Y. 865,422, pub. 12–10–68. Cl. 44.
Precision Lock Mfg. Co., Inc., Brooklyn, N.Y. 743,379, canc. Cl. 25.
Precision Rubber Products Corp., Dayton, Ohio. 743,449, canc. Cl. 35.
Precision Welder & Flexopress Corp., Cincinnati, Ohio. 865,270, pub. 12–10–68. Cl. 23.
Pre-Stop Moisture Control, Inc., from M. K. Gist, Executrix of the Estate of C. J. Gist, deceased, Los Angeles, Calif. 743,231, canc. Cl. 12.
Products Research & Chemical Corp., Burbank, Calif. 865,153, pub. 12–10–68. Cl. 1.
Professional Specialties Co., Clayton, Mo. 865,424, pub. 12–10–68. Cl. 44.
Progredo Trading Co.: *See—*
Schutterman, Gustav J.
Puritan Chemical Co., Atlanta, Ga. 865,209, pub. 12–10–68. Cl. 16.
Quinn, K. J., & Co., Inc., Malden, Mass. 865,223, pub. 12–10–68. Multiple Class (Classes 18, 22, 40, and 51).
Raab Industries: *See—*
Raab, Michael J.
Raab, Michael J., d.b.a. Raab Industries, Philadelphia, Pa. 865,530, pub. 12–10–68. Cl. 106.
Race & Race, Inc., Winter Haven, Fla. 743,256, canc. Cl. 13.
Race & Race, Inc., Winter Haven, Fla. 743,258, canc. Cl. 13.
Railroad Sock, The: *See—*
Leininger, Wm. G., Knitting Co., Inc.
Rap Industries, Inc., Minneapolis, Minn. 743,466, canc. Cl. 37.
Ray, Sharon, Corp., Angola, Ind. 865,478, pub. 12–10–68. Cl. 51.
Regie Nationale des Usines Renault, Billan Court (Seine), France. 865,232, pub. 12–10–68. Multiple Class (Classes 19 and 23).
Reid-Meredith, Inc., Lawrence, Mass. 865,401, pub. 12–10–68. Cl. 40.
Reliance Varnish Co., Louisville, Ky. 743,281, canc. Cl. 16.
Rembrandt Tobacco Corp. (Overseas) Ltd., Zurich, Switzerland. 865,212, pub. 12–10–68. Cl. 17.
Republic Steel Corp., Cleveland, Ohio. 865,328, pub. 12–10–68. Cl. 32.
Rerebaz, Inc., McKee City, N.J. 865,446, pub. 12–10–68. Cl. 46.
Researched Plastics, Inc., Columbia, S.C. 865,240, pub. 12–10–68. Cl. 19.
Responsive Environments Corp., Englewood Cliffs, N.J., from Edu-Center, Inc., New York, N.Y. 865,310, pub. 12–10–68. Cl. 26.
Reuter, John, Jr., Sault Sainte Marie, Mich., to John Reuter, Jr., Inc., Phoenix, Ariz. 442,260, ren. 2–25–69. Cl. 22.
Reuter, John, Jr., Inc.: *See—*
Reuter, John, Jr.
Reynolds Metals Co., Richmond, Va. 865,291, pub. 12–10–68. Cl. 23.
Richards, Caryl, Inc., New York, N.Y. 865,470, pub. 6–7–66. Cl. 51.
Richards Son & Allwin Ltd., Great Bridge, Tipton, England. 865,239, pub. 12–10–68. Cl. 19.
Richardson-Merrell Inc., New York, N.Y. 865,227, pub. 12–10–68. Cl. 18.
Ridge Plastics Co., Elyria, Ohio. 743,233, canc. Cl. 12.
Rikkers, William, Handelsonderneming N.V., Amsterdam, Netherlands. 743,404, canc. Cl. 28.
Ritter Pfaudler Corp., Rochester, N.Y. 865,204, pub. 12–10–68. Cl. 14.
Robbins Instruments: *See—*
Robbins, Noel.
Robbins, Noel, d.b.a. Robbins Instruments, Chatham, N.J. 743,514, canc. Cl. 44.
Robertson, James, Co., El Segundo, Calif. 743,542, canc. Cl. 49.
Robin Products Co., Warren, Mich. 865,198, pub. 12–10–68. Cl. 13.
Rob Roy Co., Inc., New York, N.Y. 865,382, pub. 12–10–68. Cl. 39.
Rodriguez, J. M., & Co., Inc., New York, N.Y. 865,448, pub. 12–10–68. Cl. 46.
Roselon Yarns, Inc., Philadelphia, Pa. 865,420, pub. 12–10–68. Cl. 43.
Rowe Mfg. Co., Galesburg, Ill. 865,196, pub. 12–10–68. Cl. 13.
Ruberoid Co., The, South Bound Brook, N.J. 743,306, canc. Cl. 20.
Ruberoid Co., The, New York, N.Y. 743,308, canc. Cl. 20.
Sachs Quality Stores, Inc., Bronx, N.Y. 865,324–5, pub. 12–10–68. Cl. 32.
Safeway Stores, Inc., Oakland, Calif. 743,295, canc. Cl. 18.
Safie Bros. Farm Pickle Co., Inc., New Baltimore, Mich. 865,445, pub. 12–10–68. Cl. 46.
Sandlapper Press, Inc., Columbia, S.C. 865,366, pub. 12–10–68. Cl. 38.
Sandler, A., Co., Needham Heights, Mass. 441,672, ren. 2–25–69. Cl. 39.

Sani-Top, Inc.: *See—*
  Home Products Co.
Saum, Alfons, d.b.a. Alfons Saum, Fabrik fur Schuhbodenteile, Uerzell, Kreis Schluchtern, Germany. 865,370, pub. 12–10–68. Cl. 39.
Saum, Alfons, Fabrik fur Schuhbodenteile: *See—*
  Saum, Alfons.
Schenley Distillers, Inc., New York, N.Y. 865,463, pub. 7–2–68. Cl. 49.
Schutterman, Gustav J., d.b.a. Progredo Trading Co., New York, N.Y. 865,192, pub. 12–10–68. Cl. 13.
Schutterman, Gustav J., d.b.a. Progredo Trading Co., New York, N.Y. 865,288, pub. 12–10–68. Cl. 23.
Scovill Mfg. Co., Waterbury, Conn. 865,194, pub. 12–10–68. Cl. 13.
Scripto, Inc., Atlanta, Ga. 865,359, pub. 12–10–68. Cl. 37.
Sea & Ski Corp., San Francisco, Calif. 865,225, pub. 12–10–68. Cl. 18.
Seafield Amalgamated Rubber Co. Ltd., London, England. 865,154, pub. 12–10–69. Cl. 1.
Sears, Roebuck & Co., Chicago, Ill. 865,339, pub. 12–10–68. Cl. 35.
Securities, Inc., Starkville, Miss. 743,457, canc. Cl. 36.
Seiberling Latex Products Co., Akron and Barberton, Ohio, to Meco, Inc., Oklahoma City, Okla. 250,471, ren. 2–25–69. Cl. 44.
Sentry Hardware Corp., Cleveland, Ohio. 865,167, pub. 12–10–68. Cl. 6.
Seufert Bros. Co., to Francis A. Seufert & Co., The Dalles, Oreg. 508,029, ren. 2–25–69. Cl. 46.
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  Seufert Bros. Co.
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Sipe, James B., & Co., Pittsburgh, Pa. 506,458–9, ren. 2-25–69. Cl. 16.
Sklarny Kavalier, Narodni Podnik, Sazava, Czechoslovakia. 865,314, pub. 12–10–68. Cl. 26.
Slick Industrial Co., Chicago Heights, Ill. 865,323, pub. 12–10–68. Cl. 32.
Sloane, W & J, of Beverly Hills, d.b.a. Angelus Furniture Mfg. Co., Beverly Hills, Calif. 865,330, pub. 12–10–68. Cl. 32.
Smith, David H., Inc., Lynn, Mass. 865,372, pub. 12–10–68. Cl. 39.
Sociedad Industrial Textil S.A. (Sitex), Lima, Peru. 865,418, pub. 12–10–68. Cl. 43.
Societa per Azioni Abele Bertozzi, Parma, Italy. 865,447, pub. 12–10–68. Cl. 46.
Societe Francaise d'Optique et de Mechanique-S.F.O.M., Rueil-Malmaison (Hauts-de-Seine), France. 865,308, pub. 12–10–68. Cl. 26.
Societe Le Carbone Lorraine, Paris, France. 865,145, pub. 12–10–68. Cl. 1.
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  Southern Paper Co.
Soundscriber Corp., The, North Haven, Conn. 743,453, canc. Cl. 36.
South Atlantic Sales Co., Baltimore, Md. 865,452, pub. 12–10–68. Cl. 46.
Southern Paper Co., Wiggins, Miss., from So-Soft Paper Products Co., Inc., New York, N.Y. 743,587, canc. Cl. 37.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 506,690, ren. 2–25–69. Cl. 22.
Spartans Industries, Inc., New York, N.Y. 865,386, pub. 12–10–68. Cl. 39.
Special Promotions, Inc., Jackson, Miss. 865,504, pub. 12–10–68. Cl. 100.
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  Donnahoe, Ollie N.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 441,806, ren. 2–25–69. Cl. 6.
Standard Packaging Corp., Stamford, Conn. 865,143, pub. 12–10–68. Cl. 1.
Stanley Home Products, Inc., Westfield, Mass. 865,365, pub. 12–10–68. Cl. 38.
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  Walters, James H.
Statistical Tabulating Corp., Chicago, Ill. 865,532, pub. 12–10–68. Cl. 107.
Stegmaier Brewing Co., Wilkes-Barre, Pa. 865,460, pub. 12–10–68. Cl. 48.
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  Farbwerke, vormals Meister Lucius & Bruning.
Stevens, Harry M., Inc., New York, N.Y. 865,507, pub. 12–10–68. Cl. 100.
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Stow Laboratories, Inc., Stow, Mass. 865,246, pub. 12–10–68. Cl. 21.
Strand Records, Inc., New York, N.Y. 743 461, canc. Cl. 36.
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Strauss, Levi, & Co., San Francisco, Calif. 250,265, ren. 2–25–69. Cl. 39.
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Stumpf, John, to A. T. Stumpf, d.b.a. John Stumpf's Son, Gretna, La. 70,529, ren. 2–25–69. Cl. 6.
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  Stumpf, John.
Summit Industries, to Kinkead Industries Inc., Chicago, Ill. 794,661, new cert. Cl. 13.
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  Supermarkets General Corp.
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Technomic Publishing Co., Inc., Stamford, Conn. 865,360, pub. 12–10–68. Cl. 38.
Tequila San Matias De Jal., S.A., Guadalajara, Mexico. 865,464, pub. 12–10–68. Cl. 49.
Terlin Sales Co., Inc., Stockton, Calif. 743,515, canc. Cl. 45.
Teweles, L., Seed Co., Milwaukee, Wis. 743,369, canc. Cl. 23.
Texas Instruments Inc., Dallas, Tex. 743,261, canc. Cl. 14.
Texas Research & Electronic Corp., d.b.a. Eastman Products Corp., Dallas, Tex. 743,253, canc. Cl. 13.
Tex-Togs, Inc., El Paso, Tex. 865,392, pub. 12–10–68. Cl. 39.
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Thetford Engineering Corp., Ann Arbor, Mich. 865,193, pub. 12–10–68. Cl. 13.
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Tyre, Carlton, Saving Co. Ltd., The, Saffron Walden, Essex, England. 860,468–70, cor. Cl. 22.
Traute Franke, Vienna, Austria. 743,500, canc. Cl. 42.
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Triangle Conduit & Cable Co. Inc., Newark, from Triangle Conduit & Cable Co. Inc., New Brunswick, N.J. 865,248, pub. 12–10–68. Cl. 21.
Tridair Industries, Redondo Beach, Calif. 865,201, pub. 12–10–68. Cl. 13.
Trio Chemical Works, Inc., Brooklyn, N.Y. 865,164, pub. 12–10–68. Cl. 4.
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Utica Cutlery Co., Utica, N.Y. 865,305, pub. 12–10–68. Cl. 23.
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